

Onwards and downwards

Oil and gas drilling has returned to more than 90% of its pre-recession level. As the industry surges forward once again, Gary Heath, vice-president of **Castolin Eutectic** – a leader in application solutions for maintenance, repair and wear protection – explains how hardbanding can help companies extract resources effectively.

Oil and gas wells are highly deviated and extracting resources is becoming progressively more difficult. Hardbanding, the welding process used to limit wear on casing and drilling tool joints, is seen as increasingly important as companies race to step up their E&P activities.

“Hardbanding should always be applied, unless you’re only drilling down,” says Gary Heath, vice-president of Castolin Eutectic. “It’s particularly beneficial in horizontal and extended-reach wells, where tool joints in an open hole can get severely worn. Today, there are machines that can go in different directions, sniffing out where the oil and gas is.”

Heath believes that wearfacing, as opposed to hardbanding, is a more appropriate term that better reflects the importance of selecting a surface-coating alloy with the requisite properties to resist specific wear mechanisms.

“Just because something is hard, doesn’t mean it’s going to be good at being wear resistant,” he says. “For example, glass is very hard but you’re not going to put that down a drilling hole because it is too brittle. What’s more important is how it wears. You want it to be hard enough so it doesn’t wear away but not so that it cuts into the casing.”

In addition, he believes hardbanding is the simplest yet most misunderstood method used on a drilling rig today. “Most people think that you just have to add something hard rather than wear resistant,” he adds. “We’re trying to educate customers, as this is simply not true.”

The holy trinity

Castolin Eutectic is an international leader in application solutions for maintenance, repair and wear protection. In 2007, the company acquired Trio OilTec Services, which has provided hardbanding in the Norwegian market for more than eight years. “Trio brought new technology, which we implemented,” says Heath. “It also had a lot of very good oil customers and that helped us to expand out of Norway.”

The acquisition led to the development and use of new alloys such as OTW-12 and special coatings such as MX5. In addition, Castolin Eutectic and Trio constructed the only hardbanding test machine owned by a consumable developer, and set about creating alloy solutions.

“You use a product such as the OTW-12 wire because it has unique properties in terms of three characteristics, which I call the holy trinity of hardbanding,” says Heath. “You need low casing wear, low tool wear and low friction. There are many products on the market that are good for one of these factors, but not for all three. This is why we develop this particular alloy series, because it’s good for all three – it



Using a surface-coating alloy can stop casings from wearing under difficult downhole conditions.

is multifunctional. The test machine measures all these properties for a range of typical muds.”

The cohesion between Castolin Eutectic and Trio has provided the company with another advantage; everything is now manufactured in-house. “Most of our competitors don’t manufacture their own wires,” Heath notes. “Many have a product but don’t do the wearfacing themselves. We have great experience, and this gives us an edge, because we get feedback from our end-users straight away.”

Heath says that technology is rapidly evolving in the offshore platform space, which certainly places a lot of

“ The holy trinity of hardbanding is low casing wear, low tool wear and low friction. ”

emphasis on Castolin Eutectic and its competitors. “In the future, the sector will become even more technical,” he concludes. “The reason for this is that the industry is drilling deeper, meaning the drill is underground for a long time. Therefore, as the equipment advances, companies that manufacture wires need to keep pace, offering solutions that will last.” ■

Further information

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