



"Elevate Efficiency, Extend Roller Life: Transforming Steel Surface Quality with HMSU Rollers in ECL Lines"



■ Introduction To ECL Line Sink Rollers

ECL lines clean steel surfaces with a special chemical bath to remove oil and dirt. Sink roller keeps the sheet in the solution for a thorough cleaning. This process ensures a clean and even surface for better quality of steel coils and sheets.

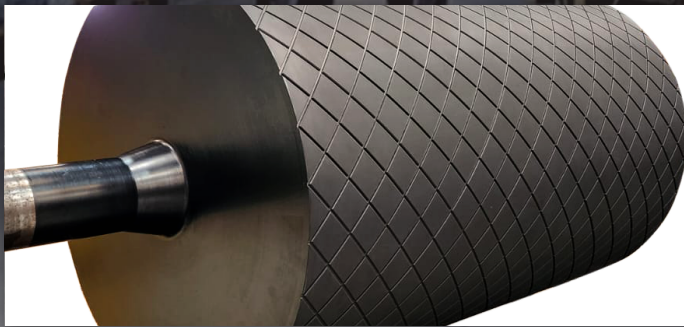
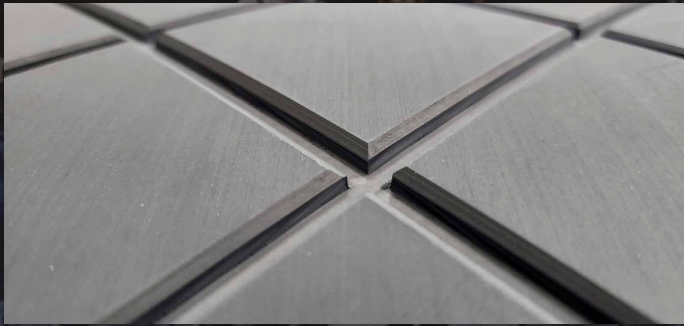
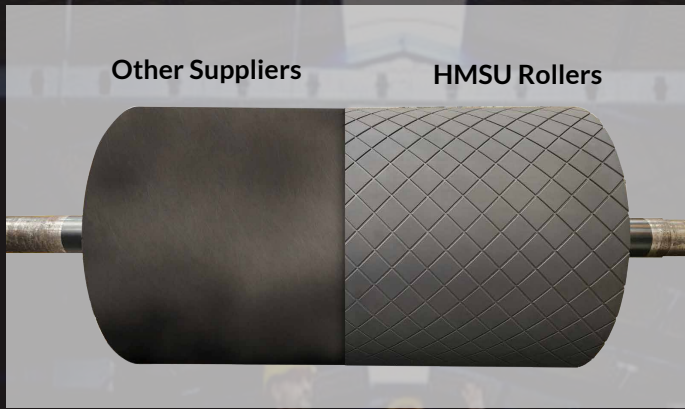
Chemical & Physical exposure of Sink Roller.

- Alkaline solution (NaOH) & hot water, Oil and other impurities from metal Sheet/Coil.
- Temperature up to 100 °C.
- Line speed: 100 m/min to 250 m/min.

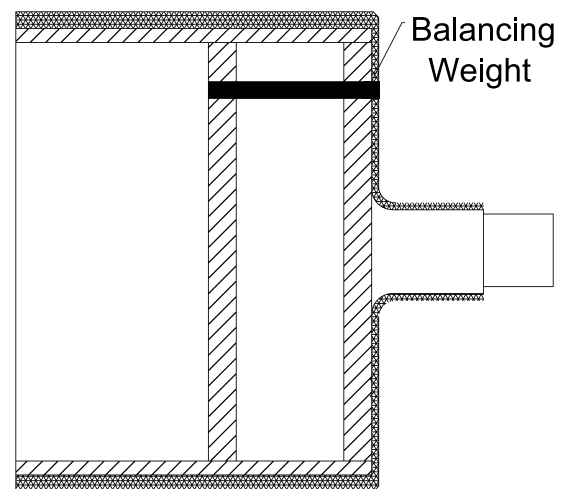
■ Problem Statement:

1. The average life of the roller stands between 4-6 months of operations. After that the roller needs to be removed from line and re rubberized.
2. As the roller ages the surface tends to get smoother leading to slippage and shifting of the continuous strip, necessitating change of these rollers.
3. High change over time due to size and location of these rollers leading to high downtime of the line and reduced capacity utilization.
4. General practice of roller covering companies to cover the side faces and shafts of these rollers by epoxy coating instead of rubber lining. This leads to damage of side faces in the electrolyte in short time leading to damage to the metal core and necessitating premature roller change.
5. Welding of metal weights on the side face to balance the roller. This practice doesn't allow rubber coating of the sides.

Solutions from HMSU Rollers:



1. HMSU offers specially designed CSM (Hypalone) Polymer based compound STEEL-PRO which is very suitable and longlasting for ECL sink rollers application.
2. This STEEL-PRO compound has excellent mechanical and chemical resistant properties suitable for this application.
3. HMSU offers these rollers top face with grooves which are made by special purpose m/c and hence are as per drawing and perfectly uniform. The edges of the groove are chamfered to prevent any damage to edges during its life time.
4. The uniformity and perfect dimensions of the grooves allows the solution and sediments to drain out thoroughly before the sheet comes out of the tank. This prevents any scratches on the sheet or carry over of sediments with it.
5. The sides & shafts are covered with same rubber to ensure that the side covering lasts same as the top covering.
6. The dynamic balancing is done by adding weight inside the roller side face so that it looks aesthetically good as well as doesn't create any issues during rubberising of the sides.



■ Success Stories

- JCAPCPL, Jamshedpur Sink Roller is currently in operation from Dec'22.
- TSL, Boisar
- POSCO, Raigad Maharashtra