

Product and Application

TruWEAR AR650 plate provides excellent properties in abrasion resistance, hardness and toughness. This quenched and tempered product excels in downstream fabrication processes like laser cutting and plasma cutting, and has limited bending capability. This product is used widely in mining, concrete, aggregate and various other industries where ultra high hard steel is required.

Available in thicknesses up to 0.500", widths up to 60" and lengths up to 144".

Mechanical Properties

Surface Hardness	625 - 700 HBW (aim 650 HBW)
Yield Strength	240 ksi (1655 MPa)
Tensile Strength	314 ksi (2165 MPa)
Charpy Impacts (typical @ -40° F)	10 ft-lbs (13.5 J)

Typical mechanical testing values other than Brinell hardness listed for information only and are not performed unless specified at time of order. Charpy Impact specimens, when performed, are subsize on thicknesses < 0.375". Charpy Impact values listed are adjusted to full size equivalent. Hardness tested on each plate, but not reported. 90% through hardness

Dimensional Tolerances

Flatness	Flatness tolerances meet ASTM A6, Table 14, latest revision
Thickness	+/- 0.012" to nominal thickness
Length and Width	Length and width tolerances meet ASTM A6, latest revision

Chemical Composition

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo
Max	0.51	1.00	0.020	0.015	0.50	0.25	2.50	0.70	0.87
CE* (typical):			1.00		*Carbon Equivalency calculated using the following formula: $CEV = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$				

Fabrication, Bending, Post-Delivery Heating and Welding

Bending	Material is formable based on application and conditions. Please inquire.
Post-Delivery Heating	TruWEAR AR650 plate achieves its properties through quenching and tempering processes. Heating in fabrication (such as post-weld stress relieving) or in service must not exceed 300° F without risk of lowering the strength and hardness of the material.
Welding	TruWEAR AR650 plate can be welded by conventional processes such as SMAW, SAW and GMAW, provided that the weld procedures used are suitable for this grade and design of the welded structure, using low hydrogen conditions.

These statements are general guidelines. CMC Impact Metals is not responsible for the results of any welding work performed. Contact your CMC Impact Metals representative to receive more detailed technical information about any fabrication or machining processes.

Standard Delivery Conditions

Surface Finish	Shot blasting is provided and rust preventative applications are available. Please inquire.
Test Reports	Supplied with shipment for each production lot in the shipment. Reports include product description, heat number, chemical analysis and Brinell hardness value.