Chapter- 05

Documentation and Deliverables

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Chapter-06

Documentation and Deliverables

This Chapter describes the documentation requirements and provides a list of deliverable that the Contractor shall provide to the Employer. Complete documentation necessary for the operation and maintenance of the Fibre Optic Cabling System is required. All the documentation shall be provided in hard copy and also on CD-ROMs in full compliance with the specification. Conditions pertaining to Document Review and Approval Rights and Document Submission Scheduling are specified in this Chapter.

As detailed in subsequent Chapters the documentation shall include the following:

(a) Detailed list of the deliverables
(b) Description of the products
(c) Technical particulars
(d) Installation manuals
(e) Maintenance manuals
(f) Quality assurance manuals, Manufacturing Quality Plan (MQP) & Field Quality Plan (FQP)
(g) Tests (type test, production, FAT, SAT) documentation

5.1 System Documentation

A detailed documentation plan and document submission schedule shall be prepared and submitted for approval. The guidelines specified in table 6-1 and 6-2 shall be followed.

5.2 Supplementary Documentation

If during the training courses or while performing maintenance on such equipment during the warranty period, the Employer determines that additional information is required to perform the maintenance function, the Contractor and/or its subcontractors shall provide the specific supplemental information necessary to perform the maintenance function. This information shall be documented in a form suitable for incorporation into the appropriate maintenance document.

5.3 Test Documentation

The Contractor shall provide documentation for all type test, factory acceptance test (FAT) and site acceptance tests (SAT).

The test documentation shall include the following:

(a) Test Procedure Document
(b) Type test documents

(c) Factory Acceptance Test Documents
(d) Site Acceptance Test Documents

5.4 Drawings

All drawings submitted by the Contractor including those submitted at the time of bid shall be in sufficient detail to indicate the type, size, arrangement, dimensions, material description, Bill of Materials, weight of each component, break-up for packing and shipment, shipping arrangement required, the dimensions required for installation and any other information specifically requested in the Specifications.

Each drawing submitted by the Contractor shall be clearly marked with the Employer name, the unit designation, the specification title, the specification number and the name of the Project. All titles, notes, markings and writings on the drawing shall be in English. All the dimensions should be to the scale and in metric units. The drawing revision level/ issue no, issue date shall be marked on each drawing and the drawing shall carry issue history information and appropriate signatures (eg: originator, checker and approving authority).

5.6 Drawing and Document Approval Procedure

The drawings/documents submitted by the Contractor shall be reviewed by the Employer as far as practicable with in stipulated duration and shall be modified by the Contractor if any modifications and/or corrections are required by the Employer in compliance with the Specifications. The Contractor shall incorporate such modifications and/or corrections and submit the final drawings for approval. Any delays arising out of failure by the Contractor to rectify the drawings in good time shall not alter the contract completions date.

The drawings/documents submitted for approval to the Employer shall be in triplicate. One print of such drawings shall be returned to the Contractor by the Employer marked with one of the categories as listed below:-

Category	Inference
Cat I	Approved/Released for implementation.
Cat II	Approved/Released for implementation subject to incorporation of comments. Revised drawing required.
Cat III	To be resubmitted for approval after incorporating comments.
Cat IV	For information and record.

The approval of the drawing/document conveyed vide above marked copy shall neither relieve the Contractor of its contractual obligations and its responsibilities towards weights, qualities,

design details, assembly fits, performance particulars and conformity of supplies with the Indian Statutory Laws as may be applicable, nor shall it limit Employer's right under the contract.

Depending upon the category of approval the Contractor shall resubmit the drawings/documents for review by Employer after incorporating all corrections.

Further work by the Contractor shall be strictly in accordance with the Cat-I, Cat-II or Cat-IV approved drawings and no deviation shall be permitted without the written approval of the Employer.

All manufacturing and fabrication work in connection with the equipment/material prior to the approval of the drawings shall be at the Contractor's risk. The Contractor may make any changes in the design which are necessary to make the equipment/material conform to the provisions and intent of the Contract and such changes will again be subject to approval by the Employer. Approval of Contractor's drawing or work by the Employer shall not relieve the Contractor of any of his responsibilities and liabilities under the Contract.

5.7 Final Documentation

Final documentation shall consist of the documents approved in Cat I and Cat IV listed in table 5-1. The documents will be used by the Employer personnel for operating and maintaining the equipment after acceptance.

Until acceptance of the equipment by the Employer, the Contractor shall be responsible for supplying documentation revisions or changes necessitated by inaccuracies, installation requirements, omissions determined by usage, and design or production alterations to the equipment. All changes shall be issued in the form of replacements for the affected drawings, diagrams, charts, graphs, tables, lists, and pages in the various documentation such that all documentation describes the equipment "as delivered".

For all CAT-I & CAT-IV approved documents listed in table (except Type, FAT & SAT related), Five (5) sets of the final approved documentation shall be provided to the Employer in CD-ROM and two sets in hardcopy. The list given in Table 6-1 is tentative which shall be finalised during detailed engineering.

All final Contractor-supplied documentation shall be easily reproducible by the Employer.

Table 5-1
Documentation Plan

S. No	Document	Applicable Equipments / Item	Brief Description	Category of Approval
1.	Documentation plan & schedule		This document shall contain the list of all documents to be submitted for approval and their submission/approval schedule.	I
2.	Survey guidelines & formats		As per Technical Specifications	I
3.	Data Requirement Sheets (DRS) and Guaranteed Technical Parameters & Drawings	For each and every item to be supplied including OPGW Cable, Aerial Cable, UGFO, Optical fibre, OPGW/Aerial/UGFO hardware & fittings, Approach cable, Joint Box, FODP etc	These document(s) shall describe all the technical parameters of the equipment being offered. The DRS shall be submitted for all the items and supported by Technical brochure/Product manual.	Cat-I (for DRS) & Cat-IV (for brochure)
4.	Sag Tension charts	For OPGW cable	Shall accompany the DRS document	I
5.	Standard Documents	For all items	Complete set of all manuals for that product. A set of product brochures, photographs etc.	IV
6.	Previous type test reports	For all items for which type testing is envisaged.	Shall be complete in all respect including all test graphs, curves, calculations, photographs etc.	Acceptance letter by Employer
7.	Type test procedures	For all items for which type testing is required.	Shall be formatted as per the technical specifications	I
8.	Type test schedule	For all items for which type testing is required.	Shall indicate the start & finish data for each test & sequence of tests if applicable, test labs.	I
9.	Type test report	For all items for which type testing is required.		Acceptance letter by Employer
10.	Bill of Quantity	For each items and each line		*

Table 5-1
Documentation Plan

S. No	Document	Applicable Equipments / Item	Brief Description	Category of Approval
11.	Factory Acceptance tests: test plan, procedures and report format	For all items to be supplied	This document shall include the list of Factory Acceptance Tests, the administrative & functional test plans, test procedures and formats for recording & reporting factory acceptance test results.	I
12.	Factory acceptance test report	For all Factory acceptance tests		Acceptance letter by Employer
13.	Site Acceptance tests (SAT) test plan, procedures and report format	System document	This document shall include the list of Site acceptance tests, the administrative & functional test plans, test procedures and formats for recording & reporting site acceptance test results. This document shall be restricted to describing the acceptance tests listed in this technical specification, and other similar tests which shall be conducted in Employer presence for Site acceptance.	I
14.	Field Quality Plan	One Document with multiple subdocuments if required	Field Quality Plan shall describe the quality control to be exercised during the field activities. This document can include the following information: (a.) The list of performance & safety checks applied to installation equipment, tools & tackles, checks, check on physical health & training records of installation crew etc. (b.) The list of Site Acceptance tests (including statement of	I

Table 5-1
Documentation Plan

S. No	Document	Applicable Equipments / Item	Brief Description	Category of Approval
			acceptance criteria). The inclusion of list of site acceptance tests in FQP is analogous to the inclusion of list of FAT in the MQP. The formats for recording & reporting Site acceptance tests can also be reproduced	
15.	Approach Cable Installation Document - General	Approach cable	This document shall describe the general approaches to be adopted for installation of Approach cables, for example the document shall try to answer questions such as whether cable trenches or cable raceways shall be used? Or whether any conduits/ ducts will be used, if so, of what type? etc. This document shall describe all allowable alternative installation methodologies, such that the actual implementation at a particular site shall be one or a combination of the methods described. The approach followed at a particular site shall be described based on this document in site by site documentation to be submitted later.	Cat- I
16.	Approach Cable & FODP layout document- site wise	For each site	To describe the layout of approach cable at each site and the floor plan of the FODP.	Cat- I
17.	SAT reports	Per Link		

Table 5-1 Documentation Plan				
S. No	**Document**	**Applicable Equipments / Item**	**Brief Description**	**Category of Approval**
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Note*: To be reviewed & approved by site.

----------End of this Chapter----------