

## ASSET INTEGRITY



# RD-6: When is a tape not a tape?

Polyguard's Nate Muncaster explains how the RD-6 Non-Shielding coating system illustrates the difficult path between innovation and adherence to standards

In terms of modern pipeline protection, “tape” has very negative connotations. It is associated with failure as a result of disbonding, wrinkling and shielding on cathodic protection, all of which can occur once the tape has lost its adhesion to the surface. In the US market, multi-layer polyethylene tapes have more or less been a dead technology for decades, now used by only small fringe of the industry.

In response, Polyguard developed the RD-6 coating system – the “tape that is not a tape” – in the late 1980s. It differentiates itself from older tape in its application and performance, offering far superior adhesion and added resistance to elongation – a customised polypropylene mesh means it will resist wrinkling from soil stress. The coating is a self-healing, one-layer system which can be applied faster and more simply – it doesn't need time to cure – than multi-layer tape systems.

In many cases, the cost of the RD-6 system is cheaper than multi-layer polyethylene tapes, because the user only needs to apply one layer, with a one-inch (2.5 cm) overlap instead of a 50% overlap. The bitumen layer used in RD-6 is also much thicker, meaning a more resistant and higher-performing coating system can be applied for less money than existing multi-layer systems

RD-6 is also a non-shielding coating. This means that if the coating ever becomes disbonded, the pipeline is still protected because cathodic protection currents can reach the disbonded area.

#### Standard deviation

Having been used in the US for over 25 years, the system is proven and effective for the rehabilitation and maintenance of buried pipelines. Yet adherence to different standards has so far prevented a wider uptake in Europe. Polyguard's Global Business Development director, Nate Muncaster explained to InnovOil that: “In Europe there is a perception that the highest standards are in place. In some contexts that is correct... [but] in a context where the standard obliges an engineer or designer to follow what they consider an obsolete or inferior technology then the standard becomes an inhibition.”

The result is that “such standards can therefore be a limitation when designers find it difficult to use judgment or adopt a new or innovative solution,” he continues. An example of this was seen in recent trials in Estonia, a country held in very high esteem inside the EU for strict adherence to European Norms and budgetary requirements.

Here, the Polyguard RD-6 coating system was field-tested for a period of over five years in a demanding buried environment. Four other European Norm-compliant products were also tested – some for only two years, some for the full five. At the end of this trial period, the only system without a failure was the officially “non-compliant” RD-6 system. All other coating systems revealed failures from their environment.

“This issue of performance versus compliance created a complication for the Estonian Gas company, leading several branches of the Estonian government and industry associations to study the results. In the end, Eesti Gaas favored the performance of RD-6,” Muncaster enthuses.

Polyguard's point is that the purpose of standards should be to provide the best performance – when they fail to do that, their value decreases. As Muncaster concludes, it should also serve as a reminder of “the importance of innovation and the value it brings to engineers and energy professionals in the industry.” ■

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