



NATIONAL PETROCHEMICAL COMPANY STANDARDS

CONSTRUCTION STANDARD FOR PIPING FABRICATION & ERECTION

NPCS-CS-PI-

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1 SCOPE

1.1 This standard covers the minimum basic requirements, for various aspects of above ground and In-trench piping construction :

- a) Shop and field fabrication and erection of piping.
- b) Installation of in-line instrument items like orifice flanges, control valves, rotameters, safety valves , etc.
- c) Installation of items like line mounted filters, ejectors , sample cooler, etc.
- d) Installation of expansion joints.
- e) Fabrication & erection of pipe supports including installation of spring supports, etc.
- f) Casting of concrete pedestals for pipe supports.

1.2 Both shop and field fabrication include cutting, threading, bending, welding, bolting, etc., administration of material certificates, welding operations and execution, administration of all destructive & non-destructive examinations and all testing operations as required by the applicable procedure and standards.



2

GENERAL

2.1

BASIS FOR WORK

The basis for carrying out piping work shall be as per the latest edition of following codes and standards including applicable addenda :

- ANSI B1.20.1 Pipe Threads(Except Dryseal)
- ANSI B16.5 Pipe Flanges and Flanged Fittings.
- ANSI B16.25 Buttwelding Ends.
- ANSI B31.3 Chemical Plant and Petroleum Refinery Piping.
- ASME Section VIII & IX.
- NPCS-CS-PI-01 Construction Standard for Welding and Heat Treatment.
- NPCS-CS-PI-03 Construction Standard for Non Destructive Testing of Piping
- NPCS-CS-PI-04 Construction Standard for Testing, Flushing and Reinstating of Piping'.
- NPCS-CS-PI-05 Construction Standard for Precommissioning Chemical Cleaning.
- NPCS-ES-PI-01 Engineering Standard far Piping, System Design.
- NPCS-ES-PI-02 Engineering Standard for Piping Material Specification.
- NPCS-ES-PI-03 Engineering\ Standard for Steam Tracing.
- NPCS-SD-PI-1 All Piping Design Standard Through 64 Drawings.

Approved for construction drawings! documents indexes, sketches, etc. , issued by client to contractor, as what will be detailed out in special condition of contract.

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2.2 DEVIATIONS FROM THE BASIS FOR WORK

Where a deviation from the "basis for work" described above is required or where the basis for work does not cover a particular situation, the matter shall be brought to the notice of client and the work carried out only after obtaining written approval by client in each case.

3 FABRICATION

3.1 PIPING MATERIAL AND IDENTIFICATION MARK

3.1.1 Pipe, pipe fittings, flanges, valves, gaskets, studs, bolts, etc., used in a given piping system shall be strictly as per the "Piping Material Specification" for the "pipe class" specified for that system. To ensure the above requirement, all piping material supplied by client/ contractor shall have proper identification marks as per relevant standards/ client/ Licensor's specifications. Contractor shall provide identification marks on leftover pipe lengths wherever marked up pipe lengths have been fabricated/ erected.

3.1.2 All weld numbers and welder's identification number shall be painted close to the weld, to enable traceability of each weld and each welder. Socket welds shall be numbered per fitting, e.g., s.w. tee has one weld number.

3.1.3 Contractor shall maintain the color coding on piping materials to allow easy and quick reference in accordance with the project engineering specification.

3.1.4 All materials included in the finished piping systems shall be undamaged & fully in accordance with the piping material class which will be indicated on Isometric/ Piping Plan Drawing.

3.1.5 All protective coverings of piping for shipment and shipping containers shall be of sturdy construction to withstand normal shipping abuse. Contractor must provide adequate protection for flange faces, threaded connections, etc., to prevent damage during handling and storage. Contractor shall ensure that flange faces are protected from corrosion or rust.