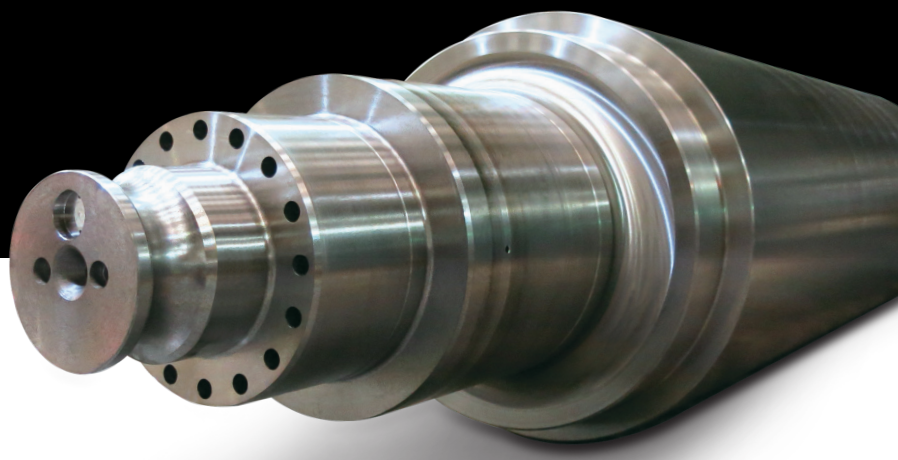
Union Electric Åkers
Forged and Cast Rolls

Category:
CAST ROLL

Application:
HOT MILL
WORK ROLL

AHCS

Advanced High Chrome Steel



Improve your roll performance by using Union Electric Åkers' re-engineered High Chromium Steel rolls. By introducing special alloying elements and heat treatments versus industry standard products, the Union Electric Åkers enhanced High Chromium Steel is even more suited to the working conditions in the roughing stands of hot strip mills.

High Chrome Steel Work Rolls, known for reliability and performance in operation, are the industry standard in roughing mill applications. We have re-engineered our High Chrome Steel microstructure to achieve optimal retention of surface profile and texture as well as resistance to thermal breakdown for longer mill campaigns without sacrificing the product's excellent resistance to mill incidents.

The Union Electric Åkers Difference

Our HiCr Steel Roughing Mill Work Rolls are manufactured using a well-controlled casting technology. This highly engineered process ensures an exceptional bond between the shell and core materials, resulting in high strength layers that provide superior reliability against interface-related spalling and core fracture throughout the life of the roll.

At Union Electric Åkers we offer maximum product safety and reliability through consistent application of fully automated surface and subsurface inspection techniques.

Features and Benefits

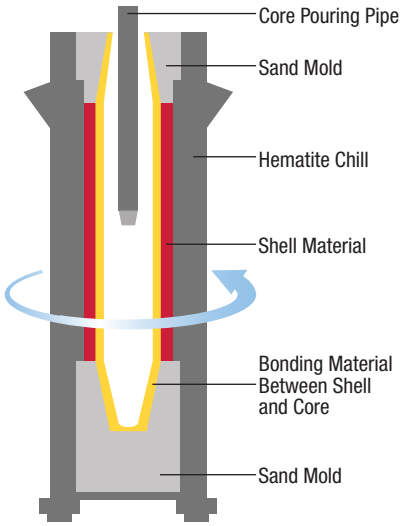
- **Enhanced HiCr Steel with improved chemistry and heat treatment for optimum wear performance and resistance to thermal damage**
- **Superior product quality and reliability due to state-of-the-art manufacturing equipment and process**
- **Maximum product safety due to 100% automated EC/UT finish inspection**
- **Maximum reliability due to superior shell to core bonding technology resulting in avoidance of roll failures from interface issues**

Mill Applications

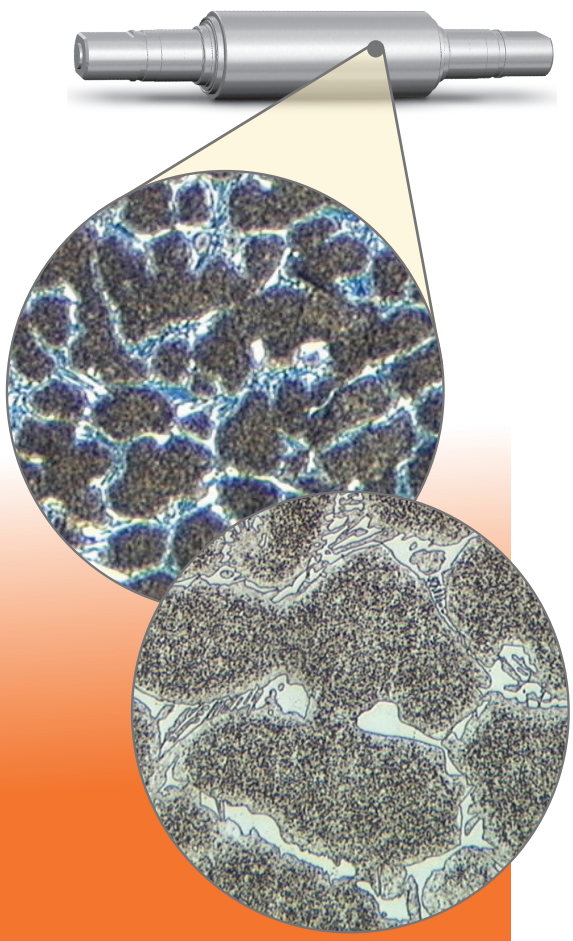
- Work Rolls for the Roughing Stands of Conventional Hot Strip Mills and the Early Stands of CSP Mills

Manufacturing Method

Duplex vertical spun cast, hardened and double tempered



AHCS Specifications



Aim Chemistry (Wt%)

C	Si	Mn	Ni	Cr	Mo	V	W
1.5/2.0	0.5/1.5	0.5/1.5	0.5/1.5	10.0/15.0	2.0/4.0	0.2/1.0	0.2/1.0

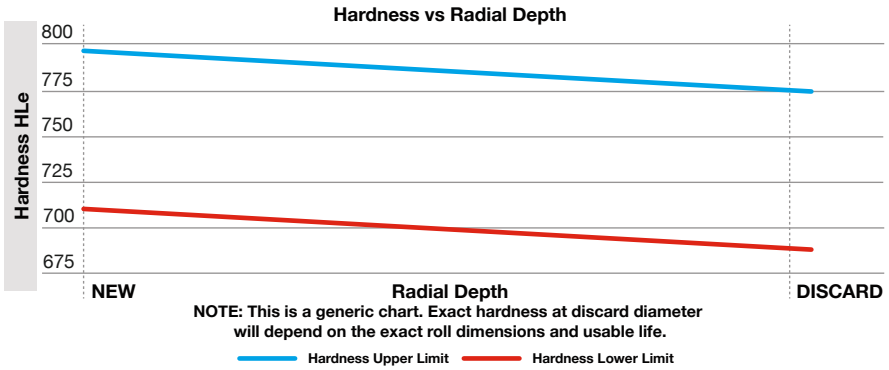
Microstructure

This high-performance advantage is achieved by combining a microstructure of a hard M_7C_3-type primary carbide, with an added amount of harder MC-type carbide in a matrix of refined lower bainite and martensite. A high Mo content provides improved resistance to thermal damage and surface deterioration. The centerline and neck of the roll are made using spheroidal graphite iron for high strength, ductility, and toughness.

Typical Carbide Analysis

Carbide Type	Carbide Hardness (HV)	Surface Area (%)
Complex mix of M_7C_3 + Mo_2C + WC + VC	1200 – 1600 (M_7C_3) 1500 (Mo_2C) 2200 – 2800 (WC + VC)	9 - 13%

Typical Depth of Hardness



Our customers have recognized that Union Electric Åkers leads the industry in safety, quality, reliability, and technology. We understand the importance of providing our customers with products that meet the highest tolerance specifications for the most demanding conditions and stringent applications in the metalworking industry. To meet the ever-increasing demands in the industry, we will continue to make investments in our manufacturing, R&D, and quality assurance.

We remain excited about the future and encourage you to visit our facilities to see for yourself the vast improvements that are taking place at Union Electric Åkers.

Contact your local Sales Representative to schedule your visit today!

Union Electric Åkers
Forged and Cast Rolls™

Union Electric Åkers is the recognized global leader in roll technology for the most stringent mill requirements, superior product performance and world-class customer service.

For more information, please visit www.uniones.com.