



38MnVS6

High Tensile Chrome Bar – Induction Hardened

Bars made from this chrome plated steel are typically used in applications where there are heavy duty, demanding and often corrosive conditions. The steel contains increased levels of alloying elements which delivers a high grade steel with excellent tensile strength exhibiting good machining and weldability.

Typical Chemical Composition %

	MIN		MAX
Carbon	0.32	–	0.41
Chromium			< 0.3
Manganese	1.20	–	1.60
Molybdenum			< 0.8
Phosphorous			< 0.025
Silicon	0.15	–	1.8
Sulphur	0.02	–	0.06
Vanadium	0.08	–	0.2

Mechanical Properties

Tensile Strength Rm (N/mm ²)	Min 800
Yield Strength Re (N/mm ²)	Min 520
Elongation	Min 18%
Hardness HB	220 – 300
Toughness KV, Joule, min:	No guarantee given, but normally 5 – 30J at 20°C

Typical Stock Range Carried

Imperial	5/8" – 6"
Metric	20mm – 160mm

Welding

38MnVS6 can be MMA or MAG welded at elevated temperature. Preheating at 200 to 300°C is recommended with slow cooling. The upper limit should not be exceeded because of risk for deterioration of the chrome layer. Low Hydrogen Electrodes are recommended.

38MnVS6 can normally be friction welded without problems. Special procedures may be necessary for larger diameters. Note that these welding details are for guidance only.

Surface Hardness, Induction Hardening

The chrome layer hardness is 850 HV_{0.1} min. The surface hardness in the induction hardened zone immediately beneath the chrome layer is 55 HRC min. The depth of hardening, which is defined as the distance from the steel/chrome interface at which the hardness has dropped to 400 HV1, is tabulated below:

Size Ø mm Hardening depth, mm

<28	1.0 – 1.5
>28 – 40	1.3 – 1.7
>40	1.7 – 2.3

Machining

Operation Parameters	Rough Turning	Fine Turning	Threading
Feed mm/r	0.3 – 0.6	0.05 – 0.3	-
Cut depth mm	2.0 – 5.0	0.2 – 2.0	-
Tool (coated)	ISO P15 – P 30	ISO P10 – P15	ISO P20 – P30
Speed m/min.	180 – 230	230 – 280	120 – 150

Carried out Controls

Chrome Layer Thickness

The thickness of the chrome is a minimum 20µm.

Surface Roughness

The surface roughness (Ra) is always less than 0.2 µm and normally in the range of 0.05 – 0.15 µm. Rt (ISO) is always less than 2.0 µm and normally in the range 0.5 – 1.5 µm.

Straightness

The maximum deviation is 0.2 mm/1.0 m.

Roundness

The out of roundness is maximised at 50% of the diameter tolerance interval.

Diameter Tolerance

ISO f7 is standard. Other tolerances can be supplied upon request (narrowest range is ISO level 7).

Tolerance Ranges

Size (mm)	ISO f7. µm	
	Upper	Lower
>18 - 30	- 20	- 41
>30 - 50	- 25	- 50
>50 - 80	- 30	- 60
>80 - 120	- 36	- 71
>120	- 43	- 83

Imperial Size Range

38MnVS6 High Tensile Chrome Bar

Product	Imperial inches	Metric mm	Weight Kg per meter
38MnVS6 High Tensile Chrome Bar – IND	5/8	15.88	1.71
38MnVS6 High Tensile Chrome Bar – IND	7/8	22.23	3.36
38MnVS6 High Tensile Chrome Bar – IND	1"	25.4	4.38
38MnVS6 High Tensile Chrome Bar – IND	1 1/4	31.75	6.84
38MnVS6 High Tensile Chrome Bar – IND	1 3/8	34.925	8.27
38MnVS6 High Tensile Chrome Bar – IND	1 1/2	38.1	9.84
38MnVS6 High Tensile Chrome Bar – IND	1 3/4	44.45	13.40
38MnVS6 High Tensile Chrome Bar – IND	2	50.8	17.50
38MnVS6 High Tensile Chrome Bar – IND	2 1/4	57.15	22.15
38MnVS6 High Tensile Chrome Bar – IND	2 1/2	63.5	27.34
38MnVS6 High Tensile Chrome Bar – IND	2 3/4	69.85	33.09
38MnVS6 High Tensile Chrome Bar – IND	3	76.2	39.38
38MnVS6 High Tensile Chrome Bar – IND	3 1/4	82.55	46.21
38MnVS6 High Tensile Chrome Bar – IND	3 1/2	88.9	53.60
38MnVS6 High Tensile Chrome Bar – IND	3 3/4	95.525	61.88
38MnVS6 High Tensile Chrome Bar – IND	4	101.6	70.00
38MnVS6 High Tensile Chrome Bar – IND	4 1/4	107.95	79.03
38MnVS6 High Tensile Chrome Bar – IND	4 1/2	114.3	88.60
38MnVS6 High Tensile Chrome Bar – IND	5	127	109.38
38MnVS6 High Tensile Chrome Bar – IND	5 1/2	139.7	132.35
38MnVS6 High Tensile Chrome Bar – IND	6	152.4	157.51

Metric Size Range

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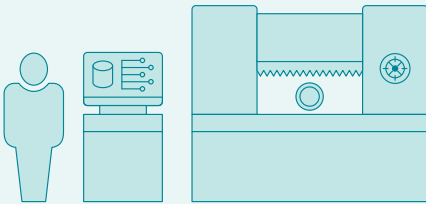
Product	Metric mm	Weight Kg per meter
38MnVS6 High Tensile Chrome Bar – IND	20	2.72
38MnVS6 High Tensile Chrome Bar – IND	25	4.24
38MnVS6 High Tensile Chrome Bar – IND	30	6.11
38MnVS6 High Tensile Chrome Bar – IND	32	6.31
38MnVS6 High Tensile Chrome Bar – IND	35	8.31
38MnVS6 High Tensile Chrome Bar – IND	36	7.99
38MnVS6 High Tensile Chrome Bar – IND	40	10.85
38MnVS6 High Tensile Chrome Bar – IND	45	13.73
38MnVS6 High Tensile Chrome Bar – IND	50	16.95
38MnVS6 High Tensile Chrome Bar – IND	55	20.52
38MnVS6 High Tensile Chrome Bar – IND	56	21.26
38MnVS6 High Tensile Chrome Bar – IND	60	24.41
38MnVS6 High Tensile Chrome Bar – IND	63	26.92
38MnVS6 High Tensile Chrome Bar – IND	65	29.66
38MnVS6 High Tensile Chrome Bar – IND	70	33.23
38MnVS6 High Tensile Chrome Bar – IND	75	38.15
38MnVS6 High Tensile Chrome Bar – IND	80	43.41
38MnVS6 High Tensile Chrome Bar – IND	85	48.99
38MnVS6 High Tensile Chrome Bar – IND	90	54.93
38MnVS6 High Tensile Chrome Bar – IND	95	61.20
38MnVS6 High Tensile Chrome Bar – IND	100	67.82
38MnVS6 High Tensile Chrome Bar – IND	105	74.77
38MnVS6 High Tensile Chrome Bar – IND	110	82.06
38MnVS6 High Tensile Chrome Bar – IND	115	89.68
38MnVS6 High Tensile Chrome Bar – IND	120	97.66
38MnVS6 High Tensile Chrome Bar – IND	120	88.78
38MnVS6 High Tensile Chrome Bar – IND	125	105.96
38MnVS6 High Tensile Chrome Bar – IND	130	114.61
38MnVS6 High Tensile Chrome Bar – IND	140	132.91
38MnVS6 High Tensile Chrome Bar – IND	145	129.62
38MnVS6 High Tensile Chrome Bar – IND	150	152.58
38MnVS6 High Tensile Chrome Bar – IND	160	158.72



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We supply hydraulic repair and manufacturing workshops with hydraulic steels. Traditional hydraulic steel suppliers are not geared towards these businesses. We are. Call our sales team on 1300 522 826.

Cutting Service



Our laser guided band saws are dedicated to hydraulic steels. Our superior cutting service ensures that we can typically process orders faster than our competitors. If we receive an order before 12 noon, we aim to have that order on transport that day.

Delivery



We've positioned ourselves geographically to be in a strategic location with excellent on and off highway access which enables transport to collect products with ease and enables us to distribute products efficiently, on time and safely to every postcode area throughout Australia.

Disclaimer

The data ranges and application examples shown are for general information purposes only and are not to be considered as recommendations. Test certificates for specific products are available on request.

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STOCK RANGE**