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ASC
ASSOCIATED STEEL CORPORATION

AR400 ABRASION RESISTANT, ALLOY WEAR PLATE

Rhino-Tuf EZ is an abrasion resistant, “thru-hardened”, AR400 wear plate. It offers excellent service for applications where formability, toughness, weldability and abrasion resistance are required.

Rhino-Tuf EZ is different from commercial grade wear plates. Made in controlled heat lots; the addition of alloying elements, such as Nickel, Chromium, Molybdenum, Titanium and Copper contribute to a chemistry rich enough to provide superior wear and uniformity of hardness but lean enough to have a low Carbon Equivalency (CE).

Rhino-Tuf EZ is engineered to replace most other commercial grade abrasion resistant plate products including, but not limited to: HSLA, T-1, A36, AR360, AR400 and A514.

KEY FEATURES

Clean Steel Technology – a manufacturing process that delivers consistent steel through control and refinement of the melt.

Vacuum Degassed – eliminates many impurities found in standard commercial grade alloys. The result is a cleaner and stronger product that will extend service.

Abrasion Resistant – engineered to resist many forms of abrasion, impact and gouging.

Ease of Machining and Welding – free of hard and soft spots which allow for predictability in machining. Utilize the “Standard Low Hydrogen Method” for welding this alloy plate product.

Low Carbon Equivalency – formable and user-friendly, responds well to fabrication.

APPLICATIONS

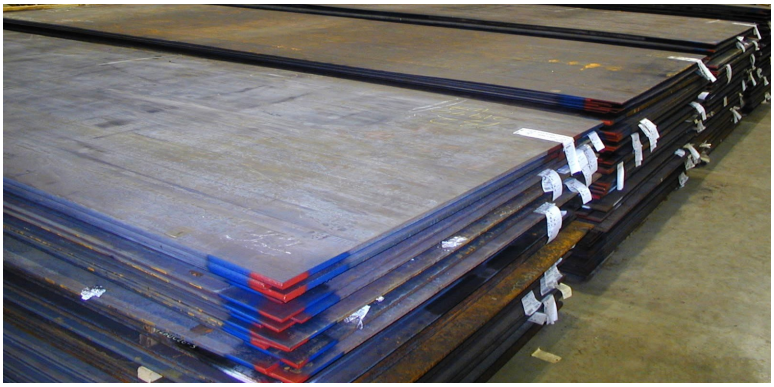
- Chain Conveyors
- Mixer Components
- Crusher Plates
- Cutting Edges
- Shakeout Liners
- Chipper Blades
- Coal Chutes
- Screw Flights
- Hammers
- Wear Guides
- Wood Chippers
- Truck Bed Liners
- Impact Pads
- Fan Blades
- Grouser Bars
- Kiln Blades
- Wear Rings
- Baler Plates
- Bucket Lips
- Hoppers
- Screens

Rhino-Tuf EZ is an excellent choice for predictable wear performance.

“FORMABLE WEAR PLATE”

TYPICAL MECHANICAL PROPERTIES

Hardness, Brinell	400/440 BHN
Tensile Strength	180,000 PSI
Yield Strength	140,000 PSI
Elongation in 2”	15%
Reduction of Area	60%
Grain Type	Tempered Martensite
Carbon Equivalency (CE)	47



TYPICAL CHEMICAL ANALYSIS

C	MN	PH	S	SI	TI
.20	1.00	.025 max	.005	.50 max	.03
NI	CR	MO	OTHER		
1.20 max	.55/.90	.50 max	(variances by heat lot)*		

*Boron, Vanadium, Aluminum and Columbium may be added at the discretion of the producing mill.

PLATE AVAILABILITY

Thickness: 1/8” up to 4”
Sheet Sizes: 48” x 96”, 48” x 144”, 48” x 288”, 96” x 144”, 96” x 240”, 96” x 288” and Custom Cut Shapes

Oxy, Hi-Definition Plasma, Laser and Water Jet Cutting Services Available

AVAILABLE IN WEAR BARS & CUT STRIPS

GENERAL FABRICATION INFORMATION

Drilling and Machining: cobalt drills, carbide drills, nitrided (hardened) twist drills, or High Speed (M-2 type) drills. Use generous coolant, (20% soluble oil). Use high quality equipment with sufficient capacity to avoid chatter and vibration. Lower speed and increase pressure to avoid “glazing.” (further information is available)

Forming: This is a true “FORMABLE” grade of wear plate. The carbon equivalency rating (C.E.) is one of the lowest in the industry. **FORM AGAINST THE GRAIN**. Hand grind edges to remove slag and eliminate potential crack initiation points. Ensure plate is at room temp., or slightly warmer. Allow minimum bend radius of 4T, (4 times the thickness of the plate). Best results will be obtained by utilizing multiple hits to form the radius. (further information is available)

Welding: Utilize the **“Standard Low-Hydrogen Method”** (E7018). When welding any hardened wear plate product, ELIMINATE MOISTURE. MINIMIZE HEAT and avoid DRAMATIC TEMPERATURE CHANGE. To minimize dramatic temperature change and evaporate any residual moisture; preheat the weld area. (further information is available)

Note: Performing hot and cold work operations on any “thru-hardened” wear plate requires caution due to the high hardness of the product. Utilize operators trained and experienced in working with hardened alloys. Follow sound procedures that are appropriate for the general classifications of those alloys, and wear the appropriate safety attire.

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