DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
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METHOD OF TEST FOR SHEAR STRENGTH OF BRICK CORES

A. SCOPE

This test method describes the procedure for determining the shear strength of a standard drilled, 6 in. diameter core taken from a brick structure.

B. REFERENCES

ASTM C39/39M - Compressive Strength of Cylindrical Concrete Specimens

C. APPARATUS

1. Testing machine meeting the requirements of ASTM C39/39M.

2. Use the special double shear-testing fixture as shown in Figure 1.

D. TEST SPECIMENS

The test specimens require no special preparation prior to testing, except that they shall be taken by drilling with a standard 6 in. inner diameter, coring barrel.

1. Cores used as specimens for shear strength testing shall be in every way representative of the brick and grout in the structure from which they are removed.

2. Drill the cores with the axis normal to the surface of the structure.

3. Do not use any cores that have been damaged appreciably in the drilling operation.

E. TEST PROCEDURE

1. Place the holding fixture in a testing machine.

2. Insert the test core into the double shear-testing fixture and adjust the fixture so that the brick and grout lines are at the edge of the tubes.

3. Set the load-applying collar on the exposed section of grout. Apply load until failure, maintaining the rate of loading within the range of 20 to 50 psi/s.

F. CALCULATION

Compute as follows:

$$Shear\ strength = \frac{Load}{2 \times area}$$

where: *Shear strength*, psi
Load, lb
Area, in^2

G. REPORTING OF RESULTS

Report the shear strength load in psi on Form TL-507.

H. HEALTH AND SAFETY

It is the responsibility of the user of this test method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. Prior to handling, testing or disposing of any materials, testers must be knowledgeable about safe laboratory practices, hazards and exposure, chemical procurement and storage, and personal protective apparel and equipment.

Caltrans Laboratory Safety Manual is available at:

http://www.dot.ca.gov/hq/esc/ctms/pdf/lab_safety_manual.pdf

Users of this method do so at their own risk.

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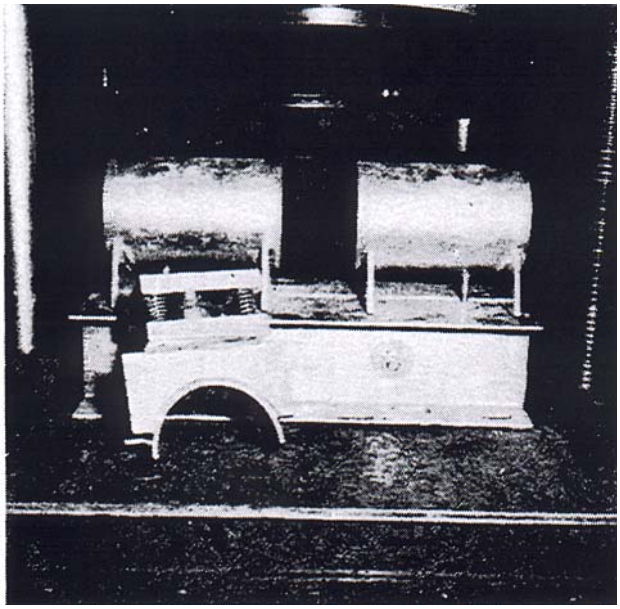

FIGURE 1. Special Holding Fixture

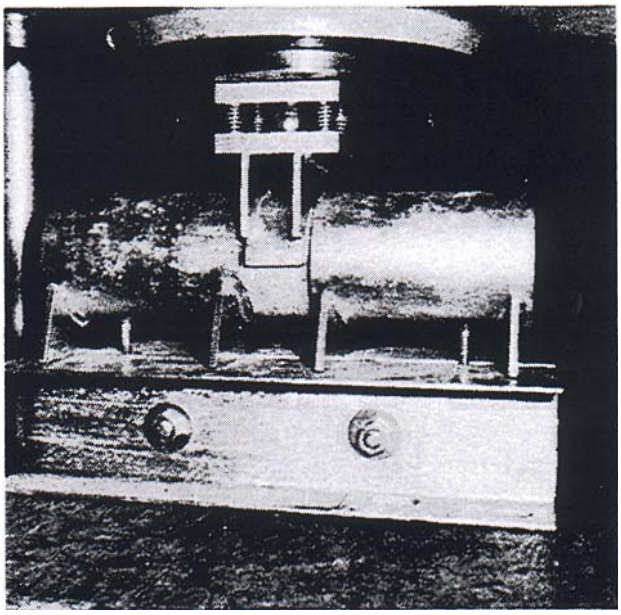

FIGURE 2. Brick Core in Testing Fixture