

Contents

Technical Committee on Wiring Products v

Subcommittee on Metal-Clad Cables vi

Preface vii

1 Scope 1

2 Reference publications 1

3 Definitions 2

4 General requirements 2

5 Construction 2

- 5.1 Circuit conductors 2
 - 5.1.1 Material 2
 - 5.1.2 Joints 2
 - 5.1.3 Sizes 2
 - 5.1.4 Conductor shield 2
- 5.2 Bonding conductors 3
 - 5.2.1 General 3
 - 5.2.2 Multi-conductor cable 3
 - 5.2.3 Single-conductor cable 3
- 5.3 Insulation 4
 - 5.3.1 General 4
 - 5.3.2 Thickness 4
- 5.4 Coverings and separators 4
- 5.5 Insulation shielding 4
- 5.6 Assembly of multi-conductor cables 5
- 5.7 Fillers 5
- 5.8 Binder 5
- 5.9 Inner jacket 5
 - 5.9.1 General 5
 - 5.9.2 Thickness of inner jacket 5
- 5.10 Tape over inner jacket (optional) 6
- 5.11 Armour 6
 - 5.11.1 General 6
 - 5.11.2 Splices 6
 - 5.11.3 Interior surface 6
 - 5.11.4 Strip 6
- 5.12 Optional outer jacket 7
- 5.13 Coding of conductors 7

6 Marking 7

- 6.1 Marking of cables 7
 - 6.1.1 Manufacturer's marker 7
 - 6.1.2 Type designation 7
 - 6.1.3 Type of insulation 7
 - 6.1.4 Low temperature classification 8
 - 6.1.5 Flame test rating 8

6.1.6	Cables with aluminum conductors	8
6.1.7	Acid gas (optional)	8
6.1.8	Weather resistance (optional)	8
6.1.9	Legend spacing	8
6.2	Marking of coils or reels	8

7 Tests 9

7.1	Properties of concentric bonding conductors	9
7.1.1	Tensile strength of aluminum wires removed from a concentric bonding conductor	9
7.1.2	Bending test on aluminum wires removed from a concentric bonding conductor	9
7.2	Physical properties of inner jacket	9
7.3	Heat shock test — Thermoplastic inner jacket	9
7.4	Deformation test — Thermoplastic inner jacket	10
7.5	Protective coating on steel strip	10
7.6	Condition of interior surface of armour	10
7.7	Flexibility of armour	10
7.8	Physical properties of outer jacket	11
7.9	Flexibility at low temperatures	11
7.10	Low temperature test — Impact test	11
7.11	Deformation — Outer thermoplastic jacket	11
7.12	Flame tests — Finished cable	12
7.12.1	Vertical flame test — FT1 (mandatory)	12
7.12.2	Vertical flame test — Cables in cable tray — FT4 (optional)	12
7.13	Dielectric strength test — Finished cable	12
7.14	Insulation resistance — Finished cable	12
7.15	Continuity of conductors — Finished cable	12
7.16	Acid gas evolution (optional)	12
7.17	Weather resistance test	13
7.17.1	Inner jacket (optional)	13
7.17.2	Outer jacket (optional)	13
7.18	Compatibility test — Single conductors and individual conductors intended for use in multiple-conductor cables insulated with ethylene propylene rubber	13
7.19	Spark test	13

Tables

1	Conductor shield thickness	14
2	Extruded semiconducting shield physical requirements	14
3	Minimum size of bonding conductors	15
4	Thickness of insulation	17
5	Maximum length of lay for multi-conductor cables	17
6	Inner jacket thickness — Single-conductor cables	18
7	Inner jacket thickness — Multi-conductor cables	18
8	Multiplying factors for calculating the diameter of a conductor assembly under the jacket	19
9	Minimum thickness of metal strip	19
10	Minimum thickness of outer jacket	20
11	Colour coding of conductors	20
12	Physical properties of inner jacket	21
13	Mandrel diameters for heat shock test	22
14	Physical properties of outer jacket	23
15	Dielectric strength test voltages	24
16	Minimum insulation resistance at 15 °C, GΩ•m	25