

Table of Contents

[Telcordia GR-3123 - Documentation Information](#)

Generic Requirements Notice of Disclaimer	iii
List of Figures	viii
List of Tables	ix
Preface	xi
1 Introduction	
1.1 Purpose and Scope	1-1
1.2 Target Audience	1-1
1.3 Structure and Use of This Document	1-1
1.4 Requirements Terminology	1-2
1.5 Requirement Labeling Conventions	1-2
1.5.1 Numbering of Requirement and Related Objects	1-2
1.5.2 Requirement, Conditional Requirement, and Objective Identification	1-3
2 General Information	
2.1 Product Description	2-1
2.2 Deployment Environments	2-3
2.3 Installation and Operating Environment	2-4
2.3.1 Connector Performance in Harsh Environments	2-4
2.4 Related Telcordia Documents	2-5
2.5 FDH Component Devices	2-5
3 General Requirements	
3.1 Documentation	3-1
3.1.1 Practices	3-1
3.2 Markings, Packaging, and Shipping	3-1
3.2.1 Identification	3-1
3.2.1.1 General	3-1
3.2.1.2 Listing	3-2
3.2.2 Shipping Container and Packaging Arrangement	3-2
3.2.3 Package Label	3-2
3.3 Labels	3-2
3.4 Consumable Materials	3-3
3.5 Product Changes	3-3
3.6 Safety and Reliability Considerations	3-3
3.7 Installation Size and Weight	3-4
3.8 Maintenance	3-4
3.9 Components	3-4
3.10 Tools	3-5
3.11 Quality	3-5
3.12 Security	3-5
4 Functional Design Criteria	
4.1 Materials	4-1
4.1.1 Metallic Materials	4-1

- 4.1.2 Polymeric and Other Non-Metallic Materials 4-1
- 4.2 Cable Management Compartments 4-2
 - 4.2.1 Cable Entrance Capacity 4-2
 - 4.2.2 Cable Compatibility 4-2
 - 4.2.3 Cable Termination Hardware 4-2
 - 4.2.4 Bonding and Grounding Hardware 4-3
- 4.3 Service Provider Splice Compartment 4-3
 - 4.3.1 Splice Storage Capacity 4-4
 - 4.3.2 Fiber and Splice Protection 4-4
- 4.4 Connector Bulkhead 4-5
 - 4.4.1 Bulkhead Capacity 4-5
 - 4.4.2 Connector Sleeves 4-5
 - 4.4.3 Connector Requirements 4-5
 - 4.4.4 Pigtail Requirements 4-6
- 4.5 Fundamental FDH Requirements 4-6
 - 4.5.1 Deployment Configurations 4-6
 - 4.5.2 Optical Power Monitoring 4-6
 - 4.5.3 FDH Mounting Hardware 4-6
 - 4.5.4 Door Restrainers 4-7
 - 4.5.5 Drainage for Condensate 4-7
 - 4.5.6 Insect Resistance 4-7
 - 4.5.7 Fire Safety 4-8
- 4.6 Finish 4-8
 - 4.6.1 Color 4-8
 - 4.6.2 Appearance 4-8
 - 4.6.3 Paint Adhesion 4-9
 - 4.6.4 Paint Adhesion After Exposure 4-9
 - 4.6.5 Flexibility 4-9
- 4.7 Screens and Filters 4-9

5 Application-Specific Requirements

- 5.1 General 5-1
 - 5.1.1 Testing 5-1
- 5.2 Electrical Criteria 5-2
 - 5.2.1 Bond Clamp Retention 5-2
 - 5.2.2 AC Fault Test 5-2
- 5.3 Mechanical Criteria 5-2
 - 5.3.1 Cable Clamping 5-5
 - 5.3.2 Sheath Retention 5-6
 - 5.3.2.1 Sheath Retention Test Configuration 5-7
 - 5.3.3 Cable Flexing 5-7
 - 5.3.3.1 Cable Flexing Test Configuration 5-8
 - 5.3.4 Cable Torsion 5-9
 - 5.3.5 Vertical Drop 5-10
 - 5.3.5.1 Packaged Equipment Shock Criteria 5-10
 - 5.3.5.1.1 Category A Containers 5-11
 - 5.3.5.1.2 Category B Containers 5-11
 - 5.3.5.2 Unpackaged Equipment Shock Criteria 5-14
 - 5.3.6 Impact Resistance 5-14
 - 5.3.7 Central Member (CM) Protrusion 5-15



5.4 Environmental Criteria	5-16
5.4.1 Accelerated Thermal Aging	5-16
5.4.2 Assembly	5-16
5.4.3 Temperature and Humidity	5-17
5.4.4 Weather Tightness	5-18
5.4.5 Water Resistance	5-19
5.4.5.1 Water Intrusion	5-19
5.4.6 Chemical Resistance	5-20
5.4.7 Fungus Resistance	5-22
5.4.8 Rodent Resistance	5-22
5.4.9 Lifting Details	5-23
5.5 Earthquake, Environmental Vibration, and Transportation Vibration	5-23
5.5.1 Conformance Criteria	5-24
5.5.1.1 Earthquake - Physical Performance Criteria	5-25
5.5.1.2 Earthquake - Functional Performance Criteria	5-26
5.5.1.3 Earthquake - FDH and Anchor Criteria	5-26
5.5.1.4 Environmental Vibration Criteria	5-27
5.5.1.5 Earthquake Test Method Details	5-28
5.5.1.5.1 Environmental Vibration Test Procedure Details	5-31
5.5.1.6 Transportation Vibration—Packaged Equipment Test Plan Details	5-31
5.5.1.7 Static Test Procedure	5-31
5.6 Airborne Contaminants	5-33
5.6.1 Conformance Criteria - Airborne Contaminants	5-34
5.6.2 Optional Airborne Contaminants Test	5-34
5.6.2.1 Gaseous Contaminants Test Method	5-35
5.6.2.2 Two Cleaning Procedures for Copper Coupons	5-38
5.6.2.3 Test Procedure - Mixed Flowing Gas	5-40
5.6.2.4 Measuring Parameters	5-41
5.6.2.4.1 Safety Procedures for Testing Gaseous Contaminants	5-42
5.7 Craft Interaction	5-42
5.7.1 Front Plane Connector Disconnect and Reconnect Test	5-42
5.7.1.1 Conformance Criteria	5-43
5.7.1.2 Measurements	5-43
5.7.1.3 Disconnect and Reconnect Test Procedure	5-43
5.7.1.4 Product Testers	5-44
5.7.2 Rear-Plane Fiber Optic Terminal (FOT) Jumper Disconnect, Adapter Replacement and Reconnect Test	5-46
5.7.2.1 Conformance Criteria	5-46
5.7.2.2 Test Method	5-46
5.7.2.3 Product Testers	5-47

6 Components

Appendix A: Observational Standard

Appendix B: References

Appendix C: Glossary

Requirement-Object Index

List of Figures

Figure 2-1	Schematic of the Fiber Distribution Hub Role	2-2
Figure 2-2	Basic Fiber Distribution Hub	2-2
Figure 5-1	Schematic of Feeder-Cable, Monitored Network for Cable Mechanical Tests	5-4
Figure 5-2	Schematic of Distribution-Cable, Monitored Network for Cable Mechanical Tests	5-4
Figure 5-3	Sheath Retention Test Configuration	5-7
Figure 5-4	Cable Flexing Test Configuration	5-8
Figure 5-5	Cable Torsion Test Configuration	5-10
Figure 5-6	Packaged Drop Surfaces	5-12
Figure 5-7	Packaged Drop Test Setup	5-13
Figure 5-8	Test Setup for Category B Container, Corner Drop	5-13
Figure 5-9	Central Member Protrusion Test Configuration	5-15
Figure 5-10	Temperature Humidity Profile (Not to Scale)	5-18
Figure 5-11	Chemical Resistance Test Configuration	5-22
Figure 5-12	Earthquake Zone Map	5-24
Figure 5-13	Earthquake Synthesized Waveform - VERTEQII	5-28
Figure 5-14	Required Response Spectra	5-29
Figure 5-15	Commercial Transportation Vibration Environment	5-32
Figure 5-16	Anthropometric Hand Dimensions to Support Table 5-7	5-45
Figure 5-17	Anthropometric Hand Dimensions to Support Table 5-8	5-48
Figure A-1	Observational Standard	A-1



List of Tables

Table 2-1	Deployment Environments for Fiber Distribution Hubs	2-3
Table 5-1	Pass/Fail Criteria for Cable/FDH Mechanical Tests	5-5
Table 5-2	Cable Pullout Criteria Levels	5-6
Table 5-3	Category A Container Packaged Equipment Shock Criteria	5-11
Table 5-4	Category B Container Packaged Equipment Shock Criteria	5-11
Table 5-5	Unpackaged Equipment Shock Criteria	5-14
Table 5-6	Impact Criteria Levels	5-14
Table 5-7	Indoor Contaminant Levels	5-34
Table 5-8	Typical Coupon Weight Gains During MFG Exposures	5-40
Table 5-9	Target Air Composition and Duration of MFG Testing for Equipment Designated for Indoor or Outdoor Use	5-41
Table 5-10	Recommended Hand Size of Product Tester	5-45
Table 5-11	Recommended Hand Size of Product Tester	5-48