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

GB/T 22437.5-2021

**Cranes-Design principles for loads and load combinations-Part
5: Overhead travelling and portal bridge cranes**

起重机 载荷与载荷组合的设计原则 第5部分：桥式和门式起重机

(English Translation)

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Foreword

GB/T 22437 "Cranes - Design principles for loads and load combinations" is divided into the following 5 parts.

- Part 1.General;
- Part 2.Mobile cranes;
- Part 3.Tower cranes;
- Part 4.Jib cranes;
- Part 5.Overhead travelling and portal bridge cranes.

This Part is Part 5 of GB/T 22437.

This Part modifies and adopts ISO 8686-5.1992 "Cranes - Design principles for loads and load combinations - Part 5.Overhead travelling and portal bridge cranes" (English edition).

This Part is redrafted in accordance with ISO 8686-5.1992.The relevant technical differences have been incorporated into the text; and, marked with a vertical single line in the margins of the clauses they involve.

The main technical differences between this Part and ISO 8686-5.1992 are.

- CHANGE the "-" in the 2nd line of the combinations A3 and B3 in Table 1 Loads and load combinations TO "1";

- CHANGE the previous "-" in the 7th line of the combinations C3 in Table

1 Loads and load combinations TO "1";

- EXCHANGE the position of "-" in the 4th line and "phi5" in the 5th line of the combinations A4 and B4 in Table 1 Loads and load combinations; CHANGE to "phi5" in the 4th line and "-" in the 5th line;
 - CHANGE the gammamA, gammamB, and gammamC in the 20th line in Table 1 Loads and load combinations TO gammam; CHANGE the value of gammam from 1.10, 1.05, and 1.00 to 1.10;
 - Modify the change of gammapi caused by the conversion of gammami to gammam in Table 1
- Loads and load combinations;
- GIVE the specific numerical value of the coefficient for high-risk.

For ease of use, this Part has also made the following editorial changes.

Cranes - Design principles for loads and load combinations - Part 5.Overhead travelling and portal bridge cranes

1 Scope

This Part of GB/T 22437 establishes the application of GB/T 22437.1 to overhead travelling and portal bridge cranes as defined in GB/T 6974.1, and gives specific values for the factors to be used.

2 Normative references

The following documents contain provisions which, through reference in this Part of GB/T 22437, constitute provisions of this Part. For the dated references, their subsequent amendments (excluding corrections) or revisions do not apply to this Part. However, the parties who enter into agreement based on this Part are encouraged to investigate whether the latest editions of these documents are applicable. For undated reference documents, the latest editions apply to

this Part.

GB/T 5905-1986 Cranes - Test code and procedures (idt ISO 4310.1981)

GB/T 6974.1 Crane - Vocabulary - Part 1.General (GB/T 6974.1-2008, ISO 4306-1.2007, IDT)

GB/T 10183 Cranes - Overhead travelling cranes and portal bridge cranes - Tolerances for cranes manufacture and tracks laying (GB/T 10183-2005, ISO 8306.1985, IDT)

GB/T 22437.1-2008 Cranes - Design principles for loads and load combinations - Part 1.General (ISO 8686-1.1989, MOD)

ISO 4302 Cranes - Wind load assessment

3 Terms and definitions

The terms and definitions established in GB/T 22437.1-2008 apply to this Part of GB/T 22437.

4 Symbols

The symbols used in this Part are in accordance with the provisions in GB/T 22437.1-2008.

5.1 The ϕ_{ii} factors for dynamic effects which are used for load combinations are given in Table 1.

5.2 The numerical values for different ϕ_{ii} factors are given in Table 2.

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