

ACCELERATED MORTAR BAR TEST

LS-620-R30 _____
A23.2-25A-14 _____

APPARATUS

1. Sieves?..... _____
2. Mixer, Paddle and Mixing Bowl? _____
3. Tamper and Trowel? _____
4. Containers?..... _____
5. Oven?..... _____

REAGENTS AND MATERIALS

1. Sodium Hydroxide (NaOH): USP or technical grade. (Na⁺ and OH⁻ concentrations between 0.99N and 1.01N)? _____
2. Water purity is reagent water conforming to Type IV of ASTM D 1193? _____
3. Sodium Hydroxide Solution: Each litre contains 40.0 g of NaOH dissolved in 900 mL Of water diluted to 1.0 L of solution with additional water?..... _____
4. Control Aggregate: Spratt alkali-silica reactive aggregate from MTO? _____
5. Reference Cement: Reference Portland Cement from MTO?..... _____

CONDITIONING

1. Molding room temperature and dry materials maintained between 20°C and 27.5°C? _____
2. Temperature of mix water and moist room (closet) is 23 ± 1.7°C? _____
3. Relative humidity of moist room (closet) conforms to ASTM C 511? _____
4. Relative humidity of molding room is not less than 50%? _____
5. Temperature of oven (solution) for storage of specimens is 80 ± 2.0°C? _____

PREPARATION OF TEST SPECIMENS

1. Aggregate meets gradation requirements of Table 1? _____

Sieve Size		Mass, %
Passing	Retained	
4.75 mm	2.36 mm	10
2.36 mm	1.18 mm	25
1.18 mm	600 µm	25
600 µm	300 µm	25
300 µm	150 µm	15

2. Cement is passed through 850 µm sieve? _____
3. Molds are prepared per ASTM C 490, with an acceptable release agent? _____
4. At least 3 specimens per cement/aggregate combination? _____
5. a) Dry materials proportioned 1 part cement to 2.25 parts aggregate, sufficient for 3 bars?
b) water / cement ratio shall be 0.44 for natural sands, 0.50 for processed aggregates?.... _____
6. Mortar is mixed in accordance with ASTM C 305? _____
7. Molding time is less than 2 minutes 15 seconds? _____
8. Specimens molded in 2 layers per section 7.4.5 of method? _____

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PROCEDURE

1. Molded samples placed in moist room (cabinet) for 24 ± 2 h? _____
2. Samples de-molded, identified and measured for initial length (protected from moisture loss) _____
3. Samples immersed in tap water, in covered containers, and stored at $80 \pm 2.0^\circ\text{C}$ for 24 h? _____
4. Zero measurements made according to section 8.2? _____
5. Do not follow 8.3 unless specified? _____
6. Follow PH-CC-448a Apr-15 and PH-CC-448b Sept-15? _____
7. If reading exceeds 0.150% @ 14 d, an aggregate may be accepted provided the requirements for the Concrete Prism Expansion Test (CSA A23.2-14A) are met (max 0.040%) see PH-CC-448a Apr-15 and PH-CC-448b Sept-14? _____

USE OF LABORATORY CONTROL SAMPLE

1. Laboratory has a supply of Sprat III control sample? _____
2. Control sample tested every 10 samples or at least every 6 months a sample is tested? ... _____
3. Control sample mean expansion @ 14d is 0.382%, with a standard deviation of 0.042%? _____
4. Control sample mean expansion @ 28d is 0.585%, with a standard deviation of 0.065%? _____
5. Control chart showing data for last 20 samples of reference material? _____
 - Mean for last 20 samples _____
 - Low for last 20 samples _____
 - High for last 20 samples _____

COMMENTS: