



Exploration & Production

GENERAL SPECIFICATION

TELECOMMUNICATIONS

GS EP TEL 190

**Engineering and installation of offshore optical fibres
based telecommunications**

03	10/2009	Update of reference titles
02	10/2008	Installation details + ICPC recommendations
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1. Scope

The purpose of this General Specification is to define project activities to be applied to the offshore optical fibres based telecommunication links.

This Specification applies to any and all industrial sites where communications are required between onshore or offshore sites (HQ, Operations Bases) and industrial sites (oil and gas platforms or FPSO) or between offshore sites.

This specification applies to projects using optical cables only. Composite cables applications are specified in the **GS EP ELE 765** General Specification. Umbilicals are specified in **GS EP PLR 160**.

2. Reference documents

The equipment shall satisfy the requirements and regulations of the country of installation and specific standards referred to in this specification.

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

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.

Standards

Reference	Title
IEC 60793.1	Optical fibres, generic specification
IEC 60793.2	Optical fibres, product specifications
IEC 60794.1	Optical fibres, generic specification
IEC 60794.2	Optical fibres, product specifications
IEC 304	Standard colours for insulation of low frequency cables
IEC 331	Fire resistance characteristics of electric cables
IEC 332.1	Test of electrical cables under fire conditions
ISO 13628.5	Design and operation of subsea production systems - Subsea umbilicals
ITU-T G.652	Single mode fibres (1300 nm)
ITU-T G.653	Single mode fibres (1550 nm)
ITU-T G.654	Single mode fibres (1530 - 1625 nm)
ITU-T G.655	Single mode fibres (1530 - 1565 nm)

Reference	Title
ITU-T G.707	SDH network node interface
ITU-T G.708	SDH network node interface
ITU-T G.780	SDH vocabulary
ITU-T G.783	SDH equipment functional blocks
ITU-T G.784	SDH Management.
ITU-T G.803	Architecture of transport network
ITU-T G.841	Types and Characteristics of SDH Network Protection
ITU-T G.842	Interworking of SDH Network Protection Architectures
ITU-T G.958	SDH systems for use on optical fibres
ITU-T G.977	Repeated optical submarine systems
M.2100	Commissioning and maintenance (measurement procedures)
M.2110	SDH and PDH commissioning (measurement procedures)
M.2120	Fault detection (PDH and SDH)

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
ICPC Recommendations	1 - Management and Redundance of out of service cable 2 - Recommended routing and reporting criteria for cables in proximity of others 3 - Criteria crossing between submarine telecom cables, and pipelines and power cables 4 - Recommended co-ordination procedure repair operation near in-service cable system 5 - Standardization of cable awareness chart 6 - Recommended actions for effective cable protection (post installation) 7 - Procedure for offshore civil engineering work in the vicinity of active submarine cables systems 8 - Procedure for offshore seismic survey work in the vicinity of active submarine cable systems 9 - Minimum technical requirements for a Desk Top Study (DTS, aka Cable Route Study) 10 - Minimum requirements for load and lay reporting and charting 11 - Standardization of Electronic formatting of route position lists 12 - Mechanical testing of submarine telecommunications cables 13 - Proximity of windfarm developments and submarine cables

Total General Specifications

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

- Country specific regulations
- Job specification
- Data sheets
- Articles and conditions; list of tasks
- Quality assurance provisions.

Reference	Title
GS EP ELE 765	Subsea cables
GS EP EXP 101	Precommissioning and commissioning specification
GS EP EXP 103	Precommissioning and commissioning technical preparation
GS EP EXP 105	Precommissioning execution
GS EP EXP 107	Commissioning execution
GS EP GEO 101	Offshore geotechnical soil survey
GS EP GEO 102	Onshore geotechnical soil survey
GS EP GEO 110	Requirements for Offshore survey vessels
GS EP GEO 501	Meteorological and Oceanographic survey
GS EP GEO 504	Comprehensive evaluation of meteocean conditions
GS EP PLR 100	Submarine pipeline systems
GS EP PLR 160	Design, Fabrication, and testing of subsea umbilicals
GS EP PLR 401	Installation of submarine pipelines
GS EP TEL 191	Telecom Fibre Optic Systems Design
GS EP TEL 700	Telecommunications Engineering services

3. General

This specification applies to:

- Optical fibres communications links between COMPANY onshore offices or operational bases and COMPANY offshore installations (platforms, FPSO...)
- Optical fibres communications links between COMPANY offshore installations (platforms, FPSO...).

Depending upon the project requirements, the links may be single (point to point connection) or implemented through a network (loop, mesh...).

The telecommunications links shall carry voice, data, SCADA, CCTV, etc. and all kind of industrial applications.

The scope of design will be split into following segments.

- Onshore segment
- Landfall area
- Subsea cable and associated devices (repeaters...)
- Offshore risers: jackets & floating units
- Subsea connections
- End devices and interfaces.