

TIDAL ZONES

TECHNICAL PROBLEMS

A tidal zone is a zone around 10 to 15 m high, located on the parts of the platform structure exposed to the movement of the waves. These zones are particularly sensitive: the immersion-emergence cycles and the salt in the seawater combine to exacerbate the corrosion problems.

These zones are also exposed to mechanical impact risks from objects floating on the surface of the sea.

TRADITIONAL SOLUTION

It is widely acknowledged that excellent corrosion protection is required in these zones as they are extremely exposed - and difficult to access for any later maintenance or repair work.

Two very different techniques are used:

- **a thick layer of protective coating**

Reinforced protection in tidal zones with thick protective coating systems, such as solvent-free epoxy mixed with glass fibres (several millimetres thick) or neoprene. There are two drawbacks: they are fragile to shocks and impact damage - and the coating is rigid, leading to the development of cracks.

- **layers of thin protective films**

This succession of thinner layers has less risk of cracking but does not provide a sufficient level of mechanical protection.

SOUPLETHANE UR 6 TECHNIQUE

SOUPLETHANE UR 6 is applied to the substrate to be protected (after being shot-blasted) in a single thick coat (3mm). It meets the quality requirements for structural corrosion protection, without any of the disadvantages of the traditional solutions:

- A thick coat, mechanically resistant to shocks and impact damage, with no cracking.
 - A supple coating: it easily follows the deformations in the substrate without damage, even major deformations (extension: 50 %).
 - Can be placed under cathodic protection.
 - Can be repaired, even at low temperatures, in the event of accidental damage. Can be submerged as soon as the repair is completed. It will polymerise underwater.
 - UV-resistant.
 - The coating is not affected by the hostile environment, by molluscs, which cannot chemically attack the coating with their secretions and pierce it.
- Additionally, they have trouble adhering to SOUPLETHANE and can be removed with energetic brushing (with no damage to the coating).



SPECIFICATION

- First brush all the points, welds, etc. after grinding away any defects (burrs, droplets, etc.) Sharp edges should also be rounded off before application.
- Shot-blasting: SA2.5
- Apply SOUPLETHANE UR 6 in a continuous, spray until it is approximately 3 mm thick.
- If necessary, finish with a coat of PU paint if markings or signs are required.

QUALITY CONTROL

- Sandblasting: SA 2.5.

Check that there is no dust

SOUPLETHANE UR 6 coating:

- Adhesion test: 20 MPa
- Good film appearance (polymerisation, blisters, etc.)
- Thickness: check using a microtest
- Porosity: holiday detector - 3 000 Volts per mm thickness.

All defects in the coating must be corrected.

TESTS AND CERTIFICATIONS

- Pressure resistance CNEXO - 600 kg/cm²
- Impact resistance: ELF
- Cathodic protection: ELF
- Resistance to salt mist: SNCF laboratory - Levallois - 2 000 h in salt mist

WORK REFERENCES

- CFP: Abu Dhabi