Topcoat interchangeability

Introduction

The primary function of topcoats in anticorrosive paint systems is to provide a desired finish. The topcoat has the required colour & gloss level and provides UV protection, while the primer and the mid coat(s) are the deciding factors in the corrosion protection offered by the system. For this reason, Hempel finds it technically justified to consider a certain interchangeability between topcoats in systems tested according to the same test protocol. Changing topcoat between systems has no significant impact on the anti-corrosive performance and does not require further testing or revised approvals in certain situations.

Exchanging topcoat may be relevant e.g. due to climatic conditions at the site of application, to achieve another gloss level or due to requirement to use only iso cyanate free products.

Scope

This document is relevant for performance testing according to ISO 12944, Norsok M501 and similar schemes e.g. customer specific test protocols for testing of corrosion protection of coating systems. The document applies to Hempel's assortment of 2-component cross linking UV resistant topcoats. These comprise

- Polyurethanes (typically named Hempathane, Hemuthane, Hempatop Finish)
- Polysiloxanes (named Hempaxane)
- Flouropolymers (typically named Hempatop Finish)
- Polyureas (named Hemparea)
- 2 component acrylics (named Hempel's Pro Acrylic)
- These may be solvent borne or water borne

Outside of scope are single component products (acrylics, alkyds, thin film silicones etc)

If further guidance is required please contact your local Hempel representative.

ISO 12944 part 5 & 6

ISO 12944:2018 define mandatory coating system requirements in part 5. Supplementary to this part 6 suggest test schemes for the systems depending on the intended service condition. Since the testing in part 6 is not mandatory there is full freedom to apply interchangeability of the topcoats as long as the generic descriptions in part 5 are observed.

Norsok M-501, eds 7.

Testing (called prequalification) is mandatory for certain systems according to Norsok M-501. This is of particular relevance for areas in atmospheric service - systems 1A, 1B & 2B.

According to clause 11.1 substitution of topcoats is possible:
"*If agreed with the end user, the approved topcoat in a prequalified system, may substitute another prequalified topcoat, provided the intermediate material is the same and the DFT of the topcoats are equal*"
While this may not be accepted by all end users, Hempel supports this to allow flexibility in selecting the most suitable topcoat for a given project.
Hempel prequalified topcoats according to Norsok M501: 2022 are:

- Hempathane HS 55610
- Hempathane Speed-dry Topcoat 250 (55250)
- Hempathane Fast Dry 55750
- Hempel's Pro Acrylic 55883
- Hemuthane Enamel 58510
- Hempaxane Light 55030

These topcoats may also be used as optional topcoats inn system 6A, 6B and 6D.

ISO 12944 part 9 & vgbe/BAW standard, Corrosion Protection for Offshore Wind Structures

The requirements according to ISO 12944-9 is very similar to Norsok M501. However, a difference is that there is no clause to allow exchange of topcoats as mentioned above for Norsok. The same is the case for the vgbe/BAW standard. Thus, for full formal compliance to the standards only the exact tested systems can be used.

However, in Hempel's view there is no negative implication on the performance of the system in case a customer decides to make a deviation from this and make use of the topcoat substitution principle.