



Exploration & Production

GENERAL SPECIFICATION

PIPELINES - RISERS

GS PLR 406

Packaging and transportation of line pipes

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1. Scope

The purpose of this document is to specify the minimum requirements for the packaging and the transportation of line pipes.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Where national regulations exist, their provisions and those of the standards and codes to which they refer shall apply, supplementing or amending the provisions of this document.

If there are no national regulations covering all or part of the subject of this document, the reference documents shall be strictly applied, as supplemented by the provisions of this document.

Only the main reference documents are mentioned; the CONTRACTOR shall be responsible for complying with all secondary reference documents dealing with the subject of this document.

Unless otherwise indicated in the detailed contractual conditions, all the reference documents to be used, as well as their supplements shall be the latest editions.

Standards

Reference	Title
Not applicable	

Professional Documents

Reference	Title
API RP 5L	API specification for line pipe
API RP 5LW	API Recommended practice for Transportation of Line Pipe on Barges and Marine Vessels

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	



Other documents

Reference	Title
Not applicable	

Total General Specifications

The provisions of this document shall be applied in the light of the supplementary documents supplied by the OWNER, including:

- Country specificity appendices
- Job specification
- Data sheets
- Articles and conditions; list of tasks

Quality assurance provisions.

Reference	Title
GS PLR 401	Installation of submarine pipelines
GS COR 220	Three-layer polyethylene external coating for pipelines
GS COR 221	Three-layer polypropylene external coating for pipelines

3. Stockpiling

All methods of stockpiling line pipes shall be designed to prevent any damage on line pipe and/or any coating material at any stage.

Procedures for the storage of line pipes shall be submitted for approval. These procedures shall identify the manner in which the pipe is to be supported and state the maximum number of layers.

Pipe ends shall be fitted with open bevel protectors.

Onshore, for long duration storage, pipes shall be stockpiled at a slight slope to avoid inside rainwater corrosion.

Damage caused to the pipe or coating shall be repaired by an appropriate method in accordance with the job specification.

3.1 Steel line pipes

Calculations shall be required to confirm that the pipe will not be subjected to flattening or overstressing.

3.2 External coated line pipes

For each type of external coating, the stockpiling shall respect the coater's requirements.

3.3 Concrete coated line pipes

Maximum stockpiling shall be allowed after the concrete coating has achieved full stabilisation and strength.

If the concrete is steam cured, after 15 hours of curing, the pipes may be handled and stored in layers limited to four layers, provided that the test result made on a 10x10x10 cm³ shows a minimum compressive strength of 15 MPa.

In all other cases, after concrete coating, the pipes shall be stored as follows:

- On the first day, the pipes shall be laid on sand banks and the upper face shall be repaired if necessary
- On the fourth day, protective separating strips shall be laid on the first layer of pipes and a second layer of pipe may be laid on top
- On the fifth day a third layer may be added
- On the sixth day, a fourth and final layer may be laid.

Waivers with respect to storage shall be given only if the compressive strength of a sample taken of a pipe from the bottom layer is greater than 10 MPa (or 15 MPa in the case of a cube subjected to the same temperature and curing conditions as the pipe).

3.4 Insulated line pipes

Stockpiling shall respect the requirements supplied.

3.5 Stockpiling of line pipes with anodes

Stockpiling arrangement taking into account fixed anodes shall be performed and submitted for acceptance.

4. Handling of line pipe

Line pipes shall be handled by means of hooks padded with soft material to avoid bevel damage or flat strap slings.

Hooks and slings and other lifting gears, shall be suitable and safe for handling pipes.

The number of pipes, which can be handled simultaneously, shall be notified.

Pipe shall at any time be handled in a way, which prevents damage to the coating and to the bevelled ends.

Hooks and slings shall also be designed to prevent damage to the surface, coating or bevelled ends.

Any damage to the coating caused by handling shall be repaired in accordance with relevant specification.

4.1 Handling by means of lifting beams or by lifting pipe ends

The rule is that the compression stress in the concrete induced by the deflection of the pipe transported shall be less than 15 MPa.



5. Transportation

5.1 Transportation by truck or rail

Concrete coated line pipes shall be placed on trucks for transportation with a minimum elapse time after concrete coating of 15 days and not exceeding three layers.

5.2 Transportation by barge or ship

The pipes shall be loaded in staggered layers. All the pipes in the same pile shall have the same diameter.

Unless otherwise specified, in application of the Roark and Young formula, with a safety coefficient of 2 for the admissible concrete stress at the time of loading, the number of layers shall be limited to 10 after a minimum drying time of 29 days.