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Innovative Rolling Mill for Seamless Structural Hollow Sections - The legacy of MSH profiles continues

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Although the production of ERW (electric resistance welded) square and rectangular sections is well-established, certain applications require seamless square and rectangular hollow sections due to their superior properties. These products' limited demand capacities make the market closely linked to downstream value chains, where their availability is crucial, as ERW tubes have neither been extensively tested nor approved.

After being balanced for decades, shifts on the supply side threatened to remove a significant portion of these products from the market. These were produced by a sophisticated hot rolling process that ensured strong structural properties. The so-called MSH profiles, which include circular, square, and rectangular structural hollow sections, were widely used in various applications, including construction, mechanical engineering, and offshore structures, due to their versatility and strength.

To counteract the risk of shortcoming, companies like voestalpine Tubulars are expanding their capabilities in this area. Together with KOCKS as an experienced special plant manufacturer, an ambitious project was initiated to develop an innovative four-roll profiling mill designed to produce seamless, hot-rolled square and rectangular hollow sections. This mill was strategically installed after an existing stretch reducing mill, leveraging the efficiency of the existing setup while enhancing production capabilities without requiring major relocation of equipment.

The paper puts focus on the main drivers, motivations and challenges in line with this plant project in an evolving industrial landscape from a technical viewpoint. The application will be described in detail as part of a best practice including its respective benefits. And, given the high importance of those products in downstream value chains, it shows how the legacy of MSH profiles continues to influence the development of new structural hollow sections.

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