

Seeking perfection by degrees: how our Thermosafe range was born

The evolution of Jotun's Thermosafe range of protective coatings is a story that spans several years of research and development and represents a perfect synergy between our clients' requirements and our on going drive to improve the technical quality of our products.

Interview with Svein Jacob Kaspersen Ph.D., Senior Chemist, R&D

A common industry benchmark for many companies to operate their assets continuously on a day-to-day basis is around the 200C range, although we know from experience that there can be occasions when operational temperatures can reach 230C or 240C, such as steam outs. And while such events may occur only a few times a year, we knew that we had to create an epoxy technology that would enable our customers to successfully continue operations beyond the 200C perimeter, without being limited by the integrity of their pipe coatings.



To get that extra increase in coating performance, companies had previously had to jump to more expensive 650C or 1000C ceramic products. But it was clear that they only needed an extra 50C for their operations, so why pay the extra?

We therefore decided to create an anti-corrosive protection that would operate successfully at a continuous temperature of 250C and would drastically reduce costs, compared to alternative, higher temperature resistant solutions. We were told many times that it couldn't be done, and while we knew it was an ambitious target, our years of experience in technical innovation gave us the confidence and commitment to prove the doubters wrong.

Extensive and rigorous corrosion, curing and temperature tests were first undertaken on sample panels at our research and development facility in Norway – incorporating the largest privately owned laboratory in Northern Europe – and elsewhere in the world by third parties. The temperature tests progressed to 230C, but breaking beyond that barrier proved a challenge – until we introduced additional raw materials to create a new composite which delivered additional properties and helped increase the flexibility of the coating. Tests on an aluminium recycling facility in Oman proved successful and conclusive. We had created a coating technology that could withstand a continuous temperature of 250C. And it was able to provide cost savings of more than 70 percent on existing products. Jotatemp 250 was born.

The commercial success of Jotatemp 250 led us on to an examination of the other critical challenges in enhancing operational efficiency and on-site safety in the extreme environments faced by onshore oil and gas facilities. The highly sophisticated testing regimes and processes established in the development of Jotatemp 250 served as a template for the creation of the other products in the Thermosafe range, while a culture of continuous improvement, aligned with a desire to produce technologies with a clear commercial benefit to the industry, provided the impetus for our research and development.

But, rather than the establishment of a range of successful industry-leading technologies being the end of the Thermosafe story, it's just the latest chapter. We're now supporting our clients through providing combinations of Thermosafe technologies to suit their specific needs, whatever they may be. We're also exploring the science behind why combinations of materials work together and continually looking at ways to improve our products.

And while some may say that it can't be done, at Jotun we've learned that it can.