

voestalpine HIGH PERFORMANCE METALS

AISI 4340 / 1.6565 / G43400

DESCRIPTION

Nickel, Chromium, Molybdenum steel for applications requiring high tensile strength and toughness values, particularly in large cross sections in the quenched and tempered condition. The addition of Molybdenum prevents the steel from being susceptible to temper brittleness. Higher tensile and yield strength than 4140.

NEAREST STANDARDS

AISI	DIN	BS	UNS
4340	1.6565 / 40NiCrMo6	EN24	G43400

CHEMICAL ANALYSIS (%)

C	Si	Mn	Ni	Cr	Mo	S	P
0.43	0.3	0.8	2.00	0.9	0.3	0.025	0.035

HEAT TREATMENT (RECOMMENDED)

Normalise	870°C-920°C. Soak time 10-20 minutes per 25mm cross section. Air cool.
Anneal	830-860°C. Hold to achieve uniform temperature, then slow cool in furnace.
Harden	815-845°C. Soak time 10-20 minutes per 25mm cross section. Quench in oil or polymer.
Temper	Re-heat immediately 455-650°C. Hold to achieve uniform temperature. Temper min 2 hours. Air cool.
Nitriding	Suitable of liquid and gas nitriding.
Stress Relieve	In annealed condition, stress relieve at 650-675°C. In Quench & Temper condition, stress relief 30-50°C below the last tempering temperature.

MECHANICAL PROPERTIES (HEAT TREATED)

	T	U	V	W	X*	Y*	Z*
Limiting ruling section (mm)	150	100	63	30	30	30	30
Yield Strength (Rp 0.2 (Mpa))	Min 665	Min 740	Min 835	Min 925	Min 1005	Min 1080	Min 1125
Tensile Rm (Mpa)	850-1000	930-1080	1000-1150	1080-1230	1150-1300	1230-1380	>1550
Elongation (A5 %)	Min 13	Min 12	Min 12	Min 11	Min 10	Min 10	Min 5
Charpy Impact (J)	Min 35	Min 42	Min 42	Min 35	Min 28	Min 20	Min 9
Hardness (HB)	248-302	269-331	293-352	311-375	341-401	363-429	>444

* TYPICALLY ORDERED IN ANNEALED CONDITION FOR MACHINING AND SUBSEQUENTLY HEAT TREATED TO ACHIEVE SPECIFIED MECHANICAL PROPERTIES.

voestalpine HIGH PERFORMANCE METALS

AISI 4340 / 1.6565 / G43400

SUPPLY CONDITION

Quench & Tempered to condition U & V

SURFACE TREATMENT

Black
Peeled & Polished
Rough Machined (K12)

PERFORMANCE IS IN OUR DNA

voestalpine High Performance Metals is the global market leader in the production of tool steels and one of the world's leading suppliers of high-speed steels, valve steels, special steels, powder metallurgy steels, and nickel-based alloys. We also manufacture die-forged components and large castings from nickel-based alloys and high, medium and low alloy steels.

Customers rely on our key brands of Bohler, Uddeholm and Villares, to set the highest standards of innovation, quality and service across a wide range of industries including automotive, aerospace, consumer electronics and oil & gas. We are fully integrated from steel production through to local customer sales, ensuring we keep our customers One Step Ahead.

EXPLORE WHAT IS POSSIBLE.



voestalpine High Performance Metals Australia

17 Distribution Drive
Orchard Hills, NSW, 2748
T. +61 02 4744 9496
E. info@voestalpine.com.au
www.voestalpine.com/hpm/australia

voestalpine

ONE STEP AHEAD.