



NATIONAL PETROCHEMICAL COMPANY
STANDARDS

MATERIAL STANDARD
FOR
TOWER INTERNALS AND VESSEL TRAYS
NPCS-MS-PV-03
REVISION : 0

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1 SCOPE

- 1.1 The intent of this standard is to define qualitatively the basis of design of all types of vessel trays with the exception of extractor trays. Together with tray data sheets, standard drawings, requisition and purchase order, it shall indicate the requirements to be met by vendor in the design, fabrication, inspection, testing and supply-.
- 1.2 It shall be the responsibility of vendor to point out in his quotation any exception that are being taken to the requirements of this standard.
- 1.3' "Purchaser" means National Petrochemical Company "NPC".
- 1.4 The compliance with this standard does not relieve fabricator from his own responsibilities and guarantees for the soundness of vessel to be delivered.

2 STANDARDS AND CODES

- ASTM American Society for Testing of Materials
- ASME Boiler and Pressure Vessel Code, Section VIII, Div. 1 and/or 2.
Boiler and Pressure Vessel Code, Section II.
Boiler and Pressure Vessel Code, Section IX.
- All Codes Referred to, in the above Mentioned Codes.
- WCS-ES-PV-02 Engineering Standard for Towers.
- NPCS-MS-PV-02 Material Standard for Tall Towers.



3 PROCESS DESIGN

Trays and internal parts for equipment will be designed by the supplier on the basis of process design data supplied by purchaser. Any changes which the supplier considers necessary in order to guarantee the performance of the trays will be submitted to purchaser for approval during the bid stage.

4 MATERIALS OF CONSTRUCTION

4.1 All materials shall conform to those which will be specified on the respective purchaser's drawings, data sheets, requisition or purchase order. Equivalent specifications may be allowed having modified chemical analysis to allow cold forming and machining.

4.2 Where tray material is specified to be Stainless Steel, tray plate and valve parts shall be of the same material.

4.3 Materials shall conform to the following specifications:

4.3.1 13 Cr Assemblies

- a) All sheet and plates materials shall be in accordance with ASTM Specification A 240, Type 410 S with 0.08% maximum Carbon content.
- b) Support rings and downcomer bars and other parts welded to the vessel shall be Carbon Steel in accordance with ASTM A 7, unless specified to be alloy, when they shall be in accordance with paragraph 4.3.1-a.
- c) All bolting material shall be 13 Cr type 410 Stainless Steel.

4.3.2 Monel Assemblies

- a) All sheet and plate materials shall be hot rolled annealed and pickled weldable Monel in accordance with ASTM B 127.