1.800.321.9300
www.associatedsteel.com

ASC
ASSOCIATED STEEL CORPORATION

HEAT TREATED, HIGH STRENGTH ALLOY

Kromite #3 is a modified 4000 series based alloy engineered to provide optimum performance and extended service life for a variety of maintenance applications.

Kromite #3 is a dependable material choice for various machined parts and components that require a high degree of resistance to toughness, flex, torque and general wear.

Consider **Kromite #3** in place of other hot roll, alloy and carbon steels including: AISI 4140, 4150, 4340, 1018, 1020 and 1045 depending upon the requirement.

KEY FEATURES

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

• **Electric Furnace Melt** – offers greater quality control at the mill including refinement of chemistry, grain size and shape.

• **Vacuum Degassed** – eliminates many impurities found in standard commercial grade metals. The result is a better, cleaner and stronger product that extends service.

• **Heat Treated** – eliminates additional heat treatment costs. Delivered hardness is 269/341BHN.

• **Machine Straightened** – eliminates excessive bow and distortion. Our straightness is 1/8" in any 5 feet, better than twice the industry standard (for rounds and squares).

• **Stress Relieved** – reduces the likelihood of material "walking" or moving during machining.

TYPICAL APPLICATIONS

• Arbors	• Drive Shafts	• Locater Pins
• Axle Shafts	• Die Sleeves	• Mandrels
• Alignment Pins	• Feed Rollers	• Nuts
• Brake Dies	• Flanges	• Stub Shafts
• Bushings	• Gears	• Sprockets
• Chuck Jaws	• Guide Rods	• Tie Bars
• Collets	• Gripper Bars	• Tool Holders
• Carrier Blocks	• Hubs	• Worm Gears
• Calendar Bars	• Jigs	• Wear Rings
• Conveyor Pins	• Journals	• Wear Strips

IN-STOCK AVAILABILITY

Rounds*	Flats
1/2" to 16"	1/4" x 1" to 2" x 5"
Squares	**Heavy Hollow Sections**
1/2" to 4"	3" OD x 1-1/2" ID to 6" OD x 3-1/2" ID

*Bar stock 10" round and over is typically furnished rough turned and oversized to finish to the nominal size.

Decarb-Free, Pre-Machined Stock and **Custom Forgings** – contact office for your requirements.

LENGTHS

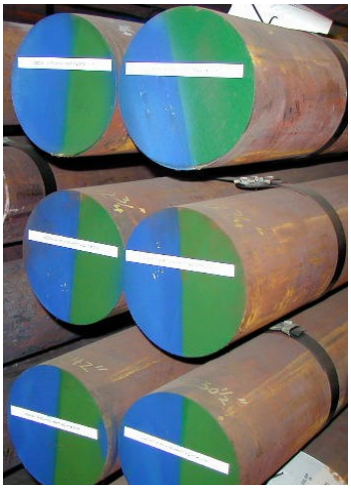
10/12 Ft and 20/24 Ft Random Lengths
Custom Cut-To-Length Options

FATIGUE RESISTANT ALLOY

TYPICAL MECHANICAL PROPERTIES*

Hardness, Brinell	269/341 BHN
Tensile Strength	156,000 PSI
Yield Strength	123,500 PSI
Grain Size	95% - 8
Elongation in 2”	17%
Reduction of Area	55%
Machinability Rating	50%

**Based on 1/2” Test Specimen*



GENERAL MACHINING GUIDELINES

High Speed – Depth of Cut .150” \ Speed 70 fpm \ Feed .015 inch/revolution \ Tooling M1, M2, T15, M33, M41, M47

Carbide – Depth of Cut .150” \ Speed 260 brazed, 330 throw-away \ Feed .015 inch/revolution \ Tooling C6

Cutting Fluid: Soluble Oil (1:20)

Drilling – Point Angle 118°, relief 12° \ Helix Angle 29° point: plain \ Feed .005 inch/revolution

Note: Caution should be exercised when working with hardened alloy materials. Use equipment of sufficient capacity, that is in good condition. Utilize machine operators that are experienced in working with these materials. Appropriate safety gear should be utilized at all times.

GENERAL WELDING INFORMATION

Our Proprietary Chemistry, Q & T, through hardened products are readily welded utilizing the “Standard Low-Hydrogen Method”. Use of Low Hydrogen rods, such as E7018, and E8018, provides greater ductility. In instances where pre-heat is not possible, use of a 309 Stainless Rod should be considered. Where higher tensile is required, a E10018 rod may be used with attention to the pre and post thermal treatment.

Preheat the weld area - 400°F. Interpass temperature of 500°F to 700°F. Exact furnace controlled temperature is not required, a heat crayon will provide adequate guidance. When using a torch, move rapidly and evenly to provide a general increase in temperature. Maintain preheat temperature during weld. Post-heat following the same procedure will allow the assembly to slow-cool, thus minimizing shrinkage of the weld.

Use the smallest diameter electrode that will do the job. Travel rapidly and use several small stringer beads. To help minimize welding stresses, peen the beads, after each pass, while they are still hot. Note that stick welding is preferred simply because of the tendency of the semi-automatic process to apply too great of a deposit, which translates into higher heat.

Make every attempt to remove material stresses prior to welding, and to ensure that the weld surfaces are clean and free of contaminants, such as grease, dust, oil, etc.

After welding, stress relieve at 1000°F to 1250°F, holding at that temperature one hour per inch of greatest cross section. Ensure that the welded unit is transferred to the furnace quickly. Do not allow the temperature to drop below the pre-heat and interpass temperature when transferring to the furnace.

Adherence to sound welding practice, the elimination of moisture, the minimization of dramatic temperature change, and use of the **Standard Low-Hydrogen Method**, will greatly improve your chances for exceptional welds.

Note: This data is for information purposes only and is not intended to be instructional. It is not to be used as a substitute for the AWS welding procedures appropriate for the welding of medium alloy Quench & Tempered materials. In all cases the employment of trained/qualified welders, the observance of sound welding practices, and adherence to AWS procedures is strongly urged. This information does not apply to “Free Machining” grades.

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