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GB 8076–2008

P Replace GB 8076–1997

Concrete Admixtures

混凝土外加剂

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Foreword

Among those items listed in Table 1 in Chapter 5, compressive strength ratio, shrinkage ratio and relative durability are compulsory; the rest are recommended.

This standard replaces GB 8076 - 1997 "concrete admixture" and it differs from GB 8076 - 1997 in the following aspects:

——To add high performance water reducer and pumping admixture; to formulated technical requirements and test methods;

——To add a Chapter on symbols of products;

——To classify high performance water reducer, high efficiency water reducer and ordinary water reducer, namely a certain type of admixture may be divided into accelerating one, standard one and retarding one;

—— To delete accepted product and to adjust product technical index basing on the performance index of former Class I product;

—— To adjust technical indexes (such as solid content, water content and density etc.) of uniformity items by referring to EN 934-2:2001 and JIS A 6204: 2006; to add concrete test items for some products (for instance: slump and air content change in one hour duration);

—— To delete testing method on reinforcing steel rust in the former standard; to establish test method to measure chloride ion content in concrete admixture with chromatography of ions;

—— To improve the specific area of reference cement being exclusively used in concrete admixture performance inspection

Annex A and Annex B in this standard are normative; while Annex c is informative.

This standard is proposed by China Building Materials Federation.

This standard is under the jurisdiction of National Technical Committee on Cement Products of Standardization Administration of China.

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Chief drafting staff: Tian Pei, Wang Ling, Miu Changwen, Song Yongliang, Sun Zhenping, Yao Lijun, Guo Jingyu, Zhu Changhua, Zhang Yanchi, Cui Jinhua, Feng Jinzhi, Zhu Weizhong, Zhong Yilin, Zhang Junchao, Xu Zhaotong, Luo Jiangcheng, He Jiemeng, Shuai Xiwen, Li Quanhua, Zhang Shuqiang, Jia Jitang, Zhu Guangxiang, Bai Jie, Gao Chunyong and Lin Hui.

All previous editions of the replaced standard: GB 8076—1987, GB 8076—1997

Introduction

Application of various concrete admixtures has improved the performance of new-mixing and hardened concretes; promoted the development of concrete new technology and stimulated more application of industrial secondary product in cementitious material system. What's more, the concrete admixtures are beneficial to resource saving and environmental protection so they are essential materials for quality concrete. In recent years, as national infrastructures are growing with a high speed, such projects as railway, highway, airport, coal-mine, municipal project, nuclear power plant and large dam requires a lot of concrete admixtures. As a result, concrete admixture industries in China are developing with a high speed as well.

Water reducer, one of the most importance concrete admixtures, may be divided into ordinary water reducer (represented by lignosulfonate), high efficiency water reducer (including naphthalene-based, melamine, amino sulfonic acid-based and aliphatic ones etc.) and high performance water reducer (represented by poly carboxylic acid ones) according to its performance of water-reducing rate. In 2007, total water reducer is about 2.8454 million t. Thereinto, ordinary water reducer accounted for 6.2%, 175.1 thousand t; high efficiency water reducer accounts for 79. 3%, 2.256 million t and high performance water reducer accounts for 14.6%, 413.3 thousand t.

High performance water reducer is characterized by a certain air-entraining property, higher water-reducing rate and favorable slump keeping quality. Being compared with other water reducers, high performance water reducer shows up distinct technical superiority and higher cost performance when it is used to prepare strong concrete and concrete with high durability. Foreigners have used high performance water reducer from the 1990s. Now, among the total water reducer, Japan uses 60% ~ 70% and occident applies about 20% .High performance water reducers include poly carboxylic acid ones, aminocarboxylic acid ones and other water reducers which can satisfy the indexes of this standard. China has studied high performance water reducer since 2000 or so. In the last several years, high performance water reducer represented by poly carboxylic acid one is gradually applied in projects across China. Therefore, this standard adds accelerating, standard and retarding high performance water reducers. In addition, it proposes the specific performance requirements and test procedures according to the technical characteristics of these water reducers and basing on a great deal of tests.

1 Scope

This standard specifies the terms, definitions, requirements, test procedures, inspection rules, package, delivery, storage and return of admixtures used in concrete.

This standard is applicable to high performance water reducer (accelerating, standard and retarding ones), high efficiency water reducer (standard and retarding ones), ordinary water reducer (accelerating, standard and retarding ones), air-entraining water reducer, pumping admixture, early strength admixture, retarder and air-entraining admixture, eight in total.

2 Normative References

The following standard contains provisions which, through reference in the following text, constitute provisions of this standard. For dated reference, subsequent amendments (excluding correction) to, or revisions of, any of these publications do not apply. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. For undated references, the latest edition of the normative document referred to applies.

GB/T176 Method for Chemical Analysis of Cement

GB/T 8074 Method for Cement Surface Area Testing Blaine Method

GB/T 8075 Definition, Classification, Nomenclature and Terms of Concrete Admixtures

GB/T 8077 Method for Concrete Admixture Uniformity Test

GB/T 8170 Rules of Rounding off for Numerical Values & Expression and Judgment of Limiting Values

GB/T 14684 Building Sand

GB/T 14685 Pebbles and Crackle for Construction

GB/T 50080 Standard for Test Method of Performance on Ordinary Fresh Concrete

GB/T 50081 Standard for Test Method of Mechanical Properties on Ordinary Concrete

GBJ 82 Standard for Test Methods of Long-term Performance and Durability of Ordinary Concrete

JG 3036 Mixers for Concrete Test

JGJ 55 Specification for Mix Proportion Design of Ordinary Concrete

JGJ 63 Standard of Water for Concrete

3 Terms and Definitions

For the purpose of this standard, the following terms and definitions and those ones established GB/T 8075 apply.

3.1

High performance water reducer (HPWR)

It is superior to high efficiency water reducer in the following aspects: higher water-reducing rate, better slump keeping performance, less dry shrinkage and a certain performance of air entraining.

3.2

Reference cement

The cement which meet the requirements in Annex A of this standard and is particularly

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