

STAINLESS STEELS - NICKEL ALLOYS - ALUMINIUM - ENGINEERING PLASTICS - ENGINEERING STEELS

IRELAND'S PREMIER MULTI-METAL STOCKHOLDER



PRODUCT BROCHURE
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Engineering Steel Bar

Stainless Steel

Hot Finished Hollow Bar

Hydraulic Range

Nickel Alloys

Bronze/Brass/Copper

Titanium

Tool Steel

Cast Iron

Aluminium

Engineering Plastics

STAINLESS STEELS - NICKEL ALLOYS - ALUMINIUM - ENGINEERING PLASTICS - ENGINEERING STEELS

We are passionate about providing superior quality products on time, all of the time. The only technical specification and delivery time that matters to us is yours.

Others may talk about quality management systems and service excellence but with us, it's not only our passion, but it's also our policy. That's why we applied for, were awarded and have consistently maintained the AS9120B & BS EN 9001:2015 standard.

This standard is applicable to the Quality Management System of our;

- Procurement
- Stockholding
- In-House Cutting and Boring to the length of;
 - ◆ Stainless Steels
 - ◆ Nickel Alloys
 - ◆ Carbon and Alloy Steels
 - ◆ Semi-Finished Engineering Plastics
 - ◆ Non-Ferrous Metals

The entire team at Impact Ireland (Metals) Ltd. are charged with upholding our commitment to a superior Quality Management System. Every member of the team is familiar with the company's Quality Manual, which has been established and adopted as the means for achieving the standard.

Our core strength is a motivated and committed team. Everybody at Impact Ireland (Metals) Ltd. is dedicated to providing superior quality products and services to our many customers. We are committed to ensuring our team is the most highly trained and effective in the industry. Every team member's training and development needs are met through an individualised programme tailored to their needs.

We constantly review the suitability and effectiveness of our Quality Management System to ensure that it is in keeping with the expectations of our customers, the realities of a dynamic marketplace and the size and nature of our company.

For more information on our Quality Management System and an updated version of our Quality certificate please contact our Quality Manager or visit our website at www.impactirl.ie.



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IMPACT IRELAND METALS LTD **Engineering Steel Stockist**



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IMPACT ENGINEERING PLASTICS **Stockholder of High Performance Engineering Plastic**



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080A15/1018 Bright Bar



080A15/1018 Bright Bar (EN3B) is general-purpose plain carbon steel suitable for mechanical and allied engineering applications that will not be heavily stressed. It has good machining properties and is suitable for welding. This material can be case hardened and is normally used in the supplied condition.

Used in many engineering applications, suitable for studs, bolts, shafts, threaded bars, spindles, axles and machinery parts.

Specification

Steel Number	Steel Name	Grade	AISI/SAE	Symbol	Material Standard	EN Number
1.1151	C15	En3B	1020/1021	070M20/080A15	EN10083-1	EN3B

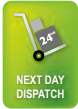
Chemical Analysis

Grade	C	Mn	Si	P	S
BS970 080A15	.13 - .18	1.0 max	.35 max	.06 max	.06 max

Rounds (mm)

3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	13.00	15.00
16.00	20.00	22.00	25.00	30.00	35.00	36.00	40.00	45.00	50.00
55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00	100.00	105.00
110.00	120.00	130.00	140.00	150.00	160.00				

Colour Code: Royal Blue



Sizes

Rounds (inch)

1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	1 1/16
3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8
2	2 1/8	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4
4 1/4	4 1/2	4 3/4	5	5 1/2	6	7	7 1/4	8	8 1/2
9	9 1/2	10							

Squares (mm)

6	8	10	12	15	20	25	30	35	40
45	50	55	60	65	70	75	80	100	125

Squares (inch)

1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4
4	4 1/2	5	6						

Flats (mm)

10 x 3	10 x 5	10 x 6	12 x 6	12 x 10	15 x 4	15 x 6	15 x 10	16 x 5	16 x 10
20 x 4	20 x 5	20 x 6	20 x 8	20 x 10	20 x 16	25 x 4	25 x 5	25 x 8	25 x 10
25 x 12	25 x 16	30 x 3	30 x 4	30 x 5	30 x 6	30 x 8	30 x 10	30 x 12	30 x 15
30 x 16	30 x 20	32 x 16	35 x 10	35 x 20	35 x 30	40 x 5	40 x 6	40 x 10	40 x 12
40 x 16	40 x 20	40 x 25	40 x 30	45 x 10	45 x 20	45 x 25	45 x 30	45 x 40	50 x 5
50 x 6	50 x 8	50 x 12	50 x 15	50 x 16	50 x 20	50 x 25	50 x 30	50 x 35	50 x 40
55 x 5	55 x 10	55 x 20	55 x 30	60 x 6	60 x 8	60 x 10	60 x 12	60 x 25	60 x 30
60 x 40	65 x 6	65 x 12	65 x 20	65 x 30	65 x 40	65 x 50	70 x 6	70 x 8	70 x 10
70 x 12	70 x 16	70 x 20	70 x 30	70 x 40	70 x 50	80 x 10	80 x 12	80 x 16	80 x 20
80 x 25	80 x 30	80 x 40	80 x 50	90 x 10	90 x 25	90 x 30	90 x 40	90 x 50	100 x 10
100 x 20	100 x 30	100 x 40	100 x 50	110 x 10	110 x 16	110 x 20	110 x 30	110 x 40	110 x 50
125 x 6	125 x 10	125 x 20	125 x 25	125 x 30	125 x 40	125 x 50	130 x 10	130 x 20	130 x 25
40 x 10	140 x 25	140 x 50	150 x 10	150 x 20	150 x 30	150 x 50	160 x 10	160 x 20	160 x 25
160 x 30	160 x 40	160 x 50							

Flats (inches)

1/2 x 1/8	1/2 x 1/4	1/2 x 3/8	5/8 x 1/8	5/8 x 1/4	3/4 x 1/8	3/4 x 1/4	3/4 x 5/16	3/4 x 3/8	3/4 x 1/2
1 x 1/8	1 x 1/4	1 x 5/16	1 x 3/8	1 x 1/2	1 x 5/8	1 x 3/4	1 1/4 x 1/8	1 1/4 x 1/4	1 1/4 x 3/8
1 1/4 x 1/2	1 1/4 x 5/8	1 1/4 x 3/4	1 1/4 x 1	1 1/2 x 1/8	1 1/2 x 1/4	1 1/2 x 3/8	1 1/2 x 1/2	1 1/2 x 5/8	1 1/2 x 3/4
1 1/2 x 1	1 3/4 x 1/4	1 3/4 x 3/8	1 3/4 x 1/2	1 3/4 x 3/4	1 3/4 x 1	2 x 1/8	2 x 1/4	2 x 3 5/16	2 x 1/2
2 x 5/8	2 x 3/4	2 x 1	2 x 1 1/4	2 x 1 1/2	2 x 1 3/4	2 1/4 x 1/4	2 1/4 x 1/2	2 1/4 x 3/4	2 1/4 x 1
2 1/4 x 1 1/2	2 1/2 x 1/8	2 1/2 x 3/16	2 1/2 x 1/4	2 1/2 x 3/8	2 1/2 x 1/2	2 1/2 x 5/8	2 1/2 x 3/4	2 1/2 x 2	2 5/8 x 1
3 x 1/8	3 x 1/4	3 x 3/8	3 x 1/2	3 x 5/8	3 x 3/4	3 x 1	3 x 1 1/4	3 x 1 1/2	3 x 1 3/4
3 x 2	3 x 2 1/2	3 1/4 x 1 1/2	3 1/2 x 3/8	3 1/2 x 5/8	3 1/2 x 3/4	3 1/2 x 1	3 3/4 x 1 1/2	4 x 1/4	4 x 3/8
4 x 1/2	4 x 5/8	4 x 3/4	4 x 1	4 x 1 1/2	4 x 1 3/4	4 x 2	4 x 2 1/2	4 x 3	4 1/2 x 1/4
4 1/2 x 3/8	4 1/2 x 1/2	4 1/2 x 3/4	4 1/2 x 1	4 1/2 x 2	5 x 1/4	5 x 1/2	5 x 3/4	5 x 1	5 x 1 1/4
5 x 1 1/2	5 x 2	5 x 3	6 x 1/4	6 x 3/8	6 x 1/2	6 x 5/8	6 x 3/4	6 x 1	6 x 1 1/4
6 x 1 1/2	6 x 1 3/4	6 x 2	6 x 2 1/2	6 x 3	6 x 4	7 x 1/2	7 x 3/4	7 x 1	8 x 1/4
8 x 1/2	8 x 3/4	8 x 1	8 x 1 1/2	8 x 2	10 x 1/4	10 x 1/2	10 x 3/4	10 x 1	10 x 1 1/2
10 x 2	12 x 1/4	12 x 1/2	12 x 3/4	12 x 1	12 x 1 1/2	12 x 2			

080M40/080A42 Bright Bar



080M40/080A42 Bright Bar (EN8) is a medium carbon, medium tensile steel. This grade offers greater strength, toughness and wear-resistance than mild steel. Welding of 080M40/080A42 Bright Bar (EN8) is possible with advice from a competent welding consumables professional but welding is not recommended for through-hardened, flame or induction hardened material.

Machinability is good and forming in the annealed condition is readily accomplished. Used for shafts, couplings, pins, rolls, spindles, torsion bars, gears, axles, cold headed parts etc.

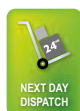
Specification

Steel Number	AISI/SAE	Symbol	Material Standard	EN Number
1.1186	1040	080M40	EN 10083-2	EN8

Chemical Analysis

Chemical	C	Mn	Si	P	S
%	0.37 - 0.44	0.6 - 0.9	0.05 - 0.35	.06 max	.05 max

Colour Code: Yellow



Sizes

Rounds (mm)

5	10	12	16	20	22	25	30	32	35
40	45	50	55	60	65	70	80	85	90
100	110	120	130	140	150	125.00	130.00	135.00	140.00

Rounds (inch)

3/8	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4
2	2 1/4	2 1/2	2 3/4	3	3 1/2	4	5	8	

Squares (mm)

4	5	6	8	10	12	14	16	18	20
25	30	35	40	45	50				

Flats (mm)

8 x 7	10 x 18	12 x 8	14 x 9	16 x 10	18 x 11	20 x 12	22 x 14	25 x 14	28 x 16
32 x 18	36 x 20	40 x 22	45 x 25	50 x 28					

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.



Full range of Engineering Steel Bar in stock
For more information call us on 014512144
or visit www.impactirl.ie

080M40/080A42 Black Bar



080M40/080A42 Black Bar (EN8) is a medium carbon, medium tensile steel. This grade offers greater strength, toughness and wear-resistance than mild steel. Welding of 080M40/080A42 Black Bar (EN8) is possible with advice from a competent welding consumables professional but welding is not recommended for through-hardened, flame or induction hardened material.

Machinability is good and forming in the annealed condition is readily accomplished. Used for shafts, couplings, pins, rolls, spindles, torsion bars, gears, axles, cold headed parts etc.

Specification

Steel Number	AISI/SAE	Symbol	Material Standard	EN Number
1.1186	1040	080M40	EN10083-2	EN8

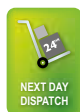
Chemical Analysis

Chemical	C	Mn	Si	P	S
%	0.37 - 0.44	0.6 - 0.9	0.05 - 0.35	.06 max	.05 max

Sizes: Rounds (mm)

45	50	55	60	65	70	75	80	85	90
95	100	105	110	115	120	125	130	135	140
145	150	155	160	165	170	175	180	185	190
200	210	220	230	240	250	260	270	280	290
300	310	350	370	380	390	410	430	450	480

Colour Code: Yellow



817M40T Bright Bar



817M40T Bright Bar (EN24T) comes treated in the "T" condition to 850/1000 N/mm². 817M40T (EN24T) is supplied in the fully heat-treated condition, it is machineable and can be put into service without further treatment. Suitable for a wide range of applications where high strength, shock resistance and wear resistance are important. As a medium carbon steel with alloying elements of Nickel, Chromium and Molybdenum, 817M40T (EN24T) is not ideally suitable for welding.

Normally specified for a wide range of applications including gears, shafts, axles, studs and machine parts.

Specification

EN Number	AISI/SAE	Symbol	Material Standard	EN Number
1.6582	4340	817M40T	EN10277-5	EN24T

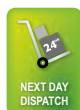
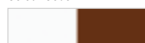
Chemical Analysis

C	Si	Mn	S	P	Cr	Mo	Ni
.36/.44	.10/.35	.45/.70	.04max	.035max	1.0/1.4	.20/.35	1.3/1.7

Sizes: Rounds (mm)

40	45	50	55	60	65	70	75	80	85
90	95	100	105	110	115	120	125	130	135
140	145	150	155	160	165	170	175	180	185
190	195	200	205	210	215	220	225	230	235
240	245	250	255	260	265	270	275	280	285
290	295	300	305	310	315	320	325	330	335
340	345	350	355	360	365	370	375	380	385
390	395	400							

Colour Code:



817M40T Black Bar



817M40T Black Bar (EN24T) comes treated in the "T" condition to 850/1000 N/mm². 817M40T (EN24T) is supplied in the fully heat-treated condition, it is machineable and can be put into service without further treatment. Suitable for a wide range of applications where high strength, shock resistance and wear resistance are important. As a carbon steel with alloying elements of Nickel, Chromium and Molybdenum, 817M40T (EN24T) is not ideally suitable for welding.

Normally specified for a wide range of applications including gears, shafts, axles, studs and machine parts.

Specification

EN Number	AISI/SAE	Symbol	Material Standard	EN Number
1.6582	4340	817M40T	EN10277-5	EN24T

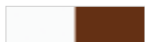
Chemical Analysis

C	Si	Mn	S	P	Cr	Mo	Ni
.36/.44	.10/.35	.45/.70	.04max	.035max	1.0/1.4	.20/.35	1.3/1.7

Sizes: Rounds (mm)

45	50	55	60	65	70	75	80	85	90
95	100	105	110	115	120	125	130	135	140
145	150	155	160	165	170	175	180	185	190
195	200	205	210	215	220	225	230	235	240
245	250	255	260	265	270	275	280	285	290
295	300	305	310	315	320	325	330	335	340
345	350	355	360	365	370	375	380	385	390
395	400								

Colour Code: White/Brown



STAINLESS STEELS - NICKEL ALLOYS - ALUMINIUM - ENGINEERING PLASTICS - ENGINEERING STEELS

Check out our Value Added Services section at
www.impactirl.ie



Along with our extensive range of products, we also have a number of services available to our customers. These services allow us to provide customer satisfaction to the highest level.

SOURCING

Our team is uniquely positioned to provide our customers with rapid and diligent assistance in sourcing any metal or engineering plastic you require to meet with your supply chain management issues. We will provide you with the most cost-efficient solution while guaranteeing the quality of material for your manufacturing processes. We are happy to provide forward stocking against customer call-off schedules for any materials required. Our global sourcing capacity and progressive product knowledge enable us to help you source any difficult material grades.

PRIMARY PROCESSING

We can get you one step closer to the finished component with our in house primary processing operations;

- Cutting
- Drilling/Boring
- Turning
- Chamfering



IRELAND'S PREMIER ALUMINIUM SERVICE CENTRE

- Highest Quality Material
- Stock availability
- Vacuum handling equipment
- Same day cutting service
- Shrinkwrap service
- Rapid dispatch and nationwide delivery



230M07/11SMn30 Bright Bar



230M07 (EN1A) is a free-machining low tensile carbon steel. It is characterised by excellent machinability, moderate weldability with reasonable strength and ductility. 230M07 (EN1A) is used extensively by all industry sectors for parts and components where machining is involved. Generally used in as supplied condition due to its low hardenability.

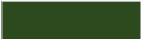
Specification

Steel Number	Steel Name	Grade	AISI/SAE	Symbol	Material Standard	EN Number
1.0715	11SMn30	En1A	1214	230M07	EN10277-3	EN1A

Chemical Analysis

C	Si	Mn	S	P
0.15 max	0.10 max	0.80/1.20	0.25/0.35	0.09 max

Colour Code: Green



Sizes

Rounds (mm)

6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	28.00
30.00	35.00	40.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00
85.00	90.00	100.00	105.00	110.00	127.00	130.00	160.00	170.00	180.00

Rounds (inch)

3/8	7/16	1/2	9/16	5/8	1 1/16	3/4	7/8	1	1 1/32
1 1/8	1 1/4	1 5/16	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4
2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4
5	5 1/2	6	6 1/2	7 1/2	8				

Squares (mm)

1/2 x 1/4	3/4 x 3/16	3/4 x 1/2	1 x 1/4	1 x 1/2	1 x 3/4	1 1/4 x 1/2	1 1/4 x 3/4	1 1/4 x 1	1 1/2 x 1/4
1 1/2 x 1/2	1 1/2 x 3/4	1 1/2 x 1	1 1/2 x 1 1/4	1 3/4 x 1	1 3/4 x 1 1/4	2 x 1/4	2 x 1/2	2 x 3/4	2 x 1
2 x 1 1/4	2 x 1 1/2	2 1/2 x 1	2 1/2 x 1/2	2 1/2 x 1 1/2	2 1/2 x 1 3/4	3 x 1/4	3 x 3/4	3 x 1	3 1/2 x 1 1/4
3 x 1 1/2	3 x 1 3/4	3 x 2	3 1/2 x 1	3 1/2 x 1 1/2	3 1/2 x 2	3 1/2 x 2 1/2	4 x 1/4	4 x 1/2	4 x 3/4
4 x 1	4 x 1 1/2	4 x 2	4 x 2 1/2	4 x 3	5 x 1	5 x 1 1/2	5 x 2	5 x 2 1/2	5 x 3
5 x 4	6 x 1/2	6 x 1	6 x 1 1/2						

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

230M07Pb/11SMn37Pb Bright Bar



230M07Pb/11SMn37Pb (EN1APb) is a low carbon lead free cutting steel, bright drawn or smooth turned with a consistently excellent level of machinability. The addition of lead plus the high sulphur and phosphorous levels form a lubricating effect resulting in extremely improved machinability with little effect on the mechanical properties. 230M07Pb/11SMn37Pb (EN1APb) will electroplate but is not suitable for hot-dip galvanising.

Used extensively in automatic screw machines for manufacturing parts requiring considerable machining and close tolerances. Welding is not recommended due to high sulphur and lead content.

Specification

Steel Number	Steel Name	Grade	AISI/SAE	Symbol	Material Standard	EN Number
1.0718	11SMnPb30	En1APb	12L14	230M07Pb	EN10277-3	EN1APb

Chemical Analysis

C	Si	Mn	S	P	Pb
0.15 max	0.10 max	0.80/1.20	0.25/0.35	0.09 max	0.15/0.35



Sizes

Rounds (mm)

4.00	5.00	6.00	8.00	10.00	12.00	13.00	14.00	15.00	16.00
17.00	20.00	22.00	23.00	25.00	26.00	30.00	35.00	40.00	42.00
45.00	50.00	55.00	60.00	65.00	70.00	80.00	85.00	90.00	100.00

Rounds (inch)

5/32	3/16	7/32	1/4	9/32	5/16	3/8	13/32	7/16	1/2
9/16	5/8	1 1/16	3/4	13/16	7/8	1	1 1/8	1 1/4	1 5/16
1 3/8	1 7/16	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 3/8	2 1/2
2 5/8	3	3 1/4	3 1/2	3 3/4	4				

Hexagons (mm)

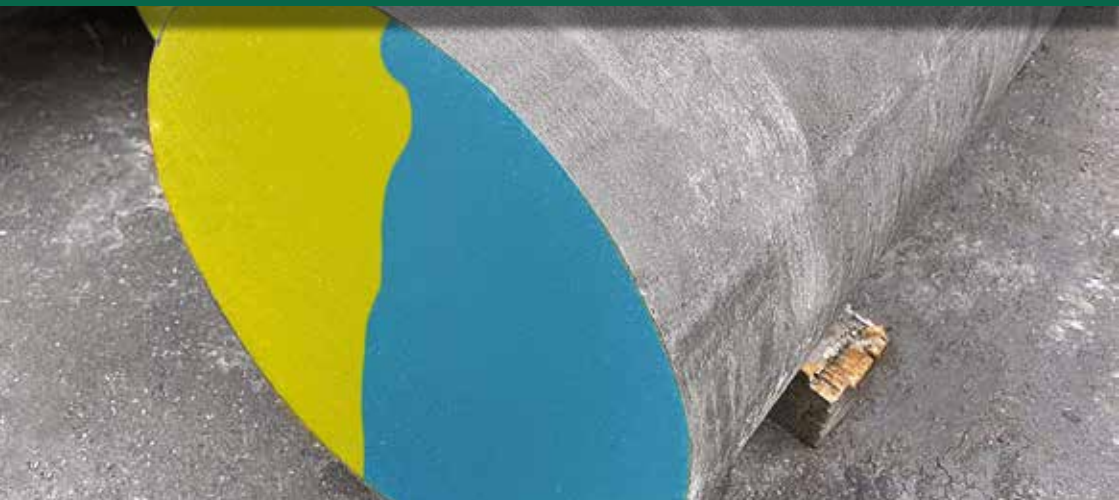
5	6	8	10	12	14	16	18	20	22
25	28	30	32	35	38	40	45	50	

Hexagons (inch)

3/16	1/4	5/16	3/8	7/16	9/16	5/8	1 1/16	3/4	13/16
7/8	15/16	1	1 1/8	1 1/4	1 1/2	1 5/8	1 3/4	1 7/8	2

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

070M55 Hot Rolled Bar



070M55 Hot Rolled Bar (EN9) is a medium carbon steel with a carbon content of 0.5/0.6 % which enables it to be flame or induction hardened to produce a high surface hardness, with excellent wear resistance. When hardened and tempered, it develops a tensile strength in the range 700-1000 N/mm² depending on the ruling section.

Suitable for components where abrasion resistance rather than toughness is of primary importance e.g. sprockets, cams, rollers, cylinders etc.

Specification

AISI	UNS	EN Number	Symbol	Material Standard	EN Number
1055	C55E	1.1203	070M55	EN10083-1	EN9

Sizes: Rounds (mm)

40	45	50	55	60	65	70	75	80	85
90	95	100	105	110	115	120	125	130	135
140	145	150	155	160	165	170	175	180	185
190	195	200	205	210	215	220	225	230	235
240	245	250	255	260	265	270	275	280	285
290	295	300							

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Colour Code: Blue/Yellow



605M36T Bright Bar



605M36T (EN16T) is a high tensile alloy steel, often hardened or tempered to the 'T' condition (850 – 1000 N/mm²). The material combines ductility with impact resistance which makes it suitable for high loading applications such as shafts, gears, nuts and bolts. The material exhibits high wear resistance and good strength. Typical applications in general engineering. Shafts, studs, nuts etc.

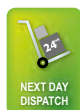
Specification

EN Number	Symbol	AISI	EN Number
EN16	605M36	4037	EN16T

Chemical Analysis

C	Si	Mn	P	S	Mo
0.32-0.40	0.10-0.40	1.30-1.70	0.00-0.035	0.0-0.03	0.22-0.30

Colour Code: White/Purple



42CrMo4 Q&T (EN19T) Bright Bar



42CrMo4 (EN19T) is a high tensile alloy steel, often hardened or tempered to the 'T' condition (850 – 1000 N/mm²). The material combines ductility with impact resistance which makes it suitable for high loading applications such as shafts or gearboxes. The material exhibits high wear resistance and good strength. Material is suitable for induction hardening. In general engineering these are suitable for shafts, studs, nuts etc.

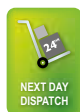
Specification

Symbol	EN Number	AISI/SAE	Material Standard	EN Number
708M40	1.7225	4140	EN10277-5	EN19T

Chemical Analysis

C	Si	Mn	P	S	Cr	Mo
0.36-0.44	0.10-0.40	0.70-1.00	0.0-0.035	0.00-0.04	0.90-1.20	0.15-0.25

Colour Code: Yellow/White



Sizes

Rounds (mm)

40	45	50	55	60	65	70	75	80	85
90	95	100	105	110	115	120	125	130	135
140	145	150	155	160	165	170	175	180	185
190	195	200	205	210	215	220	225	230	235
240	245	250	255	260	265	270	275	280	285
290	295	300	305	310	315	320	325	330	335
340	345	350	355	360	365	370	375	380	385
390	395	400							

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817M40 Hot Rolled Annealed Bar



817M40 Annealed bar (EN24) is supplied in the softened condition and can be hardened and tempered to a wide range of strengths after machining. It is suitable for a wide range of applications once machined and treated where high strength, shock resistance and wear resistance are important. As medium carbon steel with alloying elements of Nickel, Chromium and Molybdenum, 817M40 Annealed (EN24) is not ideally suitable for welding.

Normally specified for a wide range of applications including gears, shafts, axles, studs and machine parts.

Specification

Steel Number	AISI/SAE	Symbol	Material Standard	EN Number
1.6582	4340	817M40 Annealed	EN 10277-5	EN24

Chemical Analysis

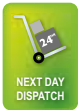
C	Si	Mn	S	P	Cr	Mo	Ni
.36/.44	.10/.35	.45/.70	.04max	.035max	1.0/1.4	.20/.35	1.3/1.7

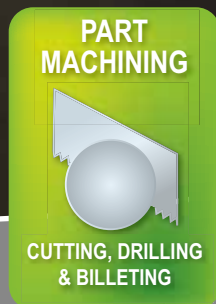
Sizes

Rounds (mm)

50.00	57.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00
100.00	105.00	110.00	115.00	120.00	125.00	130.00	140.00	150.00	160.00
165.00	170.00	180.00	190.00	200.00					

Colour Code: White/Blue





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S355J2 Bright Bar



S355J2 Bright Bar is a carbon manganese steel. It is characterised by its excellent strength and weldability. Applications include axles, bolts and connecting rods, motor, hydraulic and pump shafts, machinery parts etc.

Bright Bar size range 20mm – 80mm.

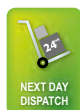
Specification

Steel Number	Steel Name	DIN	BS 970 1983	Material Standard
S355	S355J2G3	ST52-3	150M19	EN10025

Chemical Analysis

Grade	C	Mn	Si	P	S
S355J2G3	.16 - .24	1.3 - 1.6	.10 - .40	.06 max	.06 max

Colour Code: Blue/Pink



Sizes

Rounds (mm)

20	25	30	35	40	45	50	55	60	65
70	75	80							

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S355J2 Black Bar



S355J2 Black Bar is a carbon manganese steel. It is characterised by its excellent strength and weldability. Applications include axles, bolts and connecting rods, motor, hydraulic and pump shafts, machinery parts etc.

Black Bar size range 20mm – 80mm.

Specification

Steel Number	Steel Name	DIN	BS 970 1983	Material Standard
S355	S355J2G3	ST52-3	150M19	EN10025

Chemical Analysis

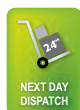
Grade	C	Mn	Si	P	S
S355J2G3	.16 - .24	1.3 - 1.6	.10 - .40	.06 max	.06 max

Sizes: Rounds (mm)

20	25	30	35	40	45	50	55	60	65
70	75	80							

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Colour Code: Blue/Pink



EN3B Black Bar



070M20 is commercial quality mild steel with a good balance of strength, ductility, toughness and weldability, also good forming and machining properties. It is not suitable for through hardening, flame or induction hardening due to relatively low carbon content.

Applications include axles, bolts and connecting rods, motor, hydraulic and pump shafts, machinery parts etc.

Specification

Steel Number	AISI/SAE	Symbol
1.1151	1020/1021	070M20

Chemical Analysis

Grade	C	Mn	Si	P	S
BS970 070M20	.16 - .24	.50 - .90	.10 - .40	.06 max	.06 max

Sizes: Rounds (mm)

40	45	50	55	60	65	70	75	80	85
90	95	100	115	120	125	130	135	140	145
150	155	160	165	170	180	190	200	210	220
230	240	250	260	270	280	300	320	330	350
360	390	400	450	500					

Colour Code: Blue



This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

SAE 8620 Peeled Bar



SAE 8620 Peeled Bar is a low alloy case hardening steel, generally supplied in the as-rolled condition. Characterised by good core strength and toughness when carburised, hardened and tempered. 8620 (carburised) is used extensively by all industry sectors for light to medium stressed components and shafts requiring high surface wear resistance, core strength and impact properties.

Typical uses include Arbors, Bearings, Bushings, Cam Shafts, Guide pins, Piston pins, Splined shafts, Ratchets, Sleeves etc.

Specification

EN Number	Symbol	Material Standard
1.6523	805M20	EN10084

Chemical Analysis

C	Si	Mn	S	P	Cr	Ni
.10/.16	.10/.40	.35/.60	.04max	.035max	.70/1.0	3.0/3.75

Sizes

Rounds (mm)

12.7	25.00	32.00	35.00	40.00	45.00	50.00	55.00	58.00	60.00
65.00	68.00	70.00	75.00	78.00	80.00	85.00	90.00	95.00	100.00
105.00	110.00	120.00	130.00	140.00	150.00	160.00	170.00	180.00	190.00
200.00	150.00	155.00	160.00	165.00	170.00	175.00	180.00	185.00	190.00
200.00									

Colour Code: Green/Black



C45 Peeled Bar



C45 Peeled Bar is an unalloyed medium carbon steel. It is supplied bright drawn in round bar. It is generally used in the as-supplied condition and is characterised by good machinability, reasonable weldability and good strength and ductility.

Specification

EN Number	AISI/SAE	Symbol	Material Standard
1.1191	1045	080M40	EN 10083-2

Chemical Analysis

Chemical	C	Mn	Si	P	S	Ni
%	0.25/0.35	0.3 - 0.9	0.35max	.06 max	.06 max	3.0/3.75

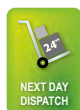
Sizes

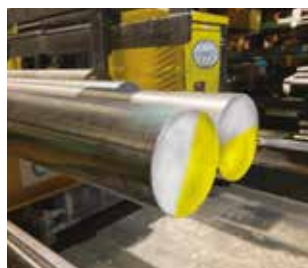
Rounds (mm)

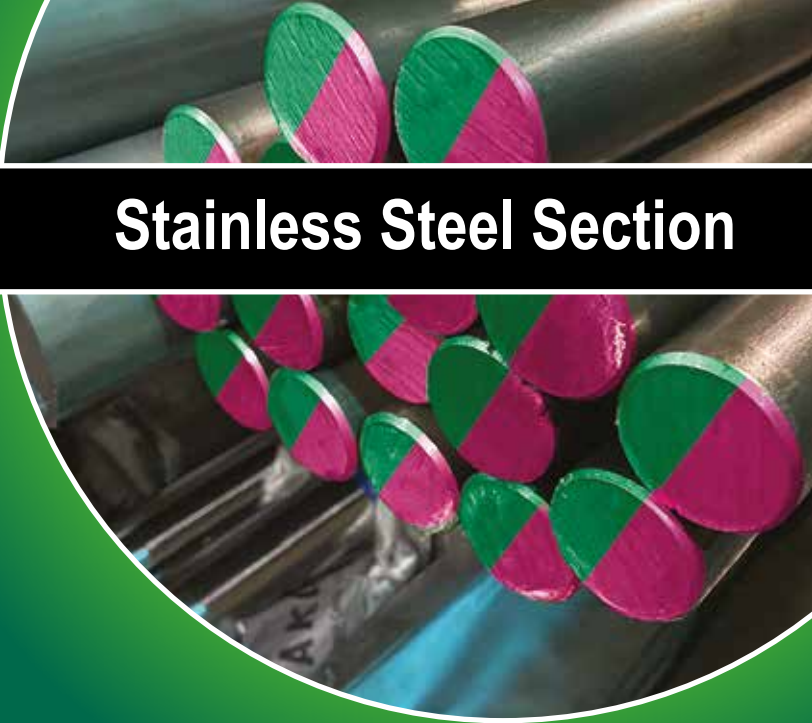
20	25	30	35	40	45	50	55	60	65
70									

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Colour Code: Red/Yellow







Stainless Steel Section

This section includes:

303/1.4305 Stainless Bar	32
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303/1.4305 Stainless Bar



Grade 303/1.4305 Stainless bar is a non-magnetic, austenitic, free machining stainless steel that is a modification of the basic 18Cr – 8Ni stainless steel. The addition of sulphur (S) and in some cases selenium (Se) produces excellent machining characteristics while maintaining good mechanical and corrosion-resistant properties and high resistance to oxidation. The high sulphur content that dramatically increases cutting speeds also reduces the grades formability making type 303 not readily cold workable. Sharp bending should be avoided.

303/1.4305 Stainless Bar is austenitic at all temperatures and cannot be hardened by heat treatment. Free machining grades are not generally recommended for welding. Typical applications include nuts & bolts, switchgear components, bushings, shafts and gears.

Specification

EN Number	Symbol	AISI	UNS	BS 970 1983	Material Standard
1.4305	X8CrNiS18-9	303	S30300	303S31	EN 10088-3

Chemical Analysis

C	Mn	Si	P	S	Cr	Ni	Fe
0.15 max	2.0 max	1.0 max	.2 max	.15-35	17-19	8-10	Bal

Colour Code: Yellow/White



Sizes

Rounds (mm)

4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00
14.00	15.00	16.00	20.00	22.00	25.00	28.00	30.00	35.00	40.00
45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00
95.00	100.00	105.00	110.00	115.00	120.00	125.00	130.00	135.00	140.00
145.00	150.00	155.00							

Rounds (inch)

3/32	9/64	5/32	3/16	1/4	9/32	5/16	11/32	3/8	13/32
7/16	31/64	1/2	9/16	5/8	11/16	3/4	7/8	1	1 1/8
1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	3	3 1/2
4	6	7	8						

Hexagons (mm)

8.00	10.00	13.00	14.00	19.00	32.00	41.00	50.00		
------	-------	-------	-------	-------	-------	-------	-------	--	--

Hexagons (inch)

3/16	1/4	5/16	3/8	7/16	1/2	5/8	7/8	1	1 3/16
1 1/4	1 5/16	1 3/8	1 7/16	1 1/2	1 5/8	1 7/8	2		

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

304/1.4301 & 304L/1.4307 Stainless Bar



Type 304L is one of the most widely used stainless steel grades. It is non-magnetic in the annealed condition. Type 304L is the low carbon variation of Type 304 and preferred for its welding abilities. It possesses an excellent combination of strength, corrosion resistance and fabricability.

Used extensively across all industries including chemical, pharmaceutical, medical, brewing, textile and architectural.

Specification

EN Number	Symbol	AISI	UNS	BS 970 1983	Material Standard
1.4301	X5CrNi18-10	304	S30400	304S15	EN 10088-3
1.4307	X2CrNi18-9	304L	S30403	304S11	EN 10088-3

Chemical Analysis: 304/1.4301

C	Mn	P	S	Si	Cr	Ni	N	Fe
.08 max	2.0 max	.045 max	.03 max	.75 max	18 / 20	8 / 12	.10 max	balance

Chemical Analysis: 304L/1.4307

C	Mn	P	S	Si	Cr	Ni	N	Fe
.03 max	2.0 max	.045 max	.03 max	.75 max	18 / 20	8 / 12	.10 max	balance

Colour Code: Red/White



Sizes

Rounds (mm)

2.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00
13.00	14.00	15.00	16.00	20.00	22.00	25.00	28.00	30.00	35.00
40.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00
90.00	95.00	100.00	105.00	110.00	115.00	120.00	125.00	130.00	135.00
140.00	145.00	150.00	155.00						

Rounds (inch)

3/32	9/64	5/32	3/16	1/4	9/32	5/16	11/32	3/8	13/32
7/16	31/64	1/2	9/16	5/8	11/16	3/4	7/8	1	1 1/8
1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	3	3 1/2
4	6	7	8						

Squares (mm)

6.00	8.00	10.00	12.00	20.00	25.00	30.00	35.00	40.00	50.00
55.00	60.00	65.00	70.00	80.00	85.00	90.00	95.00	100.00	

Squares (inch)

1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2
1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2		

Flats (mm)

20 x 10	20 x 12	20 x 15	25 x 10	25 x 12	25 x 15	25 x 20	30 x 10	30 x 12	30 x 15
30 x 20	30 x 25	40 x 10	40 x 12	40 x 15	40 x 20	40 x 25	50 x 10	50 x 12	50 x 15
50 x 20	50 x 25	50 x 30	60 x 10	60 x 12	60 x 15	60 x 20	60 x 25	60 x 30	75 x 10
75 x 12	75 x 15	75 x 20	75 x 25	75 x 30	75 x 40	100 x 10	100 x 12	100 x 15	100 x 20
100 x 25	100 x 30	100 x 40	100 x 50	100 x 60	100 x 75				

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

316/1.4401 & 316L/1.4404 Stainless Bar



Type 316L is an austenitic chromium-nickel stainless steel containing molybdenum which increases general corrosion resistance, improves resistance to pitting and provides strength at elevated temperatures. Type 316L is non-hardenable by heat treatment and is generally considered to be weldable by common techniques. Type 316L provides excellent formability and fabricability which is typical of the austenitic stainless steels.

Used extensively across all industries including marine, medical, architectural, pharmaceutical, chemical, food, oil & gas, brewing, textile among others.

Specification

Steel Number	Symbol	AI SI	UNS	BS 970 1983
1.4401	5CrNiMo17-12	316	S31600	316S31
1.4404	2CrNiMo17-12	316L	S31603	316S11

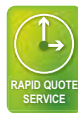
Chemical Analysis: 316/1.4401

C	Mn	Si	Cr	Ni	Mo	P	S	Ni	Fe
.08max	2.0max	.75max	16-18	10-14	2.0-3.0	.045max	.030max	.10max	Balance

Chemical Analysis: 316L/1.4404

C	Mn	Si	Cr	Ni	Mo	P	S	Ni	Fe
.03max	2.0max	.75max	16-18	10-14	2.0-3.0	.045max	.030max	.10max	Balance

Colour Code: Green/White



Sizes

Rounds (mm)

6.00	8.00	10.00	12.00	16.00	20.00	25.00	30.00	35.00	40.00
45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00
95.00	100.00	105.00	110.00	115.00	120.00	125.00	130.00	135.00	140.00
145.00	150.00	155.00	160.00	165.00	170.00	175.00	180.00	185.00	190.00
200.00	205.00	215.00	220.00	225.00	230.00	240.00	250.00	260.00	270.00
280.00	285.00	300.00	320.00	325.00	340.00	350.00	375.00	400.00	425.00
450.00									

Stainless
Steel

Rounds (inch)

1/4	5/16	3/8	1/2	9/16	5/8	3/4	7/8	1	1 1/8
1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3
3 1/4	3 1/2	3 3/4	4	4 1/2	4 3/4	5	5 1/2	5 3/4	6
6 1/2	6 3/4	7	8	9	10	12	13	14	15
16									

Squares (mm)

6.00	8.00	10.00	12.00	20.00	25.00	30.00	35.00	40.00	50.00
55.00	60.00	65.00	70.00	80.00	85.00	90.00	95.00	100.00	

Squares (inch)

1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2
1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	4	

Hexagons (mm)

5	6	8	10	12	13	14	17	19	20
22	24	30	32	41	50				

Hexagons (inch)

1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8
1 1/2	1 5/8	1 3/4	1 7/8	2	50				

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

1.4571 Stainless Bar 316Ti



1.4571 is a weldable austenitic stainless steel comparable to 316L which is the low carbon equivalent of 316. Titanium is added to the chemical composition of 1.4571 to act as a stabilizer that increases the resistance to intergranular corrosion of the material when the material is exposed to prolonged periods of elevated temperatures.

Care must be taken when welding 1.4571 to avoid heating the material adjacent to the weld area above 2100°F as when the material starts to cool down to below 1500°F, intergranular corrosion will develop.

The alloy has an FCC crystalline structure at all temperatures so therefore cannot be hardened by heat treatment. In the annealed condition, the material is non-magnetic. Main uses for 1.4571 are in the oil and gas industry where exposure to elevated temperatures in aqueous corrosion conditions can occur.

Used extensively across all industries including marine, medical, architectural, pharmaceutical, chemical, food, oil & gas, brewing, textile among others.

Specification

Steel Number	Steel Name	Grade	UNS	BS 970 1983
1.4571	X6CrNiMoTi17-12-2	316Ti	S31635	320S31

Chemical Analysis

C	Mn	Si	Cr	Ni	Mo	P	S	Ti	Fe
0.0-0.08	0.0-2.00	0.0-1.00	16.50-18.50	10.50-13.50	2.0-2.50	0.0-0.05	0.0-0.03	0.40-0.70	Balance

Colour Code: Green/Pink



Sizes

Rounds (mm)

6.00	8.00	10.00	12.00	16.00	20.00	25.00	30.00	35.00	40.00
45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00
95.00	100.00	105.00	110.00	115.00	120.00	125.00	130.00	135.00	140.00
145.00	150.00	155.00	160.00	165.00	170.00	175.00	180.00	185.00	190.00
200.00	205.00	215.00	220.00	225.00	230.00	240.00	250.00	260.00	270.00
280.00	285.00	300.00	320.00	325.00	340.00	350.00	375.00	400.00	425.00
450.00									

Hexagons (mm)

5	6	8	10	12	13	14	17	19	20
22	24	30	32	41	50				

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UNS S31803 Duplex Bar



S31803 Duplex Bar is 22% chromium duplex (austenitic/ferritic) steel with moderate to good strength and good general corrosion/stress corrosion/cracking resistance. It resists chloride environments and sulphide stress corrosion and is roughly double the strength of standard austenitic stainless steels. S31803 can be used successfully as an alternative to 300 series austenitic stainless steel in most applications where higher mechanical strength/lower weight is required. S31803 is readily weldable using many of the standard electric arc welding processes but oxyacetylene welding is not recommended because carbon pickup in the weld metals may occur.

Typical applications: Pumps, valves, flanges, boat shafts, various applications in the oil & gas, chemical, power and brewing industries.

Specification

EN Number	UNS	Material Standard	Symbol
1.4462	S31803	EN 10088-3	X2CrNiMoN22-5-3

Chemical Analysis

C	Si	Mn	P	S	N	Cr	Ni	Mo
.03	1.0	2.0	.03	.02	.08-.2	21-23	4-6.5	2-3.5

Colour Code: Green/Brown



Sizes

Rounds (mm)

10.00	12.00	16.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00	100.00
105.00	110.00	115.00	120.00	125.00	130.00	135.00	140.00	145.00	150.00
155.00	160.00	165.00	170.00	175.00	180.00	185.00	190.00	200.00	205.00
215.00	220.00	225.00	230.00	240.00	250.00	260.00	270.00	280.00	285.00
300.00	320.00	325.00	340.00	350.00	375.00	400.00	425.00	450.00	

Rounds (inch)

1/4	5/16	3/8	1/2	9/16	5/8	3/4	7/8	1	1 1/8
1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3
3 1/4	3 1/2	3 3/4	4	4 1/2	4 3/4	5	5 1/2	5 3/4	6
6 1/2	6 3/4	7	8	9	10	12	13	14	15
16									

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UNS S32750 Duplex Bar



UNS S32750 Duplex Bar is 25% chromium copper-free super duplex (austenitic/ferritic) steel also known as SAF 2507. The material exhibits high mechanical strength with outstanding corrosion resistance in marine environments. 32750/F53 typically has a min PREn (Pitting Resistance Equivalent) of 40. The grade is normally supplied in the annealed condition and although it cannot be hardened by heat treatment, stronger surface strengths can be achieved by cold working.

Typical applications: Components in the oil and gas industry, Marine, chemical processing and pollution control industries amongst others.

Specification

EN Number	UNS	Material Standard	Symbol	BS 970 1983
1.4410	S32750	EN 10088-3	X2CrNiMoN25-7-4)	316S31

Chemical Analysis

C	Si	Mn	P	S	Cr	Ni	Mo	N	PREn
.03	1.0	2.0	.035	.015	24-26	6-8	3-5	.25-.35	>40

Sizes

Rounds (mm)

20	25	30	35	40	45	50	55	60	65
70	75	80	85	90	95	100	105	110	115
120	125	130	135	140	145	150	155	160	165
170	175	180	185	190	195	200	205	210	215
220	225	230	235	240	245	250			

Colour Code: Purple/Black





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UNS S32760 Duplex Bar



S32760 Duplex Bar is 25% chromium (austenitic / ferritic) steel with .75% tungsten and copper. It is supplied with PREn (Pitting Resistance Equivalent) at >40.00 which guarantees high resistance to pit corrosion. 32760/F55 combines high mechanical strength and good ductility with corrosion resistance to marine environments and performs at ambient and sub-zero temperatures. High resistance to abrasion, erosion and cavitation erosion and also used in sour service operation.

Typical applications: Marine, oil and gas applications typically pressure vessels, valve chokes, Xmas trees, flanges and fittings.

Specification

EN Number	UNS	Material Standard	Symbol
1.4501	S32760	EN 10088-3	X2CrNiMoCuWN25-7-4

Chemical Analysis

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	N	W	PREn
0.3	1.0	1.0	.01	.03	24-26	6-8	3-4	.5-1	.2-3	.5-1	40.0

Colour Code: Yellow/Brown



Sizes

Rounds (mm)

10.00	12.00	16.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00	100.00
105.00	110.00	115.00	120.00	125.00	130.00	135.00	140.00	145.00	150.00
155.00	160.00	165.00	170.00	175.00	180.00	185.00	190.00	200.00	205.00
215.00	220.00	225.00	230.00	240.00	250.00	260.00	270.00	280.00	285.00
300.00	320.00	325.00	340.00	350.00	375.00	400.00	425.00	450.00	425.00
450.00									

Rounds (inch)

1/4	5/16	3/8	1/2	9/16	5/8	3/4	7/8	1	1 1/8
1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3
3 1/4	3 1/2	3 3/4	4	4 1/2	4 3/4	5	5 1/2	5 3/4	6
6 1/2	6 3/4	7	8						

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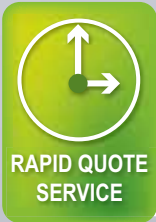
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17/4 PH Annealed Stainless Bar



17/4 PH Annealed Stainless Bar is one of the original precipitation hardened grades. 17/4 comes with a blend of corrosion and oxidation resistance with characteristics that include toughness, excellent mechanical properties and high strength at elevated temperatures. Available in condition 'A', solution annealed and heat-treated to H1150. Other heat-treated conditions are available on request i.e. H900 and H1020.

17/4 can be easily forged, formed and welded. Applications include pump shafts, bolts, gears, bearings, spindles, turbine parts, valve components and temperature sensor products.

Specification

EN Number	Symbol	AISI	UNS	BS 970 1983	Material Standard
1.4542	X5CrNiCuNb17-4	17/4 PH	S17400	-	EN 10088-3

Chemical Analysis

C	Mn	P	S	Si	Cr	Ni	Cu	Col/Tan
.07max	1.0max	0.040max	0.03max	1.0max	15/17	3/5	3/4	.15/.45

Colour Code: Green/Black/White



Sizes

Rounds (mm)

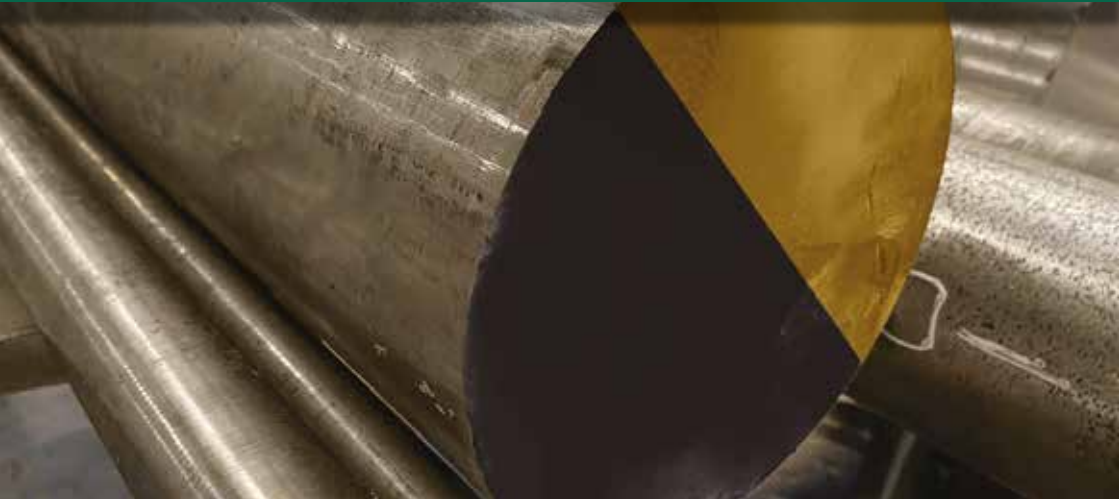
6	8	10	12	16	20	25	30	35	40
45	50	55	60	65	70	75	80	85	90
95	100	105	110	115	120	125	130	135	140
145	150	155	160	165	170	175	180	185	190
200	205	215	220	225	230	240	250	260	270
280	285	300	320	325	340	350	375	400	425
450									

Rounds (inch)

1/4	5/16	3/8	1/2	9/16	5/8	3/4	7/8	1	1 1/8
1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3
3 1/4	3 1/2	3 3/4	4	4 1/2	4 3/4	5	5 1/2	5 3/4	6
6 1/2	6 3/4	7	8	9	10	12	13	14	15
16									

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410 Stainless Bar



Grade 410 stainless bar is officially a stainless steel but characteristically the material is actually a compromise of high carbon steel (which promotes wear resistance) and chromium stainless steel (which promotes corrosion resistance) and is used in the manufacture of highly stressed parts for a variety of industries including petrochemical, oil & gas, automotive and power generation.

Grade 410 stainless steel is a hardenable, straight-chromium stainless steel which combines the superior wear resistance of high carbon alloys with the corrosion resistance of chromium stainless steels.

Specification

Steel Number	Steel Name	AISI	UNS	BS 970 1983	Material Standard
1.4006	X12CrS13	410	S41000	410S21	EN 10088-3

Chemical Analysis

C	Mn	Si	Cr	Mo	P	S	Fe
.15max	1.00max	1.00max	11.5/13.5	0.75max	.04max	.03max	Balance

Colour Code: Black/Brown



Sizes

Rounds (mm)

6	8	10	12	16	20	25	30	35	40
45	50	55	60	65	70	75	80	85	90
95	100	105	110	115	120	125	130	135	140
145	150	155	160	165	170	175	180	185	190
200	205	215	220	225	130	240	250	260	270
280	285	300	320	325	340	350	375	400	425
450									

Rounds (inch)

1/4	5/16	3/8	1/2	9/16	5/8	3/4	7/8	1	1 1/8
1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3
3 1/4	3 1/2	3 3/4	4	4 1/2	4 3/4	5	5 1/2	5 3/4	6
6 1/2	6 3/4	7	8	9	10	12	13	14	15
16									

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416 Stainless Bar



416 stainless bar is a martensitic heat treatable chromium steel. Grade 416 has the highest machinability of any stainless steel due to the addition of sulphur which forms manganese sulphide inclusions, this sulphur addition also lowers the corrosion resistance, weldability and formability.

This alloy is magnetic in all conditions and is widely used to manufacture screws, nuts, bolts, fasteners, gears and pinions.

Specification

EN Number	Steel Name	AISI	UNS	BS 970 1983	Material Standard
1.4005	X12CrS13	416	S41600	416S31	EN 10088-3

Chemical Analysis

C	Mn	Si	Cr	Mo	P	S	Fe
.15max	1.25max	1.0max	12/14	-	.06max	.15min	Balance

Colour Code: Red/Brown



Sizes

Rounds (mm)

6	8	10	12	16	20	25	30	35	40
45	50	55	60	65	70	75	80	85	90
95	100	105	110	115	120	125	130	135	140
145	150	155	160	165	170	175	180	185	190
200	205	215	220	225	230	240	250	260	270
280	285	300	320	325	340	350	375	400	425
450									

Rounds (inch)

1/4	5/16	3/8	1/2	9/16	5/8	3/4	7/8	1	1 1/8
1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3
3 1/4	3 1/2	3 3/4	4	4 1/2	4 3/4	5	5 1/2	5 3/4	6
6 1/2	6 3/4	7	8	9	10	12	13	14	15
16									

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

431/1.4057 Stainless Bar



431 Stainless Bar is a heat treatable martensitic, nickel-bearing grade with the best corrosion properties of all the martensitic grades. It has excellent tensile and torque strength and good toughness making it ideally suitable for shafting and bolt applications. It is not readily cold worked because of its high yield strength therefore not recommended for cold heading or bending. Grade 431 has good resistance to a wide variety of corrosive media.

Suitable for shafts, bolts, pump spindles, fasteners, fittings and structural components.

Specification

EN Number	Symbol	AISI	UNS	BS 970 1983	Material Standard
1.4057	X17CrNi16-2	431	S43100	431S29	EN 10088-3

Chemical Analysis

C	Mn	Si	Cr	Ni	P	S	Fe
.14/20	1.0max	1.0max	15/18	2.0-3.0	.04max	.030max	Balance

Colour Code: Orange/Brown



Sizes

Rounds (mm)

6	8	10	12	16	20	25	30	35	40
45	50	55	60	65	70	75	80	85	90
95	100	105	110	115	120	125	130	135	140
145	150	155	160	165	170	175	180	185	190
200	205	215	220	225	230	240	250	260	270
280	285	300	320	325	340	350	375	400	425
450									

Rounds (inch)

1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4
3	4	5	6						

Stainless
Steel

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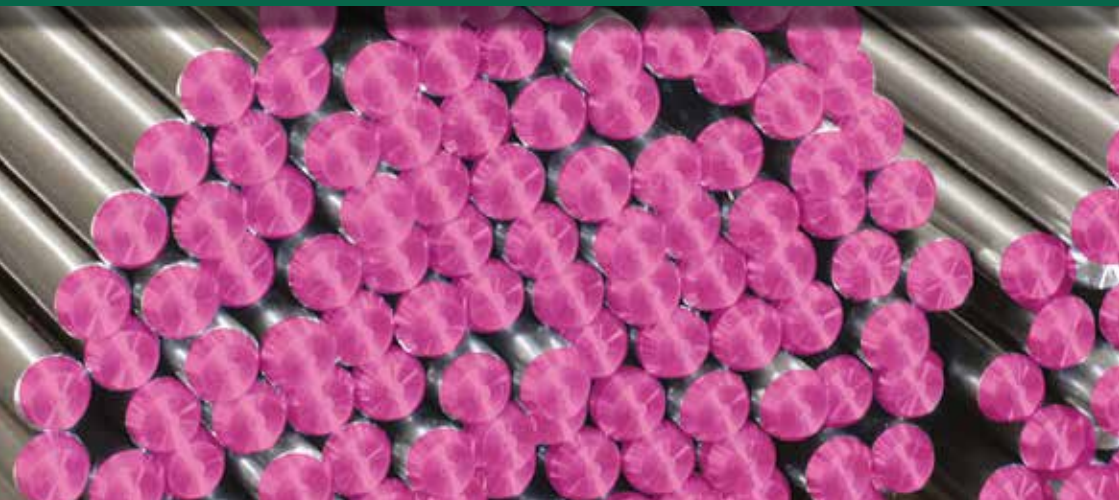
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440C Stainless Bar



440C Stainless Bar is a high carbon, straight chromium, high hardenability martensitic stainless steel. 440C Stainless Bar is generally supplied in the annealed condition and when hardened and tempered it is characterised by good corrosion resistance, extremely high strength, hardness, shock and wear resistance. Capable of being through hardened up to 60 HRC.

440C stainless bar machines best in the annealed condition and welding is not advised in the H&T condition and if necessary in the annealed condition, professional advice should be sought.

Specification

EN Number	Symbol	AISI	UNS	BS 970 1983	Material Standard
1.4125	X105CrMo17	440C	S44004	-	EN 10088-3

Chemical Analysis

C	Mn	Si	Cr	Ni	P	S	Fe
.90/1.2	1.0max	1.0max	16/18	.75max	.04max	.030max	Balance



Sizes

Rounds (mm)

10	15	20	25	30	35	40	45	50	55
60	65	70	75	80	85	90	95	100	105
110	115	120	125	130	135	140	145	150	155
160	165	170	175	180	185	190	195	200	205
210	215	220	225	230	235	240	245	250	

Rounds (inch)

3/16	1/4	3/8	1/2	3/4	7/8	1	1 1/8	1 1/4	1 3/8
1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/2	4
5	6	8	10						

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304L/1.4307 Stainless Hollow Bar



304L Stainless Hollow Bar is primarily used for the manufacture of radially machined components. The use of Hollow Bar and Mechanical Tubing is an economical and efficient means of supplying high-quality raw material and a sensible alternative to the use of solid bar as it reduces machining requirements and minimizes material wastage.

304L/1.4307 Stainless Hollow Bar is used in all sectors including: general engineering, automotive, agriculture, food, chemical, pharmaceutical and medical, etc.

Specification

EN Number	Symbol	AISI	UNS	BS 970 1 983	Material Standard
1.4307	X2CrNi18-9	304L	S30403	304S11	EN 10088-3

OD/ID (mm)	Wall thickness (mm)	Dimensions after machining - Chucked true to OD mm	Dimensions after machining - Chucked true to ID mm
32/16	8.0	31.0/18.0	30.0/17.0
32/20	6.0	31.0/21.9	30.1/21.0
36/16	10.0	35.0/18.1	33.9/17.0
36/20	8.0	35.0/22.0	34.0/21.0
36/25	6.6	35.0/26.9	34.1/26.0
40/20	10.0	39.0/22.1	37.9/21.0
40/25	7.5	39.0/27.0	38.0/26.0
40/28	6.0	39.0/29.9	36.1/29.0
45/20	12.5	44.0/22.2	42.8/21.0

Colour Code: Red/White



Standard Dimensions 304L/1.4307 Stainless Hollow Bar

OD/ID (mm)	Wall thickness (mm)	Dimensions after machining - Chucked true to OD mm	Dimensions after machining - Chucked true to ID mm
45/28	8.5	44.0/30.0	43.0/29.0
45/32	6.5	44.0/33.9	43.1/33.0
50/25	12.5	49.0/27.2	47.8/26.0
50/32	9.0	49.0/34.1	47.9/33.0
50/36	7.0	49.0/38.0	48.0/37.0
56/28	14.0	55.0/30.3	53.7/29.0
56/36	10.0	55.0/38.1	53.9/37.0
56/40	8.0	55.0/42.0	54.0/41.0
63/32	15.5	62.0/34.4	60.6/33.0
63/36	13.5	62.0/38.3	60.7/37.0
63/40	11.5	62.0/42.2	60.8/41.0
63/50	6.5	62.0/51.9	61.1/51.0
71/36	17.5	69.9/38.5	68.4/37.0
71/40	15.5	69.9/42.4	68.5/41.0
71/45	13.0	69.9/47.3	68.6/46.0
71/56	7.5	69.9/58.0	68.9/57.0
75/40	17.5	73.8/42.5	72.3/41.0
75/50	12.5	73.8/52.5	72.7/51.0
80/40	20.0	78.8/42.6	77.2/41.0
80/45	17.5	78.8/47.5	77.3/46.0
80/50	15.0	78.8/52.4	77.4/51.0
80/63	8.5	78.8/65.0	77.8/64.0
85/45	20.0	83.7/47.6	82.1/46.0
90/50	20.0	88.6/52.6	87.0/51.0
90/56	17.0	88.6/58.5	87.1/57.0
90/63	13.5	88.6/65.3	87.3/64.0
90/71	9.5	88.6/73.1	87.6/72.1
95/50	22.5	93.5/52.7	91.8/51.0
100/56	22.0	98.5/58.7	96.8/57.0
100/63	18.5	98.5/65.5	97.0/64.0
100/71	14.5	98.5/73.4	97.2/72.1
100/80	10.0	98.5/82.3	97.4/81.2
106/56	25.0	104.4/58.9	102.5/57.0
106/63	21.5	104.4/65.7	102.7/64.0
106/71	17.5	104.4/73.5	103.0/72.1
106/80	13.0	104.4/82.5	103.1/81.2
112/63	24.5	110.3/65.8	108.5/64.0
112/71	20.5	110.3/73.7	108.7/72.1
112/80	16.0	110.3/82.6	108.9/81.2
112/90	11.0	110.3/92.5	109.2/91.4
118/63	27.5	116.2/66.0	114.2/64.0

Stainless Steel

Standard Dimensions 304L/1.4307 Stainless Hollow Bar Contd

OD/ID (mm)	Wall thickness (mm)	Dimensions after machining - Chucked true to OD mm	Dimensions after machining - Chucked true to ID mm
118/71	23.5	116.2/73.8	114.5/72.1
118/80	19.0	116.2/82.8	114.6/81.2
118/90	14.0	116.2/92.7	114.9/91.4
125/71	27.0	123.1/74.0	121.2/72.1
125/80	22.5	123.1/82.9	121.4/81.2
125/90	17.5	123.1/92.8	121.7/91.4
125/100	12.5	123.1/102.7	121.9/101.5
132/71	30.5	130.0/74.2	127.9/72.1
132/80	26.0	130.0/83.1	128.1/81.2
132/90	21.0	130.0/93.0	128.4/91.4
132/106	13.0	130.0/108.8	128.8/107.6
140/80	30.0	137.9/83.3	135.8/81.2
140/90	25.0	137.9/93.2	136.1/91.4
140/100	20.0	137.9/103.1	136.3/101.5
140/112	14.0	137.9/116.0	136.6/113.7
150/80	35.0	147.7/83.6	145.3/81.2
150/95	27.5	147.7/98.4	145.7/96.4
150/106	22.0	147.7/109.3	146.0/107.6
150/125	12.5	147.7/128.1	146.5/126.9
160/112	24.0	157.6/115.5	155.8/113.7
160/122	19.0	157.6/125.4	156.0/123.8
160/132	14.0	157.6/135.3	156.3/134.0
170/118	26.0	167.4/121.7	165.5/119.8
170/130	20.0	167.4/133.6	165.8/132.0
170/140	15.0	167.4/143.5	166.0/142.1
180/125	27.5	177.3/128.9	175.3/126.9
180/140	20.0	177.3/143.7	175.7/142.1
180/150	15.0	177.3/153.6	176.0/152.3
190/132	29.0	187.1/136.0	185.1/134.0
190/150	20.0	187.1/163.9	185.5/152.3
190/160	15.0	187.1/163.8	185.7/162.4
200/140	30.0	197.0/144.2	194.9/142.1
200/150	25.0	197.0/154.1	195.2/152.3
200/160	20.0	197.0/164.0	195.4/162.4
212/130	41.0	208.8/134.6	206.2/132.0
212/170	21.0	208.8/174.2	207.2/172.6
224/140	42.0	220.6/144.8	217.9/142.1
224/180	22.0	220.6/184.4	218.9/182.7
236/150	43.0	232.4/155.0	229.7/152.3
236/190	23.0	232.4/194.6	230.7/192.9
250/200	25.0	246.2/204.9	244.3/203.0

316L/1.4404 Stainless Hollow Bar

Stainless
Steel



316L Stainless Tube is used in the production of a great variety of hollow products and cylindrical components where it is more economical to use hollow section rather than bore out solid stainless steel bar.

Normally used in conditions where corrosion & chemical resistance is required.

Specification

AISI	UNS	BS	EN Number	Symbol	Material Standard
316L	S31603	316S11	1.4404	2CrNiMo17-12	EN 10216-5

OD/ID (mm)	Wall thickness (mm)	Dimensions after machining - Chucked true to OD mm	Dimensions after machining - Chucked true to ID mm
32/16	8.0	31.0/18.0	30.0/17.0
32/20	6.0	31.0/21.9	30.1/21.0
36/16	10.0	35.0/18.1	33.9/17.0
36/20	8.0	35.0/22.0	34.0/21.0
36/25	6.6	35.0/26.9	34.1/26.0
40/20	10.0	39.0/22.1	37.9/21.0
40/25	7.5	39.0/27.0	38.0/26.0
40/28	6.0	39.0/29.9	36.1/29.0
45/20	12.5	44.0/22.2	42.8/21.0

Colour Code: Green/White



Standard Dimensions 316L/1.4404 Stainless Hollow Bar

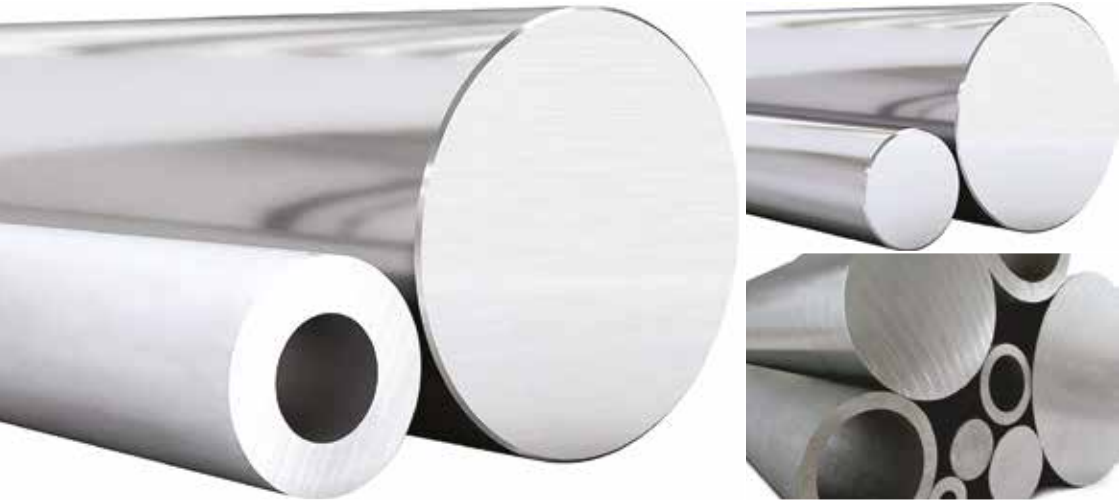
OD/ID (mm)	Wall thickness (mm)	Dimensions after machining - Chucked true to OD mm	Dimensions after machining - Chucked true to ID mm
45/28	8.5	44.0/30.0	43.0/29.0
45/32	6.5	44.0/33.9	43.1/33.0
50/25	12.5	49.0/27.2	47.8/26.0
50/32	9.0	49.0/34.1	47.9/33.0
50/36	7.0	49.0/38.0	48.0/37.0
56/28	14.0	55.0/30.3	53.7/29.0
56/36	10.0	55.0/38.1	53.9/37.0
56/40	8.0	55.0/42.0	54.0/41.0
63/32	15.5	62.0/34.4	60.6/33.0
63/36	13.5	62.0/38.3	60.7/37.0
63/40	11.5	62.0/42.2	60.8/41.0
63/50	6.5	62.0/51.9	61.1/51.0
71/36	17.5	69.9/38.5	68.4/37.0
71/40	15.5	69.9/42.4	68.5/41.0
71/45	13.0	69.9/47.3	68.6/46.0
71/56	7.5	69.9/58.0	68.9/57.0
75/40	17.5	73.8/42.5	72.3/41.0
75/50	12.5	73.8/52.5	72.7/51.0
80/40	20.0	78.8/42.6	77.2/41.0
80/45	17.5	78.8/47.5	77.3/46.0
80/50	15.0	78.8/52.4	77.4/51.0
80/63	8.5	78.8/65.0	77.8/64.0
85/45	20.0	83.7/47.6	82.1/46.0
90/50	20.0	88.6/52.6	87.0/51.0
90/56	17.0	88.6/58.5	87.1/57.0
90/63	13.5	88.6/65.3	87.3/64.0
90/71	9.5	88.6/73.1	87.6/72.1
95/50	22.5	93.5/52.7	91.8/51.0
100/56	22.0	98.5/58.7	96.8/57.0
100/63	18.5	98.5/65.5	97.0/64.0
100/71	14.5	98.5/73.4	97.2/72.1
100/80	10.0	98.5/82.3	97.4/81.2
106/56	25.0	104.4/58.9	102.5/57.0
106/63	21.5	104.4/65.7	102.7/64.0
106/71	17.5	104.4/73.5	103.0/72.1
106/80	13.0	104.4/82.5	103.1/81.2
112/63	24.5	110.3/65.8	108.5/64.0
112/71	20.5	110.3/73.7	108.7/72.1
112/80	16.0	110.3/82.6	108.9/81.2
112/90	11.0	110.3/92.5	109.2/91.4
118/63	27.5	116.2/66.0	114.2/64.0

Standard Dimensions 316L/1.4404 Stainless Hollow Bar Contd

OD/ID (mm)	Wall thickness (mm)	Dimensions after machining - Chucked true to OD mm	Dimensions after machining - Chucked true to ID mm
118/71	23.5	116.2/73.8	114.5/72.1
118/80	19.0	116.2/82.8	114.6/81.2
118/90	14.0	116.2/92.7	114.9/91.4
125/71	27.0	123.1/74.0	121.2/72.1
125/80	22.5	123.1/82.9	121.4/81.2
125/90	17.5	123.1/92.8	121.7/91.4
125/100	12.5	123.1/102.7	121.9/101.5
132/71	30.5	130.0/74.2	127.9/72.1
132/80	26.0	130.0/83.1	128.1/81.2
132/90	21.0	130.0/93.0	128.4/91.4
132/106	13.0	130.0/108.8	128.8/107.6
140/80	30.0	137.9/83.3	135.8/81.2
140/90	25.0	137.9/93.2	136.1/91.4
140/100	20.0	137.9/103.1	136.3/101.5
140/112	14.0	137.9/116.0	136.6/113.7
150/80	35.0	147.7/83.6	145.3/81.2
150/95	27.5	147.7/98.4	145.7/96.4
150/106	22.0	147.7/109.3	146.0/107.6
150/125	12.5	147.7/128.1	146.5/126.9
160/112	24.0	157.6/115.5	155.8/113.7
160/122	19.0	157.6/125.4	156.0/123.8
160/132	14.0	157.6/135.3	156.3/134.0
170/118	26.0	167.4/121.7	165.5/119.8
170/130	20.0	167.4/133.6	165.8/132.0
170/140	15.0	167.4/143.5	166.0/142.1
180/125	27.5	177.3/128.9	175.3/126.9
180/140	20.0	177.3/143.7	175.7/142.1
180/150	15.0	177.3/153.6	176.0/152.3
190/132	29.0	187.1/136.0	185.1/134.0
190/150	20.0	187.1/163.9	185.5/152.3
190/160	15.0	187.1/163.8	185.7/162.4
200/140	30.0	197.0/144.2	194.9/142.1
200/150	25.0	197.0/154.1	195.2/152.3
200/160	20.0	197.0/164.0	195.4/162.4
212/130	41.0	208.8/134.6	206.2/132.0
212/170	21.0	208.8/174.2	207.2/172.6
224/140	42.0	220.6/144.8	217.9/142.1
224/180	22.0	220.6/184.4	218.9/182.7
236/150	43.0	232.4/155.0	229.7/152.3
236/190	23.0	232.4/194.6	230.7/192.9
250/200	25.0	246.2/204.9	244.3/203.0

Stainless Steel

Sanmac



Impact Ireland Metals are Ireland's Stockists & Distributor of Sanmac

Improved Machinability Stainless Steel Bar for cost-efficient component manufacturing

Sandvik has taken the alloy a significant step forward by improving its machining properties. This is achieved through the addition of sulphur and by optimized inclusion morphology. As every member of the Sanmac family, Sanmac 316/316L is optimized for controlled chip breaking as well as secure and efficient machining, allowing for increased cutting speed, longer tool life and minimal operator engagement.

Sanmac highlights

- Machinability-improved stainless steel
- Controlled chip breaking
- Increased cutting speed
- Longer tool life
- Consistent quality



Colour Code: Green/White



MACHINABILITY

Improved Machinability Stainless Steel Bar for cost-efficient component manufacturing

Sandvik has taken the alloy a significant step forward by improving its machining properties. This is achieved through the addition of sulphur and by optimized inclusion morphology. As every member of the Sanmac family, Sanmac 316/316L is optimized for controlled chip breaking as well as secure and efficient machining, allowing for increased cutting speed, longer tool life and minimal operator engagement.

Improves your production economy

Sanmac® is the result of extensive efforts to improve the machinability of stainless steel grades and the design of tooling concepts suitable for stainless steel machining. The result of this cooperation between Sandvik Materials Technology and Sandvik Coromant is improved production economy for you as our customer.

Higher productivity

The family of Sanmac stainless steels has now been further improved through extensive product development to increase productivity for customers in the machining industry. With Sanmac we have been able to reduce tool wear, and increase cutting speeds, giving productivity improvements and therefore significant cost reductions per produced article. The Sanmac program is continuously being extended with new steel grades and dimensions.



Stainless Steel



Sanmac stainless hollow bar properties

Stainless hollow bar – stock grades

Sandvik	AISI (UNS)	W.-Nr./EN
Sanmac 4305	303	1.4305
Sanmac 4305	303	1.4305
Sanmac 304/304L	304/304L	1.4301/1.4307
Sanmac 316/316L	316/316L	1.4401/1.4404
Sanmac 4435	316/316L	1.4436/1.4435
Sanmac 4571	(316Ti)	1.4571
Sanmac SAF 2205	S31803	1.4462

All above grades, excluding Sanmac 4305, fulfill the requirements of PED 97/23/EC (EN 10216-5) leak tightness test deferred to machined component.

Sanmac stainless hollow bar properties contd.

Chemical Composition

Sandvik	Nominal chemical composition, %				
	C	Cr	Ni	Mo	Others
Sanmac 4305	≤0.035	17.5	9	–	S
Sanmac 304/304L	≤0.030	18.5	9	–	–
Sanmac 316/316L	≤0.030	16.5	11	2.1	–
Sanmac 4435	≤0.030	17.5	12.5	2.6	–
Sanmac 4571	0.03	17	12.5	2.1	Ti
Sanmac SAF 2205	≤0.030	21.5	4.5	3.2	N

Other grades to special order.

Tolerances

O.D.:	+2/-0% but minimum +1/-0 mm.
I.D.:	+0/-2% but minimum +0/-1 mm.
Straightness:	Straightness deviation max. 1.5 mm per 1000 mm.

Other tolerances can be offered to special order.

Lengths

Sandvik stainless hollow bar is delivered in lengths ranging from 2.5 to 6.5 m, depending on diameter and grade. Lengths down to 1 m may be included in the delivery. Cutting services are available.

Guaranteed component sizes

The values indicated are valid for lengths of max. 2.5 x O.D.

Standards: Test certification for hollow bar in stock
Sanmac 304/304L, EN 1.4301/1.4307 Sanmac 316/316L, EN 1.4401/1.4404 OD 32-250 mm
DIN 17456 ¹⁾ , DIN 17458 TC1 ¹⁾ , NFA 49-317, PED 97/23/EC, EN 10216-5 TC1, EN 10294-2 ²⁾ IC-test EN ISO 3651-2A in delivery condition. NACE MR-0175/ISO 15156
OD 275 mm and larger
ASTM A479, ASTM A276, ASME SA479 EN 10088-3, EN 10294-2 ²⁾ NACE MR 0175/ISO 15156 IC-test ASTM A262 Pr. E
Sanmac 4571, EN 1.4571
DIN 17456 ¹⁾ , DIN 17458 TC1 ¹⁾ , NFA 49-317, PED 97/23/EC, EN 10216-5 TC1, EN 10294-2 ²⁾ IC-test EN ISO 3651-2A in delivery condition.
Sanmac SAF 2205, EN 1.4462

Heat analysis and mechanical properties acc. to Sandvik data sheet.
EN 10294-2²⁾

Corrosion test acc to ASTM G 48, Method A.

Impact test (t ≥ 6 mm)

Micrographic test (400X)

NACE MR 0175/ISO 15156

IC = Intergranular Corrosion.

1) The leakage test is deferred to the finished component.

2) The European standard for hollow bar

Sanmac stainless bar steel properties

Stainless bar steel

Stainless Steel

Sandvik	EN	W.-Nr.	UNS	AISI
Sanmac 304/304L	1.4301/1.4307	1.4301	S30400/S30403	Type 304/304L
Sanmac 316/316L	1.4401/1.4404	1.4401/1.4404	S31600/S31603	Type 316/316L
Sanmac 4435	1.4435	1.4436/1.4435	S31600/S31603	Type 316/316L
Sanmac 4571	1.4571	1.4571	S31635	Type 316Ti
Sanmac SAF 2205	1.4462	1.4462	S31803/S32205	–
Sandvik SAF 2507	1.4410	–	S32750	–
Sandvik Sanicro 28	1.4563	1.4563	N08028	–

Chemical Composition

Sandvik	Nominal chemical composition, %				
	C	Cr	Ni	Mo	Others
Sanmac 304/304L	≤0.030	18.5	8.5	–	–
Sanmac 316/316L	≤0.030	17	10.5	2.1	–
Sanmac 4435	≤0.030	17.5	12.5	2.6	–
Sanmac 4571	0.03	17	11	2.1	Ti
Sanmac SAF 2205	≤0.030	22.5	5.5	3.2	N
Sandvik SAF 2507	≤0.030	25	7	4	N
Sandvik Sanicro 28	≤0.020	27	31	3.5	Cu

Lengths

Diameter, mm	Lengths, mm
20 – 70	3.5 – 4.5
75 – 160	5 – 7
163 – 250	5 – 6
254 – 450	3 – 5

Standards

Sandvik	Size Range
Sanmac: 304/304L, 316/316L, SAF 2205	3.5 – 4.5
EN 10 088-3	20 – 450
EN 10272	20 – 25*
ASTM A479	SA 479 20 – 450
NACE MR 0175	independent of size
Sanmac: 304/304L, 316/316L, 4435, 4571	
EN 10 088-3	75 – 450
EN 10272	75 – 250
AD2000-W2	75 – 250**
ASTM A479	SA 479 75 – 450
NACE MR 0175	independent of size
Sandvik Sanicro 28	
EN 10 088-3	100 – 185
EN 10272	100 – 185
NACE MR 0175	independent of size
Sandvik SAF 2507	
EN 10 088-3	20 – 250
EN 10272	20 – 160
ASTM A 479, SA 479	20 – 250
NACE MR 0175	independent of size

* Sandvik SAF 2205 20 – 160 mm

** Sizes >250 mm must be upgraded via TÜV.

Stainless Steel Sheet and Plate



Our stainless steel plates can be used for the following range of applications

- Chemical industries
- Oil & Gas
- Aviation & Aerospace
- Petrochemicals
- Pharmaceuticals

We provide high and fine focus plasma, waterjet & laser cutting.

Sizes

304/1.403 Stainless

6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm	22 mm
25 mm	28 mm	30 mm	32 mm	35 mm	36 mm	40 mm	45 mm	50 mm	55 mm
60 mm	65 mm	70 mm	75 mm	80 mm	90 mm	100 mm	110 mm	120 mm	130 mm
150 mm									

304L/1.4307 stainless

6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm	22 mm
25 mm	28 mm	30 mm	32 mm	35 mm	36 mm	40 mm	45 mm	50 mm	55 mm
60 mm	65 mm	70 mm	75 mm	80 mm	90 mm	100 mm	110 mm	120 mm	130 mm
150 mm									

321/1.4541 Stainless

6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm	22 mm
25 mm	28 mm	30 mm	32 mm	35 mm	36 mm	40 mm	45 mm	50 mm	55 mm
60 mm	65 mm	70 mm	75 mm	80 mm	90 mm	100 mm	110 mm	120 mm	130 mm
150 mm									



Sizes Contd

321/1.4878 Stainless

6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm	22 mm
25 mm	28 mm	30 mm	32 mm	35 mm	36 mm	40 mm	45 mm	50 mm	55 mm
60 mm	65 mm	70 mm	75 mm	80 mm	90 mm	100 mm	110 mm	120 mm	130 mm
150 mm									

Stainless Steel

316/1.4401 Stainless

6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm	22 mm
25 mm	28 mm	30 mm	32 mm	35 mm	36 mm	40 mm	45 mm	50 mm	55 mm
60 mm	65 mm	70 mm	75 mm	80 mm	90 mm	100 mm	110 mm	120 mm	130 mm
150 mm									

316L/1.4404 Stainless

6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm	22 mm
25 mm	28 mm	30 mm	32 mm	35 mm	36 mm	40 mm	45 mm	50 mm	55 mm
60 mm	65 mm	70 mm	75 mm	80 mm	90 mm	100 mm	110 mm	120 mm	130 mm
150 mm									

316ti/1.4571 Stainless

6 mm	8 mm	10 mm	12 mm	14 mm	15 mm	16 mm	18 mm	20 mm	22 mm
25 mm	28 mm	30 mm	32 mm	35 mm	36 mm	40 mm	45 mm	50 mm	55 mm
60 mm	65 mm	70 mm	75 mm	80 mm	90 mm	100 mm	110 mm	120 mm	130 mm
150 mm									

309/1.4828 Stainless

2 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	15 mm	20 mm
25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	60 mm			

314/1.4841 Stainless

2 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	15 mm	20 mm
25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	60 mm			

310S/1.4845 Stainless

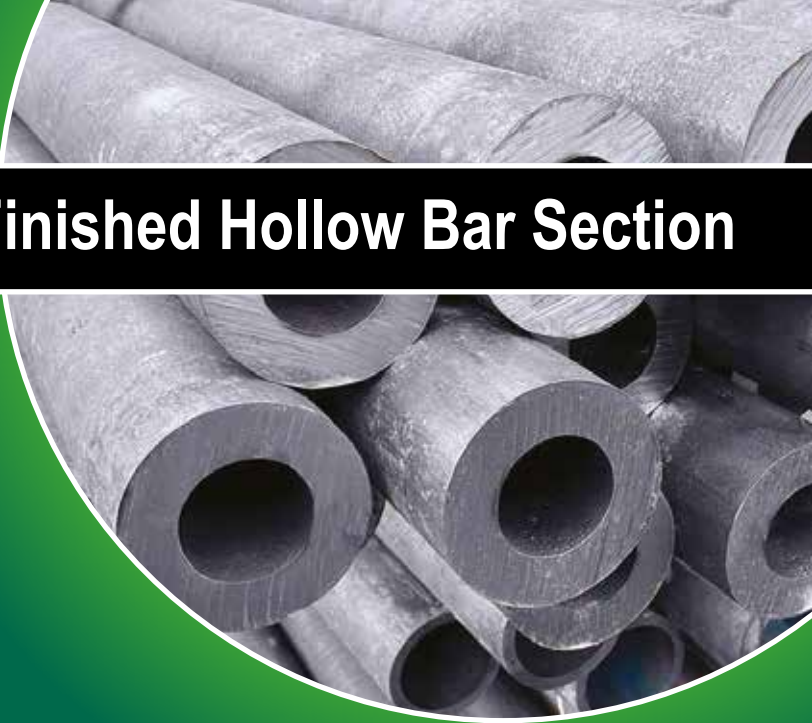
2 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	15 mm	20 mm
25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	60 mm			

253MA/1.4835 Stainless

2 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm	12 mm	15 mm	20 mm
25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	60 mm			

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.





Hot Finished Hollow Bar Section

This section includes:

Hot Finished Hollow Bar	70
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Hot Finished Hollow Bar



A Range of Hot Finished Hollow Bars for various applications in the Mechanical, Industrial and Agricultural sectors. Suitable for Welding. These tubes are designed for machining. Tolerance exists of 1% on OD and up to 12.5% on wall thickness.

Specification

UNS	Material Standard
E355	EN 10297-1

OD/ID (mm)	Wall thickness (mm)	Dimensions after machining - Chucked true to OD mm	Dimensions after machining - Chucked true to ID mm
32/16	8.0	31.0/18.0	30.0/17.0
32/20	6.0	31.0/21.9	30.1/21.0
36/16	10.0	35.0/18.1	33.9/17.0
36/20	8.0	35.0/22.0	34.0/21.0
36/25	6.6	35.0/26.9	34.1/26.0
40/20	10.0	39.0/22.1	37.9/21.0
40/25	7.5	39.0/27.0	38.0/26.0
40/28	6.0	39.0/29.9	36.1/29.0
45/20	12.5	44.0/22.2	42.8/21.0
45/28	8.5	44.0/30.0	43.0/29.0



Standard Dimensions Hot Finished Hollow Bar

OD/ID (mm)	Wall thickness (mm)	Dimensions after machining - Chucked true to OD mm	Dimensions after machining - Chucked true to ID mm
45/32	6.5	44.0/33.9	43.1/33.0
50/25	12.5	49.0/27.2	47.8/26.0
50/32	9.0	49.0/34.1	47.9/33.0
50/36	7.0	49.0/38.0	48.0/37.0
56/28	14.0	55.0/30.3	53.7/29.0
56/36	10.0	55.0/38.1	53.9/37.0
56/40	8.0	55.0/42.0	54.0/41.0
63/32	15.5	62.0/34.4	60.6/33.0
63/36	13.5	62.0/38.3	60.7/37.0
63/40	11.5	62.0/42.2	60.8/41.0
63/50	6.5	62.0/51.9	61.1/51.0
71/36	17.5	69.9/38.5	68.4/37.0
71/40	15.5	69.9/42.4	68.5/41.0
71/45	13.0	69.9/47.3	68.6/46.0
71/56	7.5	69.9/58.0	68.9/57.0
75/40	17.5	73.8/42.5	72.3/41.0
75/50	12.5	73.8/52.5	72.7/51.0
80/40	20.0	78.8/42.6	77.2/41.0
80/45	17.5	78.8/47.5	77.3/46.0
80/50	15.0	78.8/52.4	77.4/51.0
80/63	8.5	78.8/65.0	77.8/64.0
85/45	20.0	83.7/47.6	82.1/46.0
90/50	20.0	88.6/52.6	87.0/51.0
90/56	17.0	88.6/58.5	87.1/57.0
90/63	13.5	88.6/65.3	87.3/64.0
90/71	9.5	88.6/73.1	87.6/72.1
95/50	22.5	93.5/52.7	91.8/51.0
100/56	22.0	98.5/58.7	96.8/57.0
100/63	18.5	98.5/65.5	97.0/64.0
100/71	14.5	98.5/73.4	97.2/72.1
100/80	10.0	98.5/82.3	97.4/81.2
106/56	25.0	104.4/58.9	102.5/57.0
106/63	21.5	104.4/65.7	102.7/64.0
106/71	17.5	104.4/73.5	103.0/72.1
106/80	13.0	104.4/82.5	103.1/81.2
112/63	24.5	110.3/65.8	108.5/64.0
112/71	20.5	110.3/73.7	108.7/72.1
112/80	16.0	110.3/82.6	108.9/81.2
112/90	11.0	110.3/92.5	109.2/91.4
118/63	27.5	116.2/66.0	114.2/64.0

Hot Finished
Hollow Bar

Standard Dimensions Hot Finished Hollow Bar Contd

OD/ID (mm)	Wall thickness (mm)	Dimensions after machining - Chucked true to OD mm	Dimensions after machining - Chucked true to ID mm
118/71	23.5	116.2/73.8	114.5/72.1
118/80	19.0	116.2/82.8	114.6/81.2
118/90	14.0	116.2/92.7	114.9/91.4
125/71	27.0	123.1/74.0	121.2/72.1
125/80	22.5	123.1/82.9	121.4/81.2
125/90	17.5	123.1/92.8	121.7/91.4
125/100	12.5	123.1/102.7	121.9/101.5
132/71	30.5	130.0/74.2	127.9/72.1
132/80	26.0	130.0/83.1	128.1/81.2
132/90	21.0	130.0/93.0	128.4/91.4
132/106	13.0	130.0/108.8	128.8/107.6
140/80	30.0	137.9/83.3	135.8/81.2
140/90	25.0	137.9/93.2	136.1/91.4
140/100	20.0	137.9/103.1	136.3/101.5
140/112	14.0	137.9/116.0	136.6/113.7
150/80	35.0	147.7/83.6	145.3/81.2
150/95	27.5	147.7/98.4	145.7/96.4
150/106	22.0	147.7/109.3	146.0/107.6
150/125	12.5	147.7/128.1	146.5/126.9
160/112	24.0	157.6/115.5	155.8/113.7
160/122	19.0	157.6/125.4	156.0/123.8
160/132	14.0	157.6/135.3	156.3/134.0
170/118	26.0	167.4/121.7	165.5/119.8
170/130	20.0	167.4/133.6	165.8/132.0
170/140	15.0	167.4/143.5	166.0/142.1
180/125	27.5	177.3/128.9	175.3/126.9
180/140	20.0	177.3/143.7	175.7/142.1
180/150	15.0	177.3/153.6	176.0/152.3
190/132	29.0	187.1/136.0	185.1/134.0
190/150	20.0	187.1/163.9	185.5/152.3
190/160	15.0	187.1/163.8	185.7/162.4
200/140	30.0	197.0/144.2	194.9/142.1
200/150	25.0	197.0/154.1	195.2/152.3
200/160	20.0	197.0/164.0	195.4/162.4
212/130	41.0	208.8/134.6	206.2/132.0
212/170	21.0	208.8/174.2	207.2/172.6
224/140	42.0	220.6/144.8	217.9/142.1
224/180	22.0	220.6/184.4	218.9/182.7
236/150	43.0	232.4/155.0	229.7/152.3
236/190	23.0	232.4/194.6	230.7/192.9
250/200	25.0	246.2/204.9	244.3/203.0



Hydraulic Range Section



This section includes:

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Hard Chrome Plated Bar Piston Rod EN 10083-1	79

EN10305-4 Steel Tube E235 + N

(Feedline Tube)

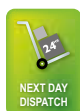


EN10305-4 Steel Tube E235 + N (Feedline Tube) is a cold finished seamless pressure tube for hydraulic feed lines.

Specification

EN Number	UNS	Material Standard
ST37.2	E235	EN 10305-2

OD (mm)	ID (mm)	Wall thickness (mm)
10.00	8.00	1.00
10.00	7.00	1.50
10.00	6.00	2.00
10.00	5.00	2.50
10.00	4.00	3.00
10.00	3.00	3.50
12.00	10.00	1.00
12.00	9.00	1.50
12.00	8.00	2.00
12.00	7.00	2.50
12.00	6.00	3.00



Standard Dimensions EN10305-4 Steel Tube E235 + N Contd

OD (mm)	ID (mm)	Wall thickness (mm)
14.00	12.00	1.00
14.00	11.00	1.50
14.00	10.00	2.00
14.00	9.00	2.50
14.00	8.00	3.00
15.00	13.00	1.00
15.00	12.00	1.50
15.00	11.00	2.00
15.00	10.00	2.50
15.00	9.00	3.00
16.00	14.00	1.00
16.00	13.00	1.50
16.00	12.00	2.00
16.00	11.00	2.50
16.00	10.00	3.00
18.00	16.00	1.00
18.00	15.00	1.50
18.00	14.00	2.00
18.00	13.00	2.50
18.00	12.00	3.00
18.00	11.00	3.50
20.00	18.00	1.00
20.00	17.00	1.50
20.00	16.00	2.00
20.00	15.00	2.50
20.00	14.00	3.00
20.00	13.00	3.50
20.00	12.00	4.00
20.00	10.00	5.00
22.00	20.00	1.00
22.00	19.00	1.50
22.00	18.00	2.00
22.00	17.00	2.50
22.00	16.00	3.00
22.00	15.00	3.50
22.00	14.00	4.00
25.00	22.00	1.50
25.00	21.00	2.00
25.00	20.00	2.50
25.00	19.00	3.00
25.00	17.00	4.00

Hydraulic
Range

Standard Dimensions EN10305-4 Steel Tube E235 + N Contd

OD (mm)	ID (mm)	Wall thickness (mm)
25.00	16.00	4.50
25.00	15.00	5.00
25.00	13.00	6.00
28.00	25.00	1.50
28.00	24.00	2.00
28.00	23.00	2.50
28.00	22.00	3.00
28.00	21.00	3.50
28.00	20.00	4.00
28.00	19.00	4.50
28.00	18.00	5.00
30.00	27.00	1.50
30.00	26.00	2.00
30.00	25.00	2.50
30.00	24.00	3.00
30.00	23.00	3.50
30.00	22.00	4.00
30.00	20.00	5.00
30.00	18.00	6.00
35.00	31.00	2.00
35.00	30.00	2.50
35.00	29.00	3.00
35.00	28.00	3.50
35.00	27.00	4.00
35.00	25.00	5.00
35.00	23.00	6.00
38.00	35.00	1.50
38.00	34.00	2.00
38.00	33.00	2.50
38.00	32.00	3.00
38.00	30.00	4.00
38.00	28.00	5.00
38.00	26.00	6.00
50.00	46.00	2.00
50.00	44.00	3.00
50.00	42.00	4.00
50.00	40.00	5.00
50.00	38.00	6.00
50.00	34.00	8.00
50.00	32.00	9.00
50.00	30.00	10.00

Smooth Bore Cylinder Tube



Ready to use Smooth Bore Tubes for hydraulic cylinders with smooth mirror finish bore. Bore tolerance to h9. Smoothness to Ra 0.8. A full range of Cylinder tubes in Imperial and Metric dimensions in honed and suitable for honing conditions is also available. Imperial sizes range from 1 1/2" x 1 1/4" to 12" x 11" with metric sizes from 40 x 30 to 280 x 250.

Specification

EN Number	UNS	Material Standard
ST37.2	E235	EN10305-2



Standard Dimensions

OD (mm)	ID (mm)	Wall thickness (mm)
40	30	5
45	35	5
47.62	38.1	4.76
50	40	5
53.97	44.45	4.76
55	45	5
60	50	5
60.32	50.8	4.76
63.5	50.8	6.35
65	50	7.5
65	55	5
69.85	60.33	4.76
70	50	10
70	55	7.5
70	60	5
73	63	5
75	60	7.5
76.2	63.5	6.35
76.2	66.68	4.76
78	63	7.5
80	70	5
85	75	5
88.9	76.2	6.35
90	80	5
95	80	7.5
100	80	10
100	90	5
101.6	88.9	6.35
106	100	3
110	90	10
110	95	7.5
110	100	5
115	100	7.5

Hard Chrome Plated Bar Piston Rod

EN 10083-1



Hydraulic
Range

Hard Chrome plated bar is a chromium-plated steel product used primarily as piston rod material in standard hydraulic and pneumatic applications. It is normally used in conditions of high stress, friction and harsh climactic environments, the quality of the base metal and subsequent surface treatment are of paramount importance. Wear resistance, corrosion resistance, surface smoothness, high yield strength and uniform quality are essential properties of hard chrome bar. Generally produced from steel bars combining high strength with excellent machinability and weldability. Tolerance on bar diameter to ISO f7. Common applications are found in agricultural machinery, production equipment, cranes, garbage compactors, lifters etc.

Specification

New Product Name	AISI	UNS	EN Number	Symbol	Standard
C45	1045		1.1191	XC45	EN 10083-2
20MnV6	A381	K01907	1.5217		EN 10294-1

Chemical Analysis

C	Si	Mn	S	P	Al	Cr	V	Fe
.42/.50	.40max	0.5/0.8	.035max	.025max	.02/.05	.20	.10/.20	Bal
.22max	.10/.50	1.3/1.7	.035max	.025max	.02/.05	.20	.10/.20	Bal

Sizes

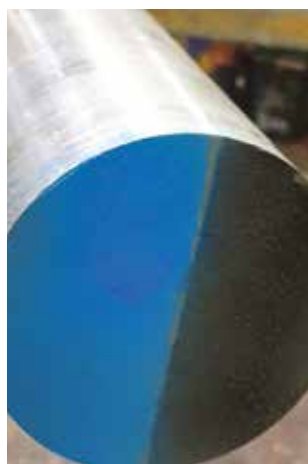
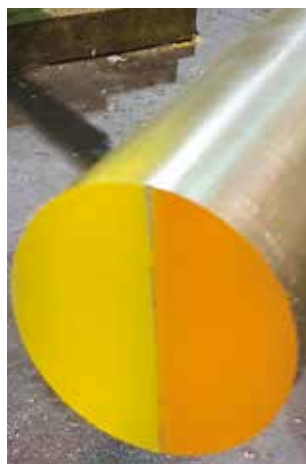
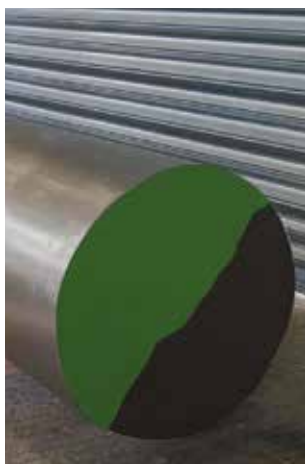
Rounds (mm)

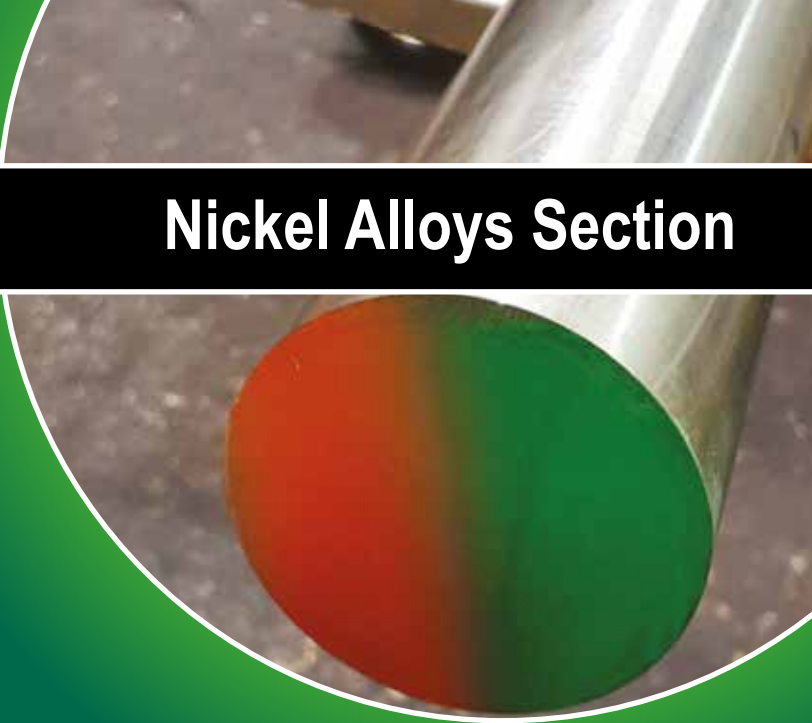
8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	25.00	28.00
30.00	32.00	35.00	36.00	40.00	45.00	50.00	55.00	56.00	60.00
63.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00	100.00	105.00
110.00	120.00	125.00	130.00	150.00					

Rounds (inch)

1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8
1 3/4	1 7/8	2	2 1/8	2 1/4	2 1/2	2 3/4	3	3 3/8	3 1/4
3 1/2	4	6							

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.





Nickel Alloys Section

This section includes:

Hastelloy C276	82
Nickel Alloy 400	83
Nickel Alloy 600	84
Nickel Alloy 625	85
Nickel Alloy 718	86
Low Expansion Alloy 42 (Nilo 42)	87
Nickel Alloy Sheet & Plate	88

Hastelloy C276



A nickel-molybdenum-chromium alloy with a tungsten addition that has excellent resistance to corrosion in a wide range of severe environments. The high molybdenum content gives very high pitting and corrosion resistance. The low carbon content minimizes carbide precipitation during welding to maintain corrosion resistance in as-welded structures.

Typical applications: Components exposed to sour gas, equipment for flue-gas desulfurization plants, digesters and bleach plants in the paper industry, sulfuric acid reactors, waste treatment, chemical processing, pollution control equipment and pharmaceutical equipment.

Specification

EN Number	UNS	ASTM
2.4819	Ni0276	B574

Chemical Analysis

Ni	Mo	Cr	Fe	W	Co	Mn	C	V	P	S	Si
Bal	15-17	14-16	4-6	3-5	2.5 max	1.0 max	.01 max	.35 max	.04 max	.03 max	.08 max

Sizes: Rounds (mm)

20	25	30	35	40	45	50	55	60	65
70	75	80	85	90	95	100	105	110	115
120	125	130	135	140	145	150	155	160	165
170	175	180	185	190	200	205	215	220	225
230	240	250	260	270	280	285	300		

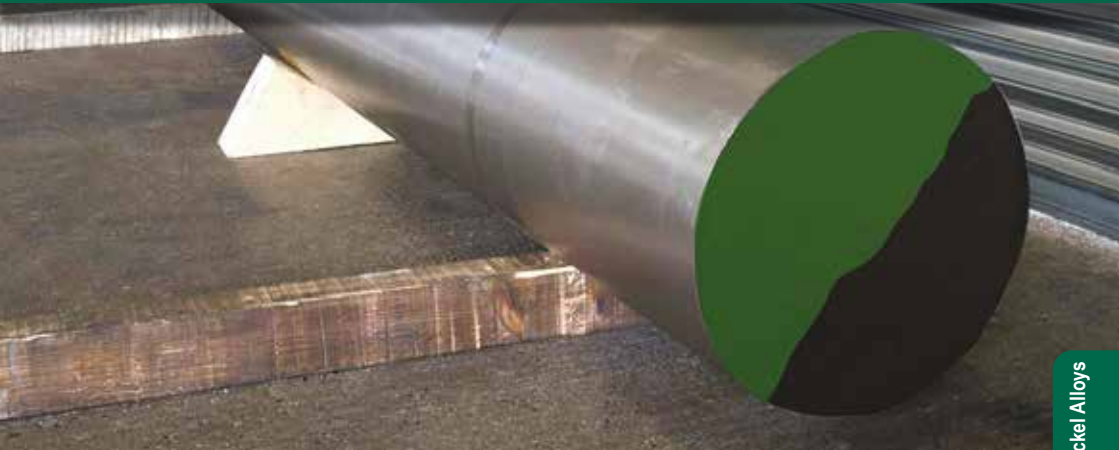
Sizes: Rounds (inch)

1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4
4	4 1/2	4 3/4	5	5 1/2	5 3/4	6			

Colour Code: Red/Green



Nickel Alloy 400



A Nickel-Copper alloy with excellent corrosion resistance to seawater, steam and acidic/alkaline media. This alloy is characterized by moderate to high strength, good weldability and is generally not susceptible to stress corrosion cracking. Alloy 400 possesses good mechanical properties from sub-zero temperatures up to 1020 deg F and is slightly magnetic at room temperatures.

Typical applications: Oil, Marine and Chemical industries, valves, pumps and propeller shafts, marine fixtures and fasteners, electrical and electronic components, chemical processing equipment.

Specification

EN Number	UNS	ASTM
2.436	N04400	B164

Chemical Analysis

Ele	C	Mn	P	S	Si	AL	Ni	Cu	Fe
Max	.3	2.0		.024	.5		70	34	2.5
Min			.005			.02	63	28	

Sizes: Rounds (mm)

20	25	30	35	40	45	50	55	60	65
70	75	80	85	90	95	100	105	110	115
120	125	130	135	140	145	150	155	160	165
170	175	180	185	190	200	205	215	220	225
230	240	250	260	270	280	285	300		

Sizes: Rounds (inch)

1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4
4	4 1/2	4 3/4	5	5 1/2	5 3/4	6			

Colour Code: Black/Green



Nickel Alloy 600



A nickel-chromium alloy with good oxidation resistance at high temperatures and resistance to stress corrosion cracking, high purity water and caustic corrosion. Alloy 600 is used from cryogenic to elevated temperatures of 200 deg F (1093 deg C). It is non-magnetic and readily weldable, resists steam and mixtures of steam, air and CO₂.

Typical applications: Industries, Petrochemical, Chemical, pulp and paper, food processing, Nuclear and heat treatment industries.

Specification

EN Number	UNS	ASTM
2.4816	N06600	B166

Chemical Analysis

C	Cr	Cu	Fe	Mn	Ni +(CO)	S	SI
0.15	14-17	0.14	6-10	1.0	72	0.015	0.05

Sizes: Rounds (mm)

20	25	30	35	40	45	50	55	60	65
70	75	80	85	90	95	100	105	110	115
120	125	130	135	140	145	150	155	160	165
170	175	180	185	190	200	205	215	220	225
230	240	250	260	270	280	285	300		

Sizes: Rounds (inch)

1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4
4	4 1/2	4 3/4	5	5 1/2	5 3/4	6			

Colour Code: Yellow/Orange



Nickel Alloy 625

A nickel-chromium-molybdenum alloy with the addition of niobium for strengthening. This alloy resists many severely corrosive environments and is very resistant to pitting/crevice corrosion. Alloy 625 has excellent weldability and service temperatures range from cryogenic to 1800 deg F. The alloy resists scaling at high temperatures making it suitable for heat shields and furnace hardware, also used in offshore marine and aerospace industries among others and for structures in contact with seawater and subject to high mechanical stresses.

Typical applications: Superphosphoric acid production equipment, flue gas scrubbers components, sour gas equipment, offshore and marine equipment.

Specification

EN Number	UNS	ASTM
2.4856	N06625	B4433-6

Chemical Analysis

Ni	Cr	Mo	Fe	C	Mn	Si	Al	Ti	Nb	P	S
Bal 57min	20-23	8-10	5	.05	.40	.50	.40	.40	3.2-4.0	.02	.01

Sizes: Rounds (mm)

20	25	30	35	40	45	50	55	60	65
70	75	80	85	90	95	100	105	110	115
120	125	130	135	140	145	150	155	160	165
170	175	180	185	190	200	205	215	220	225
230	240	250	260	270	280	285	300		

Sizes: (inch)

1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4
4	4 1/2	4 3/4	5	5 1/2	5 3/4	6			

Colour Code: Black/Blue



Nickel Alloy 718



Nickel Alloy 718 is a precipitation hardened nickel-chromium alloy containing significant amounts of iron, niobium and molybdenum with lesser amounts of aluminium and titanium. Maintains high strength, good ductility and oxidation resistance up to high temperatures while also having outstanding cryogenic properties. It has outstanding weldability including resistance to post-weld cracking.

Typical applications: Downhole tools, choke stems, gate valves, sub-surface safety valves, tubing hangers, wellhead components and fasteners.

Specification

EN Number	UNS	B637
2.4668	N07718	B637

Chemical Analysis

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	Ti	B	Al	Co	Cb+Ta
.08	.35	.015	.015	.35	17-21	50-55	2.8-3.3	.3	.65-1.15	.006	.2-.8	1	4.75-5.5

Sizes: Rounds (mm)

20	25	30	35	40	45	50	55	60	65
70	75	80	85	90	95	100	105	110	115
120	125	130	135	140	145	150	155	160	165
170	175	180	185	190	200	205	215	220	225
230	240	250	260	270	280	285	300		

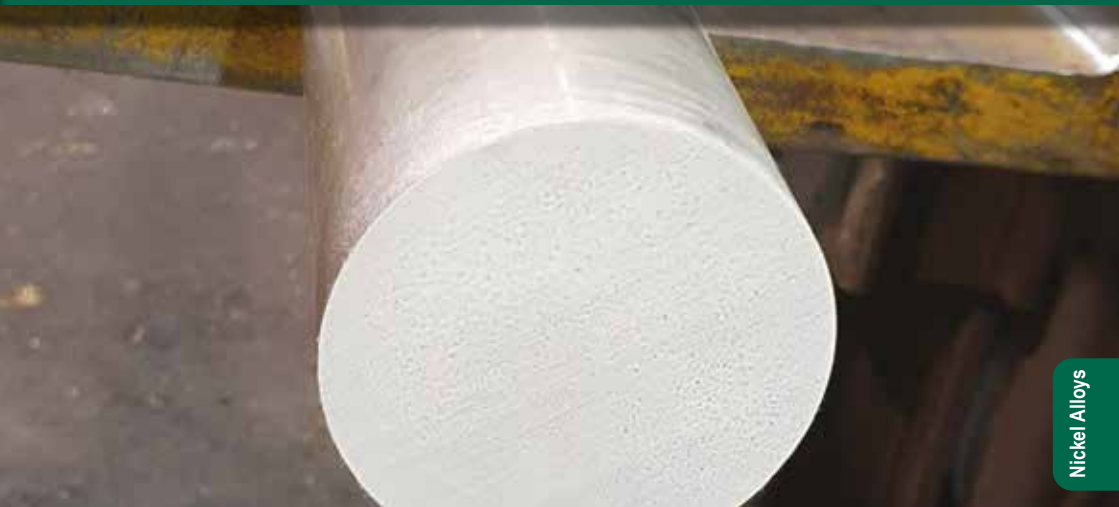
Sizes: Rounds (inch)

1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4
4	4 1/2	4 3/4	5	5 1/2	5 3/4	6			

Colour Code: Blue/Green



Low Expansion Alloy 42 (Nilo 42)



Nickel Alloys

A nickel-iron controlled-expansion alloy containing 42% Nickel. It has a low and nominally constant coefficient of thermal expansion in the 85 deg F (20 deg C) to 570 deg F (300 deg C) temperature range.

Typical application: Medical, electronics, automotive industries in various applications including bi-metals thermostat strips, thermostat rods, electronic tubes, glass to metal and ceramic to metal seals.

Specification

EN Number	UNS	ASTM
1.3917	K94100	F30

Chemical Analysis

Ni	Cr	Mn	P	S	Cr	Si	Al	Co	Fe
42	.05	.80	.025	.025	.250	0.03	.02	.05	Bal

Sizes: Rounds (mm)

50.80	63.50	76.20	82.55	88.90	101.60	114.30	127.00	133.35	146.05
152.40	165.10	177.80	203.20	215.90	222.25	235.00	300.00		

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Colour Code: White



Nickel Alloy Sheet & Plate



Our alloys can be used for the following range of applications:

- Chemical Processing Industries
- Industrial Furnace construction
- Offshore
- Power plant construction
- Petrochemicals

We provide high and fine focus Plasma cutting, waterjet and laser cutting.



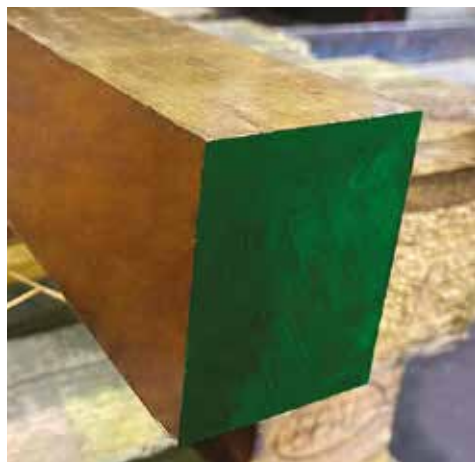
Specifications

DIN EN	Material	2mm	3mm	3.17mm	4mm	4.76mm	5mm	6mm	6.35mm	8mm
2.4602	Alloy 22	✓	✓		✓		✓	✓		✓
1.4562	Alloy 31	✓	✓		✓		✓	✓		✓
2.4605	Alloy 59	✓	✓		✓		✓	✓		✓
-	Alloy 120			✓		✓			✓	
1.4886	Alloy 330	✓	✓		✓		✓	✓		✓
2.4360	Alloy 400	✓	✓		✓		✓	✓		✓
2.4816	Alloy 600	✓	✓		✓		✓	✓		✓
2.4851	Alloy 601	✓	✓		✓		✓	✓		✓
2.4633	Alloy 602 CA	✓	✓		✓		✓	✓		✓
2.4663	Alloy 617	✓	✓		✓		✓	✓		✓
2.4856	Alloy 625	✓	✓		✓		✓	✓		✓
1.4876, 1.4958	Alloy 800 H	✓	✓		✓		✓	✓		✓
2.4858	Alloy 825	✓	✓		✓		✓	✓		✓
1.4529	Alloy 926	✓	✓		✓		✓	✓		✓
2.4610	Alloy C-4	✓	✓		✓		✓	✓		✓
2.4819	Alloy C-276	✓	✓		✓		✓	✓		✓
2.4068	Nickel 201	✓	✓		✓		✓	✓		✓

Nickel Alloys

DIN EN	Material	10mm	12mm	15mm	20mm	25.4mm	31.75mm	38.1mm	40mm	
2.4602	Alloy 22	✓	✓	✓	✓	✓	✓	✓		
1.4562	Alloy 31	✓	✓	✓	✓					
2.4605	Alloy 59	✓	✓	✓	✓	✓				
-	Alloy 120									
1.4886	Alloy 330	✓	✓	✓	✓					
2.4360	Alloy 400	✓	✓	✓	✓	✓				
2.4816	Alloy 600	✓	✓	✓	✓	✓			✓	
2.4851	Alloy 601	✓	✓	✓	✓	✓				
2.4633	Alloy 602 CA	✓	✓	✓	✓					
2.4663	Alloy 617	✓	✓	✓	✓					
2.4856	Alloy 625	✓	✓	✓	✓	✓			✓	
1.4876, 1.4958	Alloy 800 H	✓	✓	✓	✓	✓				
2.4858	Alloy 825	✓	✓	✓	✓				✓	
1.4529	Alloy 926	✓	✓	✓	✓					
2.4610	Alloy C-4	✓	✓	✓	✓					
2.4819	Alloy C-276	✓	✓	✓	✓	✓				
2.4068	Nickel 201	✓	✓	✓	✓					

Width: up to 2500mm
 Length: max. 6000mm





Bronze/Brass/Copper Section

This section includes:

Aluminium Bronze	92
Brass Bar CZ121	93
Copper C109 Bar	96
SAE 660 Bronze Bar	98

Aluminium Bronze



Aluminium Bronze with high corrosion resistance. An extremely hard and tough alloy, with high strength. Suitable for applications such as heavy-duty bearings, worm gears, etc. Typically supplied in round bar.

Specification

Number	Name	Grade	UNS	EN
CA104	CuAl10Ni	CA104	C63200	CW307G

Sizes: Rounds (inch)

3/4	1	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/2	3
4	5	6	7	8					

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Colour Code: Red



Brass Bar CZ121



Bronze
Brass/Copper

Brass bar CZ121 had lead added to the composition to significantly improve machinability. While free machining brass has excellent hot working abilities, cold working is poor and not recommended. It can, however, be knurled if required. Soldering of free machining brass is excellent and brazing is good but all other welding methods are not advised without consultation with a welding professional.

Typically supplied in round bar, hexagon bar, square bar and flat bar. Typically used for high speed machined components.

Specification

UNS	EN Number	Symbol	Material Standard
C38500	CZ121/CW614N	CuZn39Pb3	EN12164



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DISPATCH



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98%
ON TIME
DELIVERY



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QUALITY
IN-HOUSE PMI
TESTING



PART
MACHINING
CUTTING, DRILLING
& BELLING



RAPID QUOTE
SERVICE



EUROPEAN
SOURCED

Sizes: Brass Bar CZ121

Rounds (mm)

4	5	6	7	8	9	10	12	13	14
16	18	20	22	24	25	26	28	30	40
50	60	65	130	155	205				

Rounds (inch)

1/8	1/32	3/16	7/32	1/4	9/32	5/16	11/32	3/8	7/16
1/2	17/32	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1
1 1/16	1 1/8	1 3/16	1 1/4	1 5/16	1 3/8	1 1/2	1 5/8	1 3/4	2
2 1/8	2 1/4	2 3/8	2 1/2	2 5/8	2 3/4	3	3 1/4	3 1/2	3 3/4
4	4 1/4	4 1/2							

Hexagons (mm)

5	6	8	10	11	12	13	14	15	16
17	18	19	20	22	24	30	32	36	41
46	50	60	65						

Hexagons (inch)

0.248	1/4	5/16	0.324	3/8	0.445	7/16	1/2	0.525	9/16
0.6	5/8	11/16	0.71	3/4	13/16	0.82	7/8	0.92	15/16
1	1.01	1 1/16	1.1	1 1/8	1.2	1 1/4	1.3	1 5/16	1 3/8
1.48	1 1/2	1.625	1.67	1 3/4	1.86	2.05	2.2	2 1/2	2 3/4
3									

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Finish and Packaging

Chamfer					
Diameter D Key CH		End 1 Chamber		End 2 point	
		Length l		Length l	
>	≤	min.	max.	min.	max.
5	10	0,2	1,5	2	7
10	20	0,2	2	3	10
20	30	0,2	3	4	12

Surface

Pickled

Packaging

1000 kg bundles with metal straps and protective material between the straps and the bars.

Identification through

Label

Technical Information

Round Nominal Diameter	Round Nominal Diameter	Round Tolerance (mm)	Round Tolerance (mm)
>	≤	Class A	Class B
>6	≤10	+0 ; -0,06	+0 ; -0,036
>10	≤18	+0 ; -0,07	+0 ; -0,043
>18	≤30	+0 ; -0,08	+0 ; -0,052
>30	≤50	+0 ; -0,16	-
>50	≤80	+0 ; -0,19	-
>80	≤150	+0 ; -1,20	-

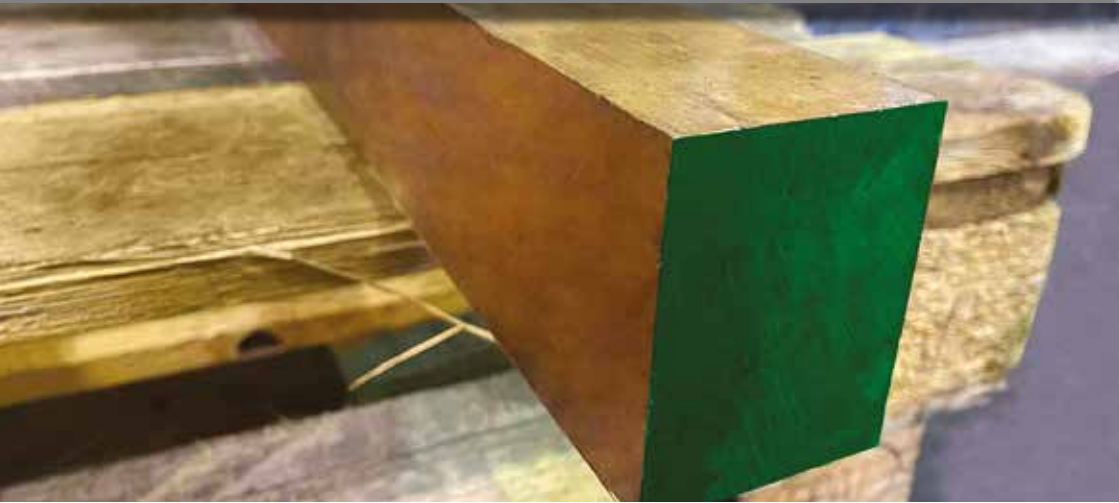
Round Diameter (mm)	Round Diameter (mm)	Round Length	Round Length
>	≤	Flats Length - L Standard M	Flats Length - tol. ± (mm)
>10	≤30	3	50
>30	≤80	3	100
>80	≤150	3	200
>30	≤50	+0 ; -0,16	-
>50	≤80	+0 ; -0,19	-
>80	≤150	+0 ; -1,20	-

Hex Size D (mm)	Hex Size D (mm)	Hex Tolerance (mm)
>	≤	
>6	≤10	+0 ; -0,09
>10	≤18	+0 ; -0,11
>18	≤30	+0 ; -0,13
>30	≤50	+0 ; -0,16
>50	≤60	+0 ; -0,19
>60	≤100	+0 ; -1,20

Hex Shape	Hex Size D up to	Hex Max. deviation (mm)	Hex Max. deviation (mm)
on 400mm	on L (L>1 m)	Flats Length - L Standard M	Flats Length - tol. ± (mm)
Round	50	0,4	1,0 × L
Round	150	6,0	9,0 × L
Hexagonal	50	0,6	1,5 × L
Hexagonal	100	6,0	9,0 × L
>50	≤80	+0 ; -0,19	-
>80	≤150	+0 ; -1,20	-

Bronze
Brass/Copper

Copper C109 Bar



High conductivity – corrosion-resistant, malleable. Silver increases the softening temperature and has a negligible effect on conductivity. Used for electrical conductors and also cold heading applications. Typically supplied in round bar; hexagon bar; square.

Specification

Name	Grade	UNS	EN
Copper	C101	C11000	CW004A

Chemical Analysis

Cu%	Sn%	Zn%	Pb%	Fe%	Ni%	P	Sb
99.9	-	-	-	-	-	-	-

Colour Code: Green



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MACHINING
CUTTING, DRILLING
& BELLING



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SERVICE



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Sizes

Rounds (mm)

4	5	6	7	8	9	10	12	13	14
16	18	20	22	24	25	26	28	30	40
50	60	65	130	155	205				

Rounds (inch)

1/8	1/32	3/16	7/32	1/4	9/32	5/16	11/32	3/8	7/16
1/2	17/32	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1
1 1/16	1 1/8	1 3/16	1 1/4	1 5/16	1 3/8	1 1/2	1 5/8	1 3/4	2
2 1/8	2 1/4	2 3/8	2 1/2	2 5/8	2 3/4	3	3 1/4	3 1/2	3 3/4
4	4 1/4	4 1/2							

Squares (inch)

1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	3	4	
-----	-----	---	-------	-------	-------	---	---	---	--

Hexagons (mm)

5	6	8	10	11	12	13	14	15	16
17	18	19	20	22	24	30	32	36	41
46	50	60	65						

Hexagons (inch)

0.248	1/4	5/16	0.324	3/8	0.445	7/16	1/2	0.525	9/16
0.6	5/8	11/16	0.71	3/4	13/16	0.82	7/8	0.92	15/16
1	1.01	1 1/16	1.1	1 1/8	1.2	1 1/4	1.3	1 5/16	1 3/8
1.48	1 1/2	1.625	1.67	1 3/4	1.86	2.05	2.2	2 1/2	2 3/4
3									

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Bronze
Brass/Copper

SAE 660 Bronze Bar



Continuous Cast leaded bronze is a general-purpose free machining bronze. It has good medium to heavy load-bearing properties with an ability to conform to minor shaft misalignment. Cast leaded bronze is not suited for welding. Soldering is not recommended but is possible under advice from a welding consumables supplier. Bronze rod has high wear resistance and is sea water-resistant.

Widely used in general engineering applications as bearings and sliding elements. Other uses include piston pin bushes, valve and gate seat rings, guide bushes and slip rings.

Specification

Steel Number	Grade	UNS	EN Number	Symbol	Material Standard
2.1091	SAE 660	C93200	ASTM B505	CuSn7ZnPb	DIN 1705

Chemical Analysis

Cu%	Sn%	Zn%	Pb%	Fe%	Ni%	P	Sb
81-85	6-8	3-5	5-7	0.2max	0.5max	0.15max	0.35max

Colour Code: White



Sizes

Rounds (mm)

15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00
65.00	70.00	75.00	80.00	85.00	90.00	95.00	100.00	110.00	120.00
130.00	140.00	150.00	250.00						

Tubes OD x ID

20 x 10	25 x 10	25 x 15	27 x 17	30 x 10	30 x 15	30 x 20	35 x 15	35 x 20	35 x 25
40 x 15	40 x 20	40 x 25	40 x 30	45 x 25	45 x 30	50 x 20	50 x 25	50 x 30	50 x 35
50 x 40	55 x 25	55 x 30	55 x 35	55 x 40	55 x 45	60 x 25	60 x 30	60 x 35	60 x 40
60 x 45	60 x 50	65 x 20	65 x 40	65 x 45	65 x 50	65 x 55	70 x 45	70 x 50	70 x 60
75 x 35	75 x 45	75 x 50	75 x 55	75 x 60	80 x 40	80 x 50	80 x 60	85 x 30	85 x 45
85 x 55	85 x 60	85 x 65	85 x 75	90 x 50	90 x 60	90 x 65	90 x 70	95 x 35	95 x 55
95 x 65	95 x 75	100 x 40	100 x 50	100 x 60	100 x 70	100 x 80	105 x 60	110 x 40	110 x 55
110 x 65	110 x 75	110 x 85	110 x 90	115 x 85	120 x 50	120 x 55	120 x 60	120 x 80	130 x 65
130 x 90	140 x 65	140 x 100	150 x 75	150 x 105	155 x 90	180 x 120	180 x 150	190 x 75	200 x 140
220 x 140	250 x 100	250 x 150	300 x 200	400 x 200					

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.



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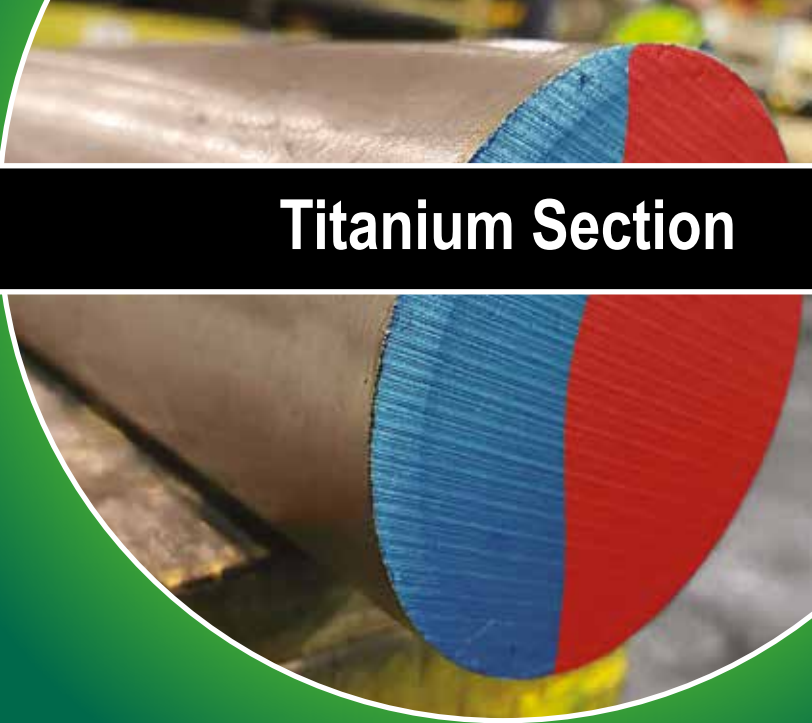


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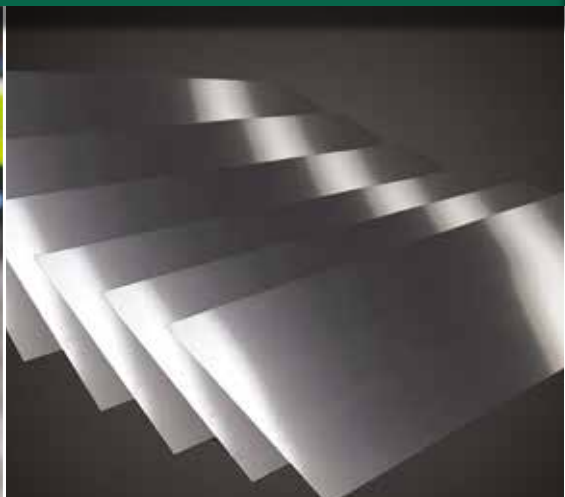


Titanium Section

This section includes:

Titanium Gr2 Bar and Sheet/Plate.....	102
Titanium Gr5 Bar and Sheet/Plate.....	103

Titanium Gr2 Bar and Sheet/Plate



Commercial pure grade 2 is the most recently employed unalloyed titanium grade. It provides moderate strength (typical yield strength 345 MPa) combined with good ductility, formability and weldability. Grade 2 has excellent resistance to high oxidation.

Typical applications: Used in seawater applications, chemical process heat exchangers, pressure vessels, sour systems applications. Also used extensively in the oil and gas, offshore industries.

Specification

Steel Number	UNS	Material Standard
3.7035	R50400	ASTM B348

Chemical Analysis

C	O	H	N	Fe	Ti
.03	.25	.015	.03	.3	99.2

Sizes: Rounds (mm)

16.00	20.00	30.00	35.00	40.00	50.00	60.00	70.00	80.00	90.00
100.00	110.00	114.30	120.00	130.00	140.00	150.00	160.00	170.00	180.00
190.00	200.00	210.00	220.00	230.00	240.00	250.00	260.00	270.00	280.00
290.00	300.00								

Sizes: Sheet/Plate (mm)

0.5	1	1.5	2	3	4	5	6	8	10
12	15	20	25	30	35	40	45	50	60

Colour Code: Blue/Red



Titanium Gr5 Bar and Sheet/Plate



Ti-6AL-4V (Grade 5, classed as an alpha-beta alloy is the most widely used of the high strength titanium alloys. Grade 5 combines its good mechanical strength and low density (4.42 kg/m³) with excellent corrosion resistance in many media. Grade 5 is fully heat-treatable in section sizes up to 15 mm and is used up to approx 400 deg C (750 deg F).

Typical applications: Oil and gas, marine offshore and power generation, including the aerospace industry.

Specification

Steel Number	UNS	Material Standard	Symbol
3.7164	R56400	ASTM B348	Ti 6Al 4V

Chemical Analysis

C	Fe	N	O	Al	V	H Sheet	H Bar	H Billet	Ti
.08	.25	.05	.2	5.5-6.75	3.5-4.5	.015	.0125	.01	Bal

Sizes: Rounds (mm) Dia

20.00	25.00	25.40	30.00	40.00	50.00	60.00	70.00	80.00	90.00
100.00	110.00	120.00	130.00	140.00	150.00	152.40	160.00	170.00	180.00
190.00	200.00	210.00	220.00	230.00	240.00	250.00	260.00	270.00	280.00
290.00	300.00								

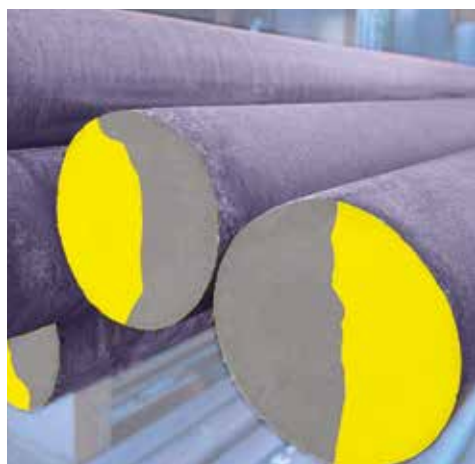
Sizes: Sheet/Plate (mm)

0.5	1	1.5	2	3	4	5	6	8	10
12	15	20	25	30	35	40	45	50	60

Colour Code: Orange/Blue



Titanium



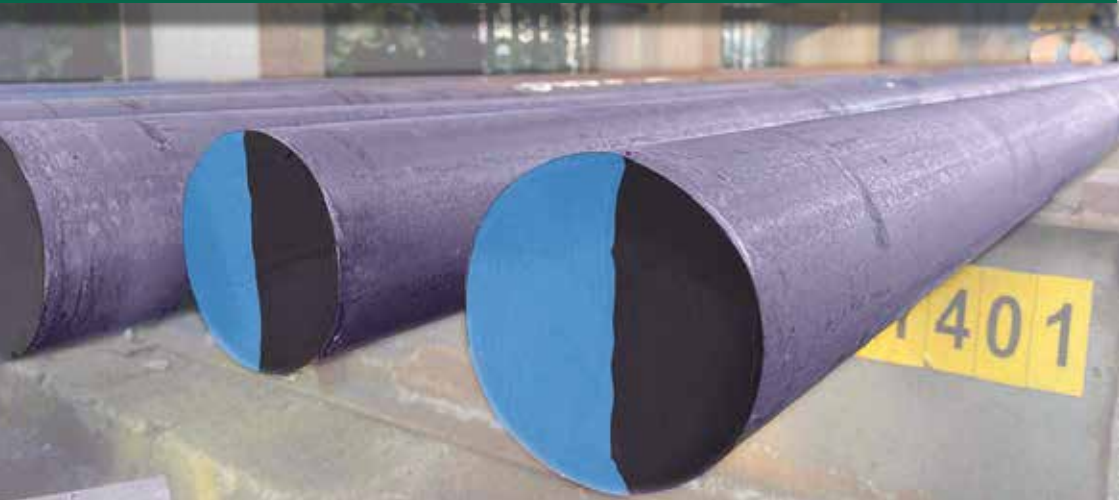


Tool Steel Section

This section includes:

01 Tool Steel Bar	106
1.2083 Stainless Plastic Mould Bar	108
D2 Tool Steel Bar	110
H13 Tool Steel Bar.....	112
P20 Tool Steel Bar.....	113

01 Tool Steel Bar



01 Tool Steel Bar is a general-purpose oil hardening tool steel. This manganese-chromium tungsten steel is suitable for a wide range of cold work applications. 01 tool steel bar is characterized by good machinability, good dimensional stability in hardening and a good combination of high surface hardness and toughness after proper heat treatment. These characteristics combine to give steel suitable for the manufacture of tooling with good tool life and production economy.

Applications include Cutting Tools for Blanking, punching, piercing, cropping, shearing, trimming. Short cold shears, clipping and trimming tools. Forming Tools for Bending, raising, drawing, rim rolling, spinning and flow forming, small coining dies, gauges, measuring tools, guide bushes, ejector pins, high duty small to medium drills and taps, small gear wheels, pistons, nozzles, cams.

Specification

Steel Number	Steel Name	Grade	Bohler	UNS	Material Standard
1.2510	95MnWCr5	01	K460	T31501	ASTM A681

Chemical Analysis

C	W	Mn	Cr
0.95	0.6	1.1	0.6

Colour Code: Blue/Grey



Sizes

Rounds (mm)

20.00	25.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00	65.00
70.00	75.00	80.00	85.00	90.00	95.00	100.00	105.00	110.00	115.00
120.00	125.00	130.00	135.00	140.00	145.00	150.00	155.00	160.00	165.00
170.00	175.00	180.00	185.00	190.00	195.00	200.00	205.00	210.00	215.00
220.00	225.00	230.00	235.00	240.00	245.00	250.00			

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 section at
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We have developed many articles and data sheets to assist you when choosing the correct metal grade for your requirements. We have compiled metal conversion tables and tolerance specifications as well as instrumental grade index and strength range documents.

1.2083 Stainless Plastic Mould Bar



1.2083 is a chromium alloyed stainless plastic mould steel. Characterised by a combination of toughness, corrosion resistance and the ability to reach uniform hardness throughout large cross-sections. 1.2083 has the added benefits of steel that possess good wear resistance and excellent polishability. The combination of these properties provides the steel with an outstanding performance which makes 1.2083 tool steel particularly suitable for moulds for chemically aggressive plastics.

Industries: Plastics, Medical, Pharmaceutical, Chemical etc. Moulds for chemically aggressive products, moulds for optical products, moulds for medical products, mould and pressure tools, tooling and inserts for corrosive plastics and polymers, larger moulds due to outstanding through hardening abilities.

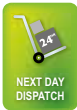
Specification

Steel Name	Steel Number	Grade	Bohler	Material Standard
1.2083	X40Cr14	1.2083	M310	ASTM A681

Chemical Analysis

C	Si	Mn	Cr
0.40	0.70	0.45	13.5

Colour Code: Silver/Blue



Sizes

Rounds (mm)

20.00	25.00	30.00	40.00	45.00	50.00	55.00	60.00	66.00	70.00
75.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00	150.00	160.00
170.00	180.00	190.00	200.00	210.00	220.00	230.00	240.00	250.00	

Flats (mm)

25 x 10	25 x 15	30 x 15	40 x 10	40 x 15	40 x 25	50 x 10	50 x 15	50 x 20	50 x 25
50 x 30	50 x 40	60 x 25	60 x 30	60 x 40	60 x 50	75 x 20	75 x 30	75 x 40	100 x 15
100 x 25	100 x 40	100 x 50	125 x 25	125 x 50	150 x 25	150 x 50			

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

D2 Tool Steel Bar



D2 tool steel bar is an air-hardening, high carbon, and high chromium tool steel, heat treatable to HRC 60-62. D2 is widely used in cold work applications requiring very high wear resistance. It offers excellent abrasion resistance and compressive strength combined with mild corrosion resistance and moderate toughness. It is very deep hardening and shows good dimensional stability after proper treatment. D2 can be supplied in many finishes including, hot rolled, part pre-machined and fine machined condition.

Applications include Cutting Tools for Blanking, fine-blanking, punching, cropping, shearing, trimming, cold shears. Shredding knives for waste plastics, granulator knives, circular shears, clipping, trimming tools for forgings. Wood milling cutters, reamers, broaches. Forming Tools for: Bending, forming, deep-drawing, rim-rolling, spinning and flow-forming. Coining dies, Cold extrusion dies, punches, tube and section forming rolls; plain rolls die for moulding of Ceramics, bricks, tiles, grinding wheels, tablets, abrasive plastics. Thread-rolling dies, cold-heading tools, crushing hammers, swaging tools, gauges, measuring tools, guide rails, bushes, sleeves, knurling tools, sandblast nozzles.

Specification

Steel Number	Steel Name	Grade	Bohler	Material Standard	UNS
1.2379	X153CrMoV12	D2	K110	ASTM A681	T30402

Chemical Analysis

C	Si	Mn	Cr	Mo	V
1.55	0.3	0.4	11.9	0.8	0.8

Colour Code: Green/Red



Sizes

Rounds (mm)

15	20	22	25	30	32.5	35	40	45	50
55	57	60	65	70	75	80	90	100	105
110	120	130	140	150	160	170	180	200	220
250	270	290	305	310					

Squares (mm)

50 x 50	60 x 60	70 x 70	80 x 80	90 x 90	100 x 100	120 x 120	130 x 130	140 x 140	150 x 150
160 x 160	170 x 170	180 x 180	190 x 190	200 x 200	205 x 205	250 x 250	2 1/2	2 3/4	3

Flats (mm)

50 x 25	60 x 10	60 x 30	70 x 25	70 x 60	80 x 40	90 x 40	90 x 70	100 x 10	100 x 30
100 x 40	100 x 50	100 x 60	100 x 70	100 x 80	120 x 50	120 x 60	150 x 30	150 x 40	150 x 50
150 x 60	150 x 70	160 x 40	160 x 60	160 x 120	180 x 50	180 x 60	180 x 100	185 x 155	200 x 50
200 x 60	200 x 150	248 x 80	250 x 100	250 x 200	300 x 80	300 x 100	350 x 90	400 x 100	500 x 100

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

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Tool Steel

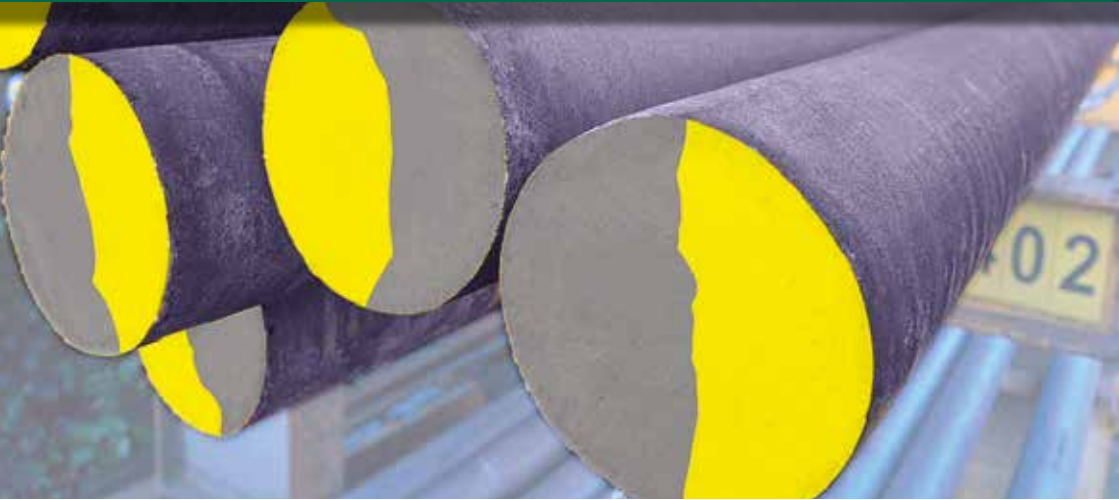
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H13 Tool Steel Bar



H-13 Tool Steel Bar is the most popular and most versatile, hot work tool steel, providing a good balance of toughness, heat check resistance, high-temperature strength and moderate wear resistance.

Applications include: Tools used in the processing of light metal alloys, hot extrusion tools, die casting tools, forming dies, die inserts, hot shear knives and tools for the plastics industry.

Specification

Steel Number	Steel Name	Grade	Bohler	UNS	Material Standard
1.2344	X40CrMoV5-1	H 13	W302	T20813	ASTM A681

Chemical Analysis

C	Si	Mn	Cr	Mo	V	P	S
0.40	1.00	0.35	5.30	1.40	1.0	0.03	0.03

Sizes: Rounds (mm)

20.50	25.40	30.00	32.80	35.00	40.00	45.00	50.00	50.80	60.80
63.50	70.00	76.00	81.00	86.00	91.00	96.00	100.00	101.60	110.00
126.50	150.00	175.00	200.00						

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Colour Code: Yellow/Grey



P20 Tool Steel Bar



P20 (1.2311) is a pre-hardened 28-32 HRC, high tensile tool steel. Uniform hardness is distributed evenly in large cross-sections and although pre-hardened P20 is still capable of being machined and of giving a good polished finish. Applications include: Plastic Moulds, backers, bolsters, die holders, shafts and wear strips.

P20+S (1.2312) is a pre-hardened 28-32HRC, high tensile tool steel with higher sulphur content. The addition of sulphur to this grade provides much-improved machinability but makes it unsuitable for applications requiring a fine polished finish. Applications include Large mould frames and large bolsters.

P20+N (1.2738) is a pre-hardened 28-32 HRC tool steel with added nickel. The nickel ensures consistent hardness through large sections. This grade is easy to polish and readily machinable. Suitable for hard chrome plating and for nitriding. Applications include: Pressing and injection moulding tools, tool sections exceeding 400mm thick.

Specification

Steel Number	Steel Name	Grade	Bohler	BS 970 1983
1.2311	40CrMnNiMo8-6	P20	M200	-

Chemical Analysis

C	Si	Mn	Cr	Mo	S	P
1.40	0.30	1.50	1.90	0.20	0.30	0.30

Sizes: Plate Thickness (mm)

20.00	25.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00
110.00	120.00	130.00	140.00	150.00	160.00	170.00	180.00	190.00	200.00
210.00									

Colour Code: White/Black



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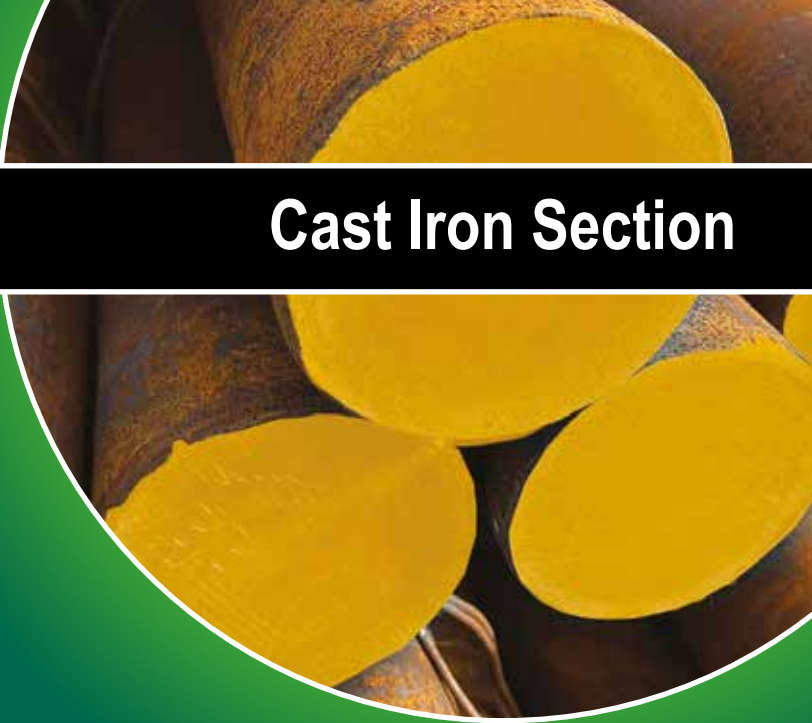
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Cast Iron Section

This section includes:

Cast Iron Bar G250	116
Ni-Resist Bar	117
SG Ductile Iron Bar GGG40	118

Cast Iron Bar G250



Normally supplied as cast in bar form. Cast iron is widely used in many industries to produce an array of products including cylinder blocks, gears, camshafts, flywheels, glass moulds, hydraulic ramparts, pistons, machine slideways, pumps, valves and rotors etc.

Specification

Steel Number	Steel Name	Grade	BS 1452 1990	Material Standard
0.6025	EN-GJL-250	250	Grade 250	EN 1561

Chemical Analysis

C	Si	Mn	S	P	Fe
2.8/3.6	1.8/2.9	.40/.70	.10max	.30max	Bal

Sizes: Rounds (mm)

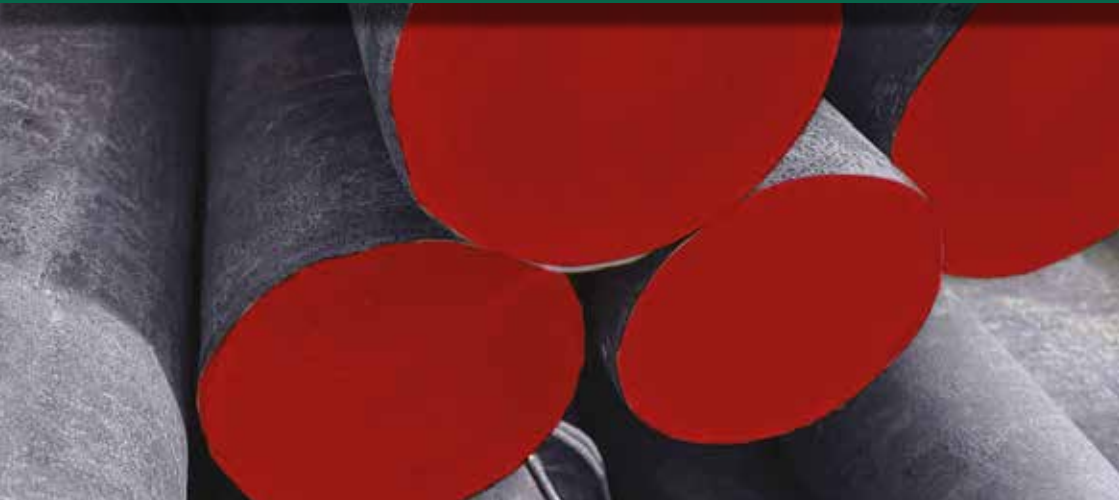
20	25	30	45	50	55	60	65	70	75
80	85	90	95	100	105	110	115	120	125
140	145	150	160	170	180	190	200	210	220
230	240	250	260	270	280	300	330	350	400

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Colour Code: Orange



Ni-Resist Bar



Ni-Resist is a high nickel-metals used to resist acid, caustic and salt solutions. Ni-Resist has an austenitic structure matrix due to alloy and Nickel being present along with approx. 10% carbide.

Ni-Resist offers excellent resistance to heat, corrosion and wear, without being magnetic while retaining its machinability. It has the same coefficient of expansion as aluminium.

Typical applications: Parts for use in seawater, sulphuric acid, hydrochloric acid and petroleum refining. Valve guides, insecticide pumps, flood gates, piston ring inserts, seawater valves and pump bodies.

Specification

Steel Number	UNS	Symbol	Material Standard
201	F41000	NiCuCr1562	ASTM A436

Chemical Analysis

C	Si	Mn	Ni	Cu	Ch	S
3.0	.10-2.8	.50-1.50	13.5-17.5	5.5-7.5	1.5-2.5	0.12

Sizes: Rounds (mm) Dia

38.10	50.80	57.15	63.50	76.20	82.55	88.90	101.60	114.30	127.00
152.40	165.00	203.20	212						

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Colour Code: Red



SG Ductile Iron Bar GGG40



Ductile iron is specifically useful in many automotive components, where strength needs surpass that of aluminium but do not necessarily require steel. Other major industrial applications include pipework, oil well pumps, components in hydraulic rams for agriculture and yellow goods industries.

While most varieties of cast iron are brittle, ductile iron has much more impact and fatigue resistance. Weldability is considered fair to poor as compared to low carbon steels and advice should be taken from a welding consumable supplier.

Specification

Steel Number	Steel Name	Grade	ATSM	BS 1452 1990	Symbol	Material Standard
0.7040	EN-GJS-400	GGG 40	65 45 12	420/12	ASTM A536	EN1563

Chemical Analysis

C	Si	Mn	S	P	Mg	Fe
3.25 - 3.70	1.80/2.90	.40/.70	0.005/0.20	0.015-0.08	0.04-0.07	Balance

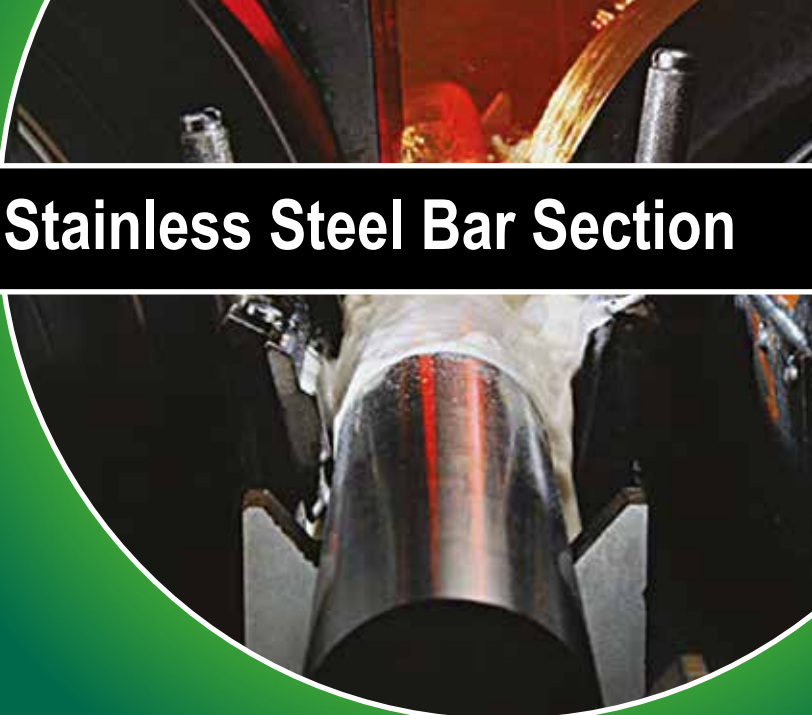
Sizes: Rounds (mm)

40	45	50	55	60	65	70	75	80	85
90	95	100	105	110	115	120	125	140	145
150	160	170	180						

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Colour Code: Red/Dark Yellow





Ground Stainless Steel Bar Section

This section includes:

Ground Stainless Steel Bar 120

Ground Stainless Steel Bar



Impact Ireland Ltd. has been appointed as the exclusive sales agent and distributor of precision bar products to the medical device market in the Republic of Ireland and the United Kingdom for Boston Centerless.

Since 1958, Boston Centerless has been known as the proven and trusted leader in the manufacturing and distribution of precision bar materials. Today, Boston Centerless not only remains the best precision bar supplier in the world, but they have expanded their capabilities and service offering to bring a whole new level of value to their customers.

AccuRod® Precision Bar

Boston Centerless supplies AccuRod® precision ground bar materials for close tolerance machining applications. With over 30 thru-feed centerless grinders, we have the capacity to provide fast lead times and handle large volume contracts. Boston Centerless provides the most consistent diameter tolerance, roundness and straightness in the industry. They supply stainless steel, medical alloys, titanium, alloy and carbon steels, plastics and more.



Customer Benefits from AccuRod®

- Manufactured with premium alloys for superior machinability
- Dual chamfered ends – to facilitate bar feeding
- Maximize operator productivity – enables operator to run multiple machines
- Consistently higher quality finished components
- Less scrap / rework
- Improved material yields
- Longer tool life
- Less machine downtime
- Lights-out manufacturing



Implantable and Instrument Grade Materials

Boston Centerless supplies material to just about every segment of the Medical Device industry from Spine and Trauma, to Orthopedic and Dental – they have it all!

Typical applications include:

- Bone Screws
- Intramedullary Nails
- Fixation Pins
- External Fixations
- Dental Implants
- Cutting Tools & Scrapers



Material most commonly sourced from our Medical Device customer Base

BioDur, TrimRite, Custom 455 and Custom 465 are registered trademarks of CRS Holdings, Inc., a subsidiary of Carpenter Technology Corporation.

Ground
Stainless steel

Implantable Grade Materials from .031” through 3.00” O.D

CoCrMo Alloy	ASTM F1537
Ti 6AL-4V ELI	ASTM F136
L605	AMS 5537,AMS 5796
316LS/LVM Implant Quality F 138	ASTM F138
22Cr-13Ni-5Mn Stainless	AMS 5764C
MP35N	AMS 5844,AMS 5845
200/140	30.0

Instrument Grade Materials from .031” through 3.00” O.D.

BioDur® TrimRite® Stainless	ASTM A276
Custom 455® Stainless	AMS 5617,ASTM A693
Custom 465® Stainless	AMS 5936,ASTM A693
Stainless 17-4 PH Type 630	ASTM A693, Grade 630 & A564
Stainless 17-4 PH Cond. H900	ASTM A693, Grade 630 & A564
303 Stainless	ASTM A582,AMS 5640
304 Stainless	ASTM A276
416 Cond. H (Rc 32-38) Stainless	ASTM A582
420 Stainless	ASTM A276
420 Modified	Per customer requirement
440A Stainless	ASTM A276
440C Stainless	ASTM A276

Technical Information

	12 ft. bars	Cut-lengths
Diameters:	.040 to 3.00"	.005" to 3.00"
Diameter Tolerances:	to .0001"	to .000040" (40 millionths)
Roundness:	to .000020" (20 millionths)	to .000020" (20 millionths)
Straightness	to .003" per ft.	to .0005" per ft.
Surface Finish	to 8 Ra	to 2 Ra



Technical Information Section



This section includes:

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Technical Information

Conversion Factors

To Convert	Multiply By
Across Flat Hexagon to Diameter	1.155
Centimetres to Inches	0.3937
Feet to Metres	0.3048
Inches to Centimetres	2.54
Kilograms to Pounds	2.205
Kilos per square mm to Tons per square Inch	0.635
Kilograms to Tons	0.0009
Millimetres to Inches	0.0394
Metres to Feet	3.281
Metres to Yards	1.094
Pounds to Kilograms	0.4536
Tons to Kilograms	1016
Tons per square Inch to Kilos per square mm	1.575
Tons to Tonnes	1.016
US short Tons to Tonnes	0.907

RELATED STEEL SPECIFICATIONS

Carbon & Carbon Manganese Freecutting Steels

Steel No. (Werkstoff No.)	Steel Name	BS 970 1991	BS 970 1955	AISI/SAE
1.0723	15 S 20	210M15	En32M	1117
1.0727	45 S 20	212A42	En8DM	1144
1.0727	45 S 20	226M44	En8DM	1144
1.0715	9 SMn 28	230M07	En1A	1214
1.0718	9 SMnPb 28	230M07Pb	En1APb	12L14

Carbon Steels

Steel No. (Werkstoff No.)	Steel Name	BS 970 1991	BS 970 1955	AISI/SAE
1.0401	C 15	080A15	En3B	1016
1.0402	C 22	070M20	En3B	1020
1.0535	C 55	070M55	En9	1055
1.1141	C 15	080A15	En3B	1016
1.1180	Cm 35	080A32	En5C	1035
1.1180	Cm 35	080A35	En8A	1035
1.1186	Ck 40	080M40	En8	1040
-	-	080A42	En8D	1042
1.1730	C45	080A47	En43B	1046
1.0535	C 55	080A57	-	1055
1.1191	Ck 45	-	-	1045

Carbon Steels

Steel No. (Werkstoff No.)	Steel Name	BS 970 1991	BS 970 1955	AISI/SAE
I.3505	100 Cr 6	-	En31	5210
I.7131	16 MnCr 5	590A15	-	-
-	-	605M36	En16	-
-	-	606M36	En16M	-
-	-	635M15	En351	-
-	-	637M17	En352	-
I.5752	14 NiCr 14	655M13	En36	3415
-	-	665M17	En34	4615
-	-	-	-	4130
I.7225	42 CrMo 4	-	-	4140
I.7361	32 CrMo 12	722M24	En40B	-
I.8159	50 CrV 4	-	En47	6150
I.6543	21 NiCrMo 22	805A20	-	8620
I.6523	21 NiCrMo 2	805M17	En361	8617
I.6543	21 NiCrMo 22	805M20	En362	8620
-	-	815M17	En353	-
I.6565	40 CrNiMo 6	817M40	En24	4340
-	-	820M17	En354	-
-	-	822M17	En355	-
I.6743	32 NiCrMo 10 4	826M31	En25	-
I.6745	40 NiCrMo 10 5	826M40	En26	-
I.6723	15 NiCrMo 16 5	835M15	En39B	-
I.6747	30 NiCrMo 16 6	-	En30B	-
I.8523	39 CrMoV 13 9	897M39	En40C	-
I.8509	41 CrAlMo 7	905M39	En41B	-

Stainless & Heat Resisting Steels

Steel No. (Werkstoff No.)	Steel Name	BS 970 1991	BS 970 1955	AISI/SAE
I.4305	X10 CrNiS 18 9	303S31	En58M	303
I.4305	X10 CrNiS 18 9	303S42	En58AM	303Se
I.4306	X2 CrNi 19 11	304S11	-	304L
I.4301	X2 CrNi 18 10	304S15	En58E	304
I.4845	X12 CrNi 25 21	310S31	-	310
I.4404	X2 CrNiMo 17 13 2	316S11		316L
I.4401	X5 CrNiMo 17 12 2	316S31		316
I.4571	X6 CrNiMoTi 17 12 2	320S31	316Ti	1042
I.4541	X2 CrNiTi 18 10	321S31	-	321
I.4550	X6 CrNiNb 18 10	347S31	-	347
I.4006	X10 Cr 13	410S21	En56A	410S
I.4005	X12 CrS 13	416S21	En56AM	416
-	-	416S41	En56AM	416Se
I.4021	X20 Cr 13	420S29	En56B	420
I.4028	-	420S37	En56C	-
I.4057	X20 CrNi 17 2	431S29	En57	431

RELATIVE MACHINABILITY INDEX

BS 970 1991/1983	En/AISI No.	Index
230M07	En1a	100
230M07Pb	En1aPb	130
230M07 PbTe	En1aPbTe	175
220M07	En1A	95
080A15/070M20	En3B	55
080A15 Pb/070M20 Pb	En3B Pb	70
210M15	En32M	70
210M15 Pb	En32M Pb	95
214M15	En202	80
080M40	En8	44
080M40 Pb	En8 Pb	58
212A42	En8DM	58
212A42 Pb	En8DM Pb	70
226M44	Usacut 45	65
150M19	En14A	54
070M55	En9	33
606M36T	En16MT	38
-	Usacut 55T	44
605M36T	En16T	30
605M36T	En16T	34
605M36T Pb	En16T Pb	38
708M40T	En19T	25
708M40T	En19T	30
817M40T	En24T	25
817M40T	En24T	30
817M40 Annealed	En24 Annealed	30
817M40 Annealed	En24 Annealed	34
665M17	En34	42
655M13	En36	36
655M13	En36	43
635M15	En35I	44
635M15	En35I	50
805M20	AISI 8620	44
805M20	AISI8620	50
805M20 Pb	AISI 8620 Pb	54
722M24T	En40 BT	22
303S31	En58AM	45
303S42	En58AM/K.E. 303Se	52
416S21	En56AM	68
416S41	En56AMR/K.E. 416Se	74
316S11	En58J	33
316S11	En58J	36
326S36	En58JM/K.E. 316Se	42
431S29	En57	30
441S49	En57T/K.E. 431Se	45

ISO TOLERANCES

The tolerances shown in this table are normally applied to metric sizes of drawn, turned and ground finish bright steel bars.

Tolerances in millimetres.

The total tolerance is taken under:

Nominal Sizes (mm)	h11	h10	h9	h8	h7
>1 to 3	0.060	0.040	0.025	0.014	0.010
>3 to 6	0.075	0.048	0.030	0.018	0.012
>6 to 10	0.090	0.058	0.036	0.022	0.015
>10 to 18	0.110	0.070	0.043	0.027	0.018
>18 to 30	0.130	0.084	0.052	0.033	0.021
>30 to 50	0.160	0.100	0.062	0.039	0.025
>50 to 80	0.190	0.120	0.074	0.046	0.030
>80 to 120	0.220	0.140	0.087	0.054	0.035
>120 to 180	0.250	0.160	0.100	0.063	0.040

The tolerances shown in this table are normally applied to imperial sizes of drawn, turned and ground finish bright steel bars.

Tolerances in Inches.

The total tolerance is taken under:

Nominal Sizes (inch)	h11	h10	h9	h8	h7
>3/64 to 1/8	0.00240	0.00157	0.00098	0.00055	0.00039
>1/8 to 1 5/64	0.00295	0.00189	0.00118	0.00071	0.00047
>15/64 to 2 5/64	0.00354	0.00228	0.00142	0.00087	0.00059
>25/64 to 4 5/64	0.00433	0.00275	0.00169	0.00106	0.00071
>45/64 to 1 3/16	0.00511	0.00331	0.00205	0.00130	0.00082
>1 3/16 to 2	0.00629	0.00393	0.00244	0.00153	0.00098
>2 to 3 1/8	0.00748	0.00474	0.00291	0.00181	0.00118
>3 1/8 to 4	0.00866	0.00551	0.00342	0.00213	0.00137
>4 to 7 3/32	0.00984	0.00629	0.00393	0.00248	0.00157

TENSILE STRENGTH RANGES

Tensile strength for the various specifications of hardened and tempered material in BS 970 are designated with the reference symbols P to Z.

Reference Symbol	Tensile Strength N/mm ² *	Tensile Strength tons/sq. in.
P	550-700	35-45
Q	625-775	45-50
R	700-850	45-55
S	775-925	50-60
T	850-1000	55-65
U	925-1075	60-70
V	1000-1150	65-75
W	1075-1225	70-80
X	1150-1300	75-85
Y	1225-1375	80-90
Z	1550min	100min

AMERICAN A.I.S.I./S.A.E. STEEL SPECIFICATIONS

Drawings issued by the European subsidiaries of United States companies often quote AISI/SAE numbers and the list below details some of those likely to be encountered. The nearest equivalent or related British Specification is shown in the table.

AISI/SAE	BS970	AISI/SAE	BS970
1012	040A12	1016	080A15
1020	070M20	1040	080A40
1042	080A42	1046	080A47
1055	070M55	1060	060A62
1065	080A67	1113	220M07
1117	210M15	1137	216M36
1144	226M44	1213	230M07
12L14	230M07(Pb)	1524	150M19
3415	655M13	4140	708M40
4142	708A42	4340	817M40
4615	665M17	4620	665M20
5015	523M15	5140	530M40
8617	805M17	8620	805M20
8622	805M22		

TECHNICAL INFORMATION

Selecting the Right Steel

The current standards for engineering steels contain several hundred specifications; This presents a wide and sometimes confusing choice to the designer or steel specifier. The harmonization of European Steel Standards has led to the introduction of a further range of steels which, until such time as they have fully replaced national standards, may add to the problem.

In practice a relatively narrow range of specifications are in general use for the majority of mechanical engineering applications. Impact Ireland (Metals) Ltd. stock range, which is based on a demand pattern built up over many years, includes most of these steels, full details of which are contained within the pages of this brochure.

To assist users in the selection of steel, the main product groups are shown below together with a selection of the relevant BS 970 specifications. Where applicable, details are also given of the harmonized European and American SAE/AISI steels. Comment is also made on the characteristics of the steel and typical application to which they may be applied. Engineering steel bars are available bright drawn, turned or ground and black hot rolled, the choice depending on the size and type of component, machining operation, surface finish, production run or other considerations.

Low Carbon Freecutting Steels

The most popular type of steel for the production of turned parts and lightly stressed components. Commonly used where machinability, surface finish and output are important factors.

The principal BS 970 specification is 230M07 either leaded or unleaded. European Standard 11SMn30 and 11SMnPb30. American AISI/SAE 1213, 12L14.

Low Carbon Steels

A group that includes the generic term mild steels. Used for many light stressed components and depending on the condition and form of supply, for welding, bending, forming and engineering applications.

The range of specifications includes BS970: 040A10, 045M10, 080A15, 070M20, European Standard EN 10083-INC22E. American AISI/SAE 1010, 1016, 1020.

Carbon and Carbon Manganese Case-Hardening Steels

Chosen for applications where it is necessary for the components to have a hard wear resisting surface with a tough supporting core, but a tensile strength is not specified. After machining it is necessary to carburize

and harden the parts when figures of 59/62 HRC are attainable.

Typical specifications – BS 970: 045A10, 045M10, 080M15, 210M15, 214M15, European Standard C15E, C16E, 10S20, 15S14, American AISI/SAE 1010, 1016, 1117, 1118.

Medium Carbon & Carbon Manganese Steels

Offering greater strength than mild steels they respond to heat treatment and include types suitable for induction and flame hardening. Depending on analysis and ruling section, tensile strengths in the range 850-1000 N/mm² may be attained although 700-850 N/mm² is more common. Freecutting grades are available. Applications include gears, racks, pinions shafts, rollers, bolts, studs, nuts etc.

Specifications include BS970: 080M30, 080M40, 080A42, 080M50, 070M55, 150M36, European Standard EN 10083-1 c40e, c45e, c50e, c35e, 28mN6, American AISI/SAE 1030, 1040, 1042, 1335.

Alloy Case-Hardening Steels

As in the case of carbon case-hardening steels, alloy grades are specified when a hard wear resisting surface is required. As a result of the alloying elements, superior mechanical properties are achieved after heat treatment. The choice of steel will depend on the ruling section and the properties required for the component. Typical applications include gears, cams, rollers, transmission components and other highly stressed parts.

Specifications include BS970: 635m15, 655m13, 665m17, 805m20, 832m13. European Standard 16MnCr5, 16NiCr4, 15NiCr13, 20NiCrMo2-2. American AISI/SAE 3415, 4615, 8620.

Alloy Direct Hardening Steels

Steels in this group contain two or more of the alloying element nickel, chromium, molybdenum, vanadium. Bars can be supplied in the softened condition where, after machining the components can be hardened and tempered to the required mechanical properties or supplied in the finally heat treated condition where the components can be put into service without further heat treatment. Direct hardening alloy steels are used for applications where high strength and resistance to shock is an important requirement. For increased surface hardness many of the specifications are suitable for surface hardening.

TECHNICAL INFORMATION Contd

Typical specifications – BS 970: 605M36, 708M40, 817M40, 826M40. European Standard EN 10083-1: 41Cr4, 42CrMo4, 34CrNiMo6. American AISI/SAE: 4140, 4340.

Stainless Steels

There are three main types of stainless steel: Martensitic – Ferritic – Austenitic.

Freecutting grades of Martensitic and Austenitic are available which offer considerable machining advantages, particularly for the production of repetition turned parts. Either selenium or sulphur is normally used as the freecutting additive.

Martensitic stainless steels can be hardened and tempered to give tensile strengths in the range 550-1000N/mm². Typical applications include fasteners, valves, shafts, spindles, cutlery, and surgical instruments.

Specifications include- BS 970: 410S21, 420S29, 420S45, 431S29.

Freecutting grades 416S21, 416S41, 416S37, 441S49.

Ferritic stainless steels are more common in strip and sheet form where applications include domestic and automotive trim, food processing and catering equipment, exhaust systems etc. They have good ductility and are easily formed.

Typical specifications BS 970: 403S17, 430S17.

Austenitic stainless steels cover a wide range of specifications. Austenitic grades offer the highest resistance to corrosion and are used for components in the food, chemical, oil & gas, medical, surgical, pharmaceutical as well as domestic and general. Austenitic grades are non magnetic and cannot be hardened and tempered in the normal manner but do work harden.

Specifications include BS 971: 302S31, 304S15, 316S11, 316S31, 320S31, 321S31,

Freecutting grades include 303S31, 325S31, 303S42, 326S36.

UNDERSTANDING THE HEAT TREATMENT OF STEELS

Many changes occur when steel is subjected to heat. There are different heat treatment processes which are listed below:

NORMALISING:	Heating to a suitable temperature, between 800-900 Deg C, according to analysis, holding at temperature followed by cooling in still air. Relieves internal stresses, refines the grain size and improves mechanical properties.
ANNEALING:	Heating and holding at a suitable temperature and cooling slowly in the furnace with the object of softening the steel, improving machinability and cold working properties.
SPHEROIDISING:	A form of annealing often used in high carbon steels with the object of obtaining the softest possible state to assist machinability.
STRESS RELIEVING:	Frequently carried out after rough machining or cold work to remove stresses. It is usually carried out at a temperature of 600-650 Deg C.
HARDENING:	Heating to a temperature slightly above the critical range, soaking for sufficient time at that temperature followed by quenching in a suitable media such as air, oil or water.
TEMPERING:	Carried out immediately after hardening to relieve stresses, remove brittleness and reduce hardness to the required range. Usually carried out between 150-650 Deg C. Cool in still air or quench.
NITRIDING:	A process for producing a very hard case by the absorption of nitrogen into the surface of the steel. depending on the specification of the steel, hardness figures up to 1100 VPN can be attained.
CARBURISING:	The diffusion of carbon into the surface of a steel that is low in carbon by heating in a solid, liquid or gaseous medium, containing carbon at a temperature around 900 Deg C.
INDUCTION HARDENING:	A surface hardening process where a component is heated by high frequency induction followed by immediate quenching. The surface hardness will depend on the carbon content of the steel. For ideal results this is usually in the range 0.40% - 0.45% C.

HARDNESS CONVERSION TABLE

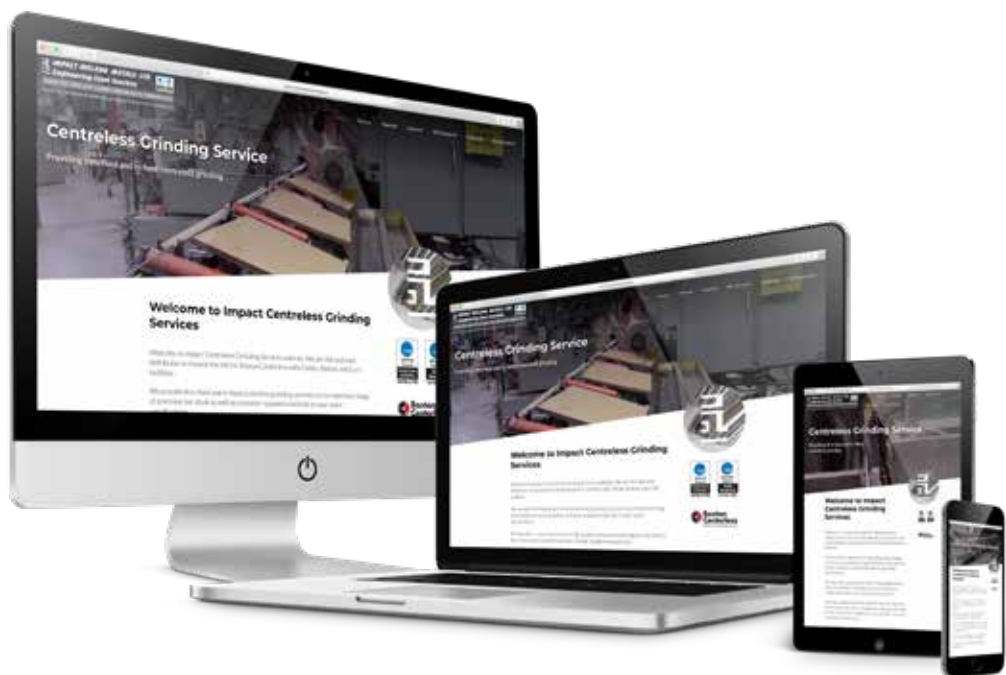
Approx. HV - HRC and HRC-HV-HB-HRA-HRB-Rm for carbon / alloy steels.

HV	HRC	HV	HRC	HV	HRC	HV	HRC	HV	HRC
2270	85	1950	81	1633	77	1323	73	1004	69
2190	84	1865	80	1556	76	1245	72	940	68
2110	83	1787	79	1478	75	1160	71	920	67,5
2030	82	1710	78	1400	74	1076	70	900	67

HRC	HV	HB	HRA	Rm	HRC	HV	HB	HRA	Rm
Diamond	Vickers	Brinell	Diamond	N/mm ²	Ball	Vickers	Brinell	Diamond	N/mm ²
penetrator	30	3000 Kgf	penetrator	MPa	1/16"	30	3000 Kgf	penetrator	MPa
68	940	-	85.6	-	100	240	240	61.5	800
67	900	-	85.0	-	99	234	234	60.9	785
66	865	-	84.5	-	98	228	228	60.2	750
65	832	739	83.9	-	97	222	222	59.5	715
64	800	722	83.4	-	96	216	216	58.9	705
63	772	706	82.8	-	95	210	210	58.3	690
62	746	688	82.3	-	94	205	205	57.6	675
61	720	670	81.8	-	93	200	200	57.0	650
60	697	654	81.2	-	92	195	195	56.4	635
59	674	634	80.7	2420	91	190	190	55.8	620
58	653	615	80.1	2330	90	185	185	55.2	615
57	633	595	79.6	2240	91	190	190	55.8	620
56	613	577	79.0	2160	88	176	176	54.0	590
55	595	560	78.5	2070	87	172	172	53.4	580
54	577	543	78.0	2010	86	169	169	52.8	570
53	560	525	77.4	1950	85	165	165	52.3	565
52	544	512	76.8	1880	84	162	162	51.7	560
51	528	496	76.3	1820	83	159	159	51.1	550
50	513	482	75.9	1760	82	156	156	50.6	530
49	498	468	75.2	1700	81	153	153	50.0	505
48	484	455	74.7	1640	80	150	150	49.5	495
47	471	442	74.1	1580	79	147	147	48.9	485

HARDNESS CONVERSION TABLE Contd

HRC	HV	HB	HRA	Rm	HRC	HV	HB	HRA	Rm
Diamond	Vickers	Brinell	Diamond	N/mm ²	Ball	Vickers	Brinell	Diamond	N/mm ²
penetrator	30	3000 Kgf	penetrator	MPa	1/16"	30	3000 Kgf	penetrator	MPa
46	458	432	73.6	1520	78	144	144	48.4	475
45	446	421	73.1	1480	77	141	141	47.9	470
44	434	409	72.5	1430	76	139	139	47.3	460
43	423	400	72.0	1390	75	137	137	46.8	455
42	412	390	71.5	1340	74	135	135	46.3	450
41	402	381	70.9	1300	73	132	132	45.8	440
40	392	371	70.4	1250	72	130	130	45.3	435
39	382	362	69.9	1220	71	127	127	44.8	425
38	372	353	69.4	1180	70	125	125	44.3	420
37	363	344	68.9	1140	69	123	123	43.8	415
36	354	336	68.4	1110	68	121	121	43.3	405
35	345	327	67.9	1080	67	119	119	42.8	400
34	336	319	67.4	1050	66	117	117	42.3	395
33	327	311	66.8	1030	65	116	116	41.8	385
32	318	301	66.3	1010	64	114	114	41.4	-
31	310	294	65.8	970	63	112	112	40.9	-
30	302	286	65.3	950	62	110	110	40.4	370
29	294	279	64.6	930	61	108	108	40.0	-
28	286	271	64.3	900	60	107	107	39.5	-
27	279	264	63.8	880	59	106	106	39.0	360
26	272	258	63.3	860	58	104	104	38.6	-
25	266	253	62.8	850	57	103	103	38.1	350
24	260	247	62.4	820	56	101	101	37.7	-
23	254	243	62.0	810	55	100	100	37.2	340
22	248	237	61.5	790	54	-	-	36.8	-
21	243	231	61.0	770	51	-	94	35.5	330
20	238	226	60.5	760	49	-	92	34.6	320



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Engineering Steel Stockist



STAINLESS STEELS - NICKEL ALLOYS - ALUMINIUM - ENGINEERING PLASTICS - ENGINEERING STEELS

EXCLUSIVE DISTRIBUTOR IN IRELAND & THE UK FOR BOSTON CENTERLESS

Technical
Information

COLOUR CODE CHART

Colour	Code	Grade	Description
STAINLESS STEEL			
Yellow/White		303S31, AISI 303, 1.4305	Free-cutting stainless steel
Red/White		304S11, AISI 304L, 1.4301/1.4307	Lower Carbon content than 303. More suitable for welding parts.
Green/White		316S11, AISI 316L, 1.4404/1.4401	Designed for use in severely corrosive conditions, suitable for welding.
Black/Brown		410S21, AISI 410, 1.4006	Martensitic stainless steel. High mechanical properties after heat treatment.
Red/Brown		416S21, AISI 416, 1.4005	Martensitic stainless steel. Good machinability used unhardened or hardened.
Green/White		17-4PH, 1.4542	Precipitation hardened stainless steel.
Green/Pink		S31635, 316Ti, 1.4571	316Ti is a weldable austenitic stainless steel comparable to 316L which is the low carbon equivalent of 316.
Orange/Brown		S43100, 431S29, 1.4057	Stainless Grade 431 is a heat treatable martensitic, nickel-bearing grade with the best corrosion properties of all the martensitic grades.
Pink		S44004, 440C, 1.4125	Stainless Grade 440C is a high carbon, straight chromium, high hardenability martensitic stainless steel

ALUMINIUM			
Red		Alloy 2011	This alloy is the most often selected for use on high speed automatic lathes. It offers the following advantages: easy machining with any equipment. Longer life of cutting tools cutting area always clean due to very thin chip.
Royal Blue		Alloy 6082	This alloy has medium mechanical properties but high resistance to corrosion and is suitable for welding, hot forging and anodizing.
Royal Blue		Alloy 6063	Alloy 6063 is a widely used extrusion alloy, suitable for applications where no special strength properties are required.
Black/Yellow		Alloy 6026	This innovative alloy has been conceived, in order to meet the most recent standards for the protection of the environment. It is particularly suitable for being machined on high speed automatic lathes, good suitability for decorative and industrial hard anodizing.
Uncoded		Al99.5, 3.0255, 1050A	1050A H14 is an unalloyed non-heat treatable rolled aluminium sheet engineered for general sheet metal work where high mechanical properties are not required.
Uncoded		AlMg3, 3.535, 5754	Treadplate is generally used in flooring applications. It provides antislip safety, perfect water drainage and doesn't require any surface treatment or maintenance.

We also offer the following Alloys: 2007, 2017, 2024, 2030, 5083, 6061, 6262.

Colour	Code	Grade	Description
STEEL			
Blue		080A15, EN3B, 1.0402	A mild steel used for general engineering purposes.
Blue/Pink		S355J2, EN14A, 1.1160	Medium tensile Carbon-Manganese steel. Applications include lifting gear components, bolts, shafts and spindles.
Green		230M07, EN1A, 1.0715	Free-cutting or free machining steel. Used in automation to produce turned parts. Good tool life.
Purple		230M07Pb, EN1APb, 1.0718	Same as EN1A with the addition of lead. Not recommended for welding.
Red/Yellow		C45	This grade is commonly known as KEY STEEL. Applications include spindles, studs, levers and clamps.
Yellow		080A42/080M40, EN8, 1.1186	A medium tensile Carbon-Steel. Greater strength than mild steel.
Blue/Yellow		070M55, EN9, 1.0535	Medium Carbon-Steel bar. For oil industry applications, suitable where abrasion resistance rather than toughness is of prime importance.
White/Purple		605M36T, EN16T	Manganese-Molybdenum steel in heat treated condition. Applications include shafts, axles, bolts and nuts.
Yellow/White		708M40, EN19, 1.7225	Annealed condition Chromium-Molybdenum steel. Applications include gears, shafts, crank shaft and bolts.
White/Blue		817M40, Annealed, EN24, 1.6565	Nickel-Chromium-Molybdenum steel in the annealed condition. After heat treatment, material exhibits high resistance to wear with good ductility and shock resistance. Applications include gears, shafts, axles, etc.
White/Brown		817M40T, EN24T, 1.6565	Hardened and tempered, high resistance to wear with good ductility and shock resistance. Applications include gears, shafts, axles etc. (Condition T).
Green/Black		SAE 8620/SAE 805A20, 1.6543	Low alloy hardening steel. Applications include gears pinions, cams and shafts.

DUPLEX STAINLESS STEEL			
Green/Brown		F51 SAF 2205, 1.4462, UNS 31803	Duplex stainless steel. Good strength and corrosion resistance.
Purple/Black		F53 SAF 2507, S32750, 1.4410	High mechanical strength with corrosion resistance in marine environments.
Yellow/Brown		F55 1.4501, UNS 32760	Super duplex stainless steel. Applications include off-shore oil and gas equipment.



COLOUR CODE CHART

Colour	Code Grade	Description
TOOL STEEL		
Green/ Red	D2, 1.2379	Excellent toughness and suitable for bath nitriding, dies and punches.
White/ Black	P20, 1.2311/1.2738	Plastic mould steel for large and medium moulds.
Blue/ Grey	1.2083	Corrosion resistant tool steel. Used for Grey chemically aggressive moulding compounds and plastics containing abrasive fillers.
Blue/ Silver	01, 1.2510	Medium alloyed. Used in cutting tools, blanking and punching tools, thread cutting tools.
Yellow/ Grey	W302, H 13, 1.2344	H-13 Tool Steel is the most popular and most versatile, hot work tool steel, providing a good balance of toughness, heat check resistance, high-temperature strength and moderate wear resistance.

NICKEL ALLOYS		
White	Alloy 42 (Nilo 42) 1.3917, UNS K94100	A Nickel-Iron controlled expansion alloy containing 42% Nickel. It has a low and normally constant coefficient of thermal expansion in the 85°F (20°C) to 570°F (300°C) temperature range.
Red/ Green	Alloy C-276, 2.4819, UNS N10276	Superior corrosion resistance, especially in the corrosive areas of flues, outlet ducting and sewage treatment plants.
Black/ Green	Alloy 400 2.4360, UNS N04400	Nickel-Copper alloy which is weldable and resistant to corrosion and sea water.
Yellow/ Orange	Alloy 600 2.4816, UNS N06600	Various corrosive and high temperature applications.
Black/ Blue	Alloy 625 2.4856, UNS N06625	Excellent resistance to pitting, crevice corrosion and stress corrosion cracking. Highly resistant to a wide range of organic and mineral acids.
Blue/ Green	Alloy 718 2.4668, UNS N07718	Alloy Nickel 718 is a precipitation hardened Nickel-Chromium alloy containing significant amounts of Iron, Niobium and Molybdenum. Maintains high strength, good ductility and oxidation resistance up to high temperatures and while also having outstanding cryogenic properties. Applications include choke stems, gate valves, sub surface safety valves.

CHROME PLATED ROD		
Uncoded	CK45 or 20MnV6	Hard Chrome plated rod for hydraulic pistons

COPPER / BRONZE / BRASS		
Red	DGS1043 CuA1 10 Ni Fe4, CA104, NES 833	Aluminium-Nickel Bronze with high corrosion resistance.
White	SAE 660 AlMgSil, 3.2315	Leaded-Phosphor Bronze. General purpose machining bronze for applications such as bushes, gears, etc.
Green	HD/HC Copper Bar, C101, Cu-ETP, 2.0060	High conductivity Copper, corrosion resistant, malleable. Used for electrical conductors and also cold heading applications.

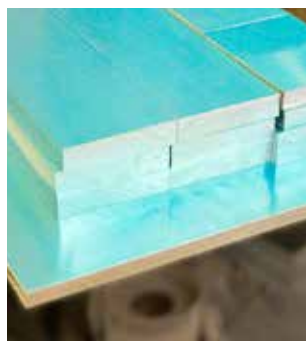
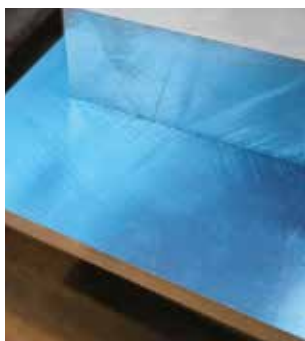
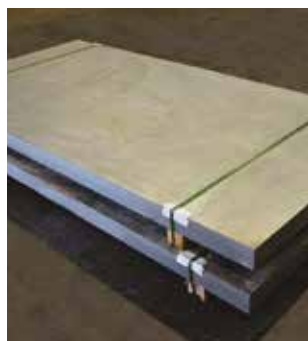
Colour	Code Grade	Description
CAST IRON		
Orange	BS 1452 GD 250, DIN 1691 GG25, 0.6025	Continuous Cast Iron Bar. Applications include pistons, gears, cams, etc.
Yellow/ Red	Ductile Iron 420/ 12 GGG40	A higher grade ductile iron with improved mechanical properties.
Red	NI Resist	Good corrosion and erosion resistance properties and good high temperature performance.

STEEL TUBES		
Uncoded	EN10305-4 DIN2391C NBK	Cold finish seamless pressure tube for hydraulic feed lines. Supplied with ends capped.
Uncoded	E355 Tube, EN10297-1, DIN 1629/ST 52	Hot finish seamless thick wall tubes or various applications in the mechanical, industrial and agricultural areas.

TITANIUM		
Blue/ Red	Titanium GR.2 Grade 3.7035	Commercially Pure Grade 2 is the most frequently employed unalloyed Titanium grade. It provides moderate strength (typical yield strength 352 MPa), combined with good ductility and formability and excellent weldability.
Blue/ Orange	Titanium GR.5 Grade 3.7165	Ti-6Al-4V (Grade 5), classed as an alpha-beta alloy, is the most widely used of the high strength Titanium alloys. The alloy combines its good mechanical strength and low density (4.42 kg/dm ³), with excellent corrosion resistance in many media.

HYDRAULIC RANGE		
Uncoded	080A42/150M19, En8D/En14A, 1.1191/1.5217	Hard Chrome bar is a chromium-plated steel product used primarily as piston rod material in standard hydraulic and pneumatic applications.
Uncoded	EN10305PT1/2, E355+SR, (Din2391/2393)	Ready to use Smooth Bore Tubes for hydraulic cylinders with smooth mirror finish bore.







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Aluminium 6082T6/T651 (Commercial Rolled Plate)



Aluminium 6082T6/T651 is a medium strength alloy with excellent corrosion resistance. It has the highest strength of 6000 series alloys. Alloy 6082T6/T651 is known as a structural alloy. In plate form, 6082 is the alloy most commonly used for machining. The addition of a large amount of manganese controls the grain structure which in turn results in a stronger alloy.

Specification

AA	HE	DIN	ISO	EN Number	Material Standard
6082	30	3.2315	Al Si Mg Mn	EN755-5	EN573-3

Chemical Analysis

Mn	Fe	Mg	Si	Cu	Zn	Ti	Cr	Other (Each)	Others (Total)	Al
0.40-1.00	0.0-0.50	0.60-1.20	0.70-1.30	0.0-0.10	0.0-0.20	0.0-0.10	0.0-0.25	0.0-0.05	0.0-0.15	Balance



Sizes

Plate Thickness (mm)

4.00	5.00	6.00	8.00	10.00	12.00	15.00	16.00	20.00	25.00
30.00	35.00	40.00	45.00	50.00	60.00	65.00	70.00	80.00	90.00
100.00	115.00	120.00	125.00	135.00	140.00	150.00	180.00	185.00	190.00
200.00									

Plate Thickness (inch)

3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/8
1 1/4	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4
3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	8	9
10	12								

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.



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Cast Machined Aluminium Plates

Impact-500 (EN AW 5083)



Characterised by excellent form stability, very good machinability, extremely low residual stresses and high strengths. The very fine-grained and homogeneous microstructure has almost no microporosity. Our aluminium cast machined plate is an ideal solution for precision parts with high demands. It has good form stability with extremely low residual stresses.

It is two sides precision machined and PVC Centered on both sides. The excellent flatness and thickness tolerance allows the shortest production times in areas such as mechanical engineering, gauge production and the construction of jigs and fixtures in all kinds of capital goods industries. This aluminium cast machined plate has been belt-sanded on both surfaces in the longitudinal direction, to receive a neutral surface, thus eliminating any milling marks.

Product Overview

- Alloy (According to EN 573-3) – AlMg4,5Mn0,7 3.3547 not heat-treatable
- Temper – Homogenised and stress relieved, o3
- Surface – Two surfaces precision-milled 0.4 µm/0.000016 in.

Tolerances

- Thickness in [mm]/[in.] – mm: 0.80/0.197 in.: 0.031 6-12.7 mm: 0.40/0.236-0.500 in.: 0.016

- Flatness [mm/m⁹]/[in.] – > 12.7 mm: 0.13/>0.50 in.: 0.005
- Plate tolerances width/length [mm]/[in.] – -0/+10, -0/+0.394
- Sawing tolerance width/length [mm]/[in.] – -0/+20, -0/+0.787

Specific Notes

- Highest reproducibility
- Very fine-grained structure
- Very good polishability
- Two surfaces precision milled
- Excellent flatness
- Stress relieved
- Elevated strength
- Very homogeneous
- Outstanding corrosion resistance

Fields of Application

Electronics, the laser, packaging and optical industries and the medical and laboratory technology.

- Displays and front frames
- Pressure plates
- Laser modules
- All kinds of base & table plates
- over plates
- Holders of microscopes and telescopes



Product Overview	Precision Machined Cast Aluminium Plates
Product Name	Impact 500 (EN AW 5083)
Alloy	AlMg4,5Mn0,7 3.3547 Not heat-treatable
Temper	Homogenised and stress relieved, o3
Surface	Two surfaces precision milled 0.4 µm/0.000016 in.

Mechanical Properties

Yield Strength Rp0,2 [MPa]/[ksi]	110-130/16-19
Ultimate Tensile Strength Rm [MPa]/[ksi]	230-290/33-42
Elongation A [%]	10-15
Hardness HBW [2.5/62.5]	68-75

Physical Properties

Density [g/cm3]/[lbs/cu.in.]	2.66-0.096
Module of elasticity [GPa]/[ksi 10 ³]	70-10.2
Electrical conductivity [m/mm2]/[% IACS]	16-18/29-32
Coefficient of thermal expansion [K-1 10-6]/[10-6/°F]	23.3/13.1
Thermal Conductivity [W/m K]/[BTU in./ft ² hr°F]	110-130/64-75
Specific heat capacity [J/kg K]/[BTU/lb°F]	900/0.212

Processing Characteristics

Form Stability	1
Machining	2
Welding (Gas/TIG/MIG/resistance/EB)	4/2/2/2/1
Corrosion Resistance (seawater/weather/stress cracking)	1/1/3
Use at temperatures (max. °C long/short therms)/ (max/ °F long/short Therms)	180/280/356/536
Anodising (technical/decorative/hard)	2/4/2
Polishing	2-3
Etching	4-5
Contact with food (according to EN 602)	yes

Tolerances

Thickness in [mm]/[in.]	+/-0.10/+/-0.004 10-15 mm:0.40/0.394-0.591 in.:0.016
Flatness [mm/m ²]/[in.]	>15 mm: 0.25/>0.591 in.:0.010
Plate tolerance width/length [mm]/[in.]	-0/+10 -0/+20/ -0/+0.394 -0/+0/787
Sawing tolerance width/length [mm]/[in.]	-0/+10 -0/+20/ -0/+0.394 -0/+0/787

Cast Machined Aluminium Plates

Impact-700 (EN AW 7021)



Strength & Precision, our cast machined aluminium plates combines both! To use all the advantages of this precision-machined cast aluminium plates in applications requiring higher strength levels, we distribute this material. The high strength values combined with very low residual stresses are unique and reduce the production time significantly. In addition, it has very good corrosion resistance because of the temper of T79. For this reason, in the last few years, it became a better alternative to standard rolled plates as they increase production profitability.

Because of the time saved, you can reduce manufacturing costs by using this material, especially in mechanical engineering and jig making.

Product Overview

- Alloy (According to EN 573-3) – AlMg4,5Mn0,7 3.3547 not heat-treatable
- Temper – Homogenised and stress relieved, o3
- Surface – Two surfaces precision-milled 0.4 $\mu\text{m}/0.000016$ in.

Tolerances

- Thickness in [mm]/[in.] – mm: 0.80/0.197 in.: 0.031 6-12.7 mm: 0.40/0.236-0.500 in.: 0.016

- Flatness [mm/m²]/[in.] – > 12.7 mm: 0.13/>0.50 in.: 0.005
- Plate tolerances width/length [mm]/[in.] – -0/+10, -0/+0.394
- Sawing tolerance width/length [mm]/[in.] – -0/+20, -0/+0.787

Specific Notes

- Precision machined surface
- High-stress relief
- Very high strength
- Very good homogeneity
- Excellent form stability
- Two surfaces precision-milled and foiled on both sides

Fields of Application

Mechanical engineering, jig making & tooling.

- Highly stressed machine components or requiring a lot of machining
- Base and table plates
- Transfer and indexing plates
- Components requiring high strength values combined with very low residual stresses
- Tool holders



Product Overview	Precision Machined Cast Aluminium Plates
Product Name	Impact 700 (EN AW 7021)
Alloy	AlZn5,5Mg1,5
Temper	Solution heat-treated, quenched, artificially aged, T79
Surface	Two surfaces precision milled 0.4 µm/0.000016 in.

Mechanical Properties

Yield Strength Rp0,2 [MPa]/[ksi]	290-340/42-47
Ultimate Tensile Strength Rm [MPa]/[ksi]	320-380/46-55
Elongation A [%]	2.5-4.5
Hardness HBW [2.5/62.5]	110-120

Physical Properties

Density [g/cm ³]/[lbs/cu.in.]	2.80/0.101
Module of elasticity [GPa]/[ksi 10 ³]	70/10.2
Electrical conductivity [m/mm ²]/[% IACS]	21-24/38-43
Coefficient of thermal expansion [K-1 10-6]/[10-6/°F]	23.0/12.9
Thermal Conductivity [W/m K]/[BTU in./ft ² hr°F]	125-155/72-90
Specific heat capacity [J/kg K]/[BTU/lb°F]	875/0.206

Processing Characteristics

Form Stability	2
Machining	1-2
Welding (Gas/TIG/MIG/resistance/EB)	6/5/2/6/1
Corrosion Resistance (seawater/weather/stress cracking)	4/3/4
Use at temperatures (max. °C long/short therms)/ (max/ °F long/short Therms)	120/140/248/284
Anodising (technical/decorative/hard)	3/6/2
Polishing	1-2
Etching	2-3
Contact with food (according to EN 602)	no

Tolerances

Thickness in [mm]/[in.]	+/-0.10/+/-0.004 10-15 mm:0.40/0.394-0.591 in.:0.016
Flatness [mm/m ²]/[in.]	>15 mm: 0.25/>0.591 in.:0.010
Plate tolerance width/length [mm]/[in.]	-0/+10 -0/+20/ -0/+0.394 -0/+0/787
Sawing tolerance width/length [mm]/[in.]	-0/+10 -0/+20/ -0/+0.394 -0/+0/787

Six-Sides Sawn Aluminium Cast Plates

Impact-506 (EN AW 5083)



Universally applicable – the solution for medium-strength applications! Because of the specific in-house heat treatment, these products get a homogeneous microstructure over the entire ingot cross-section. This is an important distinctive feature of rolled plates. The strength of rolled plates decreases towards the ingot core. These medium-strength, six-sides sawn aluminium plates are characterised by excellent form stability, very good machinability and very good corrosion resistance. Therefore it is an excellent solution for mechanical engineering and mould-making.

Restricted process parameters in the products ensure a very high reproducibility over long production periods. Available in thicknesses up to 1,070 mm / 141.73 in.

Product Overview

- Alloy (According to EN 573-3) – AlMg4,5Mn0,7 3.3547 not heat-treatable
- Temper – Homogenised and Stress relieved, O3
- Surface – Six-Sides sawn $<15 \mu\text{m}/<0.000591$ in.

Tolerances

- Thickness in [mm]/[in.] – Plates ≤ 150 mm: -0/+2.5mm Plates ≤ 5.90 in.: -0/+0.1
- Flatness [mm/m²]/[in.] – Plates > 150 mm: -0/+5mm Plates > 5.90 in.: -0/+0.2
- Plate tolerances width/length [mm]/[in.] – -0/+10, -0/+0.394
- Sawing tolerance width/length [mm]/[in.] – -0/+20, -0/+0.787

Specific Notes

- Extremely stress relieved
- Excellent form stability
- Very good corrosion resistance
- Six-sides sawn

Fields of Application

Mould-making (plastics industry / automotive industry) and mechanical engineering.

- Injection moulds for prototypes
- Deep drawing and casting moulds for the plastics industry
- Foaming and blowing moulds
- Components requiring a lot of machining



Product Overview	Six-Sides Sawn Aluminium Plates
Product Name	Impact 506 (EN AW 5083)
Alloy	AlMg4,5Mn0,73.3547 Not heat-treatable
Temper	Homogenised and stress relieved, O3
Surface	Six-sides sawn <15 µm/<0.000591 in.

Mechanical Properties

Yield Strength Rp0,2 [MPa]/[ksi]	110-130/16-19
Ultimate Tensile Strength Rm [MPa]/[ksi]	230-290/33-42
Elongation A [%]	10-15
Hardness HBW [2.5/62.5]	68-75

Physical Properties

Density [g/cm3]/[lbs/cu.in.]	2.66/0.096
Module of elasticity [GPa]/[ksi 10 ³]	70/10.2
Electrical conductivity [m/mm2]/[% IACS]	16-18/29-32
Coefficient of thermal expansion [K-1 10-6]/[10-6/°F]	23.3/13.1
Thermal Conductivity [W/m K]/[BTU in./ft ² hr°F]	110-130/64-75
Specific heat capacity [J/kg K]/[BTU/lb°F]	900/0.212

Processing Characteristics

Form Stability	1
Machining	2
Welding (Gas/TIG/MIG/resistance/EB)	4/2/2/2/1
Corrosion Resistance (seawater/weather/stress cracking)	1/1/3
Use at temperatures (max. °C long/short therms)/ (max/ °F long/short Therms)	180/280/356/536
Anodising (technical/decorative/hard)	2/4/2
Polishing	2-3
Etching	4-5
Contact with food (according to EN 602)	yes

Tolerances

Thickness in [mm]/[in.]	Plates ≤ 150 mm:-0/+2.5 mm Plates >150 mm:-0/+5 mm
Flatness [mm/m ²]/[in.]	Plates ≤ 5.90 in.-0/+0.1 Plates > 5.90 in.-0/+0.2
Plate tolerance width/length [mm]/[in.]	Thickness ≤ 150 mm = DIN ISO 2768-Im/Thickness > 150 mm = -0/+5 mm
Sawing tolerance width/length [mm]/[in.]	Thickness ≤ 5.9 in. = -0/+0.1/Thickness > 5.9 in. = -0/+0.2
Thermal Conductivity [W/m K]/[BTU in./ft ² hr°F]	110-130/64-75
Specific heat capacity [J/kg K]/[BTU/lb°F]	900/0.212

Six-Sides Sawn Aluminium Cast Plates

Impact-706 (EN AW 7021)



If the requirements towards the strength are high and the component must endure heavy loads, this is the ideal solution. The six-sides sawn cast aluminium plate is characterised by very good machinability, very high strength and very low residual stresses. Therefore it is an excellent solution for multiple applications under heavy loads in mechanical engineering and mould-making.

The very good ability for polishing leads to excellent product quality and a very long lifetime of injection and foaming moulds. Even components with excessive machining can be realised easily.

Product Overview

- Alloy (According to EN 573-3) – AlZn5,5Mg1,5
- Temper – Heat-treatable
- Surface – six-sides sawn < 15 µm/<0.000591 in.

Tolerances

- Thickness in [mm]/[in.] – Plates ≤ 150 mm:-0/+2.5mm Plates ≤ 5.90 in.: -0/+0.1
- Flatness [mm/m²]/[in.] – Plates > 150mm:-0/+5mm Plates > 5.90 in.: -0/+0.2
- Plate tolerances width/length [mm]/[in.] – -0/+10, -0/+0.394
- Sawing tolerance width/length [mm]/[in.] – -0/+20, -0/+0.787

Specific Notes

- Excellent form stability
- Stress relieved
- High strength
- Very good machinability
- Six-sides sawn

Fields of Application

Mould-making in plastics and the automotive industry.

- Injection moulds (for low and medium pressure)
- Deep drawing and casting moulds
- Foaming and blowing moulds (for low pressure)
- Tool-changing equipment
- Bearing blocks and fittings for bigger loads



Product Overview	Six-Sides Sawn Aluminium Plates
Product Name	Impact 706 (EN AW 7021)
Alloy	AlZn5,5Mg1,5 Heat Treatable
Temper	Hardened T79
Surface	Six-sides sawn <15µm/<0.000591 in.

Mechanical Properties

Yield Strength Rp0,2 [MPa]/[ksi]	290-340/42-47
Ultimate Tensile Strength Rm [MPa]/[ksi]	320-380/46-55
Elongation A [%]	2.5-4.5
Hardness HBW [2.5/62.5]	110-120

Physical Properties

Density [g/cm3]/[lbs/cu.in.]	2.80/0.101
Module of elasticity [GPa]/[ksi 10 ³]	70/10.2
Electrical conductivity [m/mm2]/[% IACS]	21-24/38-43
Coefficient of thermal expansion [K-1 10-6]/[10-6/°F]	23.0/12.9
Thermal Conductivity [W/m K]/[BTU in./ft ² hr°F]	125-155/72-90
Specific heat capacity [J/kg K]/[BTU/lb°F]	875/0.206

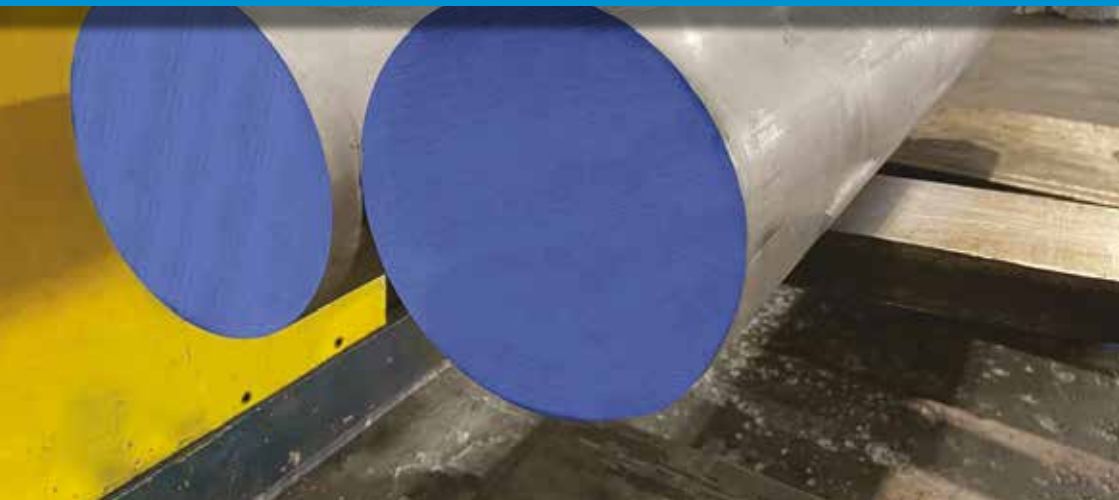
Processing Characteristics

Form Stability	2
Machining	1-2
Welding (Gas/TIG/MIG/resistance/EB)	6/5/2/6/1
Corrosion Resistance (seawater/weather/stress cracking)	4/3/4
Use at temperatures (max. °C long/short therms)/ (max/ °F long/short Therms)	120/140/248/284
Anodising (technical/decorative/hard)	3/6/2
Polishing	1-2
Etching	2-3
Contact with food (according to EN 602)	no

Tolerances

Thickness in [mm]/[in.]	Plates ≤ 150 mm:-0/+2.5 mm Plates >150 mm:-0/+5 mm
Flatness [mm/m9]/[in.]	Plates ≤ 5.90 in.: -0/+0.1 Plates > 5.90 in.: -0/+0.2
Plate tolerance width/length [mm]/[in.]	Thickness ≤ 150 mm = DIN ISO 2768-Im/Thickness > 150 mm = -0/+5 mm
Saving tolerance width/length [mm]/[in.]	Thickness ≤ 5.9 in. = -0/+0.1/Thickness > 5.9 in. = -0/+0.2

Aluminium Bar 6082T6



Aluminium Bar 6082T6 is the most common general engineering alloy. A very popular heat treatable aluminium alloy designed for all-purpose engineering work. Medium strength is matched by good welding, corrosion resistance & machinability. When bending or forming 6082T6, it is recommended to use the O or T4 temper.

6082T6 provides good machinability in the T6 temper. In plate form, 6082T6 is the Alloy most commonly used for machining.

Specification

BS and International Spec	Old BS Designation	DIN No.	W. No.	EN Number	Material Standard
6082	H30	AlMgSi1	3.2315	EN755-5	EN573-3

Chemical Analysis

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
.7-1.3	.5	.1	.421	.6-1.2	0.25	0.2	.1	REM

Colour Code: Blue



Sizes

Rounds (mm)

6.00	8.00	10.00	12.00	16.00	20.00	25.00	30.00	32.00	35.00
40.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00
90.00	100.00	110.00	120.00	130.00	140.00	150.00	180.00	200.00	220.00
240.00	260.00	280.00	310.00	340.00	360.00				

Rounds (inch)

1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4
2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2	5	5 1/2
6	6 1/2	7	7 1/2	8	8 1/2	9	9 1/2	10	10 1/2
11	11 1/2	12	12 1/2	13	14	15	16	18	20

Flats (mm)

10x3	10x4	10x5	15x3	15x4	15x5	15x6	15x8	15x10	20x3
20x4	20x5	20x6	20x8	20x10	20x12	25x2	25x3	25x4	25x5
25x6	25x8	25x10	25x12	25x15	25x20	30x2	30x3	30x4	30x5
30x6	30x8	30x10	30x12	30x15	30x20	30x25	40x2	40x3	40x4
40x5	40x6	40x10	40x12	40x15	40x20	40x25	40x30	50x2	50x3
50x4	50x5	50x6	50x8	50x10	50x12	50x15	50x20	50x25	50x30
60x3	60x4	60x5	60x6	60x8	60x10	60x12	60x15	60x20	60x25
60x30	60x40	70x5	70x6	70x8	70x10	70x12	70x15	70x20	70x25
70x40	70x50	80x5	80x6	80x8	80x10	80x12	80x15	80x20	80x25
80x30	80x50	100x5	100x6	100x8	100x10	100x12	100x15	100x20	100x25
100x50	100x80	120x10	120x12	120x15	120x20	120x25	120x30	120x40	120x50
150x10	150x15	150x20	150x25	150x30	150x40	150x50	200x10	200x12	200x15
200x20	200x25	200x30	200x40	200x50					

Flats (inch)

3/8 x 1/4	1/2 x 1/8	1/2 x 1/4	1/2 x 3/8	5/8 x 1/8	5/8 x 1/4	5/8 x 1/2	3/4 x 1/8	3/4 x 1/4	3/4 x 5/16
3/4 x 3/8	3/4 x 1/2	3/4 x 5/8	1 x 1/8	1 x 1/4	1 x 3/8	1 x 1/2	1 x 5/8	1 x 3/4	1 1/4 x 1/4
1 1/4 x 3/8	1 1/4 x 1/2	1 1/4 x 5/8	1 1/4 x 3/4	1 1/4 x 1	1 1/2 x 1/4	1 1/2 x 3/8	1 1/2 x 1/2	1 1/2 x 5/8	1 1/2 x 3/4
1 1/2 x 1	1 1/2 x 1 1/4	1 3/4 x 1/4	1 3/4 x 3/8	1 3/4 x 1/2	1 3/4 x 5/8	1 3/4 x 3/4	1 3/4 x 1	2 x 1/4	2 x 3/8
2 x 1/2	2 x 5/8	2 x 3/4	2 x 1	2 x 1 1/4	2 x 1 1/2	2 x 1 3/4	2 1/2 x 1/8	2 1/2 x 1/4	2 1/2 x 1/2
2 1/2 x 1/2	2 1/2 x 5/8	2 1/2 x 3/4	2 1/2 x 1/4	2 1/2 x 1 1/2	2 1/2 x 1 3/4	2 1/2 x 2	3 x 1/4	3 x 3/8	3 x 1/2
3 x 5/8	3 x 3/4	3 x 1	3 x 1 1/4	3 x 1 1/2	3 x 1 3/4	3 x 2	3 x 2 1/2	3 1/2 x 3/8	3 1/2 x 5/8
3 1/2 x 3/4	3 1/2 x 1	3 1/2 x 1 1/4	3 1/2 x 1 1/2	3 1/2 x 2	3 1/2 x 2 1/2	4 x 1/4	4 x 3/8	4 x 1/2	4 x 5/8
4 x 3/4	4 x 1	4 x 1 1/4	4 x 1 1/2	4 x 1 3/4	4 x 2	4 x 2 1/2	4 1/2 x 3/8	4 1/2 x 1/2	4 1/2 x 3/4
4 1/2 x 1	4 1/2 x 2	5 x 1/4	5 x 1/2	5 x 5/8	5 x 3/4	5 x 1	5 x 1 1/4	5 x 1 1/2	5 x 2
5 x 3	5 x 4	6 x 1/4	6 x 3/8	6 x 1/2	6 x 5/8	6 x 3/4	6 x 1	6 x 1 1/4	6 x 1 1/2
6 x 1 3/4	6 x 2	6 x 2 1/2	6 x 3	6 x 4	7 x 1	7 x 1 1/2	7 x 2	8 x 1/2	8 x 3/4
8 x 1	8 x 2	10 x 1	10 x 2						

Squares (mm)

6.00	8.00	10.00	12.00	15.00	20.00	25.00	30.00	35.00	40.00
45.00	50.00	60.00	70.00	75.00	80.00	100.00	110.00	120.00	140.00
160.00	180.00								

Squares (inch)

1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4
2	2 1/4	2 1/2	3	3 1/4	3 1/2	4	4 1/2	5	5 1/2
6	6 1/2	7	8	10	12				

Tubes (inch) (OD x WT)

38 x 16swg	1/2 x 18swg	1/2 x 16swg	1/2 x 10swg	5/8 x 18swg	5/8 x 16swg	5/8 x 10swg	3/4 x 18swg	3/4 x 16swg	3/4 x 10swg
7/8 x 18swg	7/8 x 16swg	1 x 18swg	1 x 16swg	1 x 10swg	1 x 3/16	1 1/8 x 18swg	1 1/8 x 16swg	1 1/8 x 10swg	1 1/4 x 18swg
1 1/4 x 16swg	1 1/4 x 12swg	1 1/4 x 10swg	1 1/4 x 3/16	1 3/8 x 16swg	1 3/8 x 10swg	1 1/2 x 18swg	1 1/2 x 16swg	1 1/2 x 10swg	1 1/2 x 3/16
1 1/2 x 1/4	1 5/8 x 16swg	1 5/8 x 10swg	1 5/8 x 3/16	1 3/4 x 16swg	1 3/4 x 10swg	1 7/8 x 10swg	2 x 16swg	2 x 10swg	2 x 3/16
2 x 1/4	2 1/4 x 16swg	2 1/4 x 10swg	2 1/2 x 16swg	2 1/2 x 10swg	2 1/2 x 3/16	2 1/2 x 3/8	2 3/4 x 10swg	3 x 16swg	3 x 12swg
3 x 10swg	3 x 3/16	3 x 1/4	3 1/2 x 16swg	3 1/2 x 1/4	4 x 16swg	4 x 12swg	4 x 10swg	4 x 1/4	4 1/2 x 10swg
4 1/2 x 1/4	5 x 10swg	5 x 1/4	5 1/2 x 1/4	6 x 10swg	6 x 1/4	6 1/2 x 1/4	6 1/2 x 1/2	6 1/2 x 3/4	6 1/2 x 1
7 x 1/4	7 x 3/8	7 x 1/2	7 x 3/4	7 x 1	7 1/2 x 1/4	7 1/2 x 1	7 1/2 x 1 1/4	8 x 1/4	8 x 3/8
8 x 1/2	8 x 3/4	8 x 1	8 x 1 1/2	8 1/2 x 1/2	8 1/2 x 3/4	8 1/2 x 1	9 x 3/8	9 x 1/2	9 x 3/4
9 x 1	9 1/2 x 3/4	9 1/2 x 1	10 x 3/16	10 x 1/2	10 x 3/4	10 x 1	10 1/2 x 3/4	10 1/2 x 1	11 x 1/2
11 x 1	12 x 1/2	12 x 3/4	12 x 1	14 x 1	16 x 1				

Equal Angle (inch)

1/2 x 1/2 x 1/16	3/4 x 1/2 x 1/16	3/4 x 1/2 x 1/8	1 x 1/2 x 1/16	1 x 1/2 x 1/8	1 x 3/4 x 1/16	1 x 3/4 x 1/8	1 1/4 x 3/4 x 1/8	1 1/4 x 1 x 1/8	1 1/2 x 1/2 x 1/8
1 1/2 x 3/4 x 1/8	1 1/2 x 1 x 1/8	1 1/2 x 1 x 3/16	1 3/4 x 3/4 x 1/8	1 3/4 x 7/8 x 1/8	2 x 1/2 x 1/8	2 x 3/4 x 1/8	2 x 1 x 1/16	2 x 1 x 1/8	2 x 1 x 3/16
2 x 1 x 1/4	2 x 1 1/4 x 1/8	2 x 1 1/4 x 1/4	2 x 1 1/2 x 1/8	2 x 1 1/2 x 3/16	2 x 1 1/2 x 1/4	2 1/2 x 1 x 1/8	2 1/2 x 1 1/2 x 1/8	2 1/2 x 1 1/2 x 3/16	
2 1/2 x 1 1/2 x 1/4	2 1/2 x 2 x 1/8	2 1/2 x 2 x 3/16	2 1/2 x 2 x 1/4	3 x 1 x 1/8	3 x 1 x 1/4	3 x 3 x 3/8	3 x 1 1/2 x 3/16	3 x 1 1/2 x 1/4	3 x 2 1/8
3 x 2 x 3/16	3 x 2 x 1/4	3 x 2 x 3/8	4 x 1 x 1/8	4 x 2 x 1/8	4 x 2 x 3/16	4 x 2 x 1/4	4 x 3 x 1/8	4 x 3 x 3/16	4 x 3 x 1/4
5 x 2 x 1/4	6 x 2 x 1/4	6 x 3 x 1/4	6 x 3 x 3/8						

Unequal Angle (inch)

$3/4 \times 3/8 \times 1/16$	$3/4 \times 1/2 \times 1/16$	$3/4 \times 1/2 \times 1/8$	$1 \times 1/2 \times 1/16$	$1 \times 1/2 \times 1/8$	$1 \times 3/4 \times 1/16$	$1 \times 3/4 \times 1/8$	$1 \times 1/4 \times 3/4 \times 1/8$	$1 \times 1/4 \times 1 \times 1/8$	$1 \times 1/2 \times 1/2 \times 1/8$
$1 \times 1/2 \times 3/4 \times 1/8$	$1 \times 1/2 \times 1 \times 3/16$	$1 \times 3/4 \times 3/4 \times 1/8$	$1 \times 3/4 \times 7/8 \times 1/8$	$2 \times 1/2 \times 1/8$	$2 \times 3/4 \times 1/8$	$2 \times 1 \times 1/16$	$2 \times 1 \times 1/8$	$2 \times 1 \times 3/16$	$2 \times 1 \times 3/16$
$2 \times 1 \times 1/4$	$2 \times 1 \times 1/4 \times 1/8$	$2 \times 1 \times 1/4 \times 1/4$	$2 \times 1 \times 1/2 \times 1/8$	$2 \times 1 \times 1/2 \times 3/16$	$2 \times 1 \times 1/2 \times 1/4$	$2 \times 1/2 \times 1 \times 1/8$	$2 \times 1/2 \times 1 \times 1/2 \times 1/8$	$2 \times 1/2 \times 1 \times 1/2 \times 3/16$	$2 \times 1/2 \times 1 \times 1/2 \times 1/4$
$2 \times 1/2 \times 2 \times 1/8$	$2 \times 1/2 \times 2 \times 3/16$	$2 \times 1/2 \times 2 \times 1/4$	$3 \times 1 \times 1/8$	$3 \times 1 \times 1/4$	$3 \times 1 \times 1/2 \times 1/8$	$3 \times 1 \times 1/2 \times 3/16$	$3 \times 1 \times 1/2 \times 1/4$	$3 \times 2 \times 1/8$	$3 \times 2 \times 3/16$
$3 \times 2 \times 1/4$	$3 \times 2 \times 3/8$	$4 \times 1 \times 1/8$	$4 \times 2 \times 1/8$	$4 \times 2 \times 3/16$	$4 \times 2 \times 1/4$	$4 \times 3 \times 3/16$	$4 \times 3 \times 1/4$	$5 \times 2 \times 1/4$	$6 \times 2 \times 1/4$
$6 \times 3 \times 1/4$	$6 \times 3 \times 3/8$								

Equal Angle (mm)

$20 \times 20 \times 2$	$20 \times 20 \times 3$	$25 \times 25 \times 2$	$25 \times 25 \times 3$	$30 \times 30 \times 2$	$30 \times 30 \times 3$	$40 \times 40 \times 2$	$40 \times 40 \times 3$	$40 \times 40 \times 4$	$40 \times 40 \times 5$
$50 \times 50 \times 2$	$50 \times 50 \times 3$	$50 \times 50 \times 5$	$50 \times 50 \times 6$	$60 \times 60 \times 6$	$70 \times 70 \times 7$	$80 \times 80 \times 8$	$100 \times 100 \times 10$		

Equal Channel (inch)

$1/2 \times 1/2 \times 1/16$	$1/2 \times 1/2 \times 1/8$	$5/8 \times 5/8 \times 1/16$	$5/8 \times 5/8 \times 1/8$	$3/4 \times 3/4 \times 1/8$	$7/8 \times 7/8 \times 1/8$	$1 \times 1 \times 1/8$	$1 \times 1 \times 3/16$	$1 \times 1/4 \times 1 \times 1/4 \times 1/8$	$1 \times 1/4 \times 1 \times 1/4 \times 3/16$
$1 \times 1/2 \times 1 \times 1/2 \times 1/8$	$1 \times 1/2 \times 1 \times 1/2 \times 3/16$	$2 \times 2 \times 1/8$	$2 \times 2 \times 1/4$						

Unequal Channel (inch)

$1 \times 1/2 \times 1/8$	$1 \times 3/4 \times 1/8$	$1 \times 1 \times 1/2 \times 1/8$	$1 \times 1/4 \times 1/2 \times 1/8$	$1 \times 1 \times 1/4 \times 3/4 \times 1/8$	$1 \times 1/4 \times 1 \times 1/8$	$1 \times 1 \times 1/2 \times 1/2 \times 1/8$	$1 \times 1/2 \times 3/4 \times 1/8$	$1 \times 1/2 \times 1 \times 1/8$	$2 \times 1 \times 1/8$
$2 \times 1 \times 3/16$	$2 \times 1 \times 1/4 \times 5/16$	$2 \times 1 \times 1/2 \times 1/4$	$2 \times 1 \times 1/2 \times 1/4 \times 5/16$	$2 \times 1/4 \times 1 \times 1/4 \times 3/16$	$2 \times 1/2 \times 1 \times 1/8$	$2 \times 1/2 \times 1 \times 1/4 \times 3/16$	$2 \times 1/2 \times 1 \times 1/2 \times 3/16$	$3 \times 1 \times 1/8$	$3 \times 1 \times 1/2 \times 1/8$
$3 \times 1 \times 1/2 \times 3/16$	$3 \times 1 \times 1/2 \times 1/4 \times 5/16$	$3 \times 2 \times 1/8$	$3 \times 2 \times 1/4 \times 5/16$	$3 \times 1/2 \times 1 \times 1/2$	$4 \times 2 \times 1/8$	$4 \times 2 \times 1/4 \times 5/16$	$4 \times 3 \times 3/8$	$5 \times 2 \times 1/4 \times 5/16$	$5 \times 2 \times 1/2 \times 1/4 \times 3/8$
$6 \times 2 \times 1/4 \times 5/16$	$6 \times 3 \times 1/4 \times 3/8$	$6 \times 3 \times 3/8 \times 1/2$	$7 \times 3 \times 3/8 \times 1/8$	$8 \times 3 \times 3/8 \times 1/2$	$8 \times 3 \times 5/16 \times 1/2$				

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.

Aluminium Bar 2011T3



Aluminium Bar 2011T3 is a copper-based aluminium alloy with added lead for improved machinability. This alloy is most often selected for high-speed automatic lathes. It offers the following advantages, easy machining with any equipment, cutting stress lower than most other alloys, longer life of cutting tools, cutting area always clean due to very thin chip.

Main applications include screws, bolts, nuts and threaded bars.

Specification

BS and International Spec	DIN No.	W. No.	EN Number	Material Standard
2011	AlCuBiPb	3.1655	EN754-3	EN573-3

Chemical Analysis

Si	Fe	Cu	Pb	Bi	Zn	Al
0.4	0.7	5-6	0.4	0.6	0.3	REM

Colour Code: Red



Sizes

Rounds (mm)

6.00	8.00	10.00	12.00	16.00	20.00	25.00	30.00	32.00	35.00
40.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00		

Rounds (inch)

1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4
2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2	5	

Hexagon (mm)

22.00	24.00	30.00							
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Hexagons (inch)

5/16	3/8	1/2	1	1.1	1.125	1.25	1.3	1.375	1.48
1.67									

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.



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Aluminium 6026T6



Aluminium 6026T6 has been updated to allow it to be used in applications that are impacted by new European environmental legislation regarding maximum allowable lead (Pb) content in finished components. This legislation particularly affects automotive and electrical applications and the chemical composition has been changed accordingly. Aluminium 6026T6 finds many applications as a replacement for AW 6262 (which has an allowable lead (Pb) content that makes it incompatible with specific elements of the new European environmental legislation).

6026T6 is especially suited to turned parts manufacture where speed and aesthetic component finish have equal importance. 6026T6 is especially recommended for such components that have anodising or superior corrosion resistance is an additional requirement.

Specification

BS and International Spec	EN Number	Material Standard
6026	EN754-3	EN573-3

Chemical Analysis

Si	Fe	Cu	Pb	Bi	Zn	Mn	Mg	Cr	Ti	Al
0.6-1.4	0.7	0.2-0.5	0.4	0.5-1.5	0.3	0.2-1	0.6-1.2	0.3	0.2	Balance

Colour Code: Black/Yellow



Sizes

Rounds (mm)

6.00	8.00	10.00	12.00	16.00	20.00	25.00	30.00	32.00	35.00
40.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00		

Rounds (inch)

1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4
2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2	5	

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.



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Aluminium Sections 6060/6063



Aluminium Sections 6060/6063 is a widely used extrusion alloy, suitable for applications where no special strength properties are required. Parts can be produced with very good surface quality, suitable for many coating operations. Typical application fields are furniture, finishing materials, windows and doors, car body finishing, façade construction, lighting columns and flagpoles, architecture, and food industry.

Tubes (inch) (OD x WT)

38 x 16swg	12 x 18swg	12 x 16swg	12 x 10swg	58 x 18swg	58 x 16swg	58 x 10swg	34 x 18swg	34 x 16swg	34 x 10swg
78 x 18swg	78 x 16swg	1 x 18swg	1 x 16swg	1 x 10swg	1 x 316	1 18 x 18swg	1 18 x 16swg	1 18 x 10swg	1 14 x 18swg
1 14 x 16swg	1 14 x 12swg	1 14 x 10swg	1 14 x 316	1 38 x 16swg	1 38 x 10swg	1 12 x 18swg	1 12 x 16swg	1 12 x 10swg	1 12 x 316
1 12 x 14	1 58 x 16swg	1 58 x 10swg	1 58 x 316	1 34 x 16swg	1 34 x 10swg	1 78 x 10swg	2 x 16swg	2 x 10swg	2 x 316
2 x 14	2 14 x 16swg	2 14 x 10swg	2 12 x 16swg	2 12 x 10swg	2 12 x 316	2 12 x 38	2 34 x 10swg	3 x 16swg	3 x 12swg
3 x 10swg	3 x 316	3 x 14	3 12 x 16swg	3 12 x 14	4 x 16swg	4 x 12swg	4 x 10swg	4 x 14	4 12 x 10swg
4 12 x 14	5 x 10swg	5 x 14	5 12 x 14	6 x 10swg	6 x 14	6 12 x 14	6 12 x 12	6 12 x 34	6 12 x 1
7 x 14	7 x 38	7 x 12	7 x 34	7 x 1	7 12 x 14	7 12 x 1	7 12 x 1 14	8 x 14	8 x 38
8 x 12	8 x 34	8 x 1	8 x 1 12	8 12 x 12	8 12 x 34	8 12 x 1	9 x 38	9 x 12	9 x 34
9 x 1	9 12 x 34	9 12 x 1	10 x 316	10 x 12	10 x 34	10 x 1	10 12 x 34	10 12 x 1	11 x 12
11 x 1	12 x 12	12 x 34	12 x 1	14 x 1	16 x 1				

Colour Code: Blue



Equal Angle (inch)

$1/2 \times 1/2 \times 1/16$	$3/4 \times 1/2 \times 1/16$	$3/4 \times 1/2 \times 1/8$	$1 \times 1/2 \times 1/16$	$1 \times 1/2 \times 1/8$	$1 \times 3/4 \times 1/16$	$1 \times 3/4 \times 1/8$	$1 \times 1/4 \times 3/4 \times 1/8$	$1 \times 1/4 \times 1 \times 1/8$	$1 \times 1/2 \times 1/2 \times 1/8$
$1 \times 1/2 \times 3/4 \times 1/8$	$1 \times 1/2 \times 1 \times 1/8$	$1 \times 1/2 \times 1 \times 3/16$	$1 \times 3/4 \times 3/4 \times 1/8$	$1 \times 3/4 \times 7/8 \times 1/8$	$2 \times 1/2 \times 1/8$	$2 \times 3/4 \times 1/8$	$2 \times 1 \times 1/16$	$2 \times 1 \times 1/8$	$2 \times 1 \times 3/16$
$2 \times 1 \times 1/4$	$2 \times 1 \times 1/4 \times 1/8$	$2 \times 1 \times 1/4 \times 1/4$	$2 \times 1 \times 1/2 \times 1/8$	$2 \times 1 \times 1/2 \times 3/16$	$2 \times 1 \times 1/2 \times 1/4$	$2 \times 1/2 \times 1 \times 1/8$	$2 \times 1/2 \times 1 \times 1/2 \times 1/8$	$2 \times 1/2 \times 1 \times 1/2 \times 3/16$	$1 \times 1/2 \times 3/16$
$2 \times 1/2 \times 1 \times 1/2 \times 1/4$	$2 \times 1/2 \times 2 \times 1/8$	$2 \times 1/2 \times 2 \times 3/16$	$2 \times 1/2 \times 2 \times 1/4$	$3 \times 1 \times 1/8$	$3 \times 1 \times 1/4$	$3 \times 3 \times 3/8$	$3 \times 1 \times 1/2 \times 3/16$	$3 \times 1 \times 1/2 \times 1/4$	$3 \times 2 \times 1/8$
$3 \times 2 \times 3/16$	$3 \times 2 \times 1/4$	$3 \times 2 \times 3/8$	$4 \times 1 \times 1/8$	$4 \times 2 \times 1/8$	$4 \times 2 \times 3/16$	$4 \times 2 \times 1/4$	$4 \times 3 \times 1/8$	$4 \times 3 \times 3/16$	$4 \times 3 \times 1/4$
$5 \times 2 \times 1/4$	$6 \times 2 \times 1/4$	$6 \times 3 \times 1/4$	$6 \times 3 \times 3/8$						

Unequal Angle (inch)

$34 \times 38 \times \frac{1}{16}$	$34 \times \frac{1}{2} \times \frac{1}{16}$	$34 \times \frac{1}{2} \times \frac{1}{8}$	$1 \times \frac{1}{2} \times \frac{1}{16}$	$1 \times \frac{1}{2} \times \frac{1}{8}$	$1 \times 34 \times \frac{1}{16}$	$1 \times 34 \times \frac{1}{8}$	$1 \times \frac{1}{4} \times 34 \times \frac{1}{8}$	$1 \times \frac{1}{4} \times 1 \times \frac{1}{8}$	$1 \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$
$1 \times \frac{1}{2} \times 34 \times \frac{1}{8}$	$1 \times \frac{1}{2} \times 1 \times \frac{1}{16}$	$1 \times 34 \times 34 \times \frac{1}{8}$	$1 \times 34 \times \frac{1}{8} \times \frac{1}{8}$	$2 \times \frac{1}{2} \times \frac{1}{8}$	$2 \times 34 \times \frac{1}{8}$	$2 \times 1 \times \frac{1}{16}$	$2 \times 1 \times \frac{1}{8}$	$2 \times 1 \times \frac{1}{16}$	$2 \times 1 \times \frac{1}{316}$
$2 \times 1 \times \frac{1}{4}$	$2 \times 1 \times \frac{1}{4} \times \frac{1}{8}$	$2 \times 1 \times \frac{1}{4} \times \frac{1}{4}$	$2 \times 1 \times \frac{1}{2} \times \frac{1}{8}$	$2 \times 1 \times \frac{1}{2} \times \frac{1}{16}$	$2 \times 1 \times \frac{1}{2} \times \frac{1}{4}$	$2 \times \frac{1}{2} \times 1 \times \frac{1}{8}$	$2 \times \frac{1}{2} \times 1 \times \frac{1}{2} \times \frac{1}{8}$	$2 \times \frac{1}{2} \times 1 \times \frac{1}{2} \times \frac{1}{316}$	
$2 \times \frac{1}{2} \times 1 \times \frac{1}{2} \times \frac{1}{4}$	$2 \times \frac{1}{2} \times 2 \times \frac{1}{8}$	$2 \times \frac{1}{2} \times 2 \times \frac{1}{316}$	$2 \times \frac{1}{2} \times 2 \times \frac{1}{4}$	$3 \times 1 \times \frac{1}{8}$	$3 \times 1 \times \frac{1}{4}$	$3 \times 1 \times \frac{1}{2} \times \frac{1}{8}$	$3 \times 1 \times \frac{1}{2} \times \frac{1}{316}$	$3 \times 1 \times \frac{1}{2} \times \frac{1}{4}$	$3 \times 2 \times \frac{1}{8}$
$3 \times 2 \times \frac{1}{316}$	$3 \times 2 \times \frac{1}{4}$	$3 \times 2 \times 38$	$4 \times 1 \times \frac{1}{8}$	$4 \times 2 \times \frac{1}{8}$	$4 \times 2 \times \frac{1}{316}$	$4 \times 2 \times \frac{1}{4}$	$4 \times 3 \times \frac{1}{316}$	$4 \times 3 \times \frac{1}{4}$	$5 \times 2 \times \frac{1}{4}$
$6 \times 2 \times \frac{1}{4}$	$6 \times 3 \times \frac{1}{4}$	$6 \times 3 \times 38$	$6 \times 3 \times 38$						

Equal Angle (mm)

20×20 $\times 2$	20×20 $\times 3$	25×25 $\times 2$	25×25 $\times 3$	30×30 $\times 2$	30×30 $\times 3$	40×40 $\times 2$	40×40 $\times 3$	40×40 $\times 4$	40×40 $\times 5$
50×50 $\times 2$	50×50 $\times 3$	50×50 $\times 5$	50×50 $\times 6$	60×60 $\times 6$	70×70 $\times 7$	80×80 $\times 8$	100×100 $\times 10$	$2 \times 1 \times$ $3/16$	$2 \times 1 \times$ $3/16$

Equal Channel (inch)

$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{16}$	$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$	$\frac{5}{8} \times \frac{5}{8} \times \frac{1}{16}$	$\frac{5}{8} \times \frac{5}{8} \times \frac{1}{8}$	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	$\frac{7}{8} \times \frac{7}{8} \times \frac{1}{8}$	$1 \times 1 \times \frac{1}{8}$	$1 \times 1 \times \frac{1}{16}$	$1 \times \frac{1}{4} \times \frac{1}{8}$	$1 \times \frac{1}{4} \times \frac{1}{16}$
$1 \times \frac{1}{2} \times \frac{1}{8}$	$1 \times \frac{1}{2} \times \frac{1}{16}$	$2 \times 2 \times \frac{1}{8}$	$2 \times 2 \times \frac{1}{16}$						

Unequal Channel (inch)

$1 \times 1/2 \times 1/8$	$1 \times 3/4 \times 1/8$	$1 \times 1/2 \times 1/8$	$1 \times 1/4 \times 1/2 \times 1/8$	$1 \times 1/4 \times 3/4 \times 1/8$	$1 \times 1/4 \times 1/2 \times 1/8$	$1 \times 1/2 \times 1/2 \times 1/8$	$1 \times 1/2 \times 3/4 \times 1/8$	$1 \times 1/2 \times 1/2 \times 1/8$	$2 \times 1 \times 1/8$
$2 \times 1 \times 3/16$	$2 \times 1 \times 1/4 \times 5/16$	$2 \times 1/2 \times 1/4$	$2 \times 1/2 \times 1/4 \times 5/16$	$2 \times 1/4 \times 1/4 \times 3/16$	$2 \times 1/2 \times 1/2 \times 1/8$	$2 \times 1/2 \times 1/4 \times 3/16$	$2 \times 1/2 \times 1/2 \times 3/16$	$3 \times 1 \times 1/8$	$3 \times 1/2 \times 1/8$
$3 \times 1/2 \times 3/16$	$3 \times 1/2 \times 1/4 \times 5/16$	$3 \times 2 \times 1/8$	$3 \times 2 \times 1/4 \times 5/16$	$3 \times 1/2 \times 1/2$	$4 \times 2 \times 1/8$	$4 \times 2 \times 1/4 \times 5/16$	$4 \times 3 \times 3/8$	$5 \times 2 \times 1/4 \times 5/16$	$5 \times 2 \times 1/2 \times 1/4 \times 3/8$
$6 \times 2 \times 1/4 \times 5/16$	$6 \times 3 \times 1/4 \times 3/8$	$6 \times 3 \times 3/8 \times 1/2$	$7 \times 3 \times 3/8 \times 1/8$	$8 \times 3 \times 3/8 \times 1/2$	$8 \times 3 \times 5/16 \times 1/2$	$3 \times 1/2 \times 1/8$	$3 \times 1/2 \times 3/16$	$3 \times 1/2 \times 1/4$	$3 \times 2 \times 1/8$
$3 \times 2 \times 3/16$	$3 \times 2 \times 1/4$	$3 \times 2 \times 3/8$	$4 \times 1 \times 1/8$	$4 \times 2 \times 1/8$	$4 \times 2 \times 3/16$	$4 \times 2 \times 1/4$	$4 \times 3 \times 3/16$	$4 \times 3 \times 1/4$	$5 \times 2 \times 1/4$

Alum 5 Bar (Quintet) Treadplate

Alloy 5754H111



Treadplate is generally used in flooring applications. It provides antislip safety, perfect water drainage and doesn't require any surface treatment or maintenance. Treadplate is the ideal choice for commercial vehicles, gantries, horseboxes, trailers, walkways etc.

Specification

BS & Intl Spec	Old BS Designation	Din No.	Wt. No.
5754	-	AlMg3	3.535

Chemical Analysis

Al	Si	Fe	Mn	Mg
Balance	0.4 max	0.4 max	0.5 max	2.6-3.2

Sizes: Sheets (mm)

2500 x 1250 x 2	3000 x 1500 x 2	2500 x 1250 x 3	3000 x 1500 x 3	2500 x 1250 x 4.5	3000 x 1500 x 4.5	2500 x 1250 x 6	3000 x 1500 x 6
-----------------	-----------------	-----------------	-----------------	-------------------	-------------------	-----------------	-----------------

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.



Aluminium Sheet 1050



Aluminium 1050 is an unalloyed non-heat treatable rolled aluminium sheet engineered for general sheet metal work where high mechanical properties are not required. Grade 1050 is suitable for welding.

Specification

BS and International Spec	Old BS Designation	DIN No.	W.No.	Material Standard
1050A	1B	Al99.5	3.0255	EN573-3

Chemical Analysis

	Al	Si	Fe	Cu	Mn	Mg	Zn	Ti
Min	99.5							
Max		0.25	0.40	0.05	0.05	0.05	0.07	0.05

Sizes: Sheets (mm)

0.5	0.7	0.9	1	1.2	1.5	2	2.5	3	4
5	6								

This is our standard size range. If you do not see the shape, size or grade you require, please contact us as we will be happy to assist you with reaching your requirements.





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PLASTICS COLOUR CODE CHART

PRODUCT	DESCRIPTION	COLOUR CODE
CAST NYLON 6	Very good mechanical, bearing & wear properties suitable for industrial wear application such as Bearings, Gears, Sprockets etc.	 GREEN
EXTRUDED NYLON 66	Highest hardness and stiffness. Best abrasion, natural resistance and sliding properties of all the non-filled nylons. Suitable in Marine, Automotive, Construction & Mining industries.	 RED
CO-POLYMER (POM) ACETAL	High mechanical strength & rigidity with low moisture absorption, excellent machinability. <i>Up to 100mm in thickness available from stock.</i> <i>Other thicknesses are available on request.</i>	 YELLOW
HOMO-POLYMER ACETAL	Good chemical resistance, high strength, excellent machinability, good slide and wear properties and easy to polish.	 BLUE
PEEK	High Performance material with high temperature and chemical resistance. Excellent dimensional stability and high creep stability.	 WHITE
PTFE (Teflon)	Good insulating properties, excellent insulating at high temperature applications.	 BLACK
PVC	Good chemical resistance & fire rating, Easy to weld & glue. Applications include cladding, fluid handling, ventilation, pump & valve parts.	 GREY
PE1000 (UHMWPE)	Good chemical & impact resistance. Good for wear & friction application. Applications such as hoppers, wear strips, marine, packaging & food processing machinery. <i>PE1000 up to 50mm in thickness available from stock.</i> <i>Other thicknesses are available on request.</i>	 BROWN



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Acetal Delrin Section

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Acetal Delrin POM-H – Black

(Tecaform AD – Black)



Chemical Designation

POM-H (Polyacetal (Homopolymer))

Colour

black opaque

Density

1.43g / cm³

Main Features

- high strength
- difficult to bond
- not electrically insulating
- good slide and wear properties
- good machinability
- not hot water resistant over 60°
- good chemical resistance
- easy to polish

Colour Code: Black



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	

Plate (mm)

0.5	1	2	3	4	5	6	10	12	15
16	20	25	30	35	40	50	60	70	80
100									

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1 mm/min	3600	MPa	DIN EN ISO 527-2	1)
Tensile strength	50 mm/min	80	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50 mm/min	80	MPa	DIN EN ISO 527-2	
Elongation at yield	50 mm/min	32	%	DIN EN ISO 527-2	
Elongation at break	50 mm/min	43	%	DIN EN ISO 527-2	
Flexural strength	2 mm/min, 10 N	106	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2 mm/min, 10 N	3600	MPa	DIN EN ISO 178	
Compression strength	1% / 2%	22 / 38	MPa	EN ISO 604	3)
	5 mm/min, 10 N				
Compression modulus	5 mm/min, 10 N	2800	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	14	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		185	MPa	ISO 2039-1	6)

(1) For tensile test: specimen type 1b

(2) For flexural test: support span 64 mm, norm specimen.

(3) Specimen 10x10x10 mm

(4) Specimen 10x10x50 mm, modulus range between 0.5 and 1% compression.

(5) For Charpy test: support span 64 mm, norm specimen. n.b. = not broken

(6) Specimen in 4 mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		-60	°C	DIN 53765	1)
Melting temperature		182	°C	DIN 53765	
Service temperature short term		150	°C		2)
Service temperature long term		110	°C		
Thermal expansion (CLTE)	23-60°C, long.	11	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	11	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,3	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,43	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Silver electrode, 23°C,	10 ¹⁴	Ω	DIN EN 61340-2-3	1)
	12% r.h.				
Specific volume resistance	Silver electrode, 23°C,	10 ¹⁴	Ω*cm	DIN EN 61340-2-3	
	12% r.h.				
Dielectric strength	23°C, 50% r.h.	38	kV/mm	ISO 60243-1	2)
Resistance to tracking (CTI)	Platin electrode, 23°C,	600	V	DIN EN 60112	
	50% r.h., solvent A				

(1) Specimen in 20mm thickness

(2) Specimen in 1mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.05 / 0.1	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–			
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Acetal Delrin POM-H – Natural

(Tecaform AD – Natural)



Chemical Designation

POM-H (Polyacetal(Homopolymer))

Colour

white opaque

Density

1.43g / cm³

Main Features

- high strength
- good slide and wear properties
- electrically insulating
- difficult to bond
- good chemical resistance
- good machinability
- easy to polish
- not hot water resistant over 60°C

Colour Code: White



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	

Plate (mm)

0.5	1	2	3	4	5	6	10	12	15
16	20	25	30	35	40	50	60	70	80
100									

Mechanical Properties

Value	Unit	Parameter	Norm		
Modulus of elasticity (tensile test)	3400	MPa	1mm/min	DIN EN ISO 527-2	1)
Tensile strength	79	MPa	50mm/min	DIN EN ISO 527-2	
Tensile strength at yield	79	MPa	50mm/min	DIN EN ISO 527-2	2)
Elongation at yield	37	%	50mm/min	DIN EN ISO 527-2	
Elongation at break	45	%	50mm/min	DIN EN ISO 527-2	
Flexural strength	106	MPa	2mm/min, 10 N	DIN EN ISO 178	
Modulus of elasticity (flexural test)	3600	MPa	2mm/min, 10 N	DIN EN ISO 178	
Compression strength	19/33/69	MPa	1% / 2% / 5%	EN ISO 604	3)
Compression modulus	2700	MPa	5mm/min, 10 N	EN ISO 604	4)
Impact strength (Charpy)	n.b.	kJ/m ²	max. 7,5J	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	15	kJ/m ²	max. 7,5J	DIN EN ISO 179-1eA	
Ball indentation hardness	185	MPa		ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Value	Unit	Parameter	Norm	
Glass transition temperature	-60	C		DIN EN ISO 11357	1)
Melting temperature	182	C		DIN EN ISO 11357	
Service temperature	150	C	short term	NN	2)
Service temperature	110	C	long term	NN	
Thermal expansion (CLTE)	12	10 ⁻⁵ */K	23-60°C, long.	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	13	10 ⁻⁵ */K	23-100°C, long.	DIN EN ISO 11359-1;2	
Thermal conductivity	0.43	W/(k*m)		ISO 22007-4:2008	
Specific heat	1.3	J/(g*K)		ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

	Value	Unit	Parameter	Norm
surface resistivity	10 ¹⁴	Ω		DIN IEC 60093

Other Properties

	Value	Unit	Parameter	Norm	
Water absorption	0.1	%	24h / 96h (23°C)	DIN EN ISO 62	1)
Resistance to hot water/ bases	–	–		–	2)
Resistance to weathering	–	–		NN	
Flammability (UL94)	HB	–	corresponding to	DIN IEC 60695-11-10;	3)

(1) Ø ca. 50mm, h=13mm

(2) - poor resistance

(3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Acetal Inductive Detectable POM-C

(Tecaform AH ID – Blue)



Chemical Designation

POM-C (Polyacetal (Copolymer))

Colour

blue opaque

Density

1.49 g/cm³

Fillers

detectable fillers

Main Features

- good slide and wear properties
- high stiffness
- good machinability
- high strength
- good chemical resistance
- detectable via metal detector
- difficult to bond
- high toughness

Colour Code: Blue Opaque



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	

Plate (mm)

0.5	1	2	3	4	5	6	10	12	15
16	20	25	30	35	40	50	60	70	80
100									

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	3200	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	68	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	68	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	8	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	10	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	100	MPa	DIN EN ISO 178 2)	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	3100	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	17 / 31	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2400	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	59	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	4	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		174	MPa	ISO 2039-1	6)

(1) For tensile test: specimen type 1b

(2) For flexural test: support span 64mm, norm specimen.

(3) Specimen 10x10x10mm

(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.

(5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken

(6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		-60	°C	DIN 53765	1)
Melting temperature		169	°C	DIN 53765	
Service temperature	short term	140	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	13	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	14	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,3	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,39	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		> 10 ¹³	Ω	DIN IEC 60093	

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.05 / 0.1	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) – poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Acetal POM-C – Black

(Tecaform AH – Black)



Chemical Designation

POM-C (Polyacetal (Copolymer))

Colour

black opaque

Density

1.41 g/cm³

Main Features

- high stiffness
- high strength
- high toughness
- good chemical resistance
- difficult to bond
- good slide and wear properties
- good machinability
- not electrically insulating

Colour Code: Black



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	

Plate (mm)

0.5	1	2	3	4	5	6	10	12	15
16	20	25	30	35	40	50	60	70	80
100									

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	2800	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	67	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	67	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	9	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	32	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	91	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2600	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	20 / 35	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	150	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	6	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		165	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		-60	°C	DIN 53765	1)
Melting temperature		166	°C	DIN 53765	
Service temperature	short term	140	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	13	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	14	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,4	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,39	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Surface resistivity	silver electrode 23°C, 12% r.h.	> 10 ¹⁴	Ω	DIN IEC 60093	1)
Volume resistivity	silver electrode 23°C, 12% r.h.	> 10 ¹⁴	Ω*cm	DIN IEC 60093	2)
Dielectric Strength	23°C, 50% r.h.	38	kV/mm	ISO 60243-1	3)
Resistance to tracking (CTI)	Platin Electrode, 23°C, 50% r.h., solvent A	600	V	DIN EN 60112	

(1) Specimen in 20mm thickness

(2) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.

(3) Specimen in 1mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.05 / 0.1	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10; 3)	

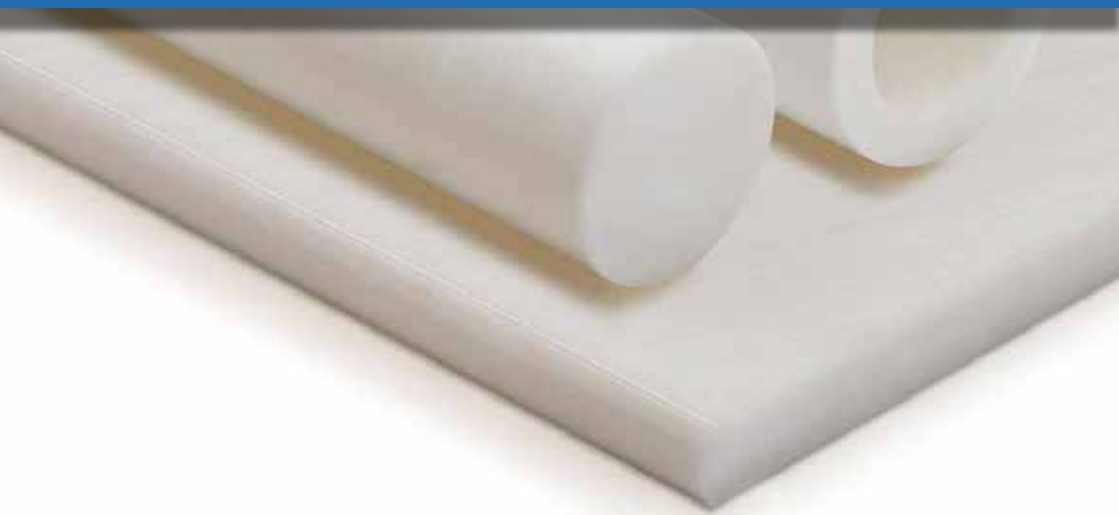
(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Acetal POM-C – Natural

(Tecaform AH – Natural)



Chemical Designation

POM-C (Polyacetal (Copolymer))

Colour

natural opaque

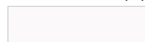
Density

1.41 g/cm³

Main Features

- high strength
- resistant against cleaning agent
- stiff
- high toughness
- very good electrical insulation
- good machinability
- good slide and wear properties
- difficult to bond

Colour Code: Natural Opaque



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	

Plate (mm)

0.5	1	2	3	4	5	6	10	12	15
16	20	25	30	35	40	50	60	70	80
100									

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	2800	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	67	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	67	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	9	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	32	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	91	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2600	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	20 / 35	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	8	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		165	MPa	ISO 2039-1	6)

(1) For tensile test: specimen type 1b

(2) For flexural test: support span 64mm, norm specimen.

(3) Specimen 10x10x10mm

(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.

(5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken

(6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		-60	°C	DIN 53765	1)
Melting temperature		166	°C	DIN 53765	
Service temperature	short term	140	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	13	10 K	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	14	10 K	DIN EN ISO 11359-1;2	
Specific heat		1,4	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,39	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Silver electrode 23°C, 12% r.h.	10	Ω	DIN EN 61340-2-3	1)
Specific volume resistance	Silver electrode 23°C, 12% r.h.	10	Ω *cm	DIN EN 61340-2-3	
Dielectric Strength	23°C, 50% r.h.	49	kV/mm	ISO 60243-1	2)
Resistance to tracking (CTI)	Platin Electrode, 23°C, 50% r.h., solvent A	600	V	DIN EN 60112	

(1) Specimen in 20mm thickness

(2) Specimen in 1mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.05 / 0.1	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) $\varnothing$ ca. 50mm, h=13mm

(2) (+) limited resistance

(3) – poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Acetal POM-C Anti-Static (Tecaform AH SD)



Chemical Designation

POM-C (Polyacetal (Copolymer))

Colour

natural opaque

Density

1.35 g/cm³

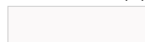
Fillers

antistatic agent

Main Features

- antistatic
- soot-free
- high strength
- good wear properties
- good chemical resistance
- high stiffness
- difficult to bond
- high toughness

Colour Code: Natural Opaque



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	

Plate (mm)

0.5	1	2	3	4	5	6	10	12	15
16	20	25	30	35	40	50	60	70	80
100									

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	1300	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	39	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	39	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	23	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	23	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	46	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	1200	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	12/19/34	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	1100	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	9	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		74	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		-60	°C	DIN 53765	1)
Melting temperature		165	°C	DIN 53765	
Service temperature	short term	140	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	16	10 K	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	17	10 K	DIN EN ISO 11359-1;2	
Specific heat		1,6	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,3	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Silver electrode 23°C, 12% rh.	109 - 1011	Ω	DIN IEC 60093	1)
Specific volume resistance	Silver electrode 23°C, 12% rh.	109	Ω *cm	DIN EN 61340-2-3	
Dielectric Strength	23°C, 50% rh.	5	kV/mm	ISO 60243-1	2)
Resistance to tracking (CTi)	Platin Electrode, 23°C, 50% rh., solvent A	600	V	DIN EN 60112	

(1) Specimen in 20mm thickness

(2) Specimen in 1mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.9 / 1.8	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

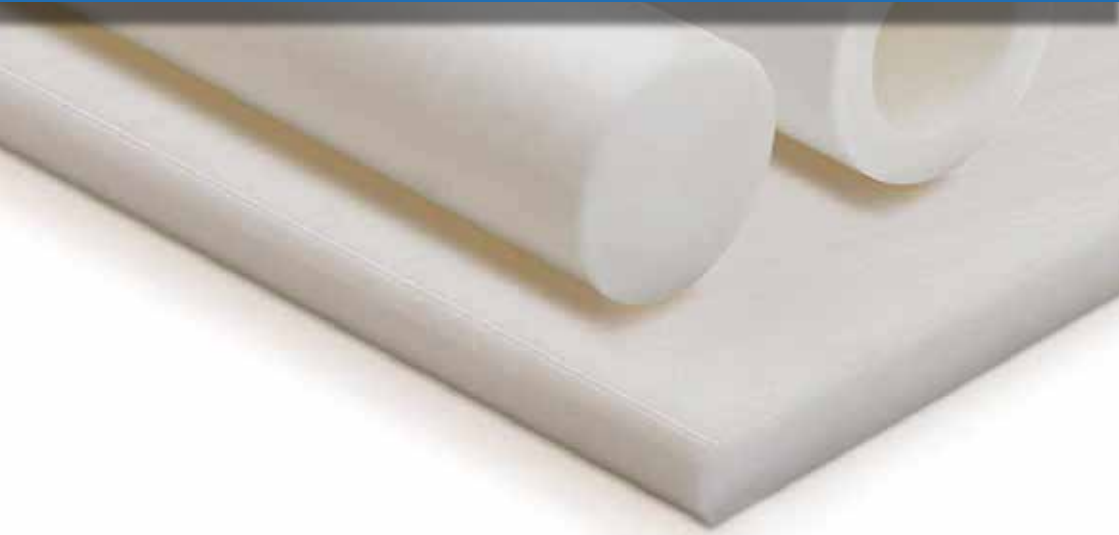
(2) (+) limited resistance

(3) – poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Acetal POM-C ESD

(Tecaform AH ELS)



Chemical Designation

POM-C (Polyacetal (Copolymer))

Colour

white

Density

1.41 g/cm³

Main Features

- electrically conductive
- high strength
- good machinability
- difficult to bond
- good chemical resistance
- high toughness
- good wear properties
- good UV and weather resistance

Colour Code: White



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	

Plate (mm)

0.5	1	2	3	4	5	6	10	12	15
16	20	25	30	35	40	50	60	70	80
100									

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	1800	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	42	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	42	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	11	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	11	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	56	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	1500	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5%	16/25/45	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	1500	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7.5J	74	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		96	MPa	ISO 2039-1	6)

(1) For tensile test: specimen type 1b

(2) For flexural test: support span 64mm, norm specimen.

(3) Specimen 10x10x10mm

(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.

(5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken

(6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Value	Unit	Parameter	Norm	
Glass transition temperature	-60	C		DIN EN ISO 11357	1)
Melting temperature	169	C		DIN EN ISO 11357	
Service temperature	140	C	short term	NN	2)
Service temperature	100	C	long term	NN	
Thermal expansion (CLTE)	13	10 ⁻⁵ 1/K	23-60°C, long.	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	14	10 ⁻⁵ 1/K	23-100°C, long.	DIN EN ISO 11359-1;2	
Thermal conductivity	0.46	W/(k*m)		ISO 22007-4:2008	
Specific heat	1.3	J/(g*K)		ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Value	Unit	Parameter	Norm	
volume resistivity	10 ³ – 10 ⁵	Ω*cm	Conductive rubber; 23°C, 12% r.h.	DIN EN 61340-2-3	
surface resistivity	10 ² – 10 ⁴	Ω	Conductive rubber; 23°C, 12% r.h.	DIN EN 61340-2-3	1)

(1) Specimen in 20mm thickness

Other Properties

Other Properties	Value	Unit	Parameter	Norm	
Water absorption	0.2	%	24h / 96h (23°C)	DIN EN ISO 62	1)
Resistance to hot water/ bases	(+)	–		–	2)
Resistance to weathering	(+)	–		NN	3)
Flammability (UL94)	HB	–	corresponding to	DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) – poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Acetal POM-C Medical Grade - Various Colours (Tecaform AH MT - Blue)



Chemical Designation

POM-C (Polyacetal (Copolymer))

Colour

blue opaque

Density

1.41 g/cm³

Main Features

- electrically insulating
- biocompatible
- good chemical resistance
- good machinability
- high stiffness
- high toughness
- difficult to bond
- high strength

Colour Code: Blue Opaque



NEXT DAY
DISPATCH



SECURELY
PACKED



98%
ON TIME
DELIVERY



NO MOQ
NO MINIMUM
ORDER QUANTITY



PART
MACHINING
TURNING, DRILLING
& MILLING



RAPID QUOTE
SERVICE



EUROPEAN
SOURCED



CUT TO
SIZE

Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	

Plate (mm)

0.5	1	2	3	4	5	6	10	12	15
16	20	25	30	35	40	50	60	70	80
100									

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	2800	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	69	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	70	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	15	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	30	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	94	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2800	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min,	18/32	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2200	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	120	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	9	kJ/m ²		
Ball indentation hardness		158	MPa	ISO 2039-1	6)

(1) For tensile test: specimen type 1b

(2) For flexural test: support span 64mm, norm specimen.

(3) Specimen 10x10x10mm

(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.

(5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken

(6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		-60	°C	DIN 53765	1)
Melting temperature		169	°C	DIN 53765	
Service temperature short term		140	°C		2)
Service temperature long term		100	°C		
Thermal expansion (CLTE)	23-60°C, long.	13	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	14	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,4	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,39	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Other Properties

Other Properties	Value	Unit	Parameter	Norm	
Water absorption	0.1	%	24h / 96h (23°C)	DIN EN ISO 62	1)
Resistance to hot water/ bases	(+)	–		–	2)
Resistance to weathering	(+)	–		–	3)
Flammability (UL94)	HB	–	corresponding to	DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Acetal POM-C Medical Grade EN1020-2.2 USP Class VI (Tecaform MT)



Chemical Designation

POM-C (Polyacetal (Copolymer))

Colour

blue opaque

Density

1.41 g/cm³

Main Features

- electrically insulating
- biocompatible
- good chemical resistance
- good machinability
- high stiffness
- high toughness
- difficult to bond
- high strength

Colour Code: Blue Opaque



NEXT DAY
DISPATCH



SECURELY
PACKED



98%
ON TIME
DELIVERY



NO
MOQ



PART
MACHINING
CUTTING, DRILLING
& MILLING



RAPID QUOTE
SERVICE



EUROPEAN
SOURCED



CUT TO
SIZE

Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	

Plate (mm)

0.5	1	2	3	4	5	6	10	12	15
16	20	25	30	35	40	50	60	70	80
100									

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	2800	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	69	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	70	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	15	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	30	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	94	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2800	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min,	18/32	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2200	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	120	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	9	kJ/m ²		
Ball indentation hardness		158	MPa	ISO 2039-1	6)

(1) For tensile test: specimen type 1b

(2) For flexural test: support span 64mm, norm specimen.

(3) Specimen 10x10x10mm

(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.

(5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken

(6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		-60	°C	DIN 53765	1)
Melting temperature		169	°C	DIN 53765	
Service temperature short term		140	°C		2)
Service temperature long term		100	°C		
Thermal expansion (CLTE)	23-60°C, long.	13	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	14	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,4	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,39	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Other Properties

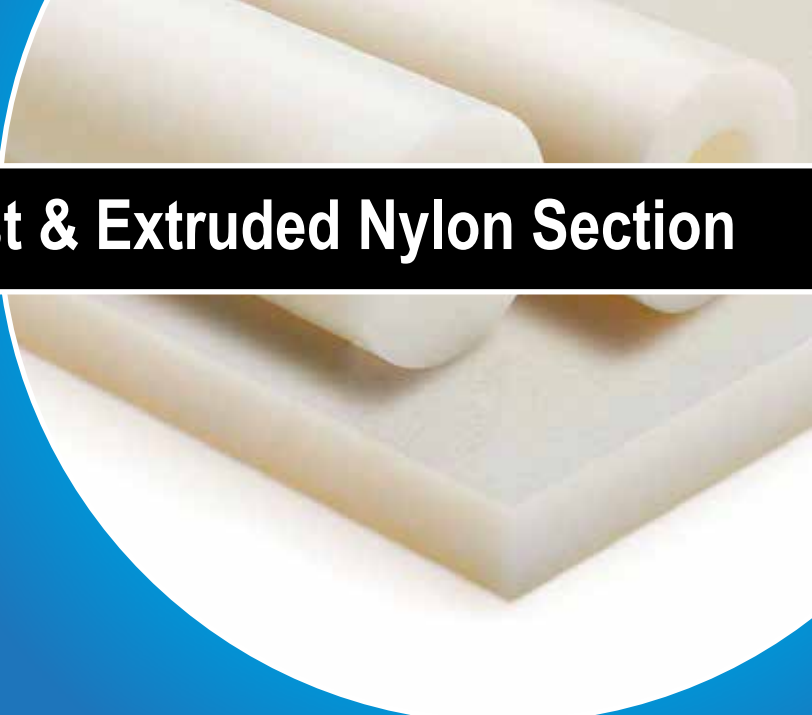
Other Properties	Value	Unit	Parameter	Norm	
Water absorption	0.05 / 0.1	%	24h / 96h (23°C)	DIN EN ISO 62	1)
Resistance to hot water/ bases	(+)	—		—	2)
Resistance to weathering	—	—		—	3)
Flammability (UL94)	HB	—	corresponding to	DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



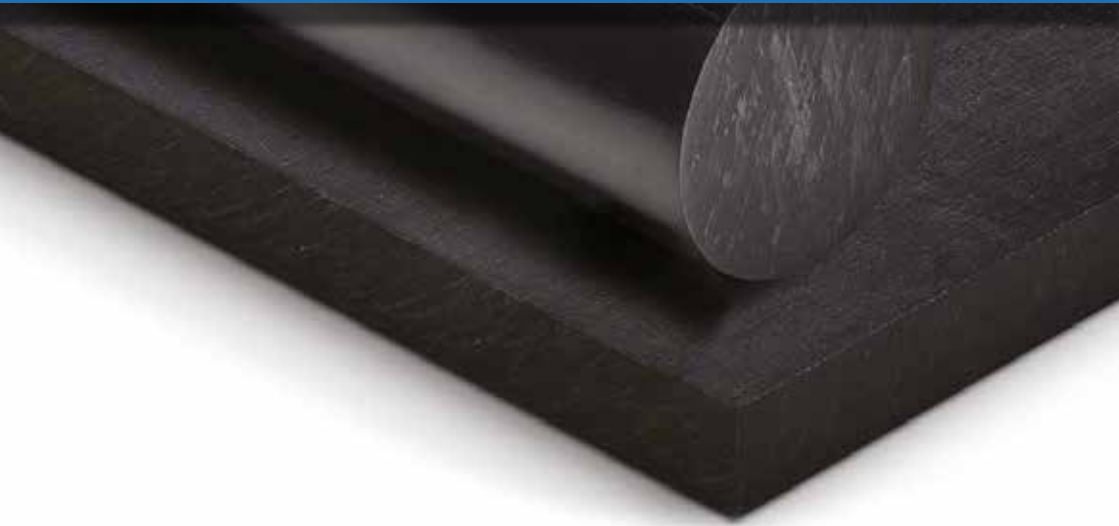
Cast & Extruded Nylon Section

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Cast Nylon – Black

(Tecast T MO)



Chemical Designation

PA 6 C (Cast polyamide 6)

Colour

black opaque

Density

1.15 g/cm³

Main Features

- good wear properties
- high toughness
- resistant to many oils, greases and fuels
- good damping
- good slide and wear properties
- high strength

Colour Code:



Shapes and Sizes

Rounds (mm)

50	55	60	65	70	75	80	85	90	95
100	110	120	125	130	135	140	150	160	170
180	190	200	210	220	230	250	280	300	320
350	370	400	150	500					

Plate (mm)

10	12	16	20	25	30	35	40	45	50
55	60	65	70	75	80	85	90	95	100
120	130								

Mechanical Properties

	Value	Unit	Parameter	Norm	
Tensile strength	82	MPa	50mm/min	DIN EN ISO 527-2	
Tensile strength at yield	80	MPa	50mm/min	DIN EN ISO 527-2	
Elongation at yield	4	%	50mm/min	DIN EN ISO 527-2	
Elongation at break	55	%	50mm/min	DIN EN ISO 527-2	
Flexural strength	102	MPa	2mm/min, 10 N	DIN EN ISO 178	1)
Modulus of elasticity (flexural test)	3000	MPa	2mm/min, 10 N	DIN EN ISO 178	
Compression strength		MPa	1% / 2% / 5%	EN ISO 604	2)
Compression modulus	2800	MPa	5mm/min, 10 N	EN ISO 604	3)
Impact strength (Charpy)	n.b.	kJ/m ²	max. 7,5J	DIN EN ISO 179-1eU	4)
Notched impact strength (Charpy)	4	kJ/m ²	max. 7,5J	DIN EN ISO 179-1eA	
Ball indentation hardness	170	MPa		ISO 2039-1	5)
Modulus of elasticity (tensile test)	3200	MPa	1 mm/min	DIN EN ISO 527-2	6)

- (1) For flexural test: support span 64mm, norm specimen.
- (2) Specimen 10x10x10mm
- (3) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (4) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (5) Specimen in 4mm thickness
- (6) For tensile test: specimen type 1b

Thermal Properties

	Value	Unit	Parameter	Norm	
Melting temperature	217	C		DIN EN ISO 11357	
Service temperature	170	C	short term	NN	1)
Service temperature	100	C	long term	NN	
Thermal expansion (CLTE)	11	10 ⁻⁵ */K	23-60°C, long.	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	11	10 ⁻⁵ */K	23-100°C, long.	DIN EN ISO 11359-1;2	
Glass transition temperature	43	C		DIN EN ISO 11357	2)
Specific heat	1.6	J/(g*K)		ISO 22007-4:2008	
Thermal conductivity	0.33	W/(k*m)		ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

	Value	Unit	Parameter	Norm	
Surface resistivity	10 ¹⁴	Ω		DIN IEC 60093	
Volume resistivity	10 ¹⁴	Ω*cm		DIN IEC 60093	1)

(1) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.

Other Properties

	Value	Unit	Parameter	Norm	
Resistance to hot water/ bases	(+)	—		—	1)
Flammability (UL94)	HB	—	corresponding to	DIN IEC 60695-11-10;	2)
Resistance to weathering	(+)	—		NN	
Water absorption	0.5	%	24h / 96h (23°C)	DIN EN ISO 62	3)

(1) (+) limited resistance

(2) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

(3) Ø ca. 50mm, h=13mm

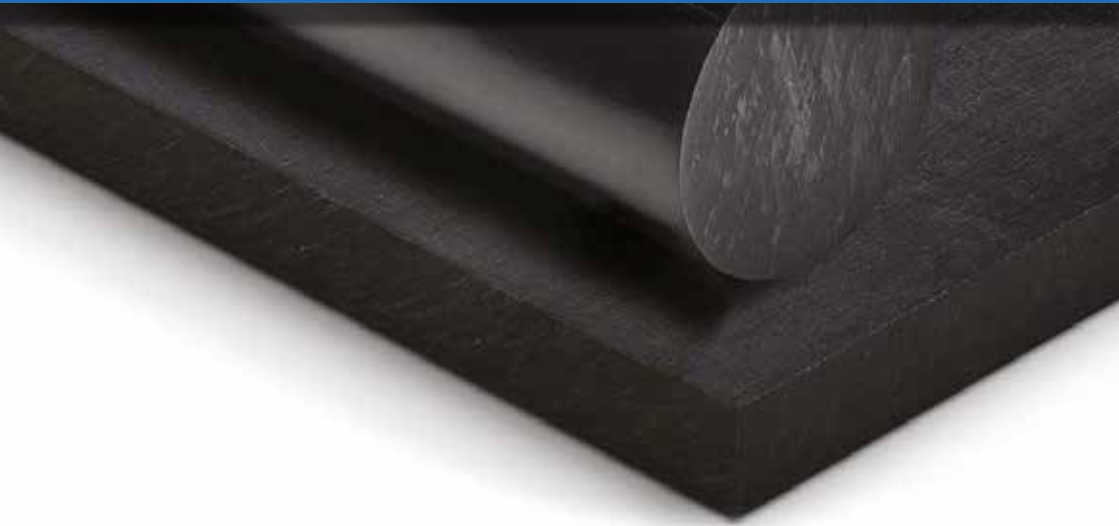
Our information and statements reflect the current state of our knowledge and shall inform about our products and their applications. They do not assure or guarantee chemical resistance, quality of products and their merchantability in a legally binding way. Our products are not defined for use in medical or dental implants. Existing commercial patents have to be observed. The corresponding values and information are no minimum or maximum values, but guideline values that can be used primarily for comparison purposes for material selection. These values are within the normal tolerance range of product properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. Unless otherwise noted, these values were determined by tests at reference dimensions (typically rods with diameter 40-60 mm according to DIN EN 15860) on extruded and machined specimen. As the properties depend on the dimensions of the semifinished products and the orientation in the component (esp. in reinforced grades), the material may not be used without a separate testing under individual circumstances. The customer is solely responsible for the quality and suitability of products for the application and has to test usage and processing prior to use. Technical changes reserved.

Engineering Plastic Plate Cut to Size -

From Stock, for immediate dispatch



Cast Nylon – Natural (Tecast TM)



Chemical Designation

PA 6 C (Cast polyamide 6)

Density

1.15 g/cm³

Data generated directly after machining
(standard climate Germany)

Main Features

- Good wear properties
- Not electrically insulating
- Resistance to many oils, greases and fuels
- High toughness
- Good damping
- Good slide and wear properties
- Sensitive to stress cracking
- High strength

Colour Code: Black Opaque



Shapes and Sizes

Rounds (mm)

50	55	60	65	70	75	80	85	90	95
100	110	120	125	130	135	140	150	160	170
180	190	200	210	220	230	250	280	300	320
350	370	400	150	500					

Cast & Ext.
Nylon

Plate (mm)

10	12	16	20	25	30	35	40	45	50
55	60	65	70	75	80	85	90	95	100
120	130								

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	3200	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	82	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	80	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	55	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	102	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	3000	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	22 / 38	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2800	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5	J n.b.	kJ/m²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5	J 4	kJ/m²	DIN EN ISO 179-1eA	
Ball indentation hardness		170	MPa	ISO 2039-1	6)

- (1) For flexural test: support span 64mm, norm specimen.
- (2) Specimen 10x10x10mm
- (3) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (4) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (5) Specimen in 4mm thickness
- (6) For tensile test: specimen type 1b

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		43	°C	DIN 53765	1)
Melting temperature		217	°C	DIN 53765	
Service temperature	short term	170	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	11	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	11	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,6	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,33	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10 ¹⁴	Ω	DIN IEC 60093	
Specific volume resistance		10 ¹⁴	Ω*cm	DIN IEC 60093	1)

(1) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.2 / 0.5	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		(+)			
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Extruded Nylon 6 – Black

(Tecamid 6 – Black)

Cast & Ext.
Nylon



Chemical Designation

PA (Polyamide 6)

Colour

black

Density

1.14 g/cm³

Main Features

- high toughness
- resistant to many oils, greases and fuels
- electrically insulating
- good wear properties
- good weldable and bondable
- good slide and wear properties
- high strength
- good machinability

Colour Code: Black



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	90	100	110	125	150
165	180	200	250						

Plate (mm)

10	12	16	20	25	30	35	40	45	50
55	60	65	70	75	80	85	90	95	100
120	130								

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1 mm/min	3300	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	79	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	78	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	130	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	100	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2900	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	24 / 41	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2700	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	7	kJ/m²	DIN EN ISO 179-1eA	
Ball indentation hardness		155	MPa	ISO 2039-1	6)

(1) For tensile test: specimen type 1b

(2) For flexural test: support span 64mm, norm specimen.

(3) Specimen 10x10x10mm

(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.

(5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken

(6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		45	°C	DIN 53765	1)
Melting temperature		221	°C	DIN 53765	
Service temperature	short term	160	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	12	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	13	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,6	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,37	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω	DIN EN 61340-2-3	1)
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω*cm	DIN EN 61340-2-3	
Dielectric strength	23°C, 50% r.h.	31	kV/mm	ISO 60243-1	2)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	600	V	DIN EN 60112	

(1) Specimen in 20mm thickness

(2) Specimen in 1mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.3 / 0.6	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) – poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Extruded Nylon 6 – Natural (Tecamid 6)



Chemical Designation

PA (Polyamide 6)

Colour

natural opaque

Density

1.14 g/cm³

Data generated directly after machining
(standard climate Germany)

Main Features

- high toughness
- resistant to many oils, greases and fuels
- electrically insulating
- good wear properties
- good weldable and bondable
- good slide and wear properties
- high strength
- good machinability

Colour Code: Natural Opaque



Shapes and Sizes

Cast Nylon (mm)

50	55	60	65	70	75	80	85	90	95
100	110	120	125	130	135	140	150	160	170
180	190	200	210	220	230	250	280	300	320
350	370	400	450	500					

Cast & Ext.
Nylon

Extruded Nylon 6 - 66 (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	90	100	110	125	150
165	180	200	250						

Plate (mm)

10	12	16	20	25	30	35	40	45	50
55	60	65	70	75	80	85	90	95	100
120	130								

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	3300	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	79	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	78	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	130	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	100	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2900	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	24 / 41	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2700	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	7	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		155	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		45	°C	DIN 53765	1)
Melting temperature		221	°C	DIN 53765	
Service temperature	short term	160	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	12	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	13	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,6	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,37	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω	DIN EN 61340-2-3	1)
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω*cm	DIN EN 61340-2-3	
Dielectric strength	23°C, 50% r.h.	31	kV/mm	ISO 60243-1	2)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	600	V	DIN EN 60112	

(1) Specimen in 20mm thickness

(2) Specimen in 1mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.3 / 0.6	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

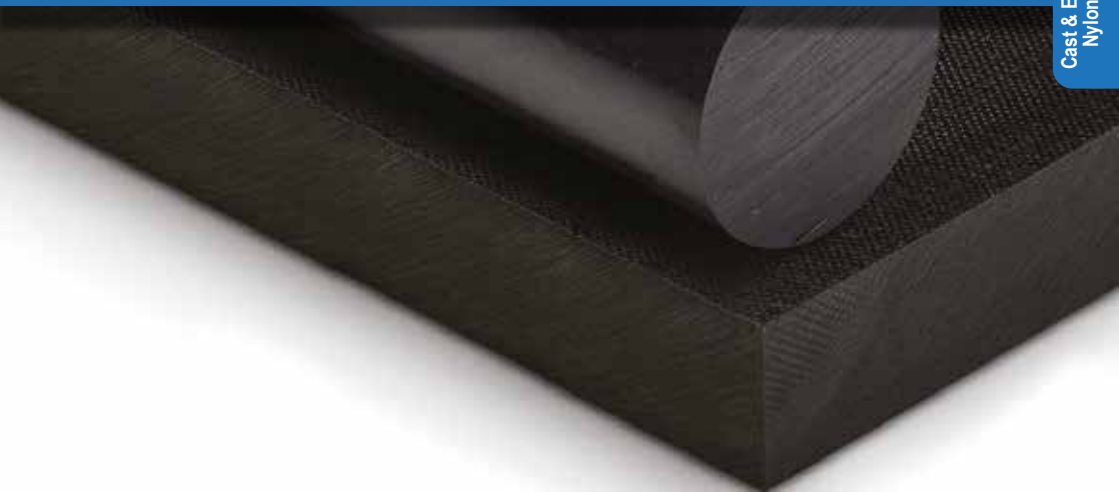
(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Extruded Nylon 6 GF30 – Black

(Tecamid 6 GF30 – Black)

Cast & Ext.
Nylon



Chemical Designation

PA (Polyamide 6)

Colour

black opaque

Density

1.36 g/cm³

Fillers

glass fibres

Data generated directly after machining
(standard climate Germany)

Main Features

- very high strength
- resistant to many oils, greases and fuels
- good wear properties
- good weldable and bondable
- high dimensional stability
- good heat deflection temperature
- good machinability
- not electrically insulating

Colour Code: Black Opaque



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	90	100	110	125	150
165	180	200	250						

Plate (mm)

10	12	16	20	25	30	35	40	45	50
55	60	65	70	75	80	85	90	95	100
120	130								

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1 mm/min	5700	MPa	DIN EN ISO 527-2	1)
Tensile strength	50 mm/min	98	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50 mm/min	98	MPa	DIN EN ISO 527-2	
Elongation at yield	50 mm/min	4	%	DIN EN ISO 527-2	
Elongation at break	50 mm/min	5	%	DIN EN ISO 527-2	
Flexural strength	2 mm/min, 10 N	140	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2 mm/min, 10 N	5200	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5 mm/min, 10 N	21 / 42	MPa	EN ISO 604	3)
Compression modulus	5 mm/min, 10 N	4200	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	60	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		232	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		49	°C	DIN 53765	1)
Melting temperature		218	°C	DIN 53765	
Service temperature	short term	180	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,3	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,41	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω	DIN EN 61340-2-3	1)
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω*cm	DIN EN 61340-2-3	
Dielectric strength	23°C, 50% r.h.	32	kV/mm	ISO 60243-1	2)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	550/475	V	DIN EN 60112	

(1) Specimen in 20mm thickness

(2) Specimen in 1mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.2 / 0.3	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Extruded Nylon 66 – Black

(Tecamid 66 – Black)



Chemical Designation

PA 66 (Polyamide 66)

Colour

black

Density

1.15 g/cm³

Data generated directly after machining
(standard climate Germany)

Main Features

- good slide and wear properties
- electrically insulating
- good wear properties
- high strength
- good weldable and bondable
- resistant to many oils, greases and fuels
- high toughness

Colour Code: Black



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	90	100	110	125	150
165	180	200	250						

Cast & Ext.
Nylon

Plate (mm)

10	12	16	20	25	30	35	40	45	50
55	60	65	70	75	80	85	90	95	100
120	130								

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1 mm/min	3500	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	85	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	84	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	7	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	70	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	110	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	3100	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	20 / 35	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2700	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	5	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		175	MPa	ISO 2039-1	6)

(1) For tensile test: specimen type 1b

(2) For flexural test: support span 64mm, norm specimen.

(3) Specimen 10x10x10mm

(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.

(5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken

(6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		47	°C	DIN 53765	1)
Melting temperature		258	°C	DIN 53765	
Service temperature	short term	170	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	11	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	12	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,5	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,36	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10	Ω	DIN IEC 60093	1)
Specific volume resistance		10	Ω*cm	DIN IEC 60093	2)

(1) Specimen in 20mm thickness

(2) Specimen in 1mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.2 / 0.4	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) – poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



IMPACT ENGINEERING PLASTICS

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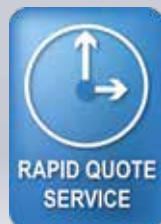
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Nylon**

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Extruded Nylon 66 – Natural (Tecamid 66)



Chemical Designation

PA 66 (Polyamide 66)

Colour

ivory

Density

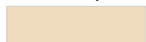
1.15 g/cm³

Data generated directly after machining
(standard climate Germany)

Main Features

- good slide and wear properties
- electrically insulating
- good wear properties
- good weldable and bondable
- high strength
- resistant to many oils, greases and fuels
- high toughness

Colour Code: Ivory



Shapes and Sizes

Rounds (mm)

4	5	6	8	19	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	85	90	95	100	110
125	150	165	180	200	250				

Cast & Ext.
Nylon

Plate (mm)

10	12	16	20	25	30	35	40	45	50
55	60	65	70	75	80	85	90	95	100
120	130								

Mechanical Properties

Mechanical Properties	Value	Unit	Parameter	Norm	
Tensile strength at yield	84	MPa	50mm/min	DIN EN ISO 527-2	
Elongation at yield	7	%	50mm/min	DIN EN ISO 527-2	
Tensile strength	85	MPa	50mm/min	DIN EN ISO 527-2	
Modulus of elasticity (flexural test)	3100	MPa	2mm/min, 10 N	DIN EN ISO 178	
Ball indentation hardness	175	MPa		ISO 2039-1	1)
Impact strength (Charpy)	n.b.	kJ/m2	max. 7,5J	DIN EN ISO 179-1eU	2)
Compression modulus	2700	MPa	5mm/min, 10 N	EN ISO 604	3)
Flexural strength	110	MPa	2mm/min, 10 N	DIN EN ISO 178	4)
Compression strength	20/35/81	MPa	1% / 2% / 5%	EN ISO 604	5)
Modulus of elasticity (tensile test)	3500	MPa	1mm/min	DIN EN ISO 527-2	6)
Notched impact strength (Charpy)	5	kJ/m²	max. 7,5J	DIN EN ISO 179-1eA	
Elongation at break	70	%	50mm/min	DIN EN ISO 527-2	

- (1) Specimen in 4mm thickness
- (2) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (3) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (4) For flexural test: support span 64mm, norm specimen.
- (5) Specimen 10x10x10mm
- (6) For tensile test: specimen type 1b

Thermal Properties

Thermal Properties	Value	Unit	Parameter	Norm	
Glass transition temperature	47	C		DIN EN ISO 11357	1)
Service temperature	170	C	short term	NN	
Service temperature	100	C	long term	NN	2)
Thermal expansion (CLTE)	12	10 ⁻⁵ */K	23-100°C, long.	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	11	10 ⁻⁵ */K	23-60°C, long.	DIN EN ISO 11359-1;2	
Melting temperature	258	C		DIN EN ISO 11357	
Thermal conductivity	0.36	W/(k*m)		ISO 22007-4:2008	
Specific heat	1.5	J/(g*K)		ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Value	Unit	Parameter	Norm	
volume resistivity	10 ¹⁴	Ω*cm		DIN IEC 60093	1)
surface resistivity	10 ¹⁴	Ω		DIN IEC 60093	2)

(1) Specimen in 20mm thickness

(2) Specimen in 1mm thickness

Other Properties

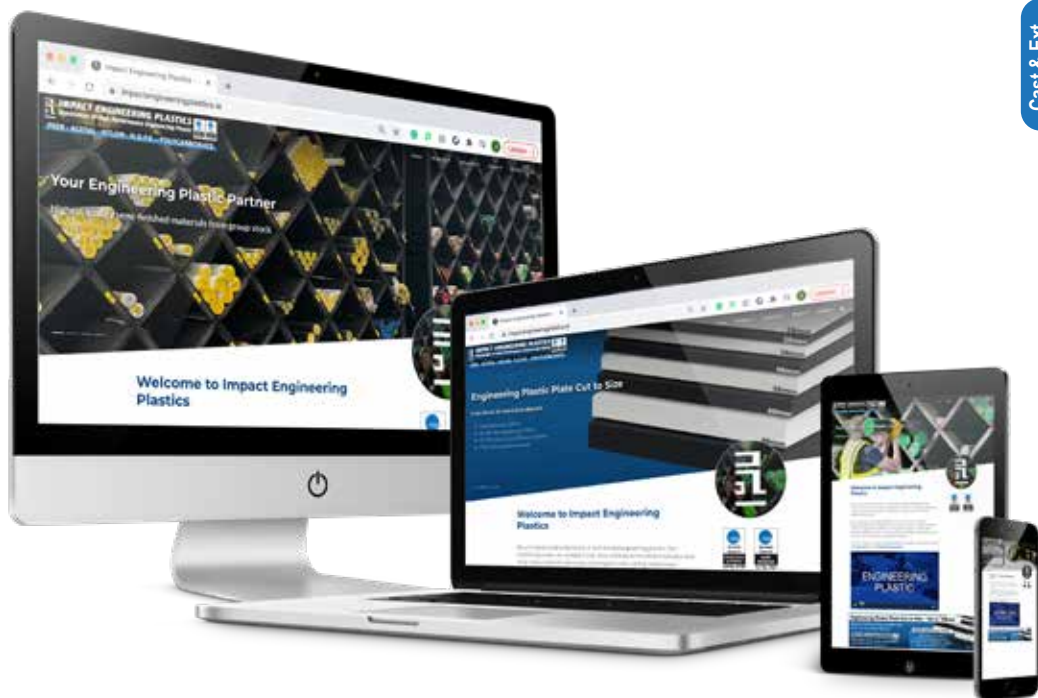
Other Properties	Value	Unit	Parameter	Norm	
Water absorption	0.4	%	24h / 96h (23°C)	DIN EN ISO 62	1)
Flammability (UL94)	HB	–	corresponding to	DIN IEC 60695-11-10;	2)
Resistance to hot water/ bases	(+)	–		–	3)
Resistance to weathering	–	–		–	4)

(1) Ø ca. 50mm, h=13mm

(2) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

(3) (+) limited resistance

(4) - poor resistance



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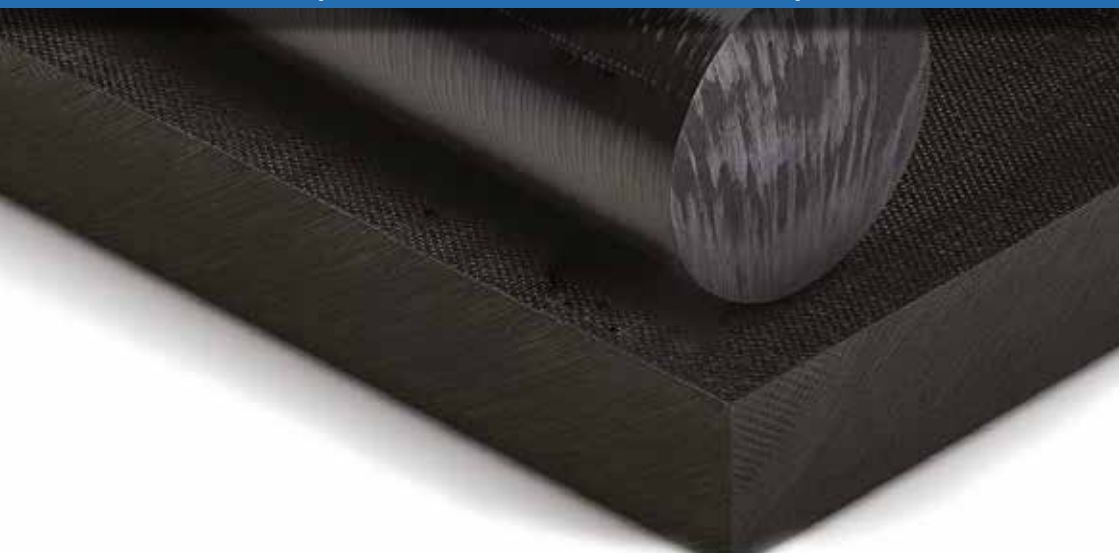
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PEEK - ACETAL - NYLON - H.D.P.E. - POLYCARBONATE

Extruded Nylon 66 GF30 – Black

(Tecamid 66 GF30 – Black)



Chemical Designation

PA (Polyamide 66)

Colour

black

Density

1.34 g/cm³

Fillers

glass fibres

Data generated directly after machining
(standard climate Germany)

Main Features

- very high stiffness
- resistant to many oils, greases and fuels
- good wear properties
- not electrically insulating
- very high strength
- high dimensional stability
- good heat deflection temperature
- good weldable and bondable

Colour Code: Black



Shapes and Sizes

Rounds (mm)

4	5	6	8	10	12	14	16	18	20
22	25	28	30	32	36	40	45	50	56
60	65	70	75	80	90	100	110	125	150
165	180	200	250						

Cast & Ext.
Nylon

Plate (mm)

10	12	16	20	25	30	35	40	45	50
55	60	65	70	75	80	85	90	95	100
120	130								

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1 mm/min	5500	MPa	DIN EN ISO 527-2	1)
Tensile strength	50 mm/min	91	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50 mm/min	91	MPa	DIN EN ISO 527-2	
Elongation at yield	50 mm/min	8	%	DIN EN ISO 527-2	
Elongation at break	50 mm/min	14	%	DIN EN ISO 527-2	
Flexural strength	2 mm/min, 10 N	135	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2 mm/min, 10 N	4700	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5 mm/min, 10 N	25 / 46	MPa	EN ISO 604	3)
Compression modulus	5 mm/min, 10 N	4100	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5 J	97	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		216	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64 mm, norm specimen.
- (3) Specimen 10x10x10 mm
- (4) Specimen 10x10x50 mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64 mm, norm specimen. n.b. = not broken
- (6) Specimen in 4 mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		48	°C	DIN 53765	1)
Melting temperature		254	°C	DIN 53765	
Service temperature	short term	170	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,2	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,39	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω	DIN EN 60093	1)
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω*cm	DIN EN 60093	
Dielectric strength	23°C, 50% r.h.	35	kV/mm	ISO 60243-1	2)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	550/475	V	DIN EN 60112	

(1) Specimen in 20mm thickness

(2) Specimen in 1mm thickness

Other Properties

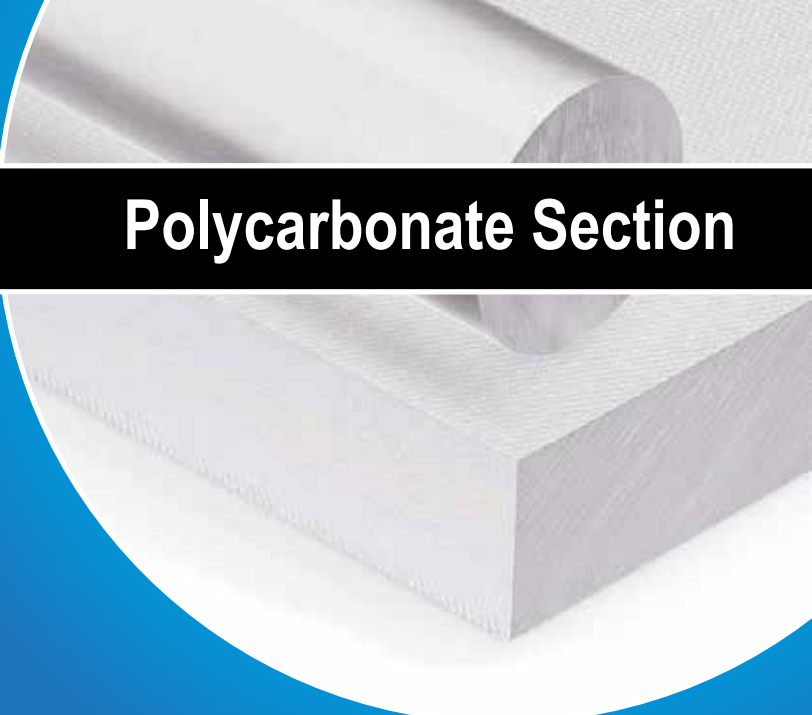
Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.1 / 0.2	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



Polycarbonate Section

This section includes:

Polycarbonate (GF30) (Tecanat GF30 – Natural)	220
Polycarbonate Engineering Grade (Tecanat – Natural).....	223
Polycarbonate Medical Grade (Tecanat MT – Natural)	226

Polycarbonate (GF30)

(Tecanat GF30 – Natural)



Chemical Designation

PC (Polycarbonate)

Colour

natural translucent

Density

1.42 g/cm³

Fillers

glass fibres

Main Features

- good heat deflection temperature
- electrically insulating
- sensitive to stress cracking
- high strength
- good weldable and bondable

Colour Code: Natural Translucent



Shapes and Sizes

Rounds (mm)

10	16	20	25	30	40	50	60	70	80
100	125	150	200						

Plate (mm)

10	16	20	30	40	50	60	80	100	
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Polycarbon

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1 mm/min	4400	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	85	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	87	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	6	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	138	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	4500	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	21 / 39	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	71	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		190	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		147	°C	DIN 53765	1)
Melting temperature		n.a.	°C	DIN 53765	
Service temperature	short term	140	°C		2)
Service temperature	long term	120	°C		
Thermal expansion (CLTE)	23-60°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,32	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10 ¹⁴	Ω	DIN IEC 60093	
Specific volume resistance		10 ¹⁴	Ω*cm	DIN IEC 60093	

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.1 / 0.2	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) – poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Polycarbonate Engineering Grade

(Tecanat – Natural)



Chemical Designation

PC (Polycarbonate)

Colour

transparent

Density

1.19 g/cm³

Main Features

- high toughness
- electrically insulating
- good machinability
- easy to polish
- good heat deflection temperature
- sensitive to stress cracking
- good weldable and bondable

Colour Code: Transparent



Shapes and Sizes

Rounds (mm)

10	16	20	25	30	40	50	60	70	80
100	125	150	200						

Plate (mm)

10	16	20	30	40	50	60	80	100	
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Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1 mm/min	2200	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	69	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	69	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	6	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	90	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	97	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2300	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	16 / 29	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2000	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	14	kJ/m²	DIN EN ISO 179-1eA	
Ball indentation hardness		190	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		149	°C	DIN 53765	1)
Melting temperature		n.a.	°C	DIN 53765	
Service temperature	short term	140	°C		2)
Service temperature	long term	120	°C		
Thermal expansion (CLTE)	23-60°C, long.	8	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	8	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,3	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,25	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10	Ω	DIN IEC 60093	
Specific volume resistance		10	Ω*cm	DIN IEC 60093	

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.03 / 0.06	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		—	2)
Resistance to weathering		—		—	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

Polycarbonate Medical Grade

(Tecanat MT – Natural)



Chemical Designation

PC (Polycarbonate)

Colour

transparent

Density

1.19 g/cm³

Main Features

- biocompatible
- high toughness
- electrically insulating
- good machinability
- easy to polish
- good heat deflection temperature
- sensitive to stress cracking
- good weldable and bondable

Colour Code: Transparent



Shapes and Sizes

Rounds (mm)

10	16	20	25	30	40	50	60	70	80
100	125	150	200						

Plate (mm)

10	16	20	30	40	50	60	80	100	
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Polycarbon

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1 mm/min	2200	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	69	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	69	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	6	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	90	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	97	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2300	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	16 / 29	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2000	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	14	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		190	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		149	°C	DIN 53765	1)
Melting temperature		n.a.	°C	DIN 53765	
Service temperature	short term	140	°C		2)
Service temperature	long term	120	°C		
Thermal expansion (CLTE)	23-60°C, long.	8	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	8	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,3	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,25	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10	Ω	DIN IEC 60093	

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.03 / 0.06	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)		—	2)
Resistance to weathering		—		—	3)
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

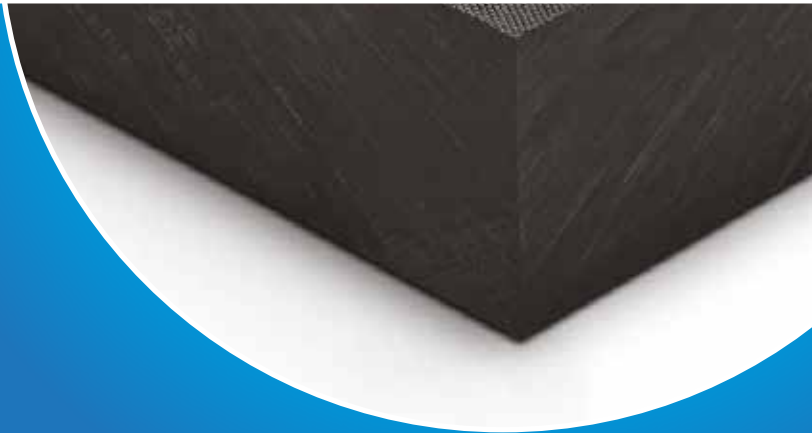
(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



Polyester Section



This section includes:

Polyester – Black (Tecapet – Black)	230
Polyester – White (Tecapet – White)	234

Polyester – Black

(Tecapet – Black)



Chemical Designation

PET (Polyethylene terephthalate)

Colour

black

Alternative Colours available

white

Density

1.39 g/cm³

Main Features

- very high strength
- good chemical resistance
- good weldable and bondable
- easy to polish
- good slide and wear properties
- high toughness
- good machinability

Colour Code: Black



Shapes and Sizes

Rounds (mm)

10	16	20	25	30	36	40	45	50	56
60	65	70	80	90	100	110	120	125	130
140	150	160	180	200					

Plate (mm)

8	10	12	16	20	25	30	40	50	60
80	100								

Polyester

Mechanical Properties

Mechanical Properties	Value	Unit	Parameter	Norm	
Modulus of elasticity (tensile test)	3400	MPa	1mm/min	DIN EN ISO 527-2	1)
Tensile strength	91	MPa	50mm/min	DIN EN ISO 527-2	
Tensile strength at yield	91	MPa	50mm/min	DIN EN ISO 527-2	
Elongation at yield	4	%	50mm/min	DIN EN ISO 527-2	
Elongation at break	15	%	50mm/min	DIN EN ISO 527-2	
Flexural strength	134	MPa	2mm/min, 10 N	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	3400	MPa	2mm/min, 10 N	DIN EN ISO 178	
Compression strength	19/36/86	MPa	1% / 2% / 5%	EN ISO 604	3)
Compression modulus	2800	MPa	5mm/min, 10 N	EN ISO 604	4)
Impact strength (Charpy)	27	kJ/m ²	max. 7,5J	DIN EN ISO 179-1eU	5)
Ball indentation hardness	195	MPa		ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen.
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Value	Unit	Parameter	Norm	
Glass transition temperature	81	C		DIN EN ISO 11357	1)
Melting temperature	244	C		DIN EN ISO 11357	
Service temperature	170	C	short term	NN	2)
Service temperature	110	C	long term	NN	
Thermal expansion (CLTE)	8	10 ⁻⁵ 1/K	23-60°C, long	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	10	10 ⁻⁵ 1/K	23-100°C, long.	DIN EN ISO 11359-1;2	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Value	Unit	Parameter	Norm	
surface resistivity	10 ¹⁴	Ω		DIN IEC 60093	
volume resistivity	10 ¹⁴	Ω*cm		DIN IEC 60093	1)

(1) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.

Other Properties

Other Properties	Value	Unit	Parameter	Norm	
Resistance to hot water/ bases	–	–		–	1)
Flammability (UL94)	HB	–	corresponding to	DIN IEC 60695-11-10;	2)
Resistance to weathering	(+)	–		–	3)
Water absorption	0.03	%	24h / 96h (23°C)	DIN EN ISO 62	4)

(1) - poor resistance

(2) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

(3) (+) limited resistance

(4) Ø ca. 50mm, h=13mm



IMPACT ENGINEERING PLASTICS
Stockholder of High Performance Engineering Plastic



PEEK - ACETAL - NYLON - H.D.P.E. - POLYCARBONATE



- Acetal plate up to 100mm
- PE 1000 Natural plate up to 50mm
- PE 1000 sheets up to 3000mm x 1250mm
- Other sizes available on request

Polyester



**Engineering Plastic Plate, available
FROM STOCK FOR IMMEDIATE DISPATCH**

Polyester – White

(Tecapet – White)



Chemical Designation

PET (Polyethylene terephthalate)

Colour

white opaque

Density

1.36 g/cm³

Main Features

- very high strength
- good chemical resistance
- electrically insulating
- easy to polish
- good slide and wear properties
- good weldable and bondable
- good machinability
- high toughness

Colour Code: White Opaque



Shapes and Sizes

Rounds (mm)

10	16	20	25	30	36	40	45	50	56
60	65	70	80	90	100	110	120	125	130
140	150	160	180	200					

Plate (mm)

8	10	12	16	20	25	30	40	50	60
80	100								

Polyester

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	3100	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	79	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	79	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	10	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	121	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	3200	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	19 / 35	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2700	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	81	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	4	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		175	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen.
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		81	°C	DIN 53765	1)
Melting temperature		244	°C	DIN 53765	
Service temperature	short term	170	°C		2)
Service temperature	long term	110	°C		
Thermal expansion (CLTE)	23-60°C, long.	8	10 K	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	10	10 K	DIN EN ISO 11359-1;2	
Specific heat		1,2	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,31	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10	Ω	DIN IEC 60093	
Specific volume resistance		10	Ω *cm	DIN IEC 60093	
Resistance to tracking (CTI)		600	V	DIN EN 60112	

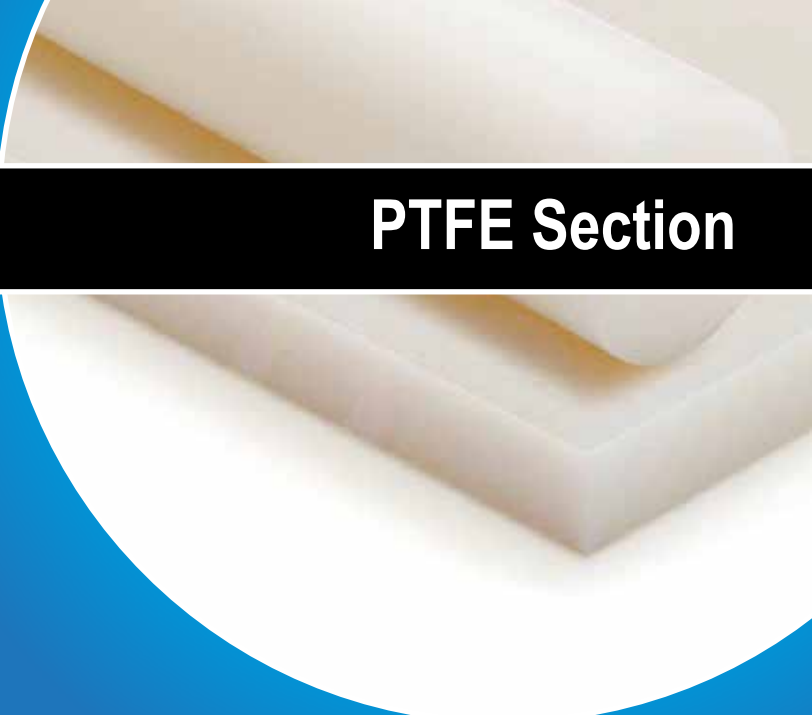
Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.02 / 0,03	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		–	–		2)
Resistance to weathering		–			
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)

(1) - poor resistance

(2) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

(3) Ø ca. 50mm, h=13mm



PTFE Section

This section includes:

PTFE (Teflon) – Natural (Tefcalon PTFE – Natural) 238

PTFE (Teflon) – Natural

(Tecaflon PTFE – Natural)



Chemical Designation

Polytetrafluorethylene

DIN-Abbreviation

PTFE (Polytetrafluorethylene)

Colours, Fillers

white opaque

Density

2.15 g/cm³

Main Features

- very good chemical resistance
- inherent flame retardant
- continuous service temperature up to 260°C
- good UV and weather resistance
- very good electrical insulation
- very good slide and wear properties

Colour Code: White Opaque



Shapes and Sizes

Rounds (mm)

4	5	6	7	8	9	9.5	10	11	12
13	14	15	16	17	18	19	20	22	23
24	25	28	30	32	35	38	40	45	50
55	60	65	70	75	80	90	100	105	110
120	125	130	140	150	160	170	180	190	200

Plate (mm)

1.5	2	2.5	3	4	5	6	8	10	12
13	15	16	19	20	25	30	35	40	45
50	60	70	80						

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Tensile strength		22	MPa	ASTM D 4894	1)
Elongation at break		220	%	ASTM D 4894	2)
Compression strength	1% deformation	5	MPa	ASTM D 695	
Shore hardness	Shore D	55		ASTM D 2240	

(1) Tested on extruded and machined specimen

(2) Tested on extruded and machined specimen

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		-20	°C	DIN 53765	1)
Service temperature	short term	260	°C	–	2)
Service temperature	long term	260	°C	–	
Thermal expansion (CLTE)	25-100°C, long.	13	10 ⁻⁵ K ⁻¹	ASTM D 696	
Thermal conductivity		0,2	W/(K*m)	ASTM C 177	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

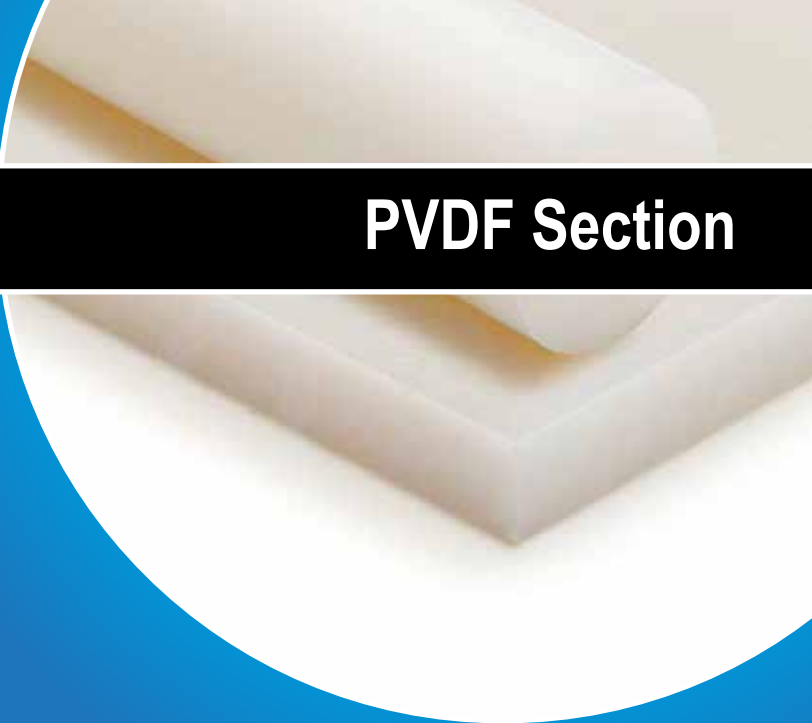
Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		1016	Ω	ASTM D 257	1)
Specific volume resistance		1017	Ω*cm	ASTM D 257	
Dielectric strength	in air; thickness 0.125mm	80	kV/mm	ASTM D 149	
Dielectric constant	50-109 Hz	2,1		ASTM D 150	

(1) Without defects

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	23°C	<0.01	%	ASTM D %70	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10; 1)	

(1) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



PVDF Section

This section includes:

PVDF Rod/Plate (Teflon PVDF).....	242
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PVDF Rod/Plate

(Teflon PVDF)



Chemical Designation

PVDF (Polyvinylidene fluoride)

Colour, Fillers

white opaque

Density

1.78 g/cm³

Main Features

- very good chemical resistance
- inherent flame retardant
- continuous service temperature up to 150° C
- good slide and wear properties
- very good weldable
- good machinability
- very good electrical insulation
- very good UV and weather resistance resistant

Colour Code: White Opaque



Shapes and Sizes

Rounds (mm)

10	15	20	25	30	35	40	45	50	60
70	80	90	100	110	125	140	150	165	200
250									

Plate (mm)

1	2	3	4	5	6	8	10	12	15
20	30	40	50	60	80	100			

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	2200	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	62	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	62	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	8	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	17	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	77	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2100	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	16 / 28	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	1900	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	150	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		129	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

PVDF

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		-40	°C	DIN 53765	1)
Melting temperature		171	°C	DIN 53765	
Service temperature	short term	150	°C		2)
Service temperature	long term	150	°C		
Thermal expansion (CLTE)	23-60°C, long.	16	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	18	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,3	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,25	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10 ¹⁴	Ω	DIN IEC 60093	

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	<0.01	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		–	–		2)
Resistance to weathering		–			
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	3)

(1) Ø ca. 50mm, h=13mm

(2) + good resistance

(3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



PEEK Section

This section includes:

PEEK – Black (Tecapeek – Black)	246
PEEK – Natural (Tecapeek – Natural)	249
PEEK CF30 – Black (Tecapeek CF30 – Black)	252
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PEEK PVX – Black (Tecapeek PVX – Black)	267

PEEK – Black

(Tecapeek – Black)



Chemical Designation

PEEK (Polyetheretherketone)

Colour

black

Density

1.31 g/cm³

Main Features

- good heat deflection temperature
- inherent flame retardant
- resistance against high energy radiation
- high strength
- high creep resistance
- good chemical resistance
- hydrolysis and superheated steam resistant

Colour Code: Black



Shapes and Sizes

Rounds (mm)

5	6	8	10	12	15	16	18	20	22
25	28	30	32	36	40	45	50	56	60
65	70	80	90	100	110	120	125	140	150
160	165	180	200						

Plate (mm)

5	6	8	10	12	16	18	20	25	30
36	40	45	50	120					

Mechanical Properties

Mechanical Properties	Value	Unit	Parameter	Norm	
Tensile strength	100	MPa	50mm/min	DIN EN ISO 527-2	
Tensile strength at yield	100	MPa	50mm/min	DIN EN ISO 527-2	
Elongation at yield	3	%	50mm/min	DIN EN ISO 527-2	
Elongation at break	3	%	50mm/min	DIN EN ISO 527-2	
Flexural strength	171	MPa	2mm/min, 10 N	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	4100	MPa	2mm/min, 10 N	DIN EN ISO 178	
Compression strength	22/41/95	MPa	1% / 2% / 5%	EN ISO 604	3)
Compression modulus	3300	MPa	5mm/min, 10 N	EN ISO 604	4)
Impact strength (Charpy)	75	kJ/m ²	max. 7,5J	DIN EN ISO 179-1eU	5)
Ball indentation hardness	253	MPa		ISO 2039-1	6)
Modulus of elasticity (tensile test)	4100	MPa	1 mm/min	DIN EN ISO 527-2	1)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

PEEK

Thermal Properties

Thermal Properties	Value	Unit	Parameter	Norm	
Glass transition temperature	151	C		DIN EN ISO 11357	1)
Melting temperature	341	C		DIN EN ISO 11357	
Service temperature	300	C	short term	NN	2)
Service temperature	260	C	long term	NN	
Thermal expansion (CLTE)	5	10 ⁻⁵ *1/K	23-60°C, long.	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	5	10 ⁻⁵ *1/K	23-100°C, long.	DIN EN ISO 11359-1;2	
Thermal conductivity	0.30	W/(k*m)		ISO 22007-4:2008	
Specific heat	1.1	J/(g*K)		ISO 22007-4:2008	
Thermal expansion (CLTE)	7	10 ⁻⁵ *1/K	100-150°C, long.	DIN EN ISO 11359-1;2	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Value	Unit	Parameter	Norm
surface resistivity	10 ¹²	Ω		DIN IEC 60093

Other Properties

Other Properties	Value	Unit	Parameter	Norm	
Resistance to hot water/ bases	+	–		–	2)
Flammability (UL94)	V0	–	corresponding to	DIN IEC 60695-11-10;	4)
Resistance to weathering	–	–		–	3)
Water absorption	0.03	%	24h / 96h (23°C)	DIN EN ISO 62	1)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

PEEK – Natural

(Tecapeek – Natural)



Chemical Designation

PEEK (Polyetheretherketone)

Colour

natural opaque

Density

1.31 g/cm³

Main Features

- good heat deflection temperature
- good machinability
- inherent flame retardant
- resistance against high energy radiation
- good slide and wear properties
- very good chemical resistance
- high creep resistance
- hydrolysis and superheated steam resistant

PEEK

Colour Code: Natural Opaque



Shapes and Sizes

Rounds (mm)

5	6	8	10	12	15	16	18	20	22
25	28	30	32	36	40	45	50	56	60
65	70	80	90	100	110	120	125	140	150
160	165	180	200						

Plate (mm)

5	6	8	10	12	16	18	20	25	30
36	40	45	50	120					

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity(tensile test)	1mm/min	4200	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	116	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	116	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	15	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	175	MPa	DIN EN ISO 178	2)
Modulus of elasticity(flexural test)	2mm/min, 10 N	4200	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/ min, 10 N	23 / 43	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3400	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7.5J	n.b.	kJ/m²	DIN EN ISO 179-1eU	5)
Notched impact strength(Charpy)	max. 7.5J	4	kJ/m²	DIN EN ISO 179-1eA	
Ball indentation hardness		253	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		150	°C	DIN 53765	1)
Melting temperature		341	°C	DIN 53765	
Heat distortion temperature	HDT, Method A	162	°C	ISO-R 75 Method A	
Service temperature	short term	300	°C		2)
Service temperature	long term	260	°C		
Thermal expansion (CLTE)	23-60°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	7	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,27	W/(K*m)	ISO 22007-4:2008	

- (1) Found in public sources.
 (2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁵	Ω	DIN IEC 60093	1)
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁵	Ω*cm	DIN IEC 60093	
Dielectric strength	23°C, 50% r.h.	73	kV/mm	ISO 60243-1	2)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	125	V	DIN EN 60112	

- (1) Specimen in 20mm thickness
 (2) Specimen in 1mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.02 /0.03	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		+		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	listed (value at 1.5mm)	V0		DIN IEC 60695-11-10;	

- (1) Ø ca. 50mm, h=13mm
 (2) (+) good resistance
 (3) - poor resistance

PEEK CF30 – Black

(Tecapeek CF30 – Black)



Chemical Designation

PEEK (Polyetheretherketone)

Colour

black

Density

1.38 g/cm³

Main Features

- good chemical resistance
- improved toughness
- inherent flame retardant
- hydrolysis and superheated steam resistant
- very high stiffness
- very high creep resistant
- resistance against high energy radiation
- high dimensional stability

Colour Code: Black



Shapes and Sizes

Rounds (mm)

5	6	8	10	12	15	16	18	20	22
25	28	30	32	36	40	45	50	56	60
65	70	80	90	100	110	120	125	140	150
160	165	180	200						

Plate (mm)

5	6	8	10	12	16	18	20	25	30
36	40	45	50	120					

Mechanical Properties

Mechanical Properties	Value	Unit	Parameter	Norm	
Modulus of elasticity (tensile test)	6000	MPa	1 mm/min	DIN EN ISO 527-2	1)
Tensile strength	112	MPa	50mm/min	DIN EN ISO 527-2	
Elongation at break	10	%	50mm/min	DIN EN ISO 527-2	
Compression strength	25/47/111	MPa	1% / 2% / 5%	EN ISO 604	2)
Impact strength (Charpy)	92	kJ/m ²	max. 7,5J	DIN EN ISO 179-1eU	3)
Ball indentation hardness	298	MPa		ISO 2039-1	4)

- (1) For tensile test: specimen type 1b
- (2) Specimen 10x10x10mm
- (3) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (4) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Value	Unit	Parameter	Norm	
Glass transition temperature	147	C		DIN EN ISO 11357	1)
Melting temperature	341	C		DIN EN ISO 11357	
Service temperature	300	C	short term	NN	2)
Service temperature	260	C	long term	NN	
Thermal expansion (CLTE)	4	10 ⁻⁵ */K	23-60°C, long.	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	4	10 ⁻⁵ */K	23-100°C, long.	DIN EN ISO 11359-1;2	
Thermal conductivity	0.66	W/(k*m)		ISO 22007-4:2008	
Specific heat	1.2	J/(g*K)		ISO 22007-4:2008	
Thermal expansion (CLTE)	6	10 ⁻⁵ */K	100-150°C, long.	DIN EN ISO 11359-1;2	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Value	Unit	Parameter	Norm	
surface resistivity	10 ³ – 10 ¹²	Ω		DIN EN 61340-2-3	
volume resistivity	10 ³ – 10 ¹²	Ω*cm		DIN EN 61340-2-3	

Other Properties

Other Properties	Value	Unit	Parameter	Norm	
Resistance to hot water/ bases	+	–		–	2)
Flammability (UL94)	V0	–	corresponding to	DIN IEC 60695-11-10;	4)
Resistance to weathering	–	–		–	3)
Water absorption	0.03	%	24h / 96h (23°C)	DIN EN ISO 62	1)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card).The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

PEEK ELS Nano – Black

(Tecapeek ELS Nano – Black)



Chemical Designation

PEEK (Polyetheretherketone)

Colour

black opaque

Density

1.36 g/cm³

Fillers

CNT

Main Features

- high dimensional stability
- continuous service temperature up to 260°C
- high strength
- very good chemical resistance
- electrically conductive
- high thermal and mechanical capacity
- good machinability
- high toughness

PEEK

Colour Code: Black Opaque



Shapes and Sizes

Rounds (mm)

5	6	8	10	12	15	16	18	20	22
25	28	30	32	36	40	45	50	56	60
65	70	80	90	100	110	120	125	140	150
160	165	180	200						

Plate (mm)

5	6	8	10	12	16	18	20	25	30
36	40	45	50	120					

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	4800	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	106	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	106	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	4	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	178	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	4700	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	27 / 47	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3600	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	58	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		253	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition	temperature	147	°C	DIN 53765 *	1)
Melting	temperature	341	°C	DIN 53765	
Service temperature	short term	300	°C		2)
Service temperature	long term	260	°C		
Thermal expansion (CLTE)	23-60°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	7	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,46	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Conductive rubber; 23°C, 12% r.h.	10 ² – 10 ⁴	Ω	DIN EN 61340-2-3	1)
Specific volume resistance	Conductive rubber; 23°C, 12% r.h.	10 ³ – 10 ⁵	Ω*cm	DIN EN 61340-2-3	

(1) Specimen in 20mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		+		–	2)
Resistance to weathering		(+)		–	3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) good resistance

(3) (+) limited resistance

(4) |Corresponding means no listing at UL (yellow card).The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

PEEK GF30

(Tecapeek GF30)



Chemical Designation

PEEK (Polyetheretherketone)

Colour

natural opaque

Density

1.53 g/cm³

Fillers

glass fibres

Main Features

- good heat deflection temperature
- good chemical resistance
- inherent flame retardant
- hydrolysis and superheated steam resistant
- very high stiffness
- very high creep resistant
- high dimensional stability
- resistance against high energy radiation

Colour Code: Natural Opaque



Shapes and Sizes

Rounds (mm)

5	6	8	10	12	15	16	18	20	22
25	28	30	32	36	40	45	50	56	60
65	70	80	90	100	110	120	125	140	150
160	165	180	200						

Plate (mm)

5	6	8	10	12	16	18	20	25	30
36	40	45	50	120					

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	6400	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	105	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	105	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	3	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	3	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	164	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	6600	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	29 / 52	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	4800	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	33	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		316	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

PEEK

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		147	°C	DIN 53765	1)
Melting temperature		341	°C	DIN 53765	
Service temperature	short term	300	°C		2)
Service temperature	long term	260	°C		
Thermal expansion (CLTE)	23-60°C, long.	4	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	4	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,35	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	.	10 ¹⁴	Ω	DIN EN 61340-2-3	
Specific volume resistance	.	10 ¹⁵	Ω*cm	DIN EN 61340-2-3	
Dielectric strength	23°C, 50% rh.	36	kV/mm	ISO 60243-1	1)

(1) Specimen in 20mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		+		–	2)
Resistance to weathering		(+)		–	3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

PEEK GFID

(Tecapeek ID)



Chemical Designation

PEEK (Polyetheretherketone)

Colour

blue grey opaque

Density

1.49 g/cm³

Fillers

detectable filler

Main Features

- detectable via metal detector
- good chemical resistance
- high creep resistance
- inherent flame retardant
- good heat deflection temperature
- hydrolysis and superheated steam resistant
- good machinability

PEEK

Colour Code: Blue Grey Opaque



Shapes and Sizes

Rounds (mm)

5	6	8	10	12	15	16	18	20	22
25	28	30	32	36	40	45	50	56	60
65	70	80	90	100	110	120	125	140	150
160	165	180	200						

Plate (mm)

5	6	8	10	12	16	18	20	25	30
36	40	45	50	120					

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	4600	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	111	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	111	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	6	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	166	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	3700	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	25 / 46	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	4800	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	72	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		260	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		150	°C	DIN 53765	1)
Melting temperature		341	°C	DIN 53765	
Service temperature	short term	300	°C		2)
Service temperature	long term	260	°C		
Thermal expansion (CLTE)	23-60°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	7	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,27	W/(K*m)	ISO 22007-4:2008	

- (1) Found in public sources.
 (2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	.	10 ¹⁴	Ω	DIN EN 60093	
Specific volume resistance	.	10 ¹⁴	Ω*cm	DIN EN 60093	

PEEK

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.02 /0.03	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		+		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

- (1) Ø ca. 50mm, h=13mm
 (2) (+) limited resistance
 (3) - poor resistance
 (4) |Corresponding means no listing at UL (yellow card).The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

PEEK MT – Natural

(Tecapeek MT – Natural)



Chemical Designation

PEEK (Polyetheretherketone)

Colour

natural opaque

Density

1.31 g/cm³

Main Features

- high creep resistance
- very good stress cracking resistance
- good machinability
- resistance against high energy radiation
- very good chemical resistance
- hydrolysis and superheated steam resistant
- good slide and wear properties
- very good sterilisable

Colour Code: Natural Opaque



Shapes and Sizes

Rounds (mm)

5	6	8	10	12	15	16	18	20	22
25	28	30	32	36	40	45	50	56	60
65	70	80	90	100	110	120	125	140	150
160	165	180	200						

Plate (mm)

5	6	8	10	12	16	18	20	25	30
36	40	45	50	120					

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	4200	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	116	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	116	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	15	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	175	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	4200	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	23 / 43	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3400	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7,5J	4	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		253	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

PEEK

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		150	°C	DIN 53765	1)
Melting temperature		342	°C	DIN 53765	
Service temperature	short term	300	°C		2)
Service temperature	long term	260	°C		
Thermal expansion (CLTE)	23-60°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	7	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,27	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	.	10 ¹⁴	Ω	DIN EN 60093	
Specific volume resistance	.	10 ¹⁴	Ω*cm	DIN EN 60093	

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		+		—	2)
Resistance to weathering		-		—	3)
Flammability (UL94)	listed (value at 1.5mm)	V0		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) |Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

PEEK PVX – Black

(Tecapeek PVX – Black)



Chemical Designation

PEEK (Polyetheretherketone)

Colour

black opaque

Density

1.44 g/cm³

Fillers

carbon fibres, PTFE, graphite

Main Features

- good heat deflection temperature
- high creep resistance
- good slide and wear properties
- hydrolysis and superheated steam resistant
- good wear properties
- inherent flame retardant
- very good chemical resistance
- not electrically insulating

PEEK

Colour Code: Black Opaque



Shapes and Sizes

Rounds (mm)

5	6	8	10	12	15	16	18	20	22
25	28	30	32	36	40	45	50	56	60
65	70	80	90	100	110	120	125	140	150
160	165	180	200						

Plate (mm)

5	6	8	10	12	16	18	20	25	30
36	40	45	50	120					

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	5500	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	84	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	84	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	3	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	3	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	142	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	6000	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	23 / 44	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	4000	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	28	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		250	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		146	°C	DIN 53765	1)
Melting temperature		341	°C	DIN 53765	
Service temperature	short term	300	°C		2)
Service temperature	long term	260	°C		
Thermal expansion (CLTE)	23-60°C, long.	3	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	3	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	4	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,82	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	Conductive rubber; 23°C, 12% r.h.	10 ⁴ – 10 ¹¹	Ω	DIN EN 61340-2-3	1)
Specific volume resistance	Conductive rubber; 23°C, 12% r.h.	10 ⁷ – 10 ¹²	Ω*cm	DIN EN 61340-2-3	

(1) Specimen in 20mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		+		–	2)
Resistance to weathering		(+)		–	3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



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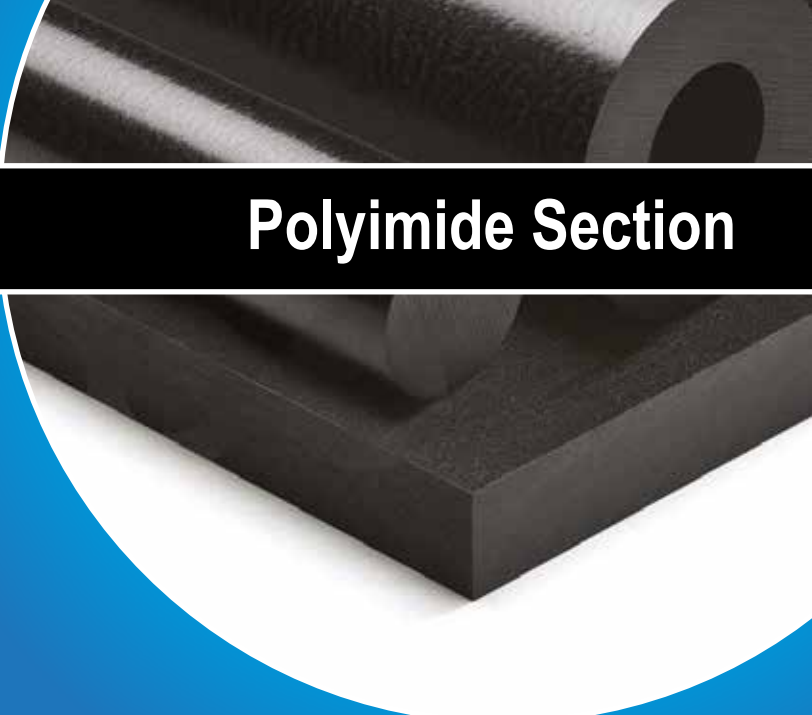


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Polyimide Section

This section includes:

Polyimide (Tecasint)	272
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Polyimide (Tecasint)



Chemical Designation

PI (Polyimide)

Colour

black

Density

1.34 g/cm³

Main Features

- high thermal and mechanical capacity
- very good thermal stability
- good chemical resistance
- resistance against high energy radiation
- low outgassing
- high creep resistance
- sensitive to hydrolysis in higher thermal range

Colour Code: Black



Shapes and Sizes

For more information on the range of shapes, sizes and grades we have available please contact us as we will be happy to assist you with reaching your requirements.

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm
Modulus of elasticity(tensile test)	1 mm/min, 23°C	3600	MPa	DIN EN ISO 527-I
Tensile strength	50 mm/min, 23°C	116	MPa	DIN EN ISO 527-I
Elongation at break	50 mm/min, 23°C	3,8	%	DIN EN ISO 527-I
Elongation at break	10 mm/min, 23°C	6	%	DIN EN ISO 178
Flexural strength	10 mm/min, 23°C	170	MPa	DIN EN ISO 178
Modulus of elasticity (flexural test)	2 mm/min, 23°C	3700	MPa	DIN EN ISO 178
Compression strength	10 mm/min, 23°C	500	MPa	EN ISO 604
Compression strength	10mm/min, 10% strain, 23°C	190	MPa	EN ISO 604
Compression modulus	1 mm/min, 23°C	2000	MPa	EN ISO 604
Compressive strain at break	10 mm/min, 23°C	45	%	EN ISO 604
Impact strength (Charpy)	max 7.5 J, 23°C	75,8	kJ/m²	DIN EN ISO 179-1eU
Notched impact strength (Charpy)	max 7.5 J, 23°C	5	kJ/m²	DIN EN ISO 179-1eA
Shore hardness	Shore D, 23°C	90	D	DIN 53505

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		368	°C	–	1)
Heat distortion temperature	1.85 MPa	368	°C	DIN 53 461	
Service temperature	long-term	–	°C	–	2)
Thermal expansion (CLTE)	50-200°C	4.3 / 4.3	10 K	DIN 53 752	
Thermal expansion (CLTE)	200-300°C	5.3 / 5.3	10 K	DIN 53 752	
Specific heat		1,04	J/(g*K) –		
Thermal conductivity	40°C	0,22	W/(K*m)	ISO 8302	
Specific heat		1,1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,82	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

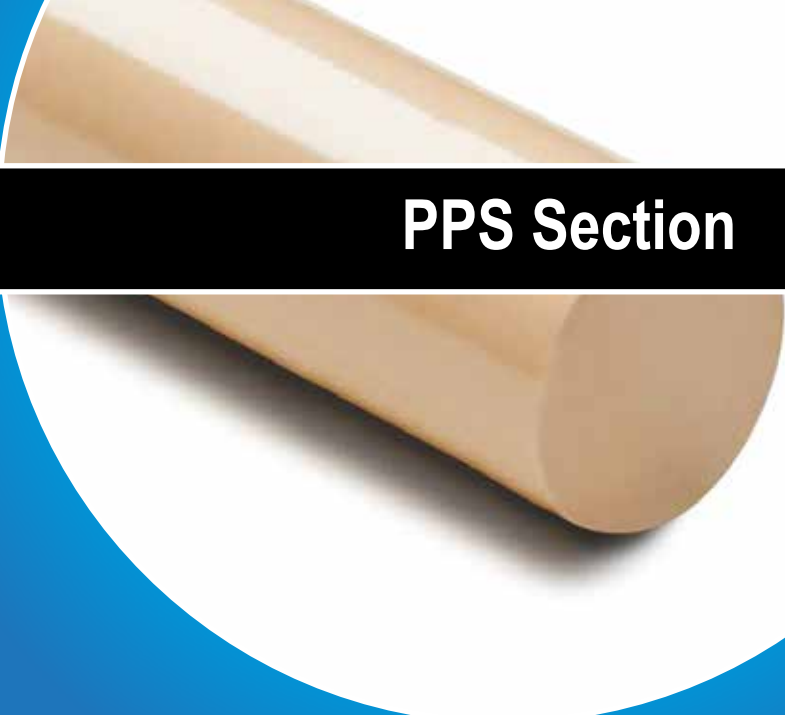
Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance	23°C	10	Ω	DIN IEC 60093	1)
Specific volume resistance	23°C	10	Ω *cm	DIN IEC 60093	
Electric strength DC	23°C	20	kV*mm	ISO 60243-1	
Dielectric loss factor	50 Hz, 23°C	1*10		DIN 53483-1	
Dielectric loss factor	27 MHz, 23°C	3*10		DIN 53483-1	
Dielectric constant	50 Hz, 23°C	3,5		DIN IEC 60250	
Dielectric constant	27 MHz, 23°C	3,1		DIN IEC 60250	

(1) Specimen in 20mm thickness

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24 h in water; 23°C	1,08	%	DIN EN ISO 62	
Water absorption	24 h in water; 80°C	3,29	%	DIN EN ISO 62	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10; 1)	

(1) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



PPS Section

This section includes:

PPS (Tecatron)	276
PPSU (Tecason)	279

PPS (Tecatron)



Chemical Designation

PPS (Polyphenylsulfide)

Colour

natural opaque

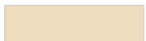
Density

1.36 g/cm³

Main Features

- good heat deflection temperature
- good chemical resistance
- resistance against high energy radiation
- high strength
- high dimensional stability
- high stiffness
- high creep resistance

Colour Code: Natural Opaque



Shapes and Sizes

For more information on the range of shapes, sizes and grades we have available please contact us as we will be happy to assist you with reaching your requirements.

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	4100	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	102	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	100	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	4	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	151	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	4000	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	20 / 38	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	29	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		248	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		97	°C	DIN 53765	1)
Melting temperature		281	°C	DIN 53765	
Service temperature	short term	260	°C		2)
Service temperature	long term	230	°C		
Thermal expansion (CLTE)	23-60°C, long.	6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	7	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	12	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,25	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10 ¹⁴	Ω	DIN IEC 60093	
Specific volume resistance		10 ¹⁴	Ω*cm	DIN IEC 60093	

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	<0.01 / 0,01	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		+		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

PPSU

(Tecason)



Chemical Designation

PPS (Polyphenylsulfide)

Colour

natural opaque

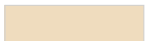
Density

1.36 g/cm³

Main Features

- good heat deflection temperature
- good chemical resistance
- resistance against high energy radiation
- high strength
- high dimensional stability
- high stiffness
- high creep resistance

Colour Code: Natural Opaque



Shapes and Sizes

For more information on the range of shapes, sizes and grades we have available please contact us as we will be happy to assist you with reaching your requirements.

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity(tensile test)	1mm/min	4100	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	102	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	100	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	4	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	151	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	4000	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	20 / 38	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	29	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		248	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		97	°C	DIN 53765	1)
Melting temperature		281	°C	DIN 53765	
Service temperature	short term	260	°C		2)
Service temperature	long term	230	°C		
Thermal expansion (CLTE)	23-60°C, long.	6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	7	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	12	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,25	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10 ¹⁴	Ω	DIN IEC 60093	
Specific volume resistance		10 ¹⁴	Ω*cm	DIN IEC 60093	

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	<0.01 / 0,01	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		+		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



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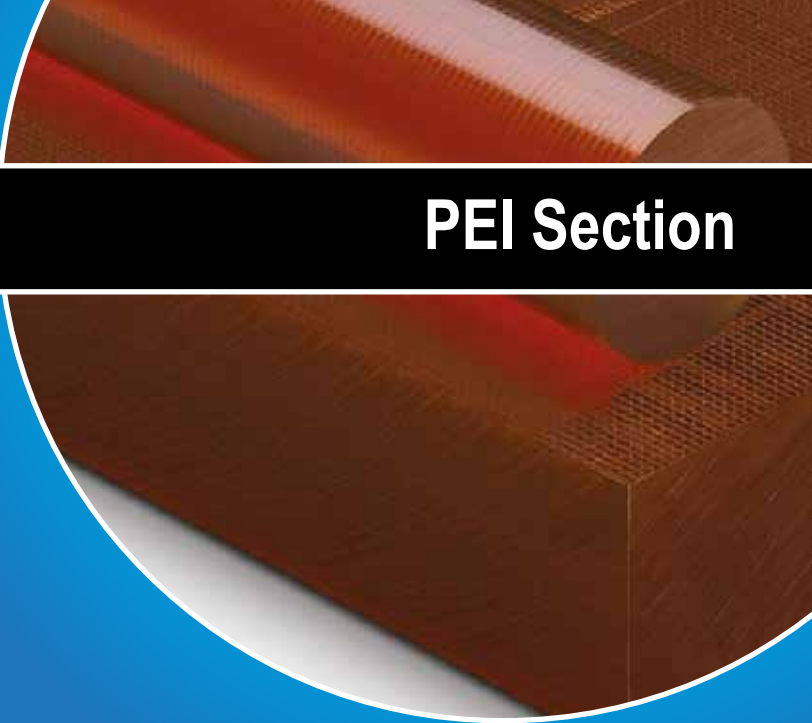
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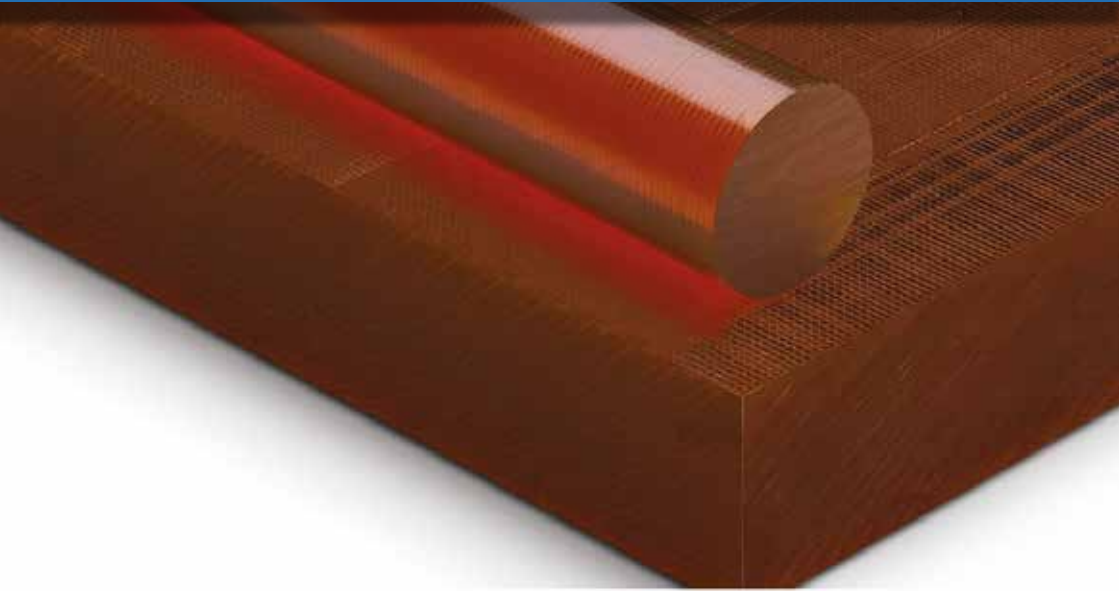


PEI Section

This section includes:

PEI (Tecapei).....	284
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PEI (Tecapei)



Chemical Designation

PEI (Polyethereimide)

Colour

amber transparent

Density

1.28 g/cm³

Main Features

- high thermal and mechanical capacity
- resistance against high energy radiation
- high dimensional stability
- inherent flame retardant

Colour Code: Amber Transparent



Shapes and Sizes

For more information on the range of shapes, sizes and grades we have available please contact us as we will be happy to assist you with reaching your requirements.

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm	
Modulus of elasticity (tensile test)	1mm/min	3200	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	127	MPa	DIN EN ISO 527-2	
Tensile strength at yield	50mm/min	127	MPa	DIN EN ISO 527-2	
Elongation at yield	50mm/min	7	%	DIN EN ISO 527-2	
Elongation at break	50mm/min	35	%	DIN EN ISO 527-2	
Flexural strength	2mm/min, 10 N	164	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	3300	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	23 / 41	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2800	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7,5J	113	kJ/m ²	DIN EN ISO 179-1eU	5)
Ball indentation hardness		225	MPa	ISO 2039-1	6)

- (1) For tensile test: specimen type 1b
- (2) For flexural test: support span 64mm, norm specimen.
- (3) Specimen 10x10x10mm
- (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
- (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken
- (6) Specimen in 4mm thickness

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm	
Glass transition temperature		216	°C	DIN 53765	1)
Melting temperature		n.a.	°C	DIN 53765	
Service temperature	short term	200 °C			2)
Service temperature	long term	170 °C			
Thermal expansion (CLTE)	23-60°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	100-150°C, long.	6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1,2	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0,21	W/(K*m)	ISO 22007-4:2008	

(1) Found in public sources.

(2) Found in public sources. Individual testing regarding application conditions is mandatory.

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm	
Specific surface resistance		10	Ω	DIN IEC 60093	
Specific volume resistance		10	Ω *cm	DIN IEC 60093	

Other Properties

Other Properties	Parameter	Value	Unit	Norm	
Water absorption	24h / 96h (23°C)	<0.05 / 0,1	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		+		–	2)
Resistance to weathering		–		–	3)
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4)

(1) Ø ca. 50mm, h=13mm

(2) (+) limited resistance

(3) - poor resistance

(4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.



Polyethelene & Polypropelene Section

This section includes:

HDPE (Tecafine PE).....	288
Polypropylene (Round & Flat) (Polyprolene).....	291
UHMWPE (Tecafine PE 10 - Tecafine PE 100).....	294

HDPE

(Tecafine PE)



Chemical Designation

Polyethylene

Colour, Fillers

opaque

DIN-Abbreviation

PE-HD

Fillers

carbon fibres, PTFE, graphite

Main Features

- very low moisture absorption
- good sliding properties
- easily welded
- difficult to bond
- resistant to cleaning agents & xxx acids
- resistant to numerous solvents
- low hardness
- low density
- very good electrical
- insulation good cold impact strength of resistance

Colour Code: Opaque



Shapes and Sizes

Rounds (mm)

20	25	30	40	50	60	70	80	90	100
110	120	130	140	150	160	180	200		

Plate (mm)

8	10	12	15	20	25	30	35	40	50
60	70	80	100						

Mechanical Properties

Mechanical Properties	Dry/Moist	Unit	Standard
Tensile strength at yield	25	MPa	DIN EN ISO 527
Elongation at yield		%	
Tensile strength at break		MPa	
Elongation at break		%	
Modulus of elasticity in tension	1000	MPa	DIN EN ISO 527
Modulus of elasticity after flexural test	1000-1400	MPa	DIN EN ISO 178
Hardness	50		DIN 53 456 (Kugeldruckhärte)
Impact strength 23° C (Charpy)	n.b.	KJ/m ²	DIN EN ISO 179
Creep rupture strength after 1000 h with static load	12,5	MPa	
Time yield limit for 1% elongation after 1000 h	3	MPa	
Co-efficient of friction p = 0,05 N/mm ² v=0,6 m/s	0,29		
on steel, hardened and ground			
Wear p = 0,05 N/mm ² v=0,6 m/s		µm/km	
on steel, hardened and ground			

Thermal Properties

Thermal Properties	Dry/Moist	Unit	Standard
Crystalline melting point	130	°C	DIN 53 765
Glass transition temperature	-95	°C	DIN 53 765
Heat distortion temperature HDT, Method A	42-49	°C	ISO-R 75 Verfahren A (DIN 53 461)
Heat distortion temperature HDT, Method B	70-85	°C	ISO-R 75 Verfahren B (DIN 53 461)
Max. service temperature short term	90	°C	
Max. service temperature long term	90	°C	
Thermal conductivity (23° C)	0,35-0,43	W/(K m)	
Specific heat (23° C)	1,7-2	J/g.K	
Coefficient of thermal expansion (23-55°C)	13-15	10-51/K	DIN 53 752

Electrical Properties

Electrical Properties	Dry/Moist	Unit	Standard
Dielectric constant (106 Hz)	2,4		DIN 53 483, IEC-250
Dielectric loss factor (106 Hz)	0,0002		DIN 53 483, IEC-250
Specific volume resistance	> 10 ¹⁵	*cm	DIN IEC 60093
Surface resistance	> 10 ¹³		DIN IEC 60093
Dielectric strength	>50	kV/mm	DIN 53 481, IEC-243, VDE 0303 Teil 2
Resistance to tracking	KA 3c		DIN 53 480, VDE 0303 Teil 1

Other Properties

Miscellaneous Properties	Dry/Moist	Unit	Standard
Density	0,96	g/cm ³	DIN 53 479
Moisture absorption (23°C/50RH)		%	DIN EN ISO 62
Water absorption to equilibrium	0,02	%	DIN EN ISO 62
Flammability acc. to UL standard 94	HB		

Polypropylene (Round & Flat)

(Polypropylene)



Chemical Designation

PP

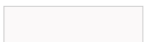
Colour

natural/black

Density

0.91 g/cm³

Colour Code: Natural/Black



Polyeth &
Polyprop

Shapes and Sizes

Rounds (mm)

20	25	30	40	50	60	70	80	90	100
110	120	130	140	150	160	180	200		

Plate (mm)

8	10	12	15	20	25	30	35	40	50
60	70	80	100						

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm
Modulus of elasticity (tensile test)		1350	MPa	DIN 53457
Tensile strength at yield		32	MPa	DIN EN ISO 527
Elongation at break		13	%	DIN 53455
Notched impact strength (Charpy)		7	kJ/m ²	DIN EN ISO 179

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm
Service temperature	long term	100	°C	
Thermal expansion (CLTE)	23-60°C, long.	16	10 ⁻⁵ *K ⁻¹	ISO 11359-2
Thermal conductivity		0,22	W/(K*m)	DIN 52612

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm
Surface resistance		10 ¹³	W	DIN 53482
Dielectric strength		>55	kV/mm	DIN 53481

Other Properties

Other Properties	Parameter	Value	Unit	Norm
Water absorption	saturation (23°C)	0,1	%	DIN 53495
Flammability		HB		UL94

UHMWPE

(Tecafine PE 10 - Tecafine PE 100)



Chemical Designation

Polyethylene

Colour

opaque/black

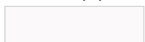
DIN-Abbreviation

PE-UHMW

Main Features

- Tough
- Good sliding properties
- Resistant to dilute acids, cleaning agents, numerous solvents
- Very good electrical insulation
- Difficult to bond
- Lightweight
- Very good abrasion resistance
- Very low water absorption

Colour Code: Opaque/Black



Shapes and Sizes

Rounds (mm)

20	25	30	40	50	60	70	80	90	100
110	120	130	140	150	160	180	200		

Plate (mm)

8	10	12	15	20	25	30	35	40	50
60	70	80	100						

Mechanical Properties

Mechanical properties		unit	standard
Density	0,93	g/cm ³	DIN EN ISO 527 / D 792
Tensile strength at yield	17	MPa	DIN EN ISO 527 / D 638
Tensile strength at break	40	MPa	DIN EN ISO 527 / D 638
Elongation at break	>50	%	DIN EN ISO 527 / D 638
Modulus of elasticity in tension	650	MPa	DIN EN ISO 527 / D 638
Modulus of elasticity in flexure	800	MPa	DIN EN ISO 178 / D 790
Ball indentation hardness	35	MPa	DIN EN ISO 2039 / I
Impact strength	No br.	kJ/m ²	DIN EN ISO 179 / D 256
Creep rupture strength after 1000 hrs with static load		MPa	
Time yield limit for 1% elongation after 1000 hrs.		MPa	
Coefficient of friction against hardened and ground steel	– 0.29		
p = 0,05 N/mm ² , v = 0,6 m/s			
Wear conditions as above		µm/km	

Thermal Properties

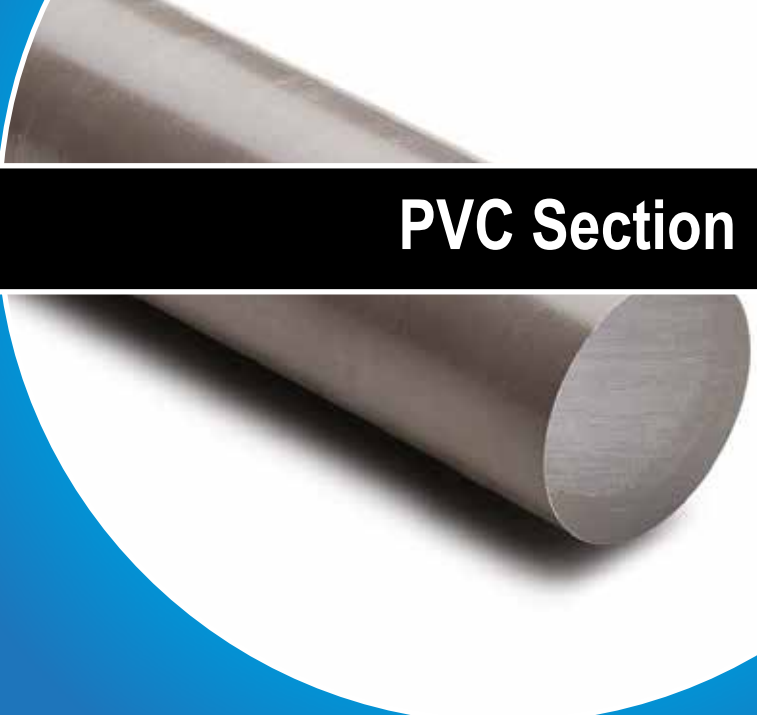
Thermal Properties		Unit	Standard
Crystalline melting point	135	°C	DIN 53 736
Glass transition temperature		°C	DIN 53 736
Heat distortion temperature			
Method A	42	°C	R 75
Method B	~70	°C	R 75
Max. service temperature			
short term	120	°C	
long term	90	°C	
Coefficient of thermal conductivity	0,41	W/(m . K)	
Specific heat	1,84	J/(g . K)	
Coefficient of thermal expansion	20	10 ⁻⁵ /K	DIN 53 483 /D 696

Electrical Properties

Electrical Properties		Unit	Standard
Dielectric constant at 105 Hz	3		DIN 53 483
Dielectric loss factor at 105 Hz			DIN 53 483
Specific volume resistance	10 ¹⁴	Ω . cm	DIN 60093
Surface resistance	10 ¹²	Ω	DIN 60093
Dielectric strength 1 mm	45	kV/mm	ASTM 149
Tracking resistance KA 3c, KB>600,KC>600			DIN 53 480

Other Properties

Miscellaneous Properties		Unit	Standard
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	0,01	%	DIN EN 150/ASTM 62
Water absorption at saturation at 23 °C	0,02	%	DIN EN 150/ASTM 62
Resistance to hot water; washing soda	resistant		
Flammability according to UL standard 94	HB		
Resistance to weathering	natural not resistant, black resistant		



PVC Section

This section includes:

PVC (Polyvinyl Chloride)	298
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PVC

(Polyvinyl Chloride)



Chemical Designation

PVC

Colour

brown

Density

1.44 g/cm³

Main Features

- good heat deflection temperature
- electrically insulating
- sensitive to stress cracking
- high strength
- good weldable and bondable

Colour Code: Brown



Shapes and Sizes

Rounds (mm)

6	8	10	12	15	18	20	25	30	35
40	45	50	55	60	65	70	75	80	90
100	110	120	130	140	150	160	180	200	225
250	300								

Plate (mm)

1	1.5	2	3	4	4.5	5	6	8	10
12	15	20	25	30	35	40	50	75	80
90	100	110	120	130	140	150	160	180	200
250	300								

Mechanical Properties

Mechanical Properties	Parameter	Value	Unit	Norm
Tensile strength at yield		45	MPa	DIN EN ISO 527
Elongation at break		15	%	DIN EN ISO 527
Modulus of elasticity (tensile test)		3000	MPa	DIN EN ISO 527
Notched impact strength (Charpy)		2	kJ/m ²	DIN EN ISO 179
Ball indentation hardness		140	MPa	DIN EN ISO 2039-1

Thermal Properties

Thermal Properties	Parameter	Value	Unit	Norm
Service temperature	short term	70	°C	Average
Service temperature	long term	60	°C	Average
Thermal conductivity		0,2	W/(K*m)	DIN 52612-I
Coefficient of linear thermal		8	10 ⁻⁵ K ⁻¹	DIN 53752

Electrical Properties

Electrical Properties	Parameter	Value	Unit	Norm
Surface resistance		10 ¹³	W	IEC 60093
Specific volume resistance		10 ¹⁵	W*cm	IEC 60093
Dielectric constant		3		IEC 60250
Dielectric strength		39	kV/mm	IEC 60243-I

Other Properties

Other Properties	Parameter	Value	Unit	Norm
Flammability		V0		UL94



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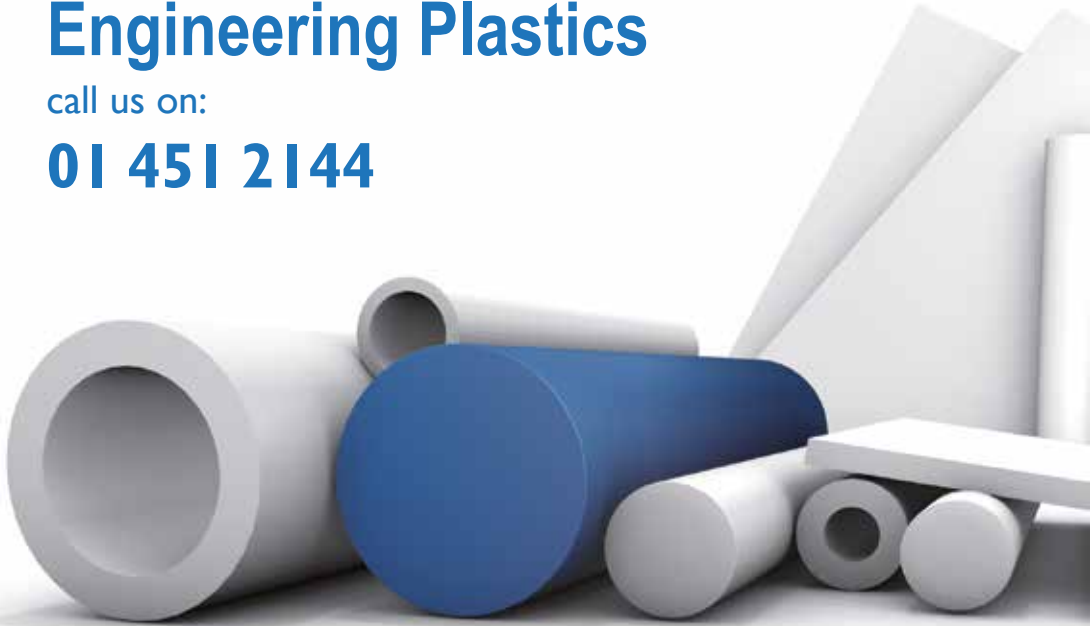


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COLOUR CODE CHART

Colour	Code	Grade	Description
STAINLESS STEEL			
Yellow/White		303S31, AISI 303, 1.4305	Free-cutting stainless steel
Red/White		304S11, AISI 304L, 1.4301/1.4307	Lower Carbon content than 303. More suitable for welding parts.
Green/White		316S11, AISI 316L, 1.4404/1.4401	Designed for use in severely corrosive conditions, suitable for welding.
Black/Brown		410S21, AISI 410, 1.4006	Martensitic stainless steel. High mechanical properties after heat treatment.
Red/Brown		416S21, AISI 416, 1.4005	Martensitic stainless steel. Good machinability used unhardened or hardened.
Green/Black/White		17-4PH, 1.4542	Precipitation hardened stainless steel.
Green/Pink		S31635, 316Ti, 1.4571	316Ti is a weldable austenitic stainless steel comparable to 316L which is the low carbon equivalent of 316.
Orange/Brown		S43100, 431S29, 1.4057	Stainless Grade 431 is a heat treatable martensitic, nickel-bearing grade with the best corrosion properties of all the martensitic grades.
Pink		S44004, 440C, 1.4125	Stainless Grade 440C is a high carbon, straight chromium, high hardenability martensitic stainless steel

ALUMINIUM			
Red		Alloy 2011	This alloy is the most often selected for use on high speed automatic lathes. It offers the following advantages: easy machining with any equipment. Longer life of cutting tools cutting area always clean due to very thin chip.
Royal Blue		Alloy 6082	This alloy has medium mechanical properties but high resistance to corrosion and is suitable for welding, hot forging and anodizing.
Royal Blue		Alloy 6063	Alloy 6063 is a widely used extrusion alloy, suitable for applications where no special strength properties are required.
Black/Yellow		Alloy 6026	This innovative alloy has been conceived, in order to meet the most recent standards for the protection of the environment. It is particularly suitable for being machined on high speed automatic lathes, good suitability for decorative and industrial hard anodizing.
Uncoded		Al99.5, 3.0255, 1050A	1050A H14 is an unalloyed non-heat treatable rolled aluminium sheet engineered for general sheet metal work where high mechanical properties are not required.
Uncoded		AlMg3, 3.535, 5754	Treadplate is generally used in flooring applications. It provides antislip safety, perfect water drainage and doesn't require any surface treatment or maintenance.

We also offer the following Alloys: 2007, 2017, 2024, 2030, 5083, 6061, 6262.

CHROME PLATED ROD			
Uncoded		CK45 or 20MNV6	Hard Chrome plated rod for hydraulic pistons

Colour	Code	Grade	Description
STEEL			
Blue		080A15, EN3B, 1.0402	A mild steel used for general engineering purposes.
Blue/Pink		S355J2, EN14A, 1.1160	Medium tensile Carbon-Manganese steel. Applications include lifting gear components, bolts, shafts and spindles.
Green		230M07, EN1A, 1.0715	Free-cutting or free machining steel. Used in automation to produce turned parts. Good tool life.
Purple		230M07Pb, EN1APb, 1.0718	Same as EN1A with the addition of lead. Not recommended for welding.
Red/Yellow		C45	This grade is commonly known as KEY STEEL. Applications include spindles, studs, levers and clamps.
Yellow		080A42/080M40, EN8, 1.1186	A medium tensile Carbon-Steel. Greater strength than mild steel.
Blue/Yellow		070M55, EN9, 1.0535	Medium Carbon-Steel bar. For oil industry applications, suitable where abrasion resistance rather than toughness is of prime importance.
White/Purple		605M36T, EN16T	Manganese-Molybdenum steel in heat treated condition. Applications include shafts, axles, bolts and nuts.
Yellow/White		708M40, EN19, 1.7225	Annealed condition Chromium-Molybdenum steel. Applications include gears, shafts, crank shaft and bolts.
White/Blue		817M40, Annealed, EN24, 1.6565	Nickel-Chromium-Molybdenum steel in the annealed condition. After heat treatment, material exhibits high resistance to wear with good ductility and shock resistance. Applications include gears, shafts, axles, etc.
White/Brown		817M40T, EN24T, 1.6565	Hardened and tempered, high resistance to wear with good ductility and shock resistance. Applications include gears, shafts, axles etc. (Condition T).
Green/Black		SAE 8620/SAE 805A20, 1.6543	Low alloy hardening steel. Applications include gears pinions, cams and shafts.

DUPLEX STAINLESS STEEL			
Green/Brown		F51 SAF 2205, 1.4462, UNS 31803	Duplex stainless steel. Good strength and corrosion resistance.
Purple/Black		F53 SAF 2507, S32750, 1.4410	High mechanical strength with corrosion resistance in marine environments.
Yellow/Brown		F55 1.4501, UNS 32760	Super duplex stainless steel. Applications include off-shore oil and gas equipment.

COPPER / BRONZE / BRASS			
Red		DGS1043 CuAl10 Ni Fe4, CA104, NES 833	Aluminium-Nickel Bronze with high corrosion resistance.
White		SAE 660 AlMgSil, 3.2315	Leaded-Phosphor Bronze. General purpose machining bronze for applications such as bushes, gears, etc.
Green		HD/HC Copper Bar, C101, Cu-ETP, 2.0060	High conductivity Copper, corrosion resistant, malleable. Used for electrical conductors and also cold heading applications.

COLOUR CODE CHART

Colour	Code Grade	Description
TOOL STEEL		
Green/ Red	 D2, 1.2379	Excellent toughness and suitable for bath nitriding, dies and punches.
White/ Black	 P20, 1.2311/1.2738	Plastic mould steel for large and medium moulds.
Blue/ Grey	 1.2083	Corrosion resistant tool steel. Used for Grey chemically aggressive moulding compounds and plastics containing abrasive fillers.
Blue/ Silver	 01, 1.2510	Medium alloyed. Used in cutting tools, blanking and punching tools, thread cutting tools.
Yellow/ Grey	 W302, H 13, 1.2344	H-13 Tool Steel is the most popular and most versatile, hot work tool steel, providing a good balance of toughness, heat check resistance, high-temperature strength and moderate wear resistance.

NICKEL ALLOYS		
White	 Alloy 42 (Nilo 42) 1.3917, UNS K94100	A Nickel-Iron controlled expansion alloy containing 42% Nickel. It has a low and normally constant coefficient of thermal expansion in the 85°F (20°C) to 570°F (300°C) temperature range.
Red/ Green	 Alloy C-276, 2.4819, UNS N10276	Superior corrosion resistance, especially in the corrosive areas of flues, outlet ducting and sewage treatment plants.
Black/ Green	 Alloy 400 2.4360, UNS N04400	Nickel-Copper alloy which is weldable and resistant to corrosion and sea water.
Yellow/ Orange	 Alloy 600 2.4816, UNS N06600	Various corrosive and high temperature applications.
Black/ Blue	 Alloy 625 2.4856, UNS N06625	Excellent resistance to pitting, crevice corrosion and stress corrosion cracking. Highly resistant to a wide range of organic and mineral acids.
Blue/ Green	 Alloy 718 2.4668, UNS N07718	Alloy Nickel 718 is a precipitation hardened Nickel-Chromium alloy containing significant amounts of Iron, Niobium and Molybdenum. Maintains high strength, good ductility and oxidation resistance up to high temperatures and while also having outstanding cryogenic properties. Applications include choke stems, gate valves, sub surface safety valves.

Colour	Code Grade	Description
CAST IRON		
Orange	 BS 1452 GD 250, DIN 1691 GG25, 0.6025	Continuous Cast Iron Bar. Applications include pistons, gears, cams, etc.
Yellow/ Red	 Ductile Iron 420/ 12 GGG40	A higher grade ductile iron with improved mechanical properties.
Red	 NI Resist	Good corrosion and erosion resistance properties and good high temperature performance.

STEEL TUBES		
Uncoded	EN10305-4 DIN2391C NBK	Cold finish seamless pressure tube for hydraulic feed lines. Supplied with ends capped.
Uncoded	E355 Tube, EN10297-1, DIN 1629/ST 52	Hot finish seamless thick wall tubes or various applications in the mechanical, industrial and agricultural areas.

TITANIUM		
Blue/ Red	 Titanium GR.2 Grade 3.7035	Commercially Pure Grade 2 is the most frequently employed unalloyed Titanium grade. It provides moderate strength (typical yield strength 352 MPa), combined with good ductility and formability and excellent weldability.
Blue/ Orange	 Titanium GR.5 Grade 3.7165	Ti-6Al-4V (Grade 5), classed as an alpha-beta alloy, is the most widely used of the high strength Titanium alloys. The alloy combines its good mechanical strength and low density (4.42 kg/dm ³), with excellent corrosion resistance in many media.

HYDRAULIC RANGE		
Uncoded	080A42/150M19, En8D/En14A, 1.1191/1.5217	Hard Chrome bar is a chromium-plated steel product used primarily as piston rod material in standard hydraulic and pneumatic applications.
Uncoded	EN10305PT1/2, E355+SR, (Din2391/2393)	Ready to use Smooth Bore Tubes for hydraulic cylinders with smooth mirror finish bore.

ENGINEERING PLASTICS

Green	 CAST NYLON 6	Very good mechanical, bearing & wear properties suitable for industrial wear application such as Bearings, Gears, Sprockets etc.	White	 PEEK	High Performance material with high temperature and chemical resistance. Excellent dimensional stability and high creep stability.
Red	 EXTRUDED NYLON 66	Highest hardness and stiffness. Best abrasion, natural resistance and sliding properties of all the non-filled nylons. Suitable in Marine, Automotive, Construction & Mining industries.	Black	 PTFE (Teflon)	Good insulating properties, excellent insulating at high temperature applications.
Yellow	 CO-POLYMER (POM) ACETAL	High mechanical strength & rigidity with low moisture absorption, excellent machinability. Up to 100mm in thickness available from stock. Other thicknesses are available on request.	Grey	 PVC	Good chemical resistance & fire rating. Easy to weld & glue. Applications include cladding, fluid handling, ventilation, pump & valve parts.
Blue	 HOMO-POLYMER ACETAL	Good chemical resistance, high strength, excellent machinability, good slide and wear properties and easy to polish.	Brown	 PE1000 (UHMWPE)	Good chemical & impact resistance. Good for wear & friction application. Applications such as hoppers, wear strips, marine, packaging & food processing machinery. PE1000 up to 50mm in thickness available from stock. Other thicknesses are available on request.

STAINLESS STEELS - NICKEL ALLOYS - ALUMINIUM - ENGINEERING PLASTICS - ENGINEERING STEELS

IRELAND'S PREMIER MULTI-METAL STOCKHOLDER



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