Making our world more productive

Pot Roll and Rig Component Solutions

General Description

Linde Advanced Material Technologies (Linde AMT) is making more possible with our pot roll and rig component solutions. Our solutions are designed to be wear resistant while preventing dross build-up. When our solutions require the use of our advanced high-temperature cured sealant, rest assured that it is chrome-free and REACH compliant.

Benefits:

→ Extended campaign cycles

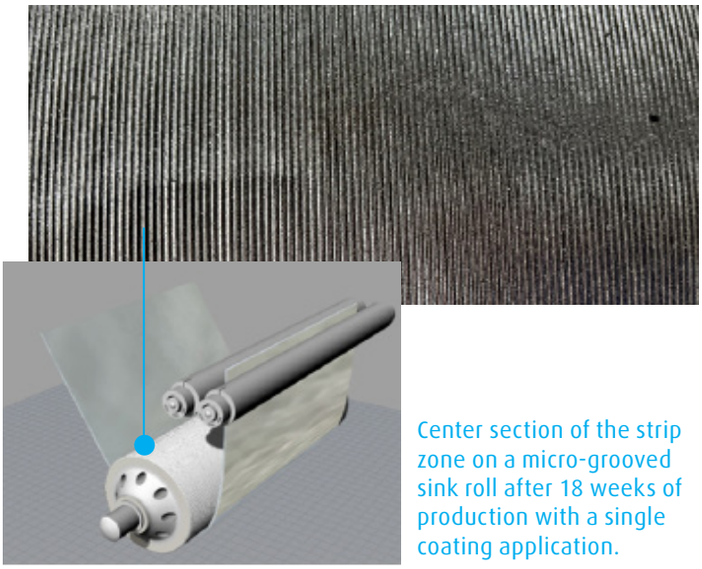
→ Retain strip quality

→ Longer roll life

→ Reduce slippage

→ Reduced maintenance, operational, and capital costs

Thermal spray coatings and laser claddings are required to protect pot equipment from dross attack and wear. Our solutions are applied to the operational areas of the sink and stabilizer roll faces, end bells, journals, rig arms, air knives, and touch rolls. When our proprietary powders are applied with our advanced thermal spray systems (SUPER D-GUN® and EXOGARD™) and laser cladding process, these coatings and claddings create a robust protective layer between the component substrate and pot material. This layer acts as a barrier to eliminate the bonding mechanism of the dross, prevents corrosion, and provides wear resistance.



Center section of the strip zone on a micro-grooved sink roll after 18 weeks of production with a single coating application.

Coating Properties

→ Strong bonding to the substrate

→ Dense coating micro-structure to prevent corrosion

→ Superior sink roll groove profile coverage

→ Extended surface roughness retention

→ Prolonged protection under extended pot idle times

Linde/LA-2-501 Duplex Coating

Clean Surface

No dents after 3rd trial (5-day campaign)

Generic Coating: Dents (pitting erosion) on surface.

Result of the LA-2-501 Duplex Coating System using a **SUPER D-GUN®** topcoat and undercoat to the roll face, bells, and journals. Linde AMT's LA-2-501 duplex coating (top) shows a clean surface with no dents after the 3rd trial of a 5-day campaign. The generic coating (bottom) resulted in heavy pitting erosion, appearing as dents on the surface.

Pot Roll Coating and Cladding Solutions

Wear Resistance

Our thermal spray coatings and laser-claddings protect surfaces against wear due to their high hardness features. This extends the service life of the roll, especially when there is a rapid switch between light and heavy strip processing.

Idle Pot Time Protection

Idle sitting is an issue that accelerates dross build-up, especially when the roll face is exposed to floating dross on the surface. This causes uneven dross formation across the roll face, creating an uneven distribution of the molten metal on the strip.

Edge Dross Build-Up Protection

Our coatings prevent edge dross build-up outside the strip zones. These zones are more open to dross build-up due to strip edge welds or non-contact strip areas. Our special powders and coating processes are designed to resist dross adhesion.

Journal Protection

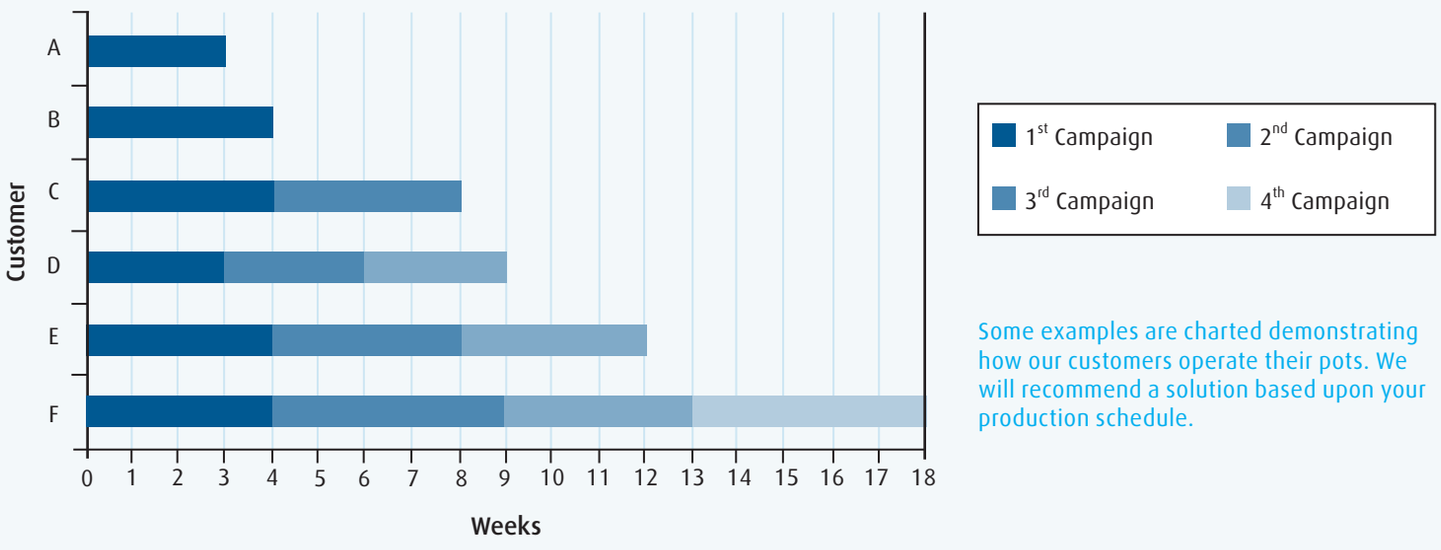
Our laser cladding solution is our first recommendation to extend bearing life. If the bushing material is wearing into the journal surface, we can recommend an overlay for the journal to extend the life of both components.

Micro-Grooves Coverage

Our advanced powder chemistry and morphology and our robotic coating method cover micro-grooves evenly with a strong bonding layer. A customized coating application technique is applied to cover the groove peaks, which are the primary area of exposure for dross build-up.

Anti-Dross Protection

Our coatings delay dross formation during the campaign cycle and offer a controlled, uniform formation to maintain the strip surface quality. Compared to traditional coatings, dross formed on the surface can be removed easily.



Some examples are charted demonstrating how our customers operate their pots. We will recommend a solution based upon your production schedule.

Application Table

Pot Roll Systems

Component / Bath Type	Galvanize & Galvanneal	Galvalume	Aluminizing
Sink Roll	SUPER D-GUN® and high velocity solutions	SUPER D-GUN® solutions	SUPER D-GUN® solutions
Stabilizer Roll			
Correcting Roll			
Taper & Bell Ends			
Roll Journals			

Roll Bearing Solutions

Component / Bath Type	Galvanizing	Galvalume	Aluminizing
Sleeves and End Caps	Cladding solutions	SUPER D-GUN® solutions	SUPER D-GUN® solutions
Thrust Buttons			

Balance of Rig Solutions

Component / Bath Type	Galvanizing	Galvalume	Aluminizing
Rig Arms	SUPER D-GUN® and high velocity solutions		SUPER D-GUN® solutions
Scraper Bar Edges			
Air Knives (Lips)	EXOGARD™ solutions		
Touch Rolls			

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