

SECTION 03 39 00 CONCRETE CURING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Concrete curing requirements.

1.2 REFERENCES

- A. ACI 301: Specifications for Structural Concrete for Buildings
- B. ACI 305: Hot Weather Concreting.
- C. ACI306: Cold Weather Concreting
- D. ASTM C 171: Standard Specification for Sheet Materials for Curing Concrete.
- E. ASTM C 1315: Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.

1.3 SUBMITTALS

- A. Curing agent data sheet.
- B. Curing plan. Describe estimated cure quantity and procedure.
- C. Manufacturer certificates, Section 01 33 00 that shows product meets performance criteria.
- D. Manufacturer's recommended installation procedures which, when accepted by ENGINEER, will become the basis for accepting or rejecting installed product.

1.4 QUALITY ASSURANCE

- A. Use workers knowledgeable of ACI 301, 305, 306.

1.5 PRODUCT HANDLING

- A. Protect materials of this section before, during, and after installation.
- B. Protect the work and materials of other trades.
- C. In the event of damage, immediately make replacements and repair at no additional cost to OWNER.

1.6 WEATHER LIMITATIONS

- A. Above 75 deg. F., ACI 305
- B. Below 55 deg. F., ACI 306

PART 2 PRODUCTS

2.1 COVERS

- A. Water or Fog-spray: Clean, non-staining and non-detrimental to concrete.
- B. Sheet Coverings: White waterproof paper, polyethylene film, or polyethylene coated burlap sheet complying with ASTM C 171.
- C. Mat Coverings: Clean roll goods of cotton or burlap fabric.

D. Insulating Coverings: Non-staining curing blankets.

2.2 MEMBRANE FORMING COMPOUND

A. Material.

1. Styrene-acrylic.
2. Styrene-butadiene.
3. Alpha-methylstyrene.

B. Performance Criteria: ASTM C 1315 compound.

1. Type ID Class A (clear with fugitive dye), or
2. Type II Class A or B (white pigmented).

C. Volatile Organic Compounds (VOC): Comply with local, state and federal requirements.

PART 3 EXECUTION

3.1 PREPARATION

- A. Do not use membrane forming curing compound on surfaces that are to receive hardeners.
- B. Commence curing operation within 20 minutes after finishing.

3.2 APPLICATION – COVERS

- A. Water: Apply water-fog spray or ponding.
- B. Absorptive Mat: Place absorptive mat to provide coverage of concrete surfaces and edges. Lap over adjacent absorptive covers. Thoroughly saturate with water and keep continuously wet.
- C. Moisture-Retaining Sheet: Place cover in widest practicable width with sides and ends lapped and sealed to prevent moisture loss. Repair any holes or tears during curing period.
- D. Formed Surface Curing: Cure formed concrete surfaces, including underside of beams, supported slabs and other similar surfaces by moist curing with forms in place for full curing period. If forms are removed prior to curing completion, applying cure film or penetrant or use methods indicated above, as applicable.

3.3 APPLICATION – MEMBRANE FORMING COMPOUND

- A. Apply coating continuously and uniformly. Follow manufacturer's recommendations
- B. Protect continuity of film coatings and repair damage during cure period.
- C. If forms are removed before expiration of cure period, apply coating to unprotected areas.

3.4 CONCRETE CURE TEMPERATURE

- A. During cure period, eliminate thermal shock of concrete by keeping cure temperature even throughout extent and depth of concrete.

3.5 SCHEDULE

- A. Concrete Exposed to Potable Water (as in Water Storage reservoirs):
1. Moisture cover curing, or
 2. Acrylic cure, or
 3. Styreen acrylic silane co-polymer cure.

END OF SECTION