ØRSTED / Horns Rev 1

ØRSTED
+ 30 years service life in the most aggressive environment with our solvent free epoxies technologies.

2002: Project commissioning

Horns Rev 1 was the first offshore wind farm in the North Sea, introducing solvent-free epoxies technologies that later become industry standard. Hempel painted different transition pieces.

2016: 14 - year inspection

An independent condition survey confirms the coating system remains in very good condition after 14 years in service, validating the durability of the solvent-free epoxy technology.

2022: 20 - year performance confirmed

A second independent inspection confirms the coating system is still in excellent condition after 20 years, with an expected lifetime extended to 30+ 2 years.

Let's talk protective coatings for your project

THE CHALLENGE

Horns Rev 1 operates in one of the harshest marine conditions in the North Sea.

Located in the harsh North Sea, the transition pieces at Horns Rev 1 endure constant wave impact, salt spray, tidal cycles and continuous UV exposure.

Ensuring long-term corrosion protection across multiple decades is critical, especially for splash-zone areas where coatings face the highest stress.

THE SOLUTION

Ørsted implemented a durable and solvent-free epoxy system.

Hempel supplied a solvent-free epoxy system — High Protect 35650 applied at 2 × 500 µm DFT — selected for its high mechanical strength, barrier performance and proven offshore track record.

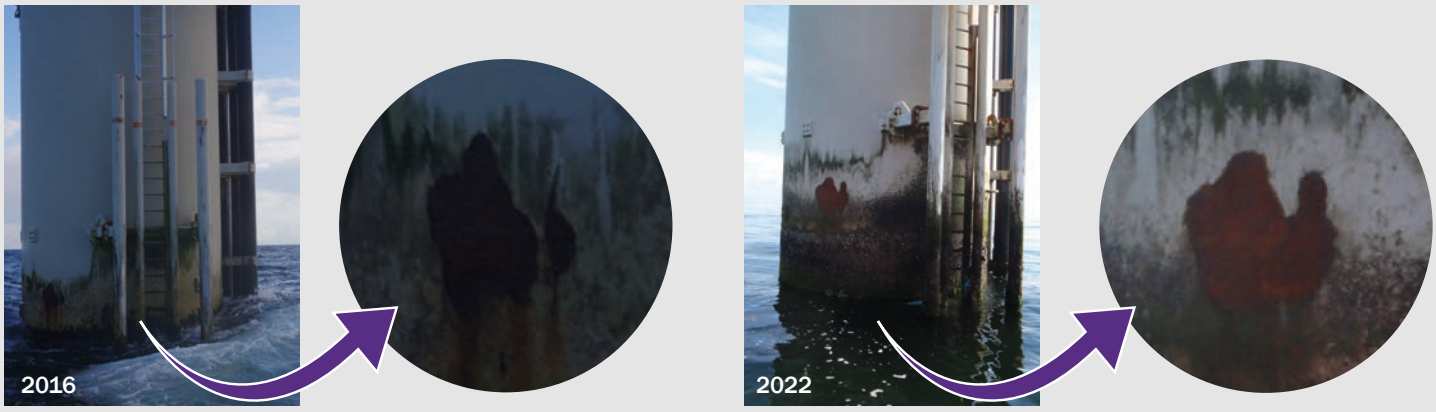
35650 has now been replaced with 35620 which is based on the same resin backbone as can be considered as the current equivalent with 35840/2 being glassflake containing versions of 35620.

THE PERFORMANCE

Hempel coatings are highly suitable for wind farms, where a lifetime of up to 30 + 2 years is expected.

"As appears from the photos, the condition of the TP-coating is quite excellent after 20 years in service in the splash zone at the Horns Rev 1 wind farm.Thus, no signs at all of degradation of the coating (except quite insignificant loss of gloss) could be observed. No signs of peeling, flaking, cracking or blistering were observed during our inspection of the coating, and no signs of rusting at all."

An area of mechanical damage was recorded on one of the transition pieces in 2016 and this was revisited in 2022:



"Comparison of extent of damage – 2016 and 2022. Except the already loosened coating in 2016 marked by the arrow, only relatively insignificant extent of under rusting and loss of coating along the edges of the damage have occurred over a period of 6 years in the splash zone".

At a glance

CUSTOMER
Ørsted, 60% owned by Vattenfall

PROJECT NAME
Horns Rev 1

ASSET
Transition Pieces of 80 Vestas 2.0 MW turbines

LOCATION
North Sea, Danish waters

COATING SYSTEM
High Protect 35650 superseded by Hempadur 35620

APPLICATION DATE
2001 / 2002