

Mill Saves US\$80,000 and Improves Operations with New Descaling Nozzles



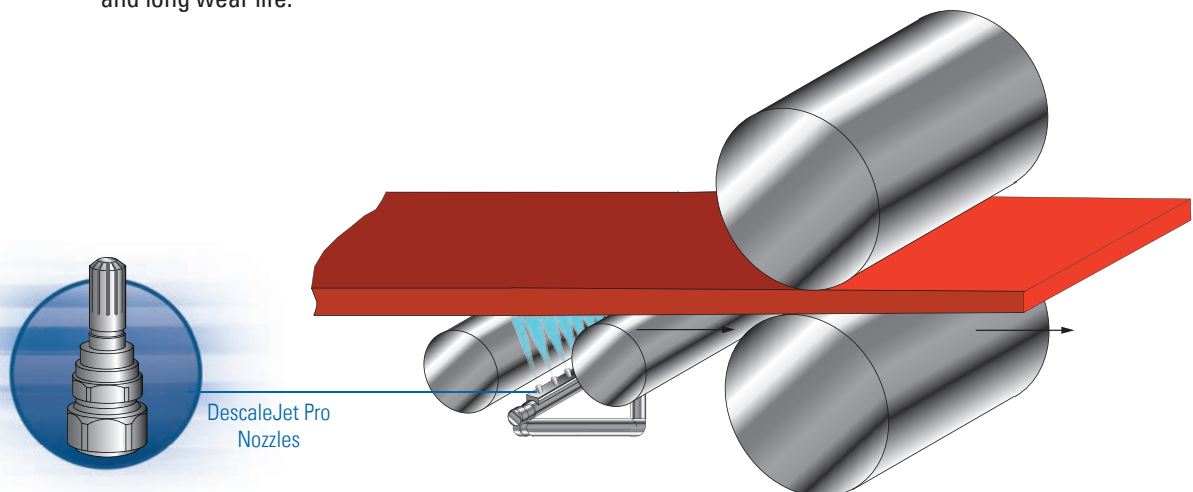
Problem:

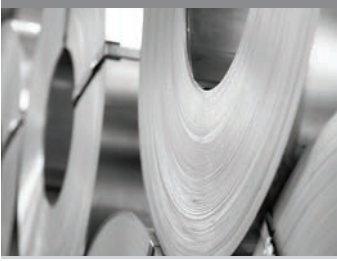
A fully integrated Midwestern steel mill manufactures hot-rolled, cold-rolled and coated-sheet products. Like all steel producers, the mill needs to remove the scale formed on the surface of the steel during rolling operations. The high pressure spray nozzles previously used did not provide adequate impact for consistent descaling. The nozzles also tended to clog and produce uneven spray patterns, further contributing to costly quality problems. Plus, the integral nozzle strainers tended to collapse and fall out and become lodged in the descaling header. Additional maintenance time was required to remove the broken pieces. Inconsistent nozzle wear life made it difficult to determine the proper interval for replacement, so the mill was replacing nozzles prematurely to avoid more quality problems caused by uneven spray impact.

Solution:

Spraying Systems Co.'s solution was DescalJet® Pro nozzles. To ensure the DescalJet Pro nozzles would provide the required performance, 3D impact testing was conducted in Spraying Systems Co.'s lab. In addition, proprietary DescalWare® software was used to determine the optimal placement of the nozzles in the header based on the mill's operating conditions. The testing and software analysis showed DescalJet Pro nozzles would provide a 15% improvement in impact than the nozzles previously used and more even coverage, especially in the critical overlap zones.

The mill installed 28 DescalJet Pro nozzles in the plate mill's 2-HI bottom header. The descaling header operates at 1900 psi (131 bar), providing a high-impact 30° pattern. The nozzles feature a threaded connection and self-aligning tungsten carbide orifices for easy maintenance and long wear life.





Mill Saves US\$80,000 and Improves Operations with New Descaling Nozzles – Continued

Results:

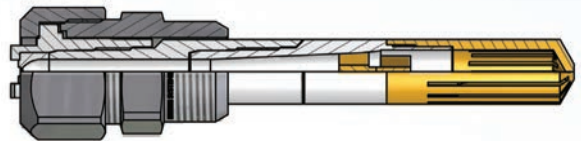
The superior performance of the DescaleJet® Pro nozzles was evident immediately after installation. The greater impact of the nozzles results in cleaner strip and fewer quality problems. The DescaleJet Pro nozzles provide 30% longer wear life than the previously used nozzles and the nozzles wear consistently so maintenance can be scheduled in advance. The integral strainers effectively screen contaminants and remain in the nozzles, eliminating spray pattern problems and unscheduled maintenance downtime. Since cost of the DescaleJet Pro nozzles is comparable to the old nozzles, savings added up quickly. The mill saved US\$80,000 in the first year through a combination of improved strip quality and reduced maintenance time.

A CLOSER LOOK AT THE SYSTEM

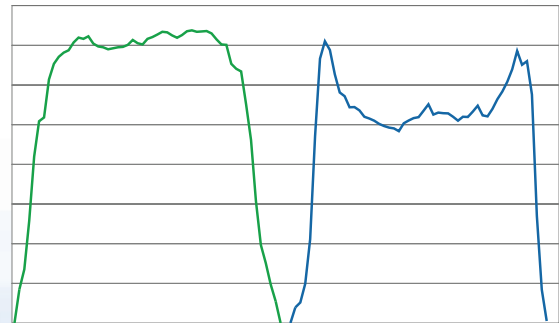
DescaleJet Pro nozzles are available in a variety of styles and sizes to fit any field installation.



DescaleJet Pro nozzles provide streak-free descaling because of even impact distribution. Competitive nozzles with non-uniform spray patterns typically cause striping and overcooling.



A special carbide material, with a finer grain structure, reduces wear and extends service life.



■ DescaleJet Pro

■ Competitive Nozzles



Spraying Systems Co.®
Experts in Spray Technology

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