

SCALING RESISTANCE OF CONCRETE SURFACES EXPOSED TO DEICING CHEMICALS LS-412-R17 ___

APPARATUS

1. Freezing Equipment, a cabinet ___ or room ___ of sufficient size? ___
and capable of lowering temperature of specimens to $-18 \pm 2^\circ\text{C}$ within 16 to 18 hours?.... ___
and capable of maintaining temperature with full load of samples? ___
2. Hygrometer for measuring humidity..... ___
3. Thawing Room, a cabinet _____ or room _____, maintains air temperature of $23 \pm 2^\circ\text{C}$?
and a relative humidity of $50 \pm 5\%$? ___
4. Scales, conforms to requirements of CSA A23.2-2C?..... ___
5. Balance, having minimum capacity of 5000 g and an accuracy of 0.1 g? ___
6. Concrete Mixer, conforms to the requirements of CSA A23.2-2C? ___
7. Slump Cone and Air Meter, conforms to the requirements of CSA A23.2-5C, 4C (or 7C)? ___
8. Moulds, 300 x 300 x 75 mm in inside dimensions with collar for dyke,
and conforming to ASTM C192? ___
9. Drying Oven, capable of maintaining a temperature of $105 \pm 2^\circ\text{C}$? ___
10. Salt Solution, deicing solution is 3% solution of sodium chloride? ___

SPECIMENS

1. Proportioning, all materials and characteristics of mix appropriate for purpose of test? ___
2. Mixing, in accordance with CSA A23.2 – 2C? ___
3. Testing Plastic Concrete, in accordance with CSA A23.2 – 4C, 5C, (or 7C)?..... ___
4. Specimens, prepared in duplicate for each test condition? ___
5. Laboratory Cast Specimens, cured at $23 \pm 2^\circ\text{C}$ and 95% R.H.? ___
Cover with 350 x 350 polyethelene cover mounted on plywood frame? ___
Demolded at 20 to 24 hours and returned to moist storage for 14 days.... ___
Removed and stored in air at $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ R.H. for 14 days? ___
6. Dyke, made of material that will not affect test results, is sealed, and does not leak salt
solution on surface? ___
7. Specimens from Hardened Concrete dyked as above? ___

PROCEDURE

1. At age 28 d, specimens are covered with 6 mm of deicing solution? ___
2. Freeze-Thaw Cycle: Specimens are exposed to 16 to 18 h at $-18 \pm 2^\circ\text{C}$, ___
followed by 6 to 8 h at $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ R.H? (equals 1 cycle) ___
3. Specimens supported on slats to allow free air movement? ___
4. Salt solution topped up as necessary to maintain depth of 6 mm? ___
5. After each 5 cycles, mass of flaked off material determined, to nearest 0.01 kg/m²? ___
6. Surface covered with new solution for next set of cycles? ___
7. Test continued for 50 cycles (unless otherwise instructed)? ___
8. Test report includes:a) mix or specimen identification information? ___
b) area of surface exposed to scaling (each slab)? ___
c) cumulative mass loss after each 5 cycles (each slab)?..... ___
d) photographs of each slab at 0, 10, 25 and 50 cycles and if the test
is extended, at the completion of the test?..... ___

Comments: