

## Round Bar

We offer the following grades and sizes of Round Bar:

Grades: EN3A, EN8, EN19, EN 24, EN30B, En36B

Sizes: 16 - 40 | 42 - 50 | 51.5 - 70 | 73 - 103 | 105 - 110 | 115 - 160 | 170 - 220  
| 230 - 250 | 250 - 400 | 401 – 540

### Material Composition

Material	EN 3	EN 8	EN 9	EN 19	EN 24	EN 30B	EN 36B
<b>Carbon</b>	0.15 - 0.25	0.36 - 0.44	0.50 - 0.60	0.35 - 0.45	0.35 - 0.45	0.26 - 0.36	0.12 - 0.18
<b>Silicon</b>	0.05 - 0.35	0.05 - 0.35	0.05 - 0.35	0.10 - 0.35	0.10 - 0.35	0.10 - 0.35	0.10 - 0.35
<b>Manganese</b>	0.40 - 0.90	0.60 - 1.00	0.50 - 0.80	0.50 - 0.80	0.45 - 0.70	0.40 - 0.60	0.30 - 0.60
<b>Sulphur</b>	0.06 Max	0.06 Max	0.06 Max	0,05 Max	0.05 Max	0.05 Max	0.05 Max
<b>Phosphorus</b>	0.06 Max	0.06 Max	0.06 Max	0.05 Max	0.05 Max	0.05 Max	0.05 Max
<b>Chromium</b>	.	.	.	0.90 - 1.20	0.90 - 1.40	1.10 - 1.40	0.60 - 1.10
<b>Molybdenum</b>	.	.	.	0.20 - 0.40	0.20 - 0.35	0.20 - 0.40	.
<b>Nickle</b>	.	.	.	.	1.30 - 1.80	3.90 - 4.30	3.00 -3.75



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## Material Typical uses and Hardness

Material	Typical uses	Brinell hardness
EN 3	Shafts, bolts, nuts, studs, couplings, and machinery components where a low tensile strength material is required.	126 -176
EN 8	Motor shafts, Heat-Treated Bolts, Crankshafts, Connecting Rods, Flanges, not subjected to high stress or severe wear.	152 - 207
EN 9	Sprockets & Springs, Cylinders, Cams, Keys, Rifle Barrels, Small Gears, machined parts requiring moderate wear resistance.	201 - 255
EN 19	Alex Shafts, Gears, High tensile Bolts & Nits, Propeller Shafts Joints, Induction Hardened Track pins.	201-352
EN 24	Automobile main shafts, axle shafts, connecting rod bolts, synchronising cones, push rods, studs, differential shafts, motorcycle kick starter rachets, pinion sleeves, mandrel bars for tube manufacturing, gun barrels, breech mechanism parts, high duty engine connecting rods, high temperature bolts in oil refining and steam installations, various parts of machine tools such as spindle gears, compensating washers, power transmission gears, slide racks, and slide cams.	248 - 401
EN 30B	Gears, shafts, high duty bolts, high duty spindles and other demanding maximum strength, toughness, or wear resistance. This steel is shocked in the annealed condition, to render machining possible, and must be heat treated as follows: harden in air (or oil for larger sections over 2½" diameters) from a temperature of 810°C / 830°C. Temper, if desired, at a suitable temperature nor exceeding 250°C.	321 - 363
EN 36B	High duty gears for aircraft, auto and heavy-duty vehicle transmission components, steering worms, track rod pins, timing wheels, breech mechanisms and small arms parts.	341

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## Hollow Bar ST52

OD	ID	Wall mm	OD	ID	Wall mm	OD	ID	Wall mm	OD	ID	Wall mm
32	16	8	95	63	16	160	90	35	236	190	23
40	20	10	95	75	10	160	100	32	250	150	50
40	25	7.5	100	56	22	160	112	24	250	160	45
45	20	12.5	100	71	14.5	160	132	14	250	180	35
45	28	8.5	100	80	10	170	100	35	250	200	25
50	25	12.5	106	56	25	170	118	26	267	167	50
50	32	9	106	63	21.5	170	140	15	267	187	40
56	28	14	106	71	17.5	180	100	40	267	197	35
56	36	10	106	80	13	180	112	34	267	217	25
63	32	15.5	112	63	24.5	180	125	27.5	273	173	50
63	40	11.5	112	80	16	180	140	20	273	193	40
63	45	9	112	90	11	180	150	15	273	201	36
63	50	6.5	118	63	27.5	190	106	42	273	223	25
71	36	17.5	118	80	19	190	120	35	298	198	50
71	45	13	118	90	14	190	132	29	298	226	36
71	56	7.5	125	71	27	190	140	25	298	242	28
75	40	17.5	125	90	17.5	190	150	20	325	225	50
75	50	12.5	125	100	12.5	190	160	15	325	240	42.5
75	60	7.5	132	71	30.5	200	112	44	325	254	35.5
80	40	20	132	90	21	200	140	30	325	273	26
80	45	17.5	132	106	13	200	160	20	355	255	50
80	50	15	140	80	30	212	125	43.5	355	275	40
80	63	8.5	140	90	25	212	150	31	355	291	32
85	45	20	140	100	20	212	160	26	355	305	25
85	55	15	140	112	14	212	170	21	355	315	20
85	67	9	150	80	35	224	125	49.5	406	306	50
90	50	20	150	90	30	224	160	32	406	326	40
90	63	13.5	150	106	22	224	180	22	406	336	35
90	71	9.5	150	116	17	236	140	48	406	342	32
95	50	22.5	150	125	12.5	236	170	33	406	356	25

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