



ACCELERATED WEATHERING TESTS METHODOLOGY TO CHARACTERISE PRODUCTS FOR PASSIVE FIRE PROTECTION OF TANKS CONTAINING PRESSURISED LIQUEFIED FLAMMABLE GASES

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SUMMARY

1 PURPOSE OF THE PROCEDURE

2 EXPERIMENTAL CONDITIONS

3 REALISATION OF THE PLATES

- 3.1 Quality of the steel to be used for the plates
- 3.2 Status of the surface before application of the complex
- 3.3 Number and size of the plates
 - 3.3.1 *Plates for fire test after weathering*
 - 3.3.2 *Plates to verify the complex efficiency against corrosion*

4 TESTS PROCEDURE

- 4.1 Generalities
 - 4.1.1 *Equipment*
 - 4.1.2 *Products*
 - 4.1.3 *Sample*
 - 4.1.4 *Operational process*
- 4.2 Test in maritime atmosphere – salt fog
 - 4.2.1 *Purpose*
 - 4.2.2 *Principle*
 - 4.2.3 *Reagents*
 - 4.2.4 *Compressed air*
 - 4.2.5 *Salt fog*
 - 4.2.6 *Equipment*
 - 4.2.6.1 *Salt fog*
 - 4.2.6.2 *Absorbent paper*
 - 4.2.6.3 *Potential variation measuring device*
 - 4.2.7 *Operation mode*
 - 4.2.7.1 *Preparation of the plates*

- 4.2.7.2 *Positioning of the plates*
 - 4.2.7.3 *Control*
 - 4.2.7.4 *Test duration*
 - 4.2.7.5 *Cleaning of the plates after the test*
 - 4.2.8 *Measure*
- 4.3 Exposure to climatic cycle
 - 4.3.1 *Purpose*
 - 4.3.2 *Principle*
 - 4.3.2.1 *Severity of the test*
 - 4.3.2.2 *Representativeness of the test*
 - 4.3.2.3 *Reproducibility of the test*
 - 4.3.3 *Equipment*
 - 4.3.3.1 *Light radiation source*
 - 4.3.3.2 *Test cabinet*
 - 4.3.3.3 *Black panel thermometer*
 - 4.3.3.4 *Spraying device*
 - 4.3.4 *Control and measures of the test parameters*
 - 4.3.4.1 *Light radiating source*
 - 4.3.4.2 *Relative humidity*
 - 4.3.4.3 *Temperature*
 - 4.3.5 *Sample plates*
 - 4.3.6 *Operating conditions*
 - 4.3.6.1 *Exposure to artificial rain*
 - 4.3.6.2 *Exposure to cold*
 - 4.3.6.3 *Exposure to UV radiation and dry heat (1st step)*
 - 4.3.6.4 *Exposure to humid heat*
 - 4.3.6.5 *Exposure to UV radiation and dry heat (2nd step)*
 - 4.3.7 *Presentation of the results*
 - 4.3.7.1 *Example of deterioration*
 - 4.3.7.2 *Non destructive measure of an eventual corrosion*
- 4.4 Industrial environment test
 - 4.4.1 *Purpose*
 - 4.4.2 *Principle*
 - 4.4.3 *Reagents*
 - 4.4.4 *Equipment*
 - 4.4.4.1 *Air tight cabinet*
 - 4.4.4.2 *Plates support*
 - 4.4.5 *Samples*
 - 4.4.6 *Operational method*
 - 4.4.6.1 *Assembly of the exposure equipment*
 - 4.4.6.2 *Introduction of the sulphur and carbon dioxide*
 - 4.4.6.3 *Test cycle*
 - 4.4.7 *Measure of an eventual corrosion*

5 MEASURE OF AN EVENTUAL CORROSION

- 5.1 Purpose
- 5.2 Principle
- 5.3 Equipment
 - 5.3.1 *Stabilised power supply*
 - 5.3.2 *Electronic voltmeter*
 - 5.3.3 *Gauged shunt*

- 5.3.4 *Electrodes*
- 5.3.5 *Plate support device*
- 5.3.6 *Ventilated oven*
- 5.4 Products
- 5.5 Samples
- 5.6 Operating mode and tests conditions
 - 5.6.1 *Operating mode*
 - 5.6.2 *Tests conditions*
- 5.7 Presentation of the results

6 TEST RECORD

- 6.1 Marine environment exposure
- 6.2 Climatic cycle exposure
- 6.3 Exposure to industrial environment
- 6.4 Measure of an eventual corrosion