COMPRESSIVE STRENGTH
OF
CYLINDRICAL CONCRETE SPECIMENS
AASHTO T 22

APPARATUS

[ ] Testing machine has a verification of calibration within the last 13 months

[ ] Protective Cage

PROCEDURE -- SULFUR MORTAR CAPS

[ ] Diameter of test specimen determined to nearest 0.01 in. by averaging two diameters measured at right angles to each other at mid-height of specimen (shall not differ by more than 2%)

[ ] Length of test specimen determined to nearest 0.05 x diameter when length to diameter ratio is less than 1.8 or more than 2.2

[ ] Test specimens kept moist during the period between removal from moist storage and testing

[ ] Lower bearing block placed, with hardened face up, on the table or platen of testing machine directly under the upper bearing block

[ ] Faces of both bearing blocks and test specimen wiped clean, and test specimen placed on the lower bearing block

[ ] Load indicator set to zero. If indicator is not properly set to zero, indicator is adjusted.

[ ] As spherically-seated block is brought to bear on the specimen, movable portion of block is rotated gently by hand so that uniform seating is obtained.

[ ] Load applied continuously and without shock

[ ] For screw-type testing machines, the moving head rate of movement is adjusted to achieve a stress rate of 35 ±7 psi/s

[ ] For hydraulically-operated testing machines, load applied at a rate of movement corresponding to a stress rate on the specimen of 35 ±7 psi/s

[ ] Rate of movement maintained at least during the latter half of anticipated loading phase of testing cycle

[ ] No adjustment in rate of movement of platen made at any time while specimen is yielding rapidly immediately before failure

[ ] Load applied until test specimen fails

[ ] Maximum load carried by test specimen during test recorded. Type of failure and appearance of concrete noted.

[ ] Capp thickness measured and does not exceed limits

[ ] Compressive strength of test specimen determined to nearest 10 psi as follows:

\[
\text{Compressive Strength} = \frac{\text{Maximum Load}}{\text{Average Cross - Sectional Area}}
\]

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PROCEDURE -- SULFUR MORTAR CAPS (Cont.)

[ ] Compressive strength corrected when specimen length-to-diameter ratio is equal to or less than 1.75 by multiplying by a correction factor as follows:

<table>
<thead>
<tr>
<th>L/D:</th>
<th>1.75</th>
<th>1.50</th>
<th>1.25</th>
<th>1.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor:</td>
<td>0.98</td>
<td>0.96</td>
<td>0.93</td>
<td>0.87</td>
</tr>
</tbody>
</table>

(Values not given in table are determined by interpolation)

PROCEDURE -- NEOPRENE CAPS- C1231

[ ] Pad dimension shall be 13 ±2 mm (1/2 ± 1/16 in.) thick with a diameter of not more than 2 mm (1/16 in.) smaller than the inside diameter of the retaining ring

[ ] Each neoprene (Shore A) cap/pad used to test no more than 100 cylinders with compressive strength ranges between 1,500 – 7,000 psi, for ranges between 7,000 to 12,000 psi, only 50 reuses are permitted per ASTM C 1231 (Table 1)

[ ] Same surface of neoprene cap used for all tests with that cap

[ ] Concrete cylinder ends have no depressions deeper than 0.12 in.

[ ] Perpendicularity is verified for compliance on both ends of specimen

[ ] 6 in. x 12 in. cylinders: 0.12 in. at 12 in.

[ ] 4 in. x 8 in. cylinders 0.08 in. at 8 in.

[ ] 6 in. diameter cylinders do not differ in height by 0.2 in. for any two measurements

[ ] Extrusion controllers, containing neoprene caps, placed on the top and bottom surfaces of test specimen

[ ] Axis of test specimen aligned with center of upper bearing block

[ ] No loose particles trapped between test specimen and neoprene caps or between the bearing surfaces of extrusion controllers and bearing blocks

[ ] Procedure for testing same as procedure for testing cylinders with sulfur mortar caps except as noted within this section

NOTE-Neoprene caps not to be used for acceptance testing of concrete with compressive strength below 10 MPa (1500 psi) or above 80 MPa 12,000 psi). ASTM C1231 (1.2)

NA - Not Applicable
X - Requires Corrective Action
√ - Satisfactory

____________________________________________
Acceptance Technician

___________________________________________     __________
INDOT                ` Date

Comments ____________________________________________________________________