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CCS U 05



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

GB/T 17557-2010

Replacing GB/T 17557-1998

**Insulating materials for shipboard and offshore units, power,
control, instrumentation, telecommunication and data cables**

(English Translation)

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3.1 General

Foreword

This standard is identical with IEC 60092-351:2004 "marine electrical equipment Part 351. ships, offshore units power, control, Instrumentation, data communications and cable insulation material "(English version).

This standard is equivalent translation IEC 60092-351:2004. For ease of use, this standard made the following editorial changes.

"," A) with a decimal point instead of IEC 60092-351:2004 as a decimal point, "";

b) Remove the IEC 60092-351:2004 Foreword;

c) "IEC 60092 this part" to "this standard";

d) For IEC 60092-351:2004 international standard references, there is tantamount to the adoption of a standard as part of this country with reference Standard instead of an international standard, and the rest is not tantamount to the adoption of the standard, in the standard are a direct reference.

e) IEC 60092-351:2004 Normative documents in IEC 60811-1-2:1995 Year of error, to IEC 60811-1-2. 1985;

f) The latest version of the legend undated reference standard footnote "1)", "2)" description;

g) For ease of viewing, increased the number in Tables 3 and 4;

h) IEC 60092-351:2004 Table 3 "have the copper conductors aging" in the upper right corner missing footnote "a", to supplement this standard;

i) Fact Sheet 4 for both high temperature pressure test load time footnote "3)", "4)" will be described.

This standard replaces GB/T 17557-1998 "marine power cable insulation material." this standard 17557-1998 major changes compared to GB/T as follows.

a) a thermoplastic material, code-named "PVC/A" to "PVC".

- b) elastomeric or thermosetting material increased 6 kinds. HEPR, HFEPR, HFHEPR, HFXLPE, HFS95, HF90.
- c) the maximum normal operating temperature of the conductor allowable changes. from 60 °C rose to 70 °C, EPR and XLPE by a PVC 85 °C raised to 90 °C.
- d) establishes the maximum temperature at S95 short circuit conductor allowed.
- e) air box divided into non-aging aging conductor and copper conductor aging categories, mechanical performance requirements of the original air box included first after aging Class requirements.
- f) Special Features.

--- PVC when the high temperature pressure test, in both cases the load time from the "outside diameter of the sample $d \leq 12.5\text{mm}$ ", "outer diameter of the sample $d > 12.5\text{mm}$ " were replaced by "The first one kind of situation "and" the second state of affairs "and annotation;

--- The thermal expansion test, XLPE maximum permanent elongation rate of 25% reduction of 15%, S95 of the test temperature $(200 \pm$

$3) ^\circ\text{C}$ was raised to $(250 \pm 3) ^\circ\text{C}$;

Deviation --- resistance to cracking in the test temperature is increased to $\pm 2 ^\circ\text{C} \pm 3 ^\circ\text{C}$;

--- Low temperature performance of the test temperature deviation increase requirements $\pm 2 ^\circ\text{C}$;

--- Increased acidity, hardness and modulus of elasticity of demand.

g) added three appendices.

The Standard Annexes A and B are normative appendix Appendix C is informative appendix.

The standard proposed by China Shipbuilding Industry Corporation.

This standard by the National Standardization Technical Committee Marine Boats (SAC/TC12) centralized.

This standard was drafted. China Shipbuilding Industry Corporation seventh THOUSAND AND FORTY Institute, Jiangsu Ocean Dongze Cable Group Co., Ltd., Changzhou Eight benefits of cable Limited.

1 Scope

This standard specifies the electrical ships, fixed and mobile offshore units power, control, instrumentation, data communications and cable insulation materials Properties, mechanical properties and special performance requirements.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 2951.11-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 11. General test method thick Degree and dimensions measuring mechanical tests (IEC 60811-1-1:2001, IDT) GB/T 2951.12-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 12. General test methods for hot Aging methods (IEC 60811-1-2. 1985, IDT) GB/T 2951.14-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 14. General test methods for low Temperature tests (IEC 60811-1-4. 1985, IDT) GB/T 2951.21-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 21. elastomeric compounds designed Ozone Test Test Method for Thermal extending mineral oil immersion tests (IEC 60811-2-1:2001, IDT) GB/T 2951.31-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 31. Polyvinyl chloride mixture Methods specific high temperature pressure test for resistance to cracking (IEC 60811-3-1. 1985, IDT) GB/T 2951.32-2008 cable and the cable Common test methods for insulating and sheathing materials - Part 32. Polyvinyl chloride mixture Methods specific weight loss test - Thermal stability test (IEC 60811-3-2. 1985, IDT) ISO 48 Rubber, vulcanized or thermoplastic - Determination of hardness (hardness 10IRHD ~ 100IRHD) 1) IEC 60502-1:1997 Rated voltage 1kV ($U_m = 1.2kV$) to 30kV ($U_m = 36kV$) power cables with extruded insulation and enclosure Member - Part 1. Rated voltage 1kV ($U_m = 1.2kV$) and 3kV ($U_m = 3.6kV$) cable Gases evolved during combustion cables IEC 60754-2 test methods - Part 2. by measuring pH and conductivity measurement is taken from the electrical Material combustion gases released cable acidity 2)

1) ISO 48 current version of ISO 48:2007 and 2009 Corrigendum 1 single.

2) IEC 60754-2 current version of IEC 60754-2:1991 and 1997 amendments 1.

3 of insulating material

3.1 General

The maximum temperature insulation mixture type, code, when the normal operation and short circuit conductors permitted by this standard are shown in Table 1.