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**NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**GB/T 20841-2025**

Replacing GB/T 20841-2007

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**Heating cables with a rated voltage up to and including 300/500  
V for comfort heating and prevention of ice formation**

额定电压300/500V及以下生活设施加热和防结冰用加热电缆

**(English Translation)**

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## Table of Contents

|                                                                       |  |
|-----------------------------------------------------------------------|--|
| Preface                                                               |  |
| 1 Scope                                                               |  |
| 2 Normative References                                                |  |
| 3 Terms and Definitions                                               |  |
| 4 Mechanical grade                                                    |  |
| 5 Labeling Requirements                                               |  |
| 6 Installation Instructions Required                                  |  |
| 7 General requirements for heating cable structure 6.                 |  |
| 7.1 General Rules                                                     |  |
| 7.2 Conductor                                                         |  |
| 7.3 Insulation                                                        |  |
| 7.4 Conductive Shielding                                              |  |
| 7.5 Armor                                                             |  |
| 7.6 Sheath                                                            |  |
| 7.7 Moisture resistance                                               |  |
| 8 Experiment                                                          |  |
| 8.1 Type Testing - General Requirements                               |  |
| 8.2 Type Testing - Detailed Test Requirements                         |  |
| 8.2.1 Resistance of heating conductor and shield                      |  |
| 8.2.2 Immersion and Temperature Cycling Test                          |  |
| 8.2.3 Verification of rated output of parallel heating cables         |  |
| 8.2.4 Verification of the starting current of parallel heating cables |  |
| 8.2.5 Conductive Shielding Penetration Test                           |  |
| 8.2.6 Flammability Test                                               |  |
| 8.2.7 Installation Classification Deformation Test                    |  |
| 8.2.8 Low-temperature impact test                                     |  |
| 8.2.9 Low-temperature bending test                                    |  |
| 8.2.10 Insulation aging test                                          |  |
| 8.2.11 Aging test of non-metallic sheath                              |  |
| 8.2.12 Compatibility Test                                             |  |
| 8.2.13 Weather resistance and UV resistance test                      |  |
| 8.2.14 Tensile Test                                                   |  |

- 8.2.15 Forward and Reverse Winding Test
- 8.2.16 Thermal shock test
- 8.2.17 Insulation and Sheath Shrinkage Test
- 8.2.18 Thermal stretching test
- 8.2.19 Cyclic Aging Test of Heating Cables
- 8.2.20 Cyclic aging test of joints and sealing terminals
- 8.2.21 Inspection of Marking Durability
- 8.2.22 High-temperature pressure test of insulation and sheath
- 8.3 Routine and Sampling Tests
  - 8.3.1 General Instructions
  - 8.3.2 Withstand Voltage Test
  - 8.3.3 Verification of Heating Cable Resistance and Output Power
  - 8.3.4 Insulation thickness
  - 8.3.5 Sheath thickness
  - 8.3.6 Thermal stretching test
- Appendix A (Normative) Weather Resistance and UV Resistance Tests
- Reference

## Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document supersedes GB/T 20841-2007 "Heating Cables for Heating and Anti-icing of Domestic Facilities with Rated Voltage of 300/500V", and is consistent with...

Compared with GB/T 20841-2007, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- The scope of application has been changed (see Chapter 1, 1.1 of the 2007 edition);
- The basic principles have been removed (see section 1.2 of the 2007 edition);
- Seven new terms and their definitions have been added, including "cold lead" and "connector" (see Chapter 3);
- The classification has been changed from three categories (A, B, and C) to two levels (M1 and M2) (see Chapter 4, 2007 edition, 1.5);
- The signage has been modified, and specific requirements have been made regarding

the content of additional signs, in addition to the spacing between signs (see Chapter 5, 1.6 of the 2007 edition);

---The installation instructions have been revised (see Chapter 6, Appendix A of the 2007 edition);

---The description of the heating cable structure has been changed (see Chapter 7, 1.7 of the 2007 edition);

---The product standard for heating cables with a rated voltage of 300/500V has been deleted (see Chapter 2 of the 2007 edition);

---Added general testing requirements (see 8.1);

---The product conductor type has been changed (see 8.2.1, 1.7.3.2 and 1.7.3.3 in the 2007 edition);

---The requirements for insulation resistance testing and the corresponding test voltage have been changed (see 8.2.2, 3.4.5 of the 2007 edition);

---Verification of the rated output of parallel heating cables has been added (see 8.2.3);

---Verification of the starting current of parallel heating cables has been added (see 8.2.4);

---A single-tube burning test has been added (see 8.2.6);

---The mechanical properties of the finished cables, as well as the corresponding test conditions and requirements, have been changed (see 8.2.7, 1.7.7 of the 2007 edition);

---The scope of test objects for cold shock testing has been changed (see 8.2.8, Table 3 of the 2007 edition);

---A low-temperature bending test has been added (see 8.2.9);

---The applicable objects for insulation material aging have been changed (see 8.2.10, Tables 1 and 2 of the 2007 edition);

---The applicable objects for sheath material aging have been changed (see 8.2.11, Table 3 of the 2007 edition);

---The requirements for compatibility testing have been changed (see 8.2.12, Tables 1, 2 and 3 of the 2007 edition);

---An ultraviolet light resistance test has been added (see 8.2.13);

---The scope of application for thermal shock testing has been changed (see 8.2.16, Table 3 of the 2007 edition);

---The scope of applicable test subjects for the heat shrinkage test has been changed (see 8.2.17, Table 1 of the 2007 edition);

---The relevant test conditions for the thermal stretching test of cross-linked insulation and sheath have been changed (see 8.2.18, Tables 1 and 3 of the 2007 edition);

---Added cyclic aging test for the non-metallic outer layer of heating cables embedded in concrete or mortar (see 8.2.19);

---Added cyclic aging tests to heating cable assemblies embedded in concrete or mortar, including joints and sealing terminals.

(See 8.2.20);

---Added high-temperature pressure testing for insulation and sheath (see 8.2.22);

---Added general requirements for routine testing of cable assemblies (see 8.3.1);

---The requirement for withstand voltage testing has been added (see 8.3.2);

---Added requirements for verifying the resistance and output power of the heating cable (see 8.3.3);

---Insulation thickness requirements have been added (see 8.3.4);

---The requirement for sheath thickness has been increased (see 8.3.5);

---Added thermal stretching tests for cross-linked insulation and sheath (see 8.3.6);

---Weather resistance and UV resistance tests have been added (see Appendix A).

This document is equivalent to IEC 60800:2021 "Heating cables for heating and anti-icing of domestic facilities with rated voltage of 300/500V and below".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Electrical Equipment Industry Association.

This document is under the jurisdiction of the National Technical Committee on Standardization of Wires and Cables (SAC/TC213).

## 1 Scope

This document applies to resistance heating cables used in low-temperature environments, such as for heating domestic facilities and preventing icing. Heating cables and heating...

Cable assemblies consist of component units assembled in the factory or on-site according to the manufacturer's instructions.

Bare conductors and protected conductors with a supply voltage of 50V or less are not included in the scope of this document.

Typical applications include, but are not limited to.