

BISALLOY® STRUCTURAL 80 STEEL

Introduction

One of Bisalloy Steels' original grades, BISALLOY® STRUCTURAL 80 steel has been continually manufactured in Australia for over 40 years and is low alloy, high strength steel plate with a yield stress three times that of carbon steel and featuring low carbon, excellent notch toughness and excellent weldability and formability.

Applications

Utilising the high strength properties of BISALLOY® STRUCTURAL 80 steel allows reduction in section thickness without loss of structural integrity. The following are some applications where the strength advantage of BISALLOY® STRUCTURAL 80 steel has been realised:

- Transport Equipment such as Low Loaders
- Structural Components for Mining Dump Trucks and other Mobile Equipment
- Mining Equipment Roll Over Protection Systems (ROPS)
- Underground Longwall Mining Supports
- Storage Tanks for Water, Oil and Gas
- Columns for Low and High Rise Buildings
- Transfer Beams for Low and High Rise Buildings
- Road and Rail Bridge Beams and Columns
- Excavator Buckets
- Mobile Lifting Equipment
- Overhead Cranes
- Container Handling Equipment
- High Stress and High Fatigue Applications including Induced Draft Fans

BISALLOY® STRUCTURAL 80 steel is manufactured in accordance with AS/NZS 3597 Grade 700.

Mechanical properties

Hardness (Typical)		Tensile				Charpy V-Notch Impact			
Plate Thickness (mm)	Brinell Hardness (HB 3000/10)	Plate Thickness (mm)	0.2% Proof Stress (MPa) Min	Tensile Strength (MPa)	% Elongation (50 mm G.L.) Min	Plate Thickness (mm)	Energy (J) (Min)	Test Temp. (°C)	Test Directions
5 - 100	255	5	650	750 - 900	18	5	By Agmnt	-40	L
		6 - 65	690	790 - 930	18	6 - <8.5	20	-40	L
		70 - 100	620	720 - 900	16	8.5 - 12	30	-40	L
						12 - 65	40	-40	L
						>65 - 100	40	-20	L

Note: >100 -120mm available by request

Chemical composition

Thickness (mm)	Weight %	C	P	Mn	Si	S	Cr	Mo	B	CE(IIW)*	CET*
5 - <30	Maximum	0.18	0.025	1.2	0.60	0.008	1.00	0.25	0.002	0.44	0.26
≥30 - 80	Maximum	0.18	0.025	1.3	0.60	0.008	1.00	0.25	0.002	0.54	0.32
>80 - 100	Maximum	0.18	0.025	1.5	0.60	0.008	1.20	0.25	0.002	0.58	0.34

*Typical average

PLEASE NOTE: Every care has been taken to ensure the accuracy of information contained in this manual which supersedes earlier publications, however Bisalloy Steels shall not be liable for any loss or damage whatsoever caused from the application of such information. Typical values are provided for reference information only and no guarantee is given that a specific plate will provide these properties. Information is subject to change without notice. **Published August 2020**