

Technidrill

Targeting optimum quality for equipment

After a study of its coring rods, Technidrill can boast a shot blasting mechanical hardening solution for drilling in abrasive ores, to prevent the appearance of cracks in its components.



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OUR CUSTOMER

Corporate name
Technidrill

Business activity
The design, manufacture and distribution of drilling, coring and survey equipment for non-oil fields.

Turnover
20 million euros

Workforce
50 employees

The coring rods, tubes with a length of 3 to 12 metres assembled together, are just some of the Technidrill products used for deep drilling. The steel used for these parts is effective in 98% of cases; only two customer complaints have been received over the last five years for the thousands of rods sold. This is good, but Technidrill asked Cetim to analyse the rods subject to complaints to improve the quality of this product. Initial visual observations revealed a through crack in the outer thread. Using 40x magnification, Cetim technicians observed interlinking microscopic cracks.

Residual service fatigue

Once this diagnostic had been established, the technicians attempted to determine the cause. Micrographic sections revealed parallel cracks of around one hundred microns, with regular spacing, which could be the symptom of surface fatigue during service. Roughness tests carried out on new tubes and after screwing confirmed that the problem was not caused by the quality of the steel or the manufacturing process. This assumption is confirmed by the absence of residual stresses. Finally, after checks, the mechanical

characteristics and chemical composition of the steel proved to match the initial specifications. This is therefore indeed a case of residual service fatigue, caused by friction with a particularly abrasive ore in the Algerian bore hole mentioned in the complaints.

After identifying the cause, a solution was determined. "I appreciated the professional approach of Cetim technicians, their responsiveness and their drive to get to the root of the problem", highlighted Étienne Bosch, manager of the Technidrill plant in Carros, near to Nice. In fact, Cetim proposed a solution for drilling for highly abrasive ores: mechanical hardening by shot blasting (roller burnishing), which creates residual compression stresses, preventing cracks from opening.

Cetim's asset

Cetim can analyse all aspects of a material and propose solutions for the most complex problems, thanks to its expertise in various analysis and testing techniques.

