

## Too Much Water? You Need A Longer Lasting Seal!

A simple material change to your stripper guides & wiper boards has a major effect on achieving the hot mill's goal of balancing strip quality, productivity, and cost.



What if longer lasting components allowed your very critical work rolls to actually “work” better? It is well known that high temperatures have adverse effects on the life of your work rolls and strip quality. Have you considered that improving performance of your strippers and wipers will have a direct impact on roll cooling efficiency, performance of your work rolls, and surface quality? Roll cooling is the single most important variable in maintaining a proper work roll surface, and your strippers and wipers play a vital role in maintaining a consistent temperature across the width of the roll.

In the Hot Mill, your work rolls MUST function at peak operating conditions to keep the strip moving at the proper speed and temperature. Miscues here result in surface defects and improper metallurgical properties that result in production challenges for the Cold Mill... and ultimately higher production costs.

But what REALLY happens when your strippers and wipers wear and begin to allow water leakage to the strip?

1. Work Rolls are not properly cooled

- This can create coil surface defects such as ridges, tiger stripes, and roll marks.
- Roll peeling increases. Excess oxidation forms on the rolls and affects coil surface quality.
- Thermal fire cracks are formed on the rolls by local overheating due to roll cooling water leakage.
- Roll shape changes leading to poor strip shape and profile.
- The domino effect hits your cold mill, downstream processors, and ultimately the end user.

➤ What do those dollars mean to you?

2. Work Rolls wear prematurely

- Typically, 30 -50 coils can be processed per campaign.
- Excess wear can reduce throughput by 10-15%, resulting in lost revenue potential from additional downtime, grinding in the Roll Shop, and purchase of additional work rolls.
- This means that the life of your rolls is decreased so your operating costs increase.

➤ What savings could be realized if you could improve work roll reliability?

3. Mill speed is increased to maintain the proper exit temperature resulting in reduced mill stability.
  - You know how critical the engineered speed of the mill is, but now operator reaction time to correct levelling issues is reduced which can result in additional cobbles.
  - Changes in one stand have a domino effect to remaining stands, perhaps in vibration and additional wear to other systems?
  - As speeds increase, so does energy consumption.
4. Water on the strip can form a steam barrier that insulates the strip.
  - This causes the creation of excess scale that is then rolled into the strip in subsequent stands.
5. Increased rate of cobbles.
  - Any increase in the gap between the roll and the delivery stripper guides can result in a cobble which leads to destroyed equipment and lost production.

## SO WHAT?

You need more predictable and reliable wear from your stripper guides and wiper boards. Transitioning to a material with a higher operating temperature means that your strippers & wipers will wear slower and hold their seal for a longer period of time. This allows the roll cooling system to do its job and protect the surface quality of your work rolls without leaking and allowing for thermal variations in the roll. As you know, roll surface quality has a direct impact on strip quality and downstream processing.

The traditional material of choice is Canvas phenolic - such as Ryertex C (aka "Micarta") - which typically lasts 4 weeks. WS Hampshire has worked with several of the largest steel producers to convert to a fiberglass epoxy - such as Ryertex FR4 - and the users have realized extended life to 8 weeks - a 2X improvement.

This increase allows the maintenance team to push change outs and reallocate labor hours (a minimum of 100 hours annually) to other projects, thus reducing the length of outages. TIME = TONS!

In reality, then, these parts provide a kind of insurance policy and can save real dollars in your plant by reducing change outs and extending the length of rolling campaigns!

## PROTECT YOUR WORK ROLL INVESTMENT!

With the proper investment in your stripper guides and wiper boards, you will recognize important increases in critical areas as well as savings & decreases in other areas.

