

# Table of Contents

## 1 General

1.1 Purpose . . . . .	1-1
1.2 Scope and Product Descriptions . . . . .	1-2
1.2.1 Cross-Connect Twisted-Pair Products . . . . .	1-2
1.3 GR Hierarchy for Twisted-Pair Products . . . . .	1-3
1.4 Safety Considerations . . . . .	1-4
1.5 Reference Documents . . . . .	1-5
1.6 Units and Tolerances . . . . .	1-5
1.7 Product Reliability/Quality Assurance . . . . .	1-5
1.7.1 Product Changes . . . . .	1-6
1.8 Reasons for GR-126-CORE Reissues . . . . .	1-6
1.8.1 Reasons for GR-126-CORE, Issue 2 . . . . .	1-6
1.8.2 Reasons for GR-126-CORE, Issue 1 . . . . .	1-7
1.9 Organization . . . . .	1-7
1.10 Requirements Terminology . . . . .	1-8
1.11 Requirement Labeling Conventions . . . . .	1-8
1.11.1 Numbering of Requirement and Related Objects . . . . .	1-9
1.11.2 Requirement, Conditional Requirement, and Objective Identification . . . . .	1-9

## 2 Conductors

2.1 Conductor Construction . . . . .	2-1
2.2 Conductor Sizes . . . . .	2-1
2.3 Factory Joints . . . . .	2-1
2.4 Conductor Elongation . . . . .	2-2

## 3 Conductor Insulation

3.1 General Features . . . . .	3-1
3.2 Polyolefin Insulations . . . . .	3-1
3.2.1 Thermal Oxidative Stability - Polyolefin Insulations . . . . .	3-2
3.3 Poly(VinylChloride) Insulation Requirements . . . . .	3-2
3.4 Insulation Construction and Dimensions . . . . .	3-3
3.5 Imperfections and Porosity . . . . .	3-4
3.6 Splices . . . . .	3-4
3.7 Insulation Adhesion to the Conductor . . . . .	3-4
3.8 Tensile Strength and Elongation . . . . .	3-5
3.9 Resistance to Aging . . . . .	3-5
3.10 Compression Resistance . . . . .	3-6
3.11 Cold Bend . . . . .	3-6
3.12 Shrinkback (Longitudinal) . . . . .	3-6
3.13 Cut-Through Resistance . . . . .	3-7
3.14 Insulation Color Coding . . . . .	3-7
3.14.1 Outdoor Cross-Connect Wire (Type G) . . . . .	3-9
3.14.2 Customer Premises Cross-Connect Wire (Type F) . . . . .	3-10
3.14.3 Universal Cross-Connect Wire (Type N) . . . . .	3-10
3.15 Twist Lengths . . . . .	3-11

## 4 Electrical Requirements

4.1 DC Conductor Resistance . . . . .	4-1
4.2 DC Resistance Unbalance . . . . .	4-1
4.3 Near-End Crosstalk (NEXT) . . . . .	4-1
4.4 Voltage Withstand Test . . . . .	4-2
4.5 Insulation Resistance (Wet) . . . . .	4-2
4.6 Continuity and Shorts . . . . .	4-3

## 5 Finished Wire Product Tests

5.1 Cold Bend or Wrap Tests . . . . .	5-1
5.2 Impact Test - Wire on Spool Product . . . . .	5-1
5.3 Flammability and Listing . . . . .	5-2
5.3.1 General Applications . . . . .	5-2
5.3.2 Inside Applications . . . . .	5-2

## 6 Marking and Packaging Requirements

6.1 General Features . . . . .	6-1
6.2 Marking and Labels . . . . .	6-1
6.3 Specific Criteria by Cross-Connect Wire Type . . . . .	6-2
6.3.1 Outdoor Cross-Connect Wire (Type G) . . . . .	6-2
6.3.2 Customer Premises Cross-Connect Wire (Type F) . . . . .	6-3
6.3.3 Universal Cross-Connect Wire (Type N) . . . . .	6-3

## 7 Product Classification

7.1 General Descriptions and Application Review . . . . .	7-1
7.2 Outdoor Cross-Connect Wire (Type G) . . . . .	7-2
7.3 Customer Premises Cross-Connect Wire (Type F) . . . . .	7-2
7.4 Universal Cross-Connect Wire (Type N) . . . . .	7-3
7.5 Conductors . . . . .	7-4
7.6 Conductor Insulation . . . . .	7-4
7.6.1 Conductor Insulation - Type G Cross-Connect Wire . . . . .	7-4
7.6.2 Conductor Insulation - Type F and Type N Cross-Connect Wires . . . . .	7-5
7.7 Pair Twisting, Binder Grouping, and Core Assembly . . . . .	7-6
7.7.1 Electrical Requirements . . . . .	7-7
7.8 Finished Wire Mechanical and Environmental Tests . . . . .	7-7
7.9 Packaging and Marking Requirements . . . . .	7-7

## Appendix A: References

A.1 To Obtain Additional Reference Material . . . . .	A-3
A.2 Telcordia Document Sets — Family of Requirements (FR) and Family of Documents (FD) . . . . .	A-4
A.3 Telcordia Reference Notes . . . . .	A-5
A.3.1 Contact Telcordia Customer Service . . . . .	A-5
A.3.2 Order Documents Online From the Telcordia Information SuperStore . . . . .	A-5
A.3.3 Web Sites for Generic Requirements Information . . . . .	A-6
A.3.4 Licensing Agreements for Telcordia Documents . . . . .	A-6

## **Appendix B: Acronyms**

### **Requirement-Object Index**

## List of Tables

Table 2-1	Conductor Diameter . . . . .	2-1
Table 3-1	Polyethylene Material Requirements . . . . .	3-2
Table 3-2	Poly(VinylChloride) Material Requirements . . . . .	3-3
Table 3-3	Cut-Through Resistance . . . . .	3-7
Table 3-4	Conductor Color Code . . . . .	3-9
Table 3-5	Outdoor Cross-Connect Wire (Type G) Color Code . . . . .	3-9
Table 3-6	Customer Premises Cross-Connect Color Code . . . . .	3-10
Table 3-7	Universal Cross-Connect Color Code . . . . .	3-11
Table 4-1	DC Resistance - Solid Copper Conductors . . . . .	4-1
Table 4-2	Voltage Withstand Test Conditions . . . . .	4-2
Table 4-3	Temperature Correction Coefficients . . . . .	4-3
Table 6-1	Type G Cross-Connect Wire - Spool Characteristics . . . . .	6-3
Table 6-2	Type F Cross-Connect Wire - Spool Characteristics . . . . .	6-3
Table 6-3	Type N Cross-Connect Wire - Spool Characteristics . . . . .	6-4
Table 7-1	Outdoor Cross-Connect Wire (Type G) Color Code . . . . .	7-2
Table 7-2	Customer Premises Cross-Connect Color Code . . . . .	7-3
Table 7-3	Universal Cross-Connect Color Code . . . . .	7-3
Table 7-4	Electrical Testing for Cross-Connect Wire Products . . . . .	7-7