11-4 chemical admixtures for concrete

TR A 0014: 2001

(Pre-JIS)

Introduction

- This technical report has been prepared based on JIS by investigating various overseas standards including EN.
- When the international conformance of various related standards progresses, this will be the alternative standard of the existing JIS.

1. Scope “chemical admixtures)

- This TR specifies;
- Air entraining admixture
- High-range water reducing admixtures
- Accelerating admixtures
- Water reducing admixtures
- Air-entraining/water-reducing admixtures
- Air-entraining/high-range water reducing admixtures
- super-plasticizing admixtures

2. Normative references-pass-

3. Definitions

- Chemical admixtures: admixtures used for improving various properties if concrete, mainly through their surface activation effects and hydration controlling effects.
- Normal type, retarding type, accelerating type : chemical admixtures which accelerate the setting of concrete.
- Reference concrete: concrete without chemical admixture, used as the standard for testing the quality of chemical admixtures.

- Test concrete: concrete with chemical admixtures which is subjected to tests for the quality of chemical admixtures.
- Initial type-testing: test on all items carried out for the conformation of performance at the initial stage of developing the products.
- Factory production controlling testing: for the purpose of confirming

4. Classification

5. Quality

- 5.1 performance: The performance shall meet the requirements specified in Attached table2. 8cm slump is for air entraining admixture, ---. 18 cm slump is for air entraining/high-range water reducing admixture. 8 or 18cm slump is for superplasticizing admixtures.
- 5.2 chloride ion content
- 5.3 total alkalis content: below 0.3kg/m3

6. Test method
6.1 concrete test

- 6.1.1 Materials :the materials shall be as follows:
- a) cement: OPC
- b) aggregate: Coarse aggregate shall be crashed stone and fine aggregate shall be sand.
- c) water: tap water

6.1.2 mix proportions

- As shown in table2.
- Cement content: 300 , 350 or 320 depend on the kind of chemical admixtures.
- Water content: this shall be determined to the required slump.
- Dosage of chemical admixture: manufacturer’s recommendation
- So on.

6.1.7 Testing of concrete

- The methods required in Table2 shall be as follows:
- Slump: in accordance with JISA 1101.
- Air content: JISA 1118 or 1128
- Weight of concrete per unit volume: JISA 1116
- Amount of bleeding: JISA 1123
- Setting time: JISA 1147

- Compressive strength: JISA 1108
- Length change: JISA 1129
- Resistance to freezing and thawing: JISA 1148
- Change in slump and air content over time for the concrete with air-entraining/high-range water reducing admixtures: the slump and air content measured immediately after mixing and at 60 min after mixing. 6cm max. and +-1.5
- ----------end ----------