Specification for Handling, Transporting and Storing of Line Pipe and Related Equipment
TABLE OF CONTENTS

1. SCOPE
2. DEFINITIONS
3. REFERENCES
4. CONTRACTOR RESPONSIBILITIES
5. GENERAL SPECIFICATIONS
6. PIPE INSPECTION

APPENDIX A: SUMMARY OF CONTRACTOR DELIVERABLE DOCUMENTS
1. **SCOPE**

This specification sets out requirements for the handling, transporting, stacking and storing and inventory control of coated or uncoated line pipe and related equipment. It applies to all such activities from the time the pipe or related equipment is loaded at the inspection facility and unloaded at the Work site.

2. **DEFINITIONS**

**COMPANY**

CONTRACTOR  The organization, person or company that contracts with COMPANY to perform services which require handling, transportation, storage and inventory control of line pipe and related equipment.

**CONTRACT**  The entire written procurement agreement between CONTRACTOR and COMPANY.

**NONCONFORMITY**  An instance of failure to meet contractual requirements, including physical, procedural or performance deficiencies.

3. **REFERENCES**

3.1 **GENERAL**

The appropriate sections of the latest versions of the following codes, standards and guidelines are incorporated by reference as a part of this specification.

3.2 **CODES, STANDARDS AND GUIDELINES**

a)  American Petroleum Institute
    API RP-5LW Transportation Of Line Pipe On Barges And Marine Vessels
b)  Association of American Railways
    AAR Section No. 1  AAR General Rules Governing The Loading Of Commodities On Open Top Cars

c)  COMPANY Material Specifications
    PS-1001  Seamless Line Pipe for Flowlines
    PS-1002  Specification for Material and Application of Fusion Bonded Epoxy Corrosion Coating for Steel Line Pipe
    PS-1019  External Protective Coatings for Subsea Components
    SP-001  Specification for Steel Line Pipe for Bundle Casing and Riser Casing
    SP-002  Specification for Flowline Bundle Spacers and Riser Spacers
    SP-004  Specification for Material and Application of Abrasion Resistant Coating for Steel Line Pipe
    SP-006  Specification for Pipe Bends
    SP-007  Specification for Sacrificial Anodes
    SP-008  Specification for Syntactic Foam Buoyancy Units
    SP-009  Specification for Thermal Insulation for Flowlines in the Bundle and in the Riser
    SP-010  Specification for Heating Pipe and Buoyancy Pipe
    SP-011  Specification for Steel Line Pipe for Annulus Line
    SP-012  Specification for Towing Gear
    SP-015  Specification for Pipe Flanges
    SP-016  Specification for Pipe Fittings
SP-020 Specification for Neoprene Coating of Riser Casing

4. CONTRACTOR RESPONSIBILITIES

4.1 GENERAL
CONTRACTORS who handle, transport or store line pipe shall be totally responsible for proper care of the pipe during the time they have custody of the pipe. CONTRACTOR will be considered to have custody during the period from collection through final delivery at the locations specified in CONTRACT. CONTRACTOR shall provide all labor, materials, tools, dunnage and equipment and shall undertake all preparation of permit applications, inspections, handling, reporting, storage and shipping necessary to perform the work required herein. If CONTRACTOR believes that this specification conflicts with other terms of the CONTRACT, CONTRACTOR shall inform COMPANY and the conflicts shall be resolved by the methods and procedures of the CONTRACT.

4.2 SUBCONTRACTORS
CONTRACTOR shall be responsible for the actions and performance of its Subcontractors.

4.3 PROJECT DOCUMENTS
Project documents shall be in English, prepared in basic US sizes of 8.5" wide by 11" long and progressively larger related paper sizes.

The system of units for project documents shall be customary US units.

In addition, a summary of CONTRACTOR Deliverable Documents is listed in Appendix A.

4.4 RESPONSIBILITY FOR DAMAGED OR MISSING MATERIAL
Pipeline Bundle materials and other related materials found to be damaged at the time CONTRACTOR assumes custody shall be replaced or repaired by CONTRACTOR, unless CONTRACTOR can produce verified inspection records showing that the material was damaged when CONTRACTOR received it. Replacements or repairs shall conform to the appropriate COMPANY specification from the list in Section 3.2.c and shall be approved by COMPANY. CONTRACTOR shall provide a schedule for material replacement for COMPANY approval. At COMPANY option, CONTRACTOR shall replace or pay for the material which is missing when custody is transferred.

4.5 REPORTING AND APPROVALS
4.5.1 CONTRACTOR Work Plan
At least 45 days before beginning the work, CONTRACTOR shall submit plans and procedures for performing the work required in this specification and the CONTRACT. Work shall not begin until CONTRACTOR receives COMPANY written approval of CONTRACTOR work plan, which shall include but not be limited to:

a) Procedures for loading, unloading transporting and handling all of the materials with a description of equipment and means of transportation to be used

b) Procedures for storing all of the materials, the method of supporting and the maximum number that can be stacked

c) Calculations showing that the stacking procedure will not overstress the pipe or coatings, according to the applicable method of API RP-5L1 or API RP-5LW, using mechanical properties given in the applicable COMPANY specifications listed in Section 3.2 and in the same CONTRACT.

d) Procedures for inspection,
4.6 DEVIATIONS AND DISCLAIMERS
Work done under this specification shall be according to all requirements herein, without deviations and disclaimers.

4.7 RECORDS
CONTRACTOR shall keep up-to-date records adequate to confirm that the work, including inspections, inventory control, reports and reviews, has been carried out according to this specification. These records shall be indexed and legibly recorded in enough detail that they can be accessed and understood by a qualified, independent third party. In absence of other instructions, CONTRACTOR shall keep these records available to COMPANY for inspection or photocopying for five years. The records shall include:

a) Results of CONTRACTOR’S inspection of materials at the time CONTRACTOR receives custody of the materials
b) The name and qualifications or authority of the inspector
c) Pertinent information about non-conforming materials, including:
   • Material condition that caused rejection
   • Method of detection
   • Number of items involved, if more than one
   • Proposed and actual disposition
   • Preventive action taken
d) Inventory control records including receiving and shipping reports, NCRs, disposition of materials

4.8 INTERACTIONS BETWEEN CONTRACTOR AND COMPANY
CONTRACTOR shall allow COMPANY access to his facilities, work areas, storage areas and processes during any portion of the work for monitoring, surveillance and inspection, including, but not limited to:

a) Review of adequacy of facilities and equipment
b) Review of personnel qualifications
c) Monitoring materials conveyance activities
d) Performing or witnessing inspections

The COMPANY Representative shall have the right to stop materials handling or storage operations which, in his judgment, are improper, and to suspend the work until the problem is resolved or corrected.
The COMPANY Representative shall inspect all materials for any visual damage prior to loading or unloading. Any visual damage or indication that the material has been damaged due to intransit shipping of the load shall be noted and brought to the attention of the CONTRACTOR prior to the commencement of the handling or transportation operations.

The material shall not be loaded, unloaded, transported or handled without the express knowledge, concurrence and observation of the COMPANY Representative.

The COMPANY reserves the right to determine the disposition of any and all damaged material.

4.9 ON-SITE DOCUMENTS
CONTRACTOR shall have this specification, referenced specifications, standards and other work related documents on-site for CONTRACTOR and COMPANY reference.

5. GENERAL SPECIFICATIONS
5.1 GENERAL
Transportation, handling and storage of materials shall be carried out according to CONTRACTOR’S Work Plan described in Paragraph 4.4.1. Specific requirements are described in the following sections and should be included in CONTRACTOR’s Work Plan.

Only equipment acceptable to the COMPANY shall be used in handling the material.

All material shall be handled, transported and stored such that it is not damaged or subject to deterioration.

Other Company’s material shall not be stored on or in the same area as the COMPANY’s material.

All material shall be tallied receipt and load out.

5.2 MARINE TRANSPORTATION

Marine transportation and loading shall be performed according to API RP 5LW. In addition sea fastening, loading height, loading scheme shall be approved by the COMPANY. All sea fastening shall be designed to prevent damage to the material from the dynamic motions of the vessel and shall be reviewed by the COMPANY’s marine surveyor for acceptance.

All ship and barge accessories shall be properly padded in such a manner to prevent damage to the material coatings. All pipes shall be shipped “nested” with proper approved padding in sufficient quantities to prevent damage to the pipe and coatings between layers of pipe.

Hardwood bearers with an overall bearing surface area of at least 2500 mm² shall be placed underneath the bottom (first) layer of pipes.

5.3 TRANSPORTATION BY ROAD
5.3.1 General
Loading and transportation by road shall be carried out according to API RP 5L1 and AAR General Rules, Sections One and Two, where these provisions can reasonably be applied.

5.3.2 Stacking on Motor Carriers
Pipes transported on motor carriers shall be stacked in unitized, nested pyramids with approved padding placed between layers to prevent damage to the coating. Padded chains or nylon straps shall be used.

5.4 TRANSPORTING PIPE WITH CORROSION/ABRASION RESISTANT COATING
Line pipe coated with corrosion/abrasion resistant coating shall be stacked on the carrier or storage place so there is no contact between pipe joints. If separator rings are on the pipe when CONTRACTOR takes custody of the pipe, it is CONTRACTOR’S responsibility to decide whether they are adequate to prevent contact or damage. If not, CONTRACTOR shall propose other means to separate pipe joints and submit the proposal for COMPANY approval. Under no circumstance shall abrasive coatings be allowed to come into contact with bare or other coated materials during handling or storage. Wooden stripping shall not be used and the pipe must be shipped with approved padding between layers and the pipe “nested”.

5.5 HANDLING AND STORAGE OF PIPE
a) Lifting slings used in direct contact with line pipe shall be wide non-abrasive belts or padded cable loops. Fork lifts utilized to move the pipe shall be properly padded. The pipes shall be raised or lowered from the barge, truck trailer or storage rack using a spreader bar of the appropriate length.

b) When hooks are used for lifting line pipe, the end hooks shall be designed to prevent end damage and should be lined with soft metal, rubber or plastic. Under no circumstances shall brass hooks be used. The end hooks shall have a length of bearing area which exceeds onto third the circumference of the pipe.

c) CONTRACTOR shall handle line pipe in a manner which shall prevent impact loads that can cause local denting or damage to the coating.

d) CONTRACTOR shall ensure that all line pipe joints being lifted have bevel end protectors fitted, and that adequate protection is given to the pipe ends.

e) CONTRACTOR shall take all necessary precautions to ensure that line pipe joints do not come into contact while being moved. Contact could result in denting or out-of-roundness of the line pipe body or pipe ends.

f) CONTRACTOR shall unload all line pipe at a controlled rate according to the agreed rate in the CONTRACTOR work plan.

g) Chains, cables, stanchions or other means of fastening or tying down the line pipe for transportation shall be properly padded. Dunnage, skids or padding shall be used to protect the bottom layer of line pipe and shall be of sufficient quantity to not allow damage to the pipe or coatings.

h) CONTRACTOR shall follow instructions and precautions given by the COMPANY Representative.

i) Use of pipe wrenches, pry bars or turning forks against any surface of the material is strictly prohibited.

j) All pipe shall be stored as directed by COMPANY, on concrete of wooden sills with 2” x 4” hardwood runners supporting the material in at least three support points. Storage racks shall meet all applicable API specifications, shall have a load capacity of 400 tons, and assure that all material is stored a minimum of 18” from the ground. The storage sills are to be flat and parallel, resting on firm supports which will not settle or tilt and are spaced in such a manner as to prevent contact with the connections.

k) Racks, roads and storage areas shall have sufficient drainage to prevent flooding. Roads and other access
areas shall be kept well maintained at all times.
l) Pipe shall be stacked in a pyramid fashion. Pipe shall never be placed on the ground or on racks that do not have the proper 2” x 4” hardwood runners.
m) Plastic or wooden chocks shall be utilized on both storage racks to prevent movement of the material. The area underneath and around the material is to be kept free of grass, weeds and standing water.

5.6 HANDLING AND STORAGE OF OTHER MATERIALS
a) The rigid foam insulation sections are easily crushed and therefore, they shall be handled carefully. The storage of the insulation shall be in a cabin that is temperature and humidity controlled. Moisture shall not be allowed to condense on the insulation surface.
b) Care shall be taken in handling the spacer half with the wheels. The wheels shall be checked for ease of rotation. Nuts, bolts and washers of each spacer shall be proper stored as sets.
c) Stainless steel tubing will be supplied on reels. Handling and storage of the reels shall be such that no contamination of the stainless steel occurs. Other materials shall not be allowed to be contact with the tubing.
d) Specific storage racks and areas shall be allocated to COMPANY and shall be designated for the storage of COMPANY material.
e) Material shall be racked by size, weight, grade and purchase order number. Different sizes, grades of material numbers shall be racked separately. Material shall not be moved at any time without the
knowledge, concurrence and observation of COMPANY’s Representative.
f) Rough handling or dropping of the material requires re-inspection of the material with the responsible party held liable for all costs including, but not limited to, handling, transportation, inspection, cost of material, etc.
g) Any material damaged during handling shall be set aside for investigative examination. Examinations shall be performed in accordance with procedures approved by the COMPANY.
h) Personnel moving or handling the material shall be qualified in the use of the equipment operated and shall be thoroughly familiar with appropriate API and COMPANY specifications

5.7 SAFETY AND YARD SECURITY
CONTRACTOR shall handle materials safely, according to all applicable legal requirements, recognized standards of good practice and CONTRACTOR written safety policies and procedures. CONTRACTOR site personnel shall review and understand the CONTRACTOR written safety procedures and policies. These policies and procedures shall also be available for review by COMPANY.

Access to the storage yard shall be controlled 24 hours per day, 365 days per year. The storage area shall be completely fenced or secured in such a manner as to prevent unauthorized access or property removal.

Sufficient inventory control records and procedures shall be maintained by the CONTRACTOR to ensure physical control of the material.
5.8 PIPE STORAGE
a) The CONTRACTOR methods of line pipe storage shall ensure that no damage occurs to the line pipe joints or any coating materials at any stage.
b) Coated line pipe shall be stacked using only suitable means to prevent pipes contacting each other. Dunnage or supports shall be made of soft material such as wood, rubber or plastic and shall have enough bearing area to prevent damage to the coatings.
c) Line pipe shall be stored so that water cannot collect inside the bore.
d) Line pipe shall be stored at least six (18") inches above ground level and shall be protected from contact with oil.
e) Three tier racks shall be utilized.

5.9 TRACEABILITY
Traceability of each item received to the mill certification papers, logs, or shipping papers shall be verified prior to acceptance by the CONTRACTOR.

Pipe or other materials not specifically traceable to those mill certification papers, logs or shipping papers shall not be accepted by the CONTRACTOR.

Documentation and traceability of the material shall be maintained at all times.

The original joint numbers for pipe shall be utilized for traceability purposes. The materials shall not be renumbered.

6. PIPE INSPECTIONS
6.1 INSPECTION AT THE RECEIVING POINT
CONTRACTOR shall visually inspect the materials before it is loaded or off-loaded where custody of the materials is taken or given. Each item shall be marked as "acceptable" or "damaged". Serial numbers of damaged material shall be recorded with a description of the extent and nature of the damage. The damage assessment shall be based on whether the material complies with applicable COMPANY specifications listed in section 3.2.c.

6.2 SEGREGATING DAMAGED OR NON-CONFORMING MATERIAL
CONTRACTOR shall be responsible for separating damaged material from acceptable material. CONTRACTOR shall also be responsible for discriminating between material damaged before and after CONTRACTOR takes custody.

6.3 DAMAGE SURVEY
CONTRACTOR shall perform a final damage survey in the presence of COMPANY, the CONTRACTOR and any subcontractors or insurance company that may be involved. CONTRACTOR shall report the results as required in Section 4.4.3. The report shall be signed by the COMPANY Representative.
APPENDIX A
SUMMARY OF CONTRACTOR DELIVERABLE DOCUMENTS

Documents to be delivered by CONTRACTOR in accordance with this specification are listed below for ease of reference only.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SECTION</th>
<th>DESCRIPTION</th>
<th>REQUIRED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>4.5.1</td>
<td>CONTRACTOR work plan</td>
<td>45 days before work start</td>
</tr>
<tr>
<td>2.</td>
<td>4.5.2</td>
<td>Accident report</td>
<td>Within 24 hours after occurrence</td>
</tr>
<tr>
<td>3.</td>
<td>4.7</td>
<td>Records</td>
<td>When requested by COMPANY</td>
</tr>
<tr>
<td>4.</td>
<td>4.5.1</td>
<td>Stacking procedure calculation</td>
<td>45 days before work start</td>
</tr>
<tr>
<td>5.</td>
<td>6.</td>
<td>Inspection report</td>
<td>When requested by COMPANY</td>
</tr>
<tr>
<td>6.</td>
<td>5.7</td>
<td>CONTRACTOR safety procedure</td>
<td>45 days before work start</td>
</tr>
<tr>
<td>7.</td>
<td>6.</td>
<td>CONTRACTOR supervisor/inspector</td>
<td>45 days before start name and resume</td>
</tr>
</tbody>
</table>