VRISHAL ENGINEERING PRIVATE LIMITED

PROCEDURE FOR MATERIAL CONTROL STORAGE & SEGREGATION

CLIENT: AARTI INDUSTRIES LTD, JHAGADIA, ZONE-4

PROJECT: CORAL-2

PO NO: 4580585038 Dt.01.03.2025

DOCUMENT NO: VEPL/AIL-J/CORAL-2/QSI-006

0	08.04.2025	ISSUED FOR REVIEW & APPROVAL	SHIVANG DIWAKAR	HARDIK PRAJAPATI
REV	DATE	ISSUED FOR	PREP. BY /VEPL	APPR. BY /VEPL

Hardik Sandhiya

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1 SCOPE

This procedure is applicable for the project: CORAL-2 PROJECT

2 PURPOSE

- This procedure defines the activities, responsibilities and methodology of receiving inspection for materials to ensure that effective inspection is deployed for the purposes of verifying Compliance to Purchase order, specification, standards where applicable.

- This document also provides required guidelines for the Handling and Storage of project materials.

3 DISTRIBUTION & INTENDED AUDIENCE

AIL: AARTI INDUSTRIES LTD, JHAGADIA, ZONE-4

AIL-TPI

VEPL: VRISHAL ENGINEERING PRIVATE LIMITED

4 ABBREVIATIONS

Abbreviations	Definitions
CAR	Corrective Action Request
IMIR	Inward Material Inspection Report
IR/IRN	Inspection Report / Inspection Release Note
ITP	Inspection and Test Plan
MDR	Material Discrepancy Report
MTC	Material Test Certificate
NCR	Non Conformance Report
PO	Purchase Order
QA/QC	Quality Assurance / Quality Control
RFI	Request For Inspection
TQ	Technical Query

5 REFERENCE DOCUMENTS

SR. NO	DOCUMENT NAME	DOCUMENT NUMBER	LATEST REVISION
1	Process Piping Code	ASME B31.3	2020
2	Inspection & Test Plan for Piping & Structure Fabrication & Erection	VEPL/AIL-J/CORAL-2/ITP/003, VEPL/AIL-J/CORAL-2/ITP/004	REV.00
3	Procedure for Welding Consumable Storage & Control	VEPL/AIL-J/CORAL-2/QSI-009	REV.00
4	Procedure for PMI Examination	VEPL/AIL-J/CORAL-2/QSI-007	REV.00

6 RESPONSIBILITY

- **QA/QC Manager**

- Overseeing the implementation of the material receiving process and procedures.
- Establishing a project-specific area with the help of the Construction / Fabrication Team.
- Monitoring issue and control of the materials as per the procedure.

- **Store Supervisor**

- Performing visual inspection, report deterioration of materials or damage to the packaging such as bends, dents, scratches, paint damage, verify quantity, documentation of received material and raising MDR, in case of any discrepancy.
- Marking of IMIR NO. on the materials / items
- Storing and preservation of equipment and materials in accordance with established requirements.

- **QC Engineer**

- Receipt Inspection, preparation of IMIR.
- QC Engineer shall inspect the material receiving from supplier or Manufacturer against Specification/Drawing/ PO terms or IR/IRN.
- QC Engineer shall also co-relate the material markings against the documents / MTC / IRN provided by AIL.
- Carry out preservation surveillance check / walk-throughs.
- Responsible for receiving inspection of welding consumables.
- Responsible for receiving inspection of coating materials .

7 PROCEDURE

➢ Receipt of Material

- Upon receipt, the material is off-loaded at the storage location in the presence of one or more Store Supervisor.

- Store Supervisor shall verify all the receipt document and quantity with respect to PO and / or dispatch documents. Shipment must be verified by Store Supervisor against "Packing List".

- If the shipment consists of unpacked goods, such as structural steel, pipe, etc., each bundle or piece is checked off the carrier by the Store Supervisor. The same applies to boxes, crates or other packed goods.

- Materials must be carefully checked as for the quantity and the condition, immediately after receipt. Store supervisor should count the number of pieces received and examine for evidence of visible damage.

- If any material is received damaged or not in accordance with packing list Store Supervisor shall report such discrepancies to Material Department for further action. Store Supervisor shall raise the Material Discrepancy Report (MDR) (refer Attachment -1), as applicable. In case of any physical Damage the Store Supervisor shall report to the QC Engineer for further action.

- Any drawings, material certificates, operating instructions and manuals relating to equipment are received along with equipment shall be forwarded to QC Engineer by Store Supervisor

➢ Inward Material Inspection

- QC Engineer shall offer received material to AIL-TPI Receiving Material through Material test certificates.

- Documents related to receiving material shall be reviewed and verified by AIL-TPI. He shall verify the MTC's, Test reports and results are meeting PO requirements. During receipt inspection of materials and items.

- QC Engineer shall verify the material offered through IMIR against PO and applicable material specifications. He shall first physically inspect the materials.

- QC Engineer shall verify the size/quantity, grade, Heat No, visual and documentation with reference to PO, Code, and Specification.

- He shall correlate material certificates and/or IRN's with material and/or equipment tag identification numbers i.e. heat, cast, serial, tag, etc.

- When Material Received from Vendor place with IR / IRN, QC Engineer Receiving Material shall verify following

❖ **Plates & Sections:**

  - Original Mill Marking shall be Co-Related with MTC / IRN / Receipt documents
  - Check visual and any Physical Damages, Dimension and Thickness verification.
  - Material Grade

❖ **Pipes & Fittings:**

  - Original Marking Co-Relate with MTC / IRN / Receipt documents
  - Check visual and any Physically Damage
  - Check compliance to Positive Material identification of alloy steel materials
  - Material Grade

❖ **Standard Forging & Flanges:**

  - Original Marking, size & rating correlated with MTC / IRN / Receipt documents.
  - Check visual and any Physically Damage.
  - Check compliance to Positive Material identification of alloy steel materials
  - Material Grade

- For Welding consumables, MTC shall be reviewed by AIL-TPI as per AIL specification and CODE.

- For paint materials, MTC shall be reviewed by AIL-TPI as per AIL specification and CODE.

- QC Engineer shall prepare the Inward Material Inspection Report (IMIR) for all accepted materials. (Refer Attachment -2).

- Material found acceptable or unacceptable due to physical damage, wrong dimensions, out of tolerance, surface defects detected, non-compliance to specification, insufficient documentation, etc. shall be reported as defined in next section.

➢ **Inspection reporting:**

- QC Engineer shall report the material status after physical verification of material and compliance to PO, Specification and code, indicating Accepted / Rejected or Hold.

- QC Engineer shall prepare the Inward Material Inspection Report (IMIR) for all accepted materials.

- QC Engineer shall forward one set of signed IMIR copy to AIL for records.

- The inspected and accepted materials shall have IMIR No. Supervisor shall be responsible for marking of IMIR No on each accepted item by Stenciling / Paint Marking / Hard Punching / Tagging etc.

- Goods which are received with insufficient documents, discrepancy or have testing deficiencies shall also be put on Hold and quarantined until required documentations are completed and required test were satisfactorily complied.

- In case the discrepancies are encountered, requirements of the PO, specifications, codes and related documents are not fulfilled, partially or fully, the material is to be rejected or kept on 'HOLD' till the deficiencies / discrepancies are resolved.

- During inspection, applicable documents like IMIR, MTC, IR/IRN, Waiver/TQ and Material Discrepancy Report (MDR) shall be offered for inspection for accepted material.

➢ **Control of process**

- Quality Manager shall inform AIL-TPI for inspection of detail material receiving and material release for further activities.

- QC engineer shall perform the necessary receiving inspections for project materials. Inspections performed shall be in accordance with this procedure.

- Quality Manager shall ensure that all materials are inspected by AIL-TPI in accordance with the specifications.

- QC Engineer shall be responsible for offering the material of inspection to AIL-TPI.

- Materials issued by Supervisor to shop shall be checked that they are identified with the Material identification Number (IMIR No.), (alternatively Heat No. or Tag No.)

- QC Engineer shall monitor the recording of Material Traceability Number (IMIR No.) on to the material.

8 MATERIAL HANDLING

- Handling shall be carried out in such manner to prevent damage or distortion during the lifting, handling and movement of all material and equipment.

- All personnel involved in the handling of materials and equipment shall be properly briefed / 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 be fully certified (where applicable).

- Fabricated Piping spool shall be packed in wooden boxes or crates or pallets and stored in a suitable indoor area.

- Where applicable, non-abrasive slings such as webbing or rubber sleeved wire slings shall be used to minimize damage to paint work. Alternatively, Equipment shall be wrapped with rubber belting before slinging.

- Equipment or instrument items shall be stacked as per manufacturer recommendation.

9 STORAGE OF MATERIALS

➢ **General:**

- All material and equipment shall be stored in such a manner to avoid injury to personnel, and protect from damage, contamination, general deterioration or losses of any kind.

- The storage areas designated shall be adequate to allow the uncongested storage and orderly movement of both incoming materials and materials in transit to construction areas. Both outdoor and indoor storage facilities shall be provided.

- Materials shall be stored so that different types and grades, service classifications are readily identifiable and retrievable.

- Indoor warehouse areas shall be provided with all necessary environmental controls for the storage of delicate materials. Storage shall be secure from adverse climatic conditions. Such areas shall be dry, adequately ventilated, and maintained free of dust, sand, grease, and condensation.

- Flammable materials shall be stored in adequately ventilated areas, away from other materials.

- Chemicals shall be stored in clearly defined areas, separated from other materials, in accordance with manufacturer's recommendations. All chemicals shall be clearly identified.

- Welding Consumable materials shall be stored in designated areas that are easily accessible and having appropriate controls.

- Materials shall not be stored directly on the ground. Materials shall not be stacked to excessive or inaccessible heights.

- Consumables & Paint which are subject to a shelf life expiry date, shall be rotated in stock accordingly.

- Fastener components (bolts, nuts & washers) shall be protected from dirt and moisture and kept in closed containers at the site of installation.

- QC Engineer and AIL-TPI shall conduct a bi-weekly surveillance visit in Stores to check the status (Storage) of the material.

➢ **Structural Steel Material**

- All materials shall be stored, and otherwise handled in a manner that will prevent distortion, deterioration, or damage. Materials shall be kept free of dirt, grease, and other foreign matter.

- In Plate storage area, vertically with the long edge at ground level and housed within purpose-built steel plate racks and with reference numbers at the same end of the rack. Where space is available, horizontally on firm hard standing raised from the ground and divided into separate stands timber dunnage spaced to avoid buckling of the plates. Each plate layer shall be separated by further timbers positioned directly above the foundation layer such that vertical forces are dispersed through the timber.

- For Steel Sections, storage area shall be stored within an open steel frame / support to allow segregation by section, size, type and grade, supported on timber slats as necessary for ease of removal.

- In restricted areas, on evenly spaced sturdy timber dunnage, laid out on firm hard standing and segregated by section, size, type and grade.

- Structural tubulars shall be stored in such a manner that will prevent distortion, deterioration, or damage. Material shall be kept free of dirt, grease and other foreign matter. Storage shall be on firm supports / standings or timber dunnage.

- The bottom raw of tabular, I-beam etc. Shall be laid with minimum ground clearance 0.5m to avoid contact with water, sand, mud etc.in order to prevent the corrosion.

- **Pipe, Fittings, Flanged Valves and Fasteners**

- All piping shall be stored material wise on evenly spaced timber dunnage laid on firm hard standing, in well-defined and dedicated locations to avoid mixing with other type. Multiple pipe classifications received in a single shipment shall be segregated upon receipt.

- Welding ends shall be protected against damage during handling and shipment by means of a securely fastened bevel protector or Pipe ends shall be protected by end caps or plugs.

- Pipes shall be stored on wooden bearing strips. Storage and handling practice must ensure that there are no mechanical dents on the pipe surface and that there is no contamination from carbon steel.

- Austenitic stainless pipe shall be stored under cover and out of contact with the ground.

- All fittings must be protected from mechanical damage. Welding ends must be protected with suitable wood, plastic, rubber or metal covers.

- All flanges shall be stored such that it is protected from mechanical damage. Welding ends and faces shall be protected with suitable wood, plastic covers. The face may be covered with an adhesive or sealing tape. Flange shall be stored face down on pallet during storage. Small flanges shall be stored in indoor facility. Bigger sizes may be stored outdoor with proper protection to ensure the protection during storage condition.

- Large fittings may be stored outside for up to 6 months in their delivery crate or a suitable crate supplied at the storage site. The crates shall be lined with bituminous heavy gauge brown paper. The crates shall be clearly marked with their contents and be raised at least 0.5m (19 in) clear of the ground on timber or other suitable material to avoid immersion in mud and water.

- The contents of the crates shall be inspected periodically to check the protective coverings and for any ingress of water.

- Fasteners shall be stored in bags or crates or wooden boxes. Storage shall be such that it segregates the items size wise and material wise and permits easy identification and retrieval.

- During fabrication, Non-ferrous metals segregation shall always be maintained utilizing dedicated fabrication area including color coding of tools and approved method statements as required.

- **Paint and Thinners**

- Paints and thinners shall be stored in well ventilated buildings free from excessive heat, sparks, flames, and direct sunlight.

- At times on the application site as specified by the manufacturer, or if not specified, temperature shall be maintained between 5°C (40°F) to 60°C (140°F).

- Containers of paints and thinners shall not be opened prior to use except for spot inspection. They shall be tightly resealed after inspection.

- Coating materials shall be used on a first-in, first-out (FIFO) basis.

10 SAFETY

- All personnel involved in material handling activities shall undergo basic Induction Safety Training Programmed on material handling practices and shall always wear mandatory PPE's during the work.

- All Personnel involved in material handling activities will take part in Daily Tool box talk before start of any handling activity on a given working day and ensure use of appropriate lifting tools and tackles**.**

11 ATTACHMENTS

- Attachment - 1: Inward Material Discrepancy Report (IMDR)

- Attachment - 2: Inward Material Inspection Report for Piping

- Attachment - 3: Inward Material Inspection Report for Structure

VISHAL ENTERPRISE & VRISHAL ENGINEERING PRIVATE LIMITED
GROUP OF COMPANIES
INWARD MATERIAL DISCREPANCY REPORT (MDR)

JOB DETAILS

CLIENT		REPORT NO.	
PROJECT		REPORT DATE	
PO NO.		IMIR NO.	
VENDOR/MANUFACTURER		IR/IRN NO.	

DISCREPANCY OF MATERIAL :

DISCREPANCY DETAIL

1	MISMATCH BETWEEN IDENTIFICATION MARKING AND TC		3	PHYSICAL DAMAGE	
2	NOT FULFILLING PO/SPECIFICATION		4	OTHERS	

REMARKS OF STORE SUPERVISOR :

REMARKS OF QC ENGINEER :

	ACCEPTED		REJECTED		

QC ENGINEER SIGNATURE

VE/QA/FORMAT/26 REV.1

Attachment – 1

VISHAL ENTERPRISE & VRISHAL ENGINEERING PRIVATE LIMITED GROUP OF COMPANIES

INWARD MATERIAL INSPECTION REPORT (IMIR)

CLIENT :	PROJECT:	IMIR NO	
PO / WO NO. :	PROCEDURE NO.:	DATE	

SL NO.	MATERIAL	DESCRIPTION	SIZE	SCH/RAT	SPEC.	MANUFACTURER / VENDOR	UNIT	QTY.	RN NO.	HEAT/ LOT NO	T.C NO.	P.O NO. / INVOICE NO.	REMARKS

REMARKS :	

	VE-QC	CLIENT-QC / TPI
SIGNATURE		
NAME		
DATE		

VE/QA/FORMAT/01 REV.2

Attachment – 2

VISHAL ENTERPRISE & VRISHAL ENGINEERING PRIVATE LIMITED GROUP OF COMPANIES

INWARD MATERIAL INSPECTION REPORT (IMIR) - STRUCTURAL

CLIENT		PROJECT:		IMIR NO	
PO / WO NO. :		DATE			

SL NO.	MATERIAL PO NO.	SECTION DETAILS	MATERIAL GRADE	INSPECTED SIZE LENGTH (MM)	INSPECTED SIZE WIDTH (MM)	INSPECTED NOS	INSPECTED WEIGHT	MANUFACTURER	SUPPLIER	HEAT/ LOT NO	T.C NO.	NVOICE NO.	ACC/ REJ	REMARKS

REMARKS :	

	VE-QC	CLIENT-QC / TPI
SIGNATURE		
NAME		
DATE		

FORMAT : VE-DOC-03 REV.00

Attachment – 3