



Exploration & Production

GENERAL SPECIFICATION

PIPING VALVES VESSELS

GS PVV 920

Inspection procedure for pressure vessels
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01	10/03	Change of Group name and logo
00	07/01	First issue
Rev.	Date	Notes



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1. Scope

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
PD 5500	Unfired Fusion Welded Pressure Vessels

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
ASME VIII div. 1	Boiler and Pressure Vessel Code
ASME VIII div. 2	Boiler and Pressure Vessel Code
TEMA	Standards of the Tubular Exchanger Manufacturers Association
OCMA	Recommendation for tube and welding

Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
GS PVV 921	Check list for inspection of pressure vessels



3. Drawings and calculation notes

These documents shall be handed over by the Engineering Company to the Inspection Agency with an "Approved for Construction" mark-up on them.

Any further revision of these documents must be despatched immediately to the Inspection Agency by the Engineering Company in the same manner.

4. Materials

Review of sub-orders and expediting of Sub-Suppliers are under the responsibility of the Engineering Company. When required in the design code or in the project specifications, the Inspection Agency shall carry out the shop inspection of all main materials, namely (as applicable): plates for shells, heads, flanges, tubes, tubes-sheets, nozzles, bolting, etc.

The scope of this inspection is, within the requirements of the design code, to perform part or all of the following activities on those materials, as applicable:

- Visual inspection
- Dimensional check
- Witnessing of samples cut-out for mechanical testing
- Witnessing of mechanical tests
- Non destructive inspection
- Approval of material certificates

(Whether a shop inspection at Sub-Suppliers is required or not according to the project documents, the Inspection Agency shall at least review and approve the materials certificates submitted by the Manufacturer).

5. Qualification tests

Approval of Welding Procedure Specifications (WPS) and of their supporting Qualification Test Records (PQR) is under the responsibility of the Engineering Company.

In particular, the acceptance of PQR's already qualified for similar previous jobs is under the responsibility of the Engineering Company and is not acceptable for materials other than ordinary steels at temperature above minus 29 degrees Celsius or ordinary austenitic stainless steels of the 300 series of grades (i.e. 304/316/321, etc.).

The Inspection Agency shall perform the following:

- Witnessing of welding procedures qualification tests
- Witnessing of welders and operators qualification tests (where necessary)
- Witnessing of fabrication tests (where applicable).

This part of the Inspection Agency's scope of work not only includes the witnessing of welding operations and of mechanical testing of test coupons, but also the approval of base materials and filler materials as well as the verifications and identifications of materials intended to be used for testing purposes.

Within the scope of the design codes and where such possibility is allowed in the applicable project specifications, the Inspection Agency may, at its discretion, approve welders and welding operators already qualified for similar and recent jobs.

6. Fabrication

The Inspection Agency shall carry out a sufficient number of visits, and at least on a monthly basis, to carry out the following during the fabrication of the vessels:

- Dimensional and visual inspection
- Approval of non destructive examination (all NDE is to be performed by the Manufacturer but requires the witnessing by or, at least, the approval of the Inspection Agency)
- Verification of welds preparation (fit-up, alignment, bevels, cleanliness, preheating, drying of low hydrogen welding products, etc.)
- Verification and identification of filler materials, based on checking against materials certificates produced by the filler materials Suppliers
- Verification and identification of base materials, based on checking of materials markings against materials certificates already approved by the Inspection Agency
- Review and approval of heat treatment charts
- Verification of assembly
- Witness of any pressure and/or tightness tests.

7. Final acceptance inspection

The Inspection Agency shall carry out the following final inspection tasks before acceptance of the vessel:

- Visual examination
- Dimensional check
- Stamping
- Painting inspection (thickness, quality tests).

8. Documentation

The Inspection Agency shall use the COMPANY General Specification **GS PVV 921** as a guide to perform the actual inspection in the Manufacturer's shops and as a record of the current status of the inspection of each vessel.