

## STRIP ROLL OVERLAYS

### Provide Superior Roll Performance

SMS group provides high-performance maintenance services for hot rolling of strip, plate, bar, and beam products using two twenty-first century strip cladding technologies that provide roll overlays with superior performance characteristics. Our roll services also include precision machining and grinding using state-of-the-art conventional and CNC equipment.

#### Electro-slag strip overlays

Depositing a strip up to 60-mm-wide, our Electro-Slag Welding (ESW) process provides a hard-faced surface for reconditioning a variety of process rolls used in rolling and shaping metals.

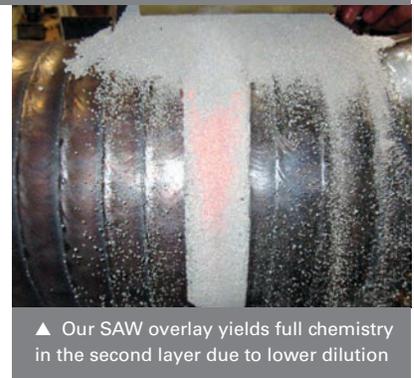
Our ESW process is not an arc process: the sintered strip and the roll surface are melted with heat generated by slag resistance to electric current. Because the ESW welding process has the lowest dilution of the base metal, neutral flux and a



large liquid pool, overlay chemistry and hardness is extremely homogeneous. As a result, rolls that have been clad with our ESW strip process have better wear profiles; longer service lives; roll runs between regrinds are longer; and mill downtime for roll maintenance is less frequent.

#### Submerged-arc strip overlays

Our Submerged-Arc Welding (SAW) strip welding process resurfaces rolls using strip overlays up to 60-mm-wide. Because it is a strip welding process, there are fewer



overlapping areas. Compared to stringer beads, because there are fewer inter-bead and reheat regions, the likelihood of defects in strip cladding is significantly reduced.

### Superior overlay chemistry, better wear profiles

Because our ESW and SAW strip-cladding processes achieve the exact required coating chemistry in the second overlay layer, they provide more usable cladding, which means longer roll service life. Better wear profiles also translate into less frequent roll changes and reduced maintenance costs.

### State-of-the-art machining

Using both CNC and conventional lathes, we can precisely machine every surface of a roll, journal, face and barrel, so it is restored to original specifications.

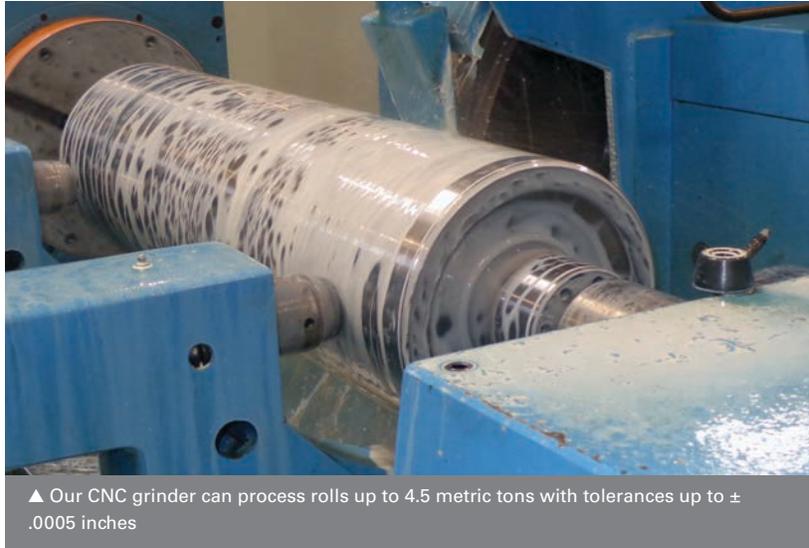
### Precision grinding

Our CNC grinder is extremely precise and can process rolls up to 630 mm (24.8 inches) diameter and 5000 mm (196.9 inches) long. Because it can accurately grind the body and the bearing and seal seats, surface quality and run-out control are improved.

In addition, we can provide eddy current and ultrasound roll testing.

### Quality control throughout the entire process

We inspect every roll we process, at each stage of the process—from rough machining to the final inspection—and document inspection results to ensure every roll meets all required specifications.



▲ Our CNC grinder can process rolls up to 4.5 metric tons with tolerances up to ± .0005 inches

### Comprehensive, responsive repair services

We can heat treat rolls to produce uniform hardness; reduce cracks and spalling; improve wear resistance; and minimize roll pickup. Our heat treating furnace is fully automated, can achieve temperatures up to 1850° F (1100° C) and handle loads up to 20 tons.

Because our facility has state-of-the-art equipment and trained technicians, we can provide complete roll refurbishment services.

### Reduced roll maintenance downtime for you

To find out more about how SMS group can improve the performance in the most demanding applications and reduce roll maintenance downtime, call us at +1-412-231-1200 or send an email to [Info.TechnicalServices@SMS-group.com](mailto:Info.TechnicalServices@SMS-group.com).



▲ All machining, welding, annealing steps are documented and available



▲ CNC machining allows for efficient roll contouring