PRODUCT **DATA SHEET**

Bisalloy ARMOUR

BISALLOY® ARMOUR HHA500 STEEL

Introduction

BISALLOY® ARMOUR HHA500 steel (High Hardness Armour) - a quenched and tempered steel armour plate suitable for use in both military and civil applications where light weight and resistance to ballistic projectiles is required.

Brinell hardness

Thickness (mm)	Specification	Typical
5 - 50[1]	477 - 534 HB	500 HB

[1] Other thicknesses may be available on application

Tensile properties

Property	Typical
0.2% Proof Stress	1300 MPa
Tensile Strength	1640 MPa
Elongation in 50 mm G.L.	10%

Charpy impact values

Thickness (mm)	Test Piece	Test Temp	Min. Energy (Transverse)	Min. Energy (Longitudinal)
5	10 x Thk	-40°C	By Agreement	By Agreement
6 - <8	10 x 5	-40°C	8 J	10 J
8 - <12	10 x 7.5	-40°C	12 J	15 J
≥12	10 x 10	-40°C	16 J	20 J

Chemistry

The chemical specification conforms to the requirements of MIL-DTL-46100, although it is tighter than the requirements of that specification so as to optimise the material's performance. Product chemical analyses are taken on a per-heat basis. Chemical analysis is as follows:

Chemical composition

Thickness (mm)	Weight %	C	P[2]	Mn	Si	S[2]	Ni	Cr	Mo	B	CE(IIW)	CET
5 - 50	Maximum	0.32	0.020	0.80	0.50	0.005	0.50	1.20	0.30	0.002	0.61*	0.40*

[2] P + S ≤ 0.020

* Typical for 12mm plate

Thickness tolerance

Thickness (mm)	Special Tolerance
5 - 25	-0.0 + 1.0
>25 - 50	-0.0 + 1.2

Test frequency

Per Plate	Per Batch	By Agreement
Hardness	Charpy (L), Charpy (T)	Thickness, Tensile, Ballistic Properties, Product Analysis

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Other

Equivalent Specification	Surface Finish
MIL - DTL - 46100	Shotblasted

Fabrication

For advice on fabrication refer to relevant Bisalloy technical brochures.
Contact Bisalloy direct or visit www.bisalloy.com

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 2025**

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