



Exploration & Production

GENERAL SPECIFICATION

PIPELINES - RISERS

GS PLR 407

**Load out submarine cables,
umbilical and flexible pipes**

01	10/03	Change of Group name and logo
00	02/01	First issue
Rev.	Date	Notes



Contents

1. Scope	3
1.1 Field of application	3
1.2 Exclusion	3
2. Reference documents.....	3
3. Storage requirements	4
3.1 Reels	4
3.2 Reel storage area of reels	5
3.3 Packaging of additional equipment	5
3.4 Warehousing.....	5
4. Handling requirements	5
4.1 Hand over	5
4.2 Load out and preservation of equipment	6



1. Scope

This specification defines the minimum requirements for loading of cables, umbilical and flexible pipes linking fixed or floating installations. Fixed installations are mainly subsea wellheads, manifolds or fixed platforms. Floating systems can typically be tension leg platforms, FPSOs or off-loading tankers.

1.1 Field of application

This specification is concerned with the storage and handling of lengths of lines stored on reels and additional structures such as buoyant structure, dead weight, arch, etc.

The definition of cable, umbilical, flowline or riser also covers the flexible line or pipe itself and all top and bottom connection devices, anodes and associated equipment of the installation.

1.2 Exclusion

This specification does not cover bonded flexible pipe, off loading flexible pipe and composite compliant pipe.

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.

Standards

Reference	Title
ISO 13628-2	Flexible pipe systems for sub sea and marine applications

Professional Documents

Reference	Title
Bureau Veritas NI364 DTO R00E	Non-bonded flexible steel pipes used as flowlines
API specification 17J	Flexible pipe systems for subsea and marine applications



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 109	Design of submarine flexible pipe and risers
GS PLR 408	Transportation of submarine cables, umbilical and flexible pipes
GS PLR 409	Installation of submarine cables, umbilical and flexible pipes
GS STR 401	Load out, sea-fastening, transportation and installation of offshore structures
GS STR 403	Acceptance of support vessel for offshore works

3. Storage requirements

3.1 Reels

The reels used for packaging must be designed for and suited to flexible lines. They must also:

- Meet the required minimum bending radius. Additional sleeves shall be added when the MBR is over the nominal central core of the reels
- Be sufficiently strong to withstand transport without deformation
- Not cause damage to the outer sheath of the flexible line

- Allow water filled flexible pipe to transportation, unreeled and laid
- Protect the flexible line against bending UV rays.

Separation flanges shall be added when several lines are stored on the same reel. The lines shall be rolled under tension with jointed wires.

3.2 Reel storage area of reels

A no-flooding area set aside for storage shall be clean, flat and guarded.

Protection shall be retained or restored, in particular protection against exposure to ultra-violet rays or end fitting protection. Where there is a risk of frost, insulation shall be provided.

Any works requiring high temperature or welding shall be prohibited in the surrounding of reels without specific protection.

3.3 Packaging of additional equipment

Packaging shall conform to the standards adopted by the Insurance Companies and Maritime Transportation. It shall protect equipment against impact, moisture or the ingress of foreign bodies such as sand, mud, etc. It shall carry an indelible identification label or inscription.

Fragile equipment shall be returned to its original packaging immediately after checking or intermediate inspection prior to actual use.

Packed equipment shall be stored under shelter and kept in secure premises until use; more particularly, packages shall be carefully re-closed after part of their contents have been used.

Some packaging accessories such as blind flanges for the operating of valve ports or other equipment (thread protectors, etc.) shall be removed only when necessary for final mounting.

3.4 Warehousing

Warehousing shall be such as to prevent the quality of the equipment from being affected.

Perishable materials and fragile equipment delivered with or without packaging shall be stored in closed warehouses. Whenever required for proper preservation, provision shall be made for air-conditioning in warehouses.

- Laying from onshore working site: A temporary site warehouse shall be provided in a separate area. This shall be either locked or guarded
- Laying from barges: The lay-barge may be used for storage. In such case all supplies and equipment intended for the project shall be stored in a closed storage area set aside solely for that purpose.

4. Handling requirements

4.1 Hand over

The locations and technical conditions for hand over of reels of flexible lines, equipment and materials shall be defined by the Contract. Certificate jointly signed by all parties involved shall include:

- Place and date
- Identity and function of signatories



- Description, quantity and quality of the supplies and equipment

Any discrepancies and out-of tolerances defects shall be clearly mentioned and checked against the reference documents.

4.2 Load out and preservation of equipment

The handling requirements and precautions for the flexible lines shall be the same as described in the specification **GS STR 401**.

The Installation procedures includes provisions for those who supply the means of transportation, machinery and personnel required for:

- Loading and securing equipment at the delivery point
- Transporting the equipment to the laying site
- Unloading and hoisting the reels.

Reels must be handled together with their support frames. It shall be took all necessary precautions not to bend them by using lifting frames, spacers, etc.

Protection and safety systems on reels and/or flexible lines shall not be removed during handling, unloading and through to transfer onto the laying vessel.

When a necessary line transfer is required, unreeling and reeling shall be performed under tension to avoid any further problems during laying operations. Procedures shall indicated particular protections so as not to damage the outer sheath or induce out of tolerance stresses.