



WHITEPAPER

# **Sidenor's answer to API20E new technical requirements**



The introduction of the three quality levels BSL1, BSL2 and BSL3 in compliance with API20 answers to a technical improvement of the bolts performance in the energy sector. Indeed, various serious incidents in the field have convinced the American Petroleum Institute of the need to adapt and strengthen the technical requirements of its API20E standard by implementing the three mentioned levels.

BSL-3, in particular, requires the use of raw material (special steel bars) that stems from a source other than continuous casting, that is, ingot casting with high quality levels. BSL1 and BSL2 allow continuous casting manufacturing, as before.

So, from now on, a steel Company which intends to be a global supplier in the energy market for oil and natural gas industries must have and master a broad range of production process formats, from continuous casting to ingot. In this respect, the manufacturers which can position themselves in this technical framework are few – and Sidenor is one of them.



**Sidenor has been a special steel producer for the industries of oil and natural gas for various decades. The company has a broad experience in quality and service requirements that are necessary in this market and is proud to say that it has developed a high-quality process in both formats – ingots and continuous casting.**

As regards continuous casting, a highly competitive format, Sidenor offers a broad range of products and reductions, based on billets in different sizes, and blooms in 3 different shapes. All this allows for a specific design of each product according to the part for which it is intended, adapting the reduction to the final part's dimensions. High-cleanliness processes, purity and precision are used to obtain the best mechanical, metallurgical and fatigue strength properties.

The ingot enables a higher inclusionary purity level, which definitely ensures the elimination of macro-inclusions and a high micro-inclusionary cleanliness. The reduction improves the purity of the material and ensures its isotropic condition by working at a high impact resistance level.

**The installations and processes of Sidenor are thus perfectly adapted to the high requirements of the oil and natural gas industries, and the company can supply the entire range of products according to the highest quality standards, as required by the API 20E standard in its three quality levels:**

API20E quality levels	Additional testing and examination of processes	Non-destructive tests	Continuous casting	Reduction	Chemical composition
BSL1	✗	✗	✓	4:1	Without B additions
BSL2	✓	✓	✓	4:1	B and S restrictions, Al test
BSL3	✓	✓	✗	10:1	Increased B and P restriction, increased S restriction and Al test