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CONSTRUCTION INDUSTRY STANDARD
OF THE PEOPLE'S REPUBLIC OF CHINA

JG 225-2007

Replacing JG/T 3013-1994

Corrugated metal ducts for prestressed concrete

预应力混凝土用金属波纹管

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Foreword

4.5 and 4.6 of this Standard are mandatory; the rest are recommendatory.

Since the implementation of this Standard, it replaces JG/T 3013-1994 *Metal spiral sheath for prestressed concrete*.

Compared with JG/T 3013-1994, main technical changes in this Standard are as follows:

1. modified material requirements;
2. corrugated metal ducts are divided into standard type and enhanced type according to rigidity; standard type and enhanced type are basically identical; enhanced type is the content added;
3. added a clause about marking of corrugated metal ducts;
4. added the minimum overlap width of the folded seam of corrugated metal ducts;
5. modified dimensional and tolerance requirements for round ducts and flat ducts;
6. added minimum ripple height requirements of corrugated metal ducts;
7. added radial rigidity requirements of enhanced-type corrugated metal ducts;
8. modified the concentrated load value and uniform load value of radial rigidity test of flat ducts;
9. modified radial rigidity test method of corrugated metal ducts;
10. modified resistance to leakage of the length of the specimen and test method of corrugated metal ducts;
11. deleted the anti-leakage performance test of specimen after bearing uniform load;
12. modified quality assurance documentation requirements for exit-factory products;
13. improved product transport and storage requirements; added stack height limit of corrugated metal ducts;
14. added use requirements;
15. merged and adjusted of relevant provisions;

16. modified an annex: Annex A Quality inspection table of corrugated metal ducts for prestressed concrete which is informative;
17. added an annex: Annex B Selection table of corrugated metal ducts for prestressed concrete which is informative.

This Standard was proposed by Institute of Standard Quota of Ministry of Construction of China.

This Standard shall be under the jurisdiction of China Building Research Institute (the jurisdiction organization specially for standard in construction engineering of Ministry of Construction).

Main drafting organization of this Standard: China Building Research Institute.

The drafting organizations of this Standard: Zhejiang Institute of Architectural Science Design & Research Co., Ltd., Kaifeng Strong Anchoring Technology Co., Ltd., Henan Hongqiao Prestressed Manufacturing Co., Ltd.

Main drafters of this Standard: Li Dongbin, Dai Weiming, Huo Tingbo, Li Guozhu, Qiao Yongli.

This Standard was issued on October 1994 for the first time. This is the first revision.

Corrugated metal ducts for prestressed concrete

1 Scope

This Standard specifies the classification and marking, requirements, test methods, inspection rules, packaging, marks, transport, storage and use of corrugated metal ducts for prestressed concrete.

This Standard is applicable to metal ducts of reserved hole which are made by plated or non-plated low-carbon steel with a screw folded seam and used in post-tensioned prestressed concrete structural pieces.

2 Normative references

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

GB 716 *Cold-rolled carbon structural steel strips*

GB/T 2518 *Continuously hot-dip zinc-coated steel sheet and strip*

3 Classification and marking

3.1 Classification

Corrugated metal ducts for prestressed concrete are divided into standard type and enhanced type according to radial rigidity, round and flat according to sectional shape, dual-wave and multi-wave according to the number of raised corrugations between each two adjacent folded bites.

3.2 Marking

The mark of corrugated metal ducts for prestressed concrete consists of three parts: code, diameter size and radial rigidity category:

4	Anti-leakage after concentrated load	3	5.4	4.6
5	Anti-leakage after bending	3	5.4	4.6

6.3 Type inspection

6.3.1 In case of one of the following situations, type inspection shall be required:

- stereotypes production identification of new products or old products to the trial production;
- after the official production, when great changes in materials, equipment, technology, etc. may affect product performance;
- type inspection should be carried out once every 2 years during normal production;
- when production is resumed after production discontinuation lasts for more than six months;
- great difference between exit-factory inspection results and the previous type inspection;
- when state quality supervision organization requires.

6.3.2 Batching

Among corrugated ducts of same corrugated amount, of same cross-sectional shape, of same stiffness characteristics, select three products of typical specifications for the inspection.

6.3.3 Sampling amount and inspection content are shown in Table 10.

Table 10 Content of type inspection

S/N	Item name	Sampling amount	Test method	Qualification criteria
1	Appearance	6	Visual inspection	4.2
2	Size	6	5.2	4.1, 4.4
3	Radial rigidity under concentrated load	6	5.3	4.5
4	Radial rigidity under uniform load	6	5.3	4.5
5	Anti-leakage after concentrated load	6	5.4	4.6

9 Use

9.1 During cast-in-place prestressing project, it shall use galvanized corrugated metal ducts. During the production of prefabricated components, when there is no corrosion of corrugated metal ducts, it shall use un-galvanized corrugated metal ducts.

9.2 During prestressed concrete project, when it uses pre-beam through process, it shall select standard type corrugated metal ducts; when it uses post-beam through process, it shall use enhanced type corrugated metal ducts. Enhanced type corrugated metal ducts shall also apply pore forming of vertical and special position in construction project. When used in circular pore forming of nuclear power plant containment, the thickness of steel strip should be increased appropriately. The diameter selection of corrugated metal ducts shall refer to Annex B.

9.3 The diameter of connecting pipe of corrugated metal round duct shall be one diameter level greater than the connected pipe. Its length is 4 ~ 5 times inner diameter of connected pipe and not less than 300 mm.

9.4 It shall use grinding wheel saw to cut corrugated metal ducts. Stamping is prohibited during use.

9.5 When corrugated metal ducts are in construction site production, the exit-factory inspection and entry inspection shall be carried out together.

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