



Indian Oil Corporation Limited

**Panipat Hydrogen Generation Unit
Praxair India Private Limited**

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MATERIAL MANAGEMENT PLAN (MATERIAL HANDLING, STORAGE, PRESERVATION etc)

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1 SCOPE

This procedure defines material handling & storage preservations of the raw material and fabricated material for the **Panipat_HGU structural steel fabrication project** at workshop.

2 PURPOSE

The purpose of this procedure is to define the System for handling & Storage Preservation of all kind of project materials.

3 DISTRIBUTION & INTENDED AUDIENCE

LEI: Linde Engineering India Pvt. Ltd
VE: Vishal Enterprise

4 ABBREVIATIONS

ASME	American Society of Mechanical Engineers
IMIR	Inward Material Inspection Report
IR	Inspection Report
IRN	Inspection Release Note
MTC	Material Test Certificate
MDR	Material Discrepancy Report
NCR	Non-Conformance Report

5 REFERENCE DOCUMENTS

SR. NO	DOCUMENT NAME	DOCUMENT NUMBER	LATEST REVISION
1	Inspection and Test Plan For Structural Steel Fabrication & Painting	0022MC5770 (RQSC-0001) W-TB 9219.001	01
2	Inspection and Test Plan - Fasteners	0022MC5770 (RQSC-0001) W-TB 9219.002	01
3	Inspection and Test Plan Grating	0022MC5770 (RQSC-0001) W-TB 9219.003	01

4	Non-Ferrous Material Specification	ASME SEC II PART-B	2021
5	Hot Rolled Medium & High Tensile Structure Steel - Specification	IS 2062	2011
6	Fabrication Specification – Structural Steel	&AG-(2910A70M)-W-SC 1901.001 (EN)	01

6 RESPONSIBILITY

Site In charge – shall be responsible for

- Provision of necessary resources like Manpower, Equipment, Storage area. etc.

Store Keeper / Store Supervisor – shall be responsible for

- Proper storage of raw material,

Material / Inward QC Engineer – shall be responsible for

- Monitoring the storage of raw material as per the requirements.

7 HANDLING & STORAGE / PROTECTION OF MATERIALS

7.1 General:

- All material shall be stored in appropriate areas clearly designated and identified.
- Materials shall be stored such that different material grades are readily identifiable and retrievable.
- Store Supervisor / Material Controller shall ensure that materials received shall be protected from theft, damage or adverse climatic conditions when placed in storage.
- Stores and Material Controller shall be responsible for monitoring the condition of materials in storage during the course of their normal duties and shall immediately take rectification action for any identified anomalies.
- The QC Head / Material QC Engineer during routine surveillance shall verify the condition of stored project materials is maintained and shall report any identified anomalies.
- Handling of Materials shall be carried out in such manner to prevent damage or distortion during the lifting, handling and movement of all material and equipment.
- Project & Non-project material shall be stored separately in the warehouse and workshop site.

- All personnel involved in the handling of materials and equipment shall be properly trained / instructed especially when handling involves cranes, forklift trucks or other mechanical handling devices.
- All lifting and handling equipment shall be fit for purpose, maintained in a safe condition and, where applicable, be fully certified.

7.2 Structure Steel Material:

- In Plate storage area, plates shall be stored vertically with the long edge at ground level. Where space is available, plates shall be stored horizontally on timber dunnage spaced to avoid buckling of the plates.
- In Sections storage area, housed within an open steel frame to allow segregation by section, size, type and grade, supported on timber slats as necessary for ease of removal. Flat Plates, Pre-Formed Plates and Beams will be stored in a horizontal attitude or vertical attitude, on firm ground and kept above any standing water.
- Supports will be provided to minimize distortion or water accumulation. The structural elements shall be elevated above the ground surface.

7.3 Pipes

- Pipe will be segregated and stored such that different sizes, types, grades etc, (e.g. carbon steel and stainless steel pipes will be stored in different locations) are readily identifiable and retrievable.
- Pipe shall be adequately protected and timber bearers shall be provided during storage.

7.4 Miscellaneous Engineering Items (E.g. Stud Bolts, Nuts & Gaskets):

- Miscellaneous Engineering Items Will be lifted and handled by methods appropriate to their packaging and stored in accordance with supplier's / Manufacturer instructions.

7.5 Paint and other Toxic Material:

- Hazardous items are stored separate from all other materials. Safety activities will be in accordance with HSC safety plan. The storage requirement shall be as per Paint manufacturer recommendation.
- Coating materials shall be used on a first-in, first-out (FIFO) basis.
- Coating materials that have livered or gelled during storage shall not be used.

8 PRESERVATION

- Preservation of materials shall be carried out from initial receipt, throughout storage to Installation and final hand over.
- Site surveillance shall be conducted by QC Head / QC Engineer to ensure compliance to preservation requirements.