

GENERAL SPECIFICATION

CORROSION

GS EP COR 353

Design and application of passive fire protection coatings

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05	10/2017	General revision
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1. Scope

This specification defines the technical requirements for the design and application of fireproofing coatings to provide structures, buildings and equipment with passive fire protection.

The document does not cover:

- Product Qualification
- Definition of equipment and structures to be protected
- Protection of cable and piping entries
- Definition of fire classifications of bulkheads and floors.

2. Reference documents

The reference documents listed below form an integral part of this General Specification.

External Documents

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and addendums, is the latest revision published at the effective date of this document.

Reference	Title
ASTM D4285	Standard Test Method for Indicating Oil or Water in Compressed Air
ISO 12944 (Parts 7; 8)	Paints and varnishes. Corrosion protection of steel structures by protective paint systems - Parts 7; 8
ISO 16276-1	Corrosion protection of steel structures by protective paint systems - Assessment of, and acceptance criteria for, the adhesion/cohesion (fracture strength) of a coating - Part 1: Pull-off testing
ISO 4628-3	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 3: Assessment of degree of rusting
ISO 8421-1	Fire protection. Vocabulary - Part 1: General terms and phenomena of fire
NFPA 33	Standard for Spray Application Using Flammable and Combustible Materials

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Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and addendums, is the latest revision published.

Reference	Title
GS EP CIV 300	Reinforced and prestressed concrete
GS EP COR 233	Risers coatings
GS EP COR 350	External protection of offshore and coastal structures and equipment by painting
GS EP PVV 202	Standard drawings for accessories and equipment of vessels
GS EP SAF 337	Passive Fire Protection: basis of design

3. Types of structures and equipment to be protected

In this General Specification, the term “structure” refers to main load bearing elements of the structure, the mechanical characteristics of which need to be maintained in the event of fire to maintain the integrity of the construction.

Further information on the definition of PFP (Passive Fire Protection) can be found in [ISO 8421-1](#).

The structures to be protected shall be determined according to General Specification [GS EP SAF 337](#).

Structures and equipment considered are:

- Concrete and metallic structures
- Onshore and offshore structures
- Onshore and offshore equipment whether thermally insulated or not
- Buildings such as but not limited to living quarters, cabins, plant rooms, temporary shelters (TSR) and control rooms.

Note:

- In cases where PFP has to be provided on Valves, instrumentation and fittings connected to equipment (as requested by HSE department), fireproofing consists in removable boxes or blankets offering the same fire resistance as that required for the equipment.
- When risers of sea-lines have to be protected with PFP (as defined by HSE department), coatings according to General Specification [GS EP COR 233](#) shall be used.

4. Fireproofing materials

Only Passive Fire Protection products certified by an approved third part laboratory in accordance with General Specification [GS EP SAF 337](#) shall be used.

The use of fireproofing products containing asbestos is prohibited.

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4.1 Selection of the PFP system

In all cases, the materials used shall satisfy the following minimal requirements:

- Passive Fire Protection products certified in accordance with General Specification **GS EP SAF 337**
- PFP products able to withstand degradation due to the environment over time
- Ease of application and repair shall be considered as essential
- An anticorrosion coating shall be applied below PFP. Such corrosion protection shall be approved by the Supplier of the fireproofing product in order to ensure that both products are compatible. The application of such corrosion protection shall be carried out in accordance with Supplier's instructions and General Specification **GS EP COR 350**.
- In the event of deterioration, repairs must be as easy as practically possible to perform and fully restore the integrity of the PFP.

Mechanical reinforcement may be incorporated in the PFP in accordance with Supplier's recommendations.

When joints are provided to take account of differential thermal expansion of equipment, PFP shall be implemented in such a way as to allow for, and not be damaged by such expansion.

The upper parts of beams supporting gratings or piping shall not be protected by PFP.

5. Certification of personnel

5.1 Operators

PFP Operators are individually trained and certified by the PFP product Supplier. Operator's certifications shall be supplied to Company for review and approval.

5.2 Inspectors

Inspectors shall be individually certified by an approved organization (ACQPA, FROSIO, NACE level 3, or equivalent). Specific qualification shall be performed by the PFP product Supplier.

6. General

6.1 Concrete structures

PFP of reinforced concrete structures shall be provided by increasing the thickness of concrete to a sufficient thickness to reach the required fire protection performance indicated in **GS EP SAF 337**.