CTIOA FIELD REPORT CTI-86-T1

SUBJECT: CEMENT BODIED TILE CURLING TEST PROCEDURE

I. Scope

A. These test procedures are to determine the amount of curling or deflection.
B. Measurements are made from a surfaced steel plate to a flat-headed stainless steel pin cemented into the surface of the tile. The distance measured between the plate and the pin will determine whether the tile is curling in a convex or concave relationship to the surface plane.

II. Apparatus

A. The plate is supported above the tile three stainless steel pins cemented into the tile surface. One pin is 1/4" from one corner of the tile and the other two are to be at the vertices of the largest equalateral triangle possible to construct on the tile under the steel plate. The three pins shall protrude 3/8" above the tile surface with the convex crown of the pin exposed. The one pin flat head up cemented in the center directly under the steel plate hole shall be 1/8" above the surface of the tile. The plate shall be a fine surfaced 1/2" steel plate with a 1/2" hole drilled through the center.
B. The depth gauge or dial indicator shall be adjustable with readings in 0.001 inch increments and accurate to ±0.001 inch.
C. The tile that are bonded to a 4" thick 3000 PSI concrete shall be immerged into a container tray of water to a height of 3".

III. Test Samples

A. Select the required number of tile specimens at random for the lot to be tested.
B. Ship 15 tile as soon as they are hard enough to package, and ship using the fastest courier.
C. Ship 21 tile cured to the recommendations of the manufacturer and/or ship as common practice by manufacturer.

IV. Procedure

A. Carefully drill the four pin holes into the surface of each tile.
B. Cement the four pins into the holes. The three at the vertices of the equalateral triangle with crown showing. The one pin in the middle under the hole of the steel plate with flat surface showing.
C. Place the bondable surface of the 15 tile on three pedestals each to allow air to circulate around the tile.
D. Place surfaced steel plate onto the three pins cemented into the tile so as to center the flat pin.
directly under the steel plate hole.

E. Record the initial reading between the plate and the pin

F. Record readings at days 1, 3, 7, 14, 28, 60, 90.

G. Three (3) tile shall be tested unbonded in ambient temperature.

H. Three (3) tile shall be tested in a moist room condition, 900+ relative humidity.

I. Nine (9) tile shall be bonded to a 4" concrete slab with 1/8" thick latex portland cement bond coat after beat-in. Three of the nine will be tested at ambient temperature. Three of the nine will be tested at 140°F surface temperature for five hours. Three will be tested with the concrete slab immersed into 3" of water.

J. Nine (9) tile shall be bonded to a 4" concrete slab with a dryset mortar 1/8" thick after beat-in. Three of the nine will be tested at ambient temperature. Three of the nine will be tested at 140°F surface temperature for five hours. Three will be tested with the concrete slab immersed into 3" of water.

Report

The report shall include the following: Nominal size of the tile tested. All recorded readings at each day specified. Any conditions visible that have changed from the original