Rudderstock refurbishment and protection

Application:	The rudderstock made of forged steel, suffering from bimetallic corrosion in the area between the liners/seal boxes and below the steering gear
Place:	FA Yard, Denmark
Date:	July 2019
Job and report done by:	Breki Ship Service ApS
Wencon products used:	Wencon Rapid & Coating

1st stage:

Surface Preparation Comply to ISO8501

1. Clean and degrease all surfaces, including cut-outs, rat holes and welds shall be rounded to a radius of at least 2 mm, optionally weld splatter removed
2. Weld seams burned, and rusty areas blast cleaned to min ISO-Sa 2½ or power tool cleaned to min SPSS-Pt3 prior Grit Blasting
3. Rough to an angular profile between 75 – 100 microns (in accordance with ISO 8503 parts 1 and 2)
4. Abrasive blasting to a cleanliness of white metal (Sa3/SP5) or near-white metal (Sa 2½/SP10) followed by removal of all abrasive residues
5. The purity of the sandblasting is visually checked
6. Bressler Sampler test for measuring soluble salts/chlorides in the steel surface (ISO 8502-6) limit value <50 mg m2
7. Distance to dew point of minimum 3 degrees Celsius throughout the application process
8. Once surface preparation has been executed the Corrosion damage is corrected with Wencon Rapid/Cream, to obtain original shape and size
9. Rapid/cream applied using a spatula while shaft slowly rotating on/off in the late machine.
10. A soft transition is established from the rudderstock to the liner to ensure no sharp edges are present
11. Immersion curing allowed before applying the protective coatings

2nd stage:

Wencon Product application:

1. Surface to be applied shall appear dust and grease free before applying the products
2. Wencon Protective Coatings is liquid and is applied by brush, roller or spatula in *minimum* 2 x 300µ layers (total 600µ DFT) to meet Client's/Class requirement of 2.400volt spark test.
3. Stripe coat of edges and welding's recommended considered beneficial by applicator
4. Wencon Coating is a double coating system. The overcoating time can vary from one to three hours depending on temperature
5. Second coat must be applied whilst the first coat is still tacky
6. Curing time for immersion will take place in 6-8 hours at 20°C (68°F) and faster by higher temperatures

Application of first layer of Wencon Protective Coating White in progress

Application of first layer Protective Coatings White completed

3rd stage:

Second and final layer of Wencon

Protective Coating Blue completed

Please note that the transition liner/rudderstock is now sealed and eliminates the risk of penetration of the surrounding media, and thereby excluding the risk of corrosion damage and loose liners etc.

- Though the application layer thickness has been surveyed using a wet film gage to insure sufficient thickness coating layers
- Temperature measurements are made of the surroundings and the steel surface. Relative humidity (RF) and dew point are checked (determined) and approved before Wencon coating begins. No Wencon produces to be applied in relative humidity above 85%
- Wencon Coatings require a distance to the drew point of minimum 3 degrees Celsius throughout the application process
- Final porosity/holiday testing
    - The continuity of the coating shall be checked, comply with NACE RP-01-88: "Discontinuity" (Holiday) Testing of Protective Coatings". 'Holidays' shall not be permitted.
- Class verified and approved the physical strange remain in the rudderstock and demanded corrosion damage repaired and stopped to protect the rudder strain against further damage