

EVRAZ North America produces a wide range of steel armor plate specifications for the defense and security industries. End uses include heavy, medium, and light military vehicles, add-on armor kits, VIP armored cars, personnel protection, and security structures.

SPECIFICATION

Armalloy 550HH+ complies with a variety of military and commercial specifications.

DIMENSIONS AND TOLERANCES (other dimensions available upon request)

T	0.1575" to 0.500"	4.0mm to 12.7mm
W	48" to 102"	1220mm to 2590mm
L	96" to 480"	2.4m to 12m

1/2 ASTM A6/A6M thickness & flatness tolerances. All other tolerances per ASTM A6/A6M unless otherwise agreed.

CHEMICAL COMPOSITION (heat analysis - % maximum)

C	Mn	P	S	Si	Ni	Cr	Mo	Al	B	CE*
0.46	1.00	0.02	0.005	1.0	2.00	1.0	0.5	0.06	0.003	0.86

*Carbon Equivalence (CE) = $C + Mn/6 + (Cr + Mo + V)/5 + (Cu + Ni)/15$

Delivery condition: Water quenched and tempered

BALLISTIC PROPERTIES

Please inquire about current ballistic capabilities

MECHANICAL PROPERTIES (typical values)

Hardness	Yield	Tensile	Elongation	Toughness (CVN)	
				Transverse -40°	Longitudinal -40°
530 to 570 BHN	220 Ksi 1,517 MPa	300 Ksi 2,068 MPa	8% min. in 2" (50mm)	inquire	inquire

BALLISTIC TESTING: As agreed per customer order

MATERIAL TEST REPORT: Chemical composition, BHN hardness, toughness (CVN) testing per heat lot

EDGE CONDITION: Mill edge or cut edge as agreed

SURFACE CONDITION: Per ASTM A6/A6M Shot-blast and primer coating available upon request

HEAT TREATMENT: May not be heated above 400°F (225°C) during fabrication or the certified hardness cannot be maintained

FABRICATION

COLD-FORMING: Due to the enhanced high hardness, extreme care must be taken during cold bending. Please contact our sales service department for more information before attempting to cold bend.

FLAME CUTTING: Standard thermal cutting (oxy-fuel, plasma, laser, water jet) can be used. Plasma cutting under water can be used to 0.5" (12.7mm thickness). Preheating is recommended – refer to welding section below. The HAZ hardness will be softened by elevated heat input. The HAZ softening can be eliminated by using abrasive water jet cutting.

WELDING: Armalloy 550HH+ has been successfully welded using standard industry welding techniques. When welding, use austenitic (stainless) weld wire.

The potential for cracking increases with plate thickness; therefore it is recommended to preheat based on material thickness per the table below:

Recommended Preheat Temperatures

Thickness	0.1575" 0.25" 0.5"
	4mm 6.35mm 12.7mm
	70°F/22°C 200°F/100°C

When ambient temperature is below 50°F (10°C), the recommended preheat should be increased by 70°F (22°C). Please contact our sales service department for additional information on welding.

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