

Engineered for optimal performance in hot strip mill coiling applications

Bemcalloy™ Pinch Rolls

- Hypoeutectic Alloy Gray Cast Iron
- Alloy additions: Silicon, Nickel, Chromium, Molybdenum and Niobium
- Horizontally centrifugally cast
- Austenitized, Quenched and Tempered

Resistance to Pickup

Pickup is a condition whereby foreign material becomes adhered to the surface of the pinch roll during service. The condition causes mill downtime for pickup removal from the pinch rolls and/or scrapped coils due to poor surface quality.

Bemcalloy™ Completely Resists Pickup

The inherent lubrication properties of graphite in Bemcalloy along with the natural resistance to adhesion of dissimilar metals is the basis of the pickup resistance of Bemcalloy.

- Xtek Bemcalloy Pinch Rolls reduce mill downtime and coil rejections
- Xtek Bemcalloy Pinch rolls require no in-situ process grinding equipment

Wear Resistance

Two wear mechanisms, abrasion and adhesion, occur in the pinch roll application. Abrasive wear results when a harder material removes particles from a softer surface. Adhesive wear results from the scuffing action between two contacting surfaces that become bonded and subsequently pulled from their respective surfaces. Both mechanisms cause pinch roll wear.

Bemcalloy™ Resists Both Adhesive and Abrasive Wear

The specific chemistry and heat treatment process used at Xtek metallurgically tailors the Bemcalloy microstructure to resist both abrasive and adhesive wear.

- Xtek Bemcalloy Pinch Rolls provide predictable and uniform wear
- Xtek Bemcalloy Pinch Rolls require less stock removal at grind

Application Requirements	Bemcalloy C141	Bemcalloy C1	Bemcalloy XA	Bemcalloy A3
Pickup Resistance	••••	••••	•••	•••
Wear Resistance	•••	••	••••	•
Corrosion Resistance	••	••	••••	••
Thermal Stability	••••	••••	••	•••
Impact Strength	••	••	••	••••
Tensile Strength	••	••	••	••••

Attributes

- Excellent Wear Resistance
- Resistance to Pick-up
- Thermal Stability
- High Thermal Conductivity
- Resistance to Thermal Fatigue / Thermal Shock
- High Strength
- Through-hardening Capability



Pinch Roll Reconditioning Services

Xtek offers reconditioning services which include:

- Complete disassembly evaluation, reporting and repair
- Journal and body diameter regrinding services
- Re-sleeves of top pinch rolls
- Bearing diameter rebuilds
- Metallurgical evaluations
- Field engineering services





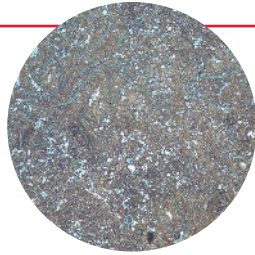
Bemcalloy C141

Composition

- Hypoeutectic Alloy Gray Cast Iron

Attributes

- Resistance to Pickup
- Very Good Wear Resistance
- Thermal Stability
- High Thermal Conductivity
- Resistance to Thermal Fatigue
- Resistance to Thermal Shock
- Through-hardening Capability



Optimal Hardness
Heat Treated
62-67 HSC
(46-50 HRC)

Carbon	Chromium	Molybdenum	Nickel	Niobium	Silicon
2.90 / 3.10	0.40 / 0.60	0.20 / 0.40	1.00 / 1.50	0.80 / 1.20	1.50 / 2.00

Bemcalloy C1

Composition

- Hypoeutectic Alloy Gray Cast Iron

Attributes

- Resistance to Pickup
- Good Wear Resistance
- Thermal Stability
- High Thermal Conductivity
- Resistance to Thermal Fatigue
- Resistance to Thermal Shock
- Through-hardening Capability



Optimal Hardness
Heat Treated
62-67 HSC
(46-50 HRC)

Carbon	Chromium	Molybdenum	Nickel	Niobium	Silicon
2.90 / 3.10	0.40 / 0.60	0.20 / 0.40	1.00 / 1.50	—	1.50 / 2.00

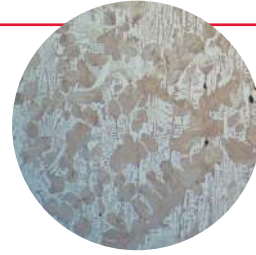
Bemcalloy XA

Composition

- Hardened White Alloy Cast Iron

Attributes

- Resistance to Pickup
- Exceptional Wear Resistance
- Corrosion Resistance
- High Thermal Conductivity



Optimal Hardness
Working Layer
67-72 HSC
(50-54 HRC)

Layer	Carbon	Chromium	Molybdenum	Nickel	Silicon
Working	3.45 / 3.70	1.45 / 1.70	0.20 / 0.30	1.45 / 1.70	0.15 / 0.30

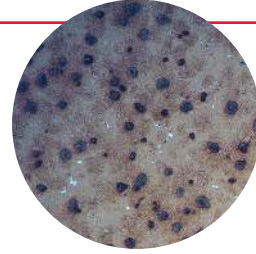
Bemcalloy A3

Composition

- Nodular Ductile Cast Iron

Attributes

- Resistance to Pickup
- Thermal Stability
- Resistance to Thermal Fatigue
- Resistance to Thermal Shock
- High Tensile Strength
- High Impact Strength



Optimal Hardness
Heat Treated
58-64 HSC
(44-48 HRC)

Carbon	Chromium	Molybdenum	Nickel	Niobium	Silicon
2.90 / 3.10	0.40 / 0.60	0.20 / 0.40	1.00 / 1.50	—	2.00 / 2.50

X-Armor Weld Overlay Pinch Rolls

- Xtek uses a custom blend of 420 Stainless steel with nominal amounts of Chromium, Nickel, Molybdenum, Manganese, Niobium, Silicon, Vanadium, Carbon, and Tungsten which was developed specifically for the coiler pinch roll application.
- Weld Overlay is deposited using an exclusive submerged arc weld (SAW) hard-facing process designed specifically for the custom blend of materials
- To greater reduce pickup and increase wear and corrosion resistance, Xtek continues to refine the processing and material selection to deliver the best weld in the business
- Xtek has also tailored the material over time to meet higher strip temperatures at coiler entry to maintain hardness while also handling heavier gauge thickness.
- Decreased pickup and increased resistance to wear and corrosion means longer campaigns and less occurrence of impact failure.



Xtek: A Trusted World Leader in Heavy Industry Components for Over 100 Years.

Gear Spindle Couplings



- World leader in couplings
- All driveshaft products are custom designed for your application
- All wear components TSP carburized to 58-62 HRC
- Reconditioning specialists

Wheel & Wheel Assemblies



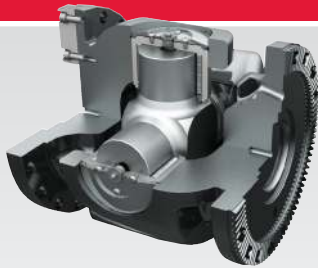
- Xtek crane, brake and sheave wheels are the industry's longest lasting wheel products
- Proprietary heat treatment provides industry's best performing wheels
- Emergency breakdown services available

Gearing & Gearboxes



- AGMA 15 capability
- TSP carburizing to 58-62 HRC
- Gear diameters from 10" - 100" (254mm - 2540mm)
- Up to 100,000 pounds (45,000 kg)
- Reverse engineering and FEA analysis
- Gearbox reconditioning specialists

Universal Joints



- Xtek manufactures closed-eye, split-eye, and block-type tight joints
- 220mm – 800mm standard sizes, others available upon request and evaluation
- A variety of flange connections are offered including: face key, integral pad, welded, and hirth serrations
- Special customized design features will be evaluated based upon the application

Maintenance Services Group



- Well Trained Mobile Crews of Mechanics, Welders and Machinists
- 24/7 Support for breakdowns and in plant outages
- On-site machining and alignment services
- Self-Sufficient crews travel in company trucks with well-equipped tool trailers

Material Handling Group



- Design & manufacturing of heavy duty lifting and floor based equipment
- Multiple options for handling coil, slab, sheet, ingot, tube and specialty products
- Licensed, professional engineers on staff
- Lifter inspection services
- Repair and retrofitting of all lifter brands

Xtek

Solutions in Motion

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