



County of Fairfax, Virginia

POLICY

DATE: July 1, 2006

EFFECTIVE DATE: September 1, 2006

TITLE: Concrete Foundation Wall Design Parameters (Residential)

To ensure compliance with International Residential Code (IRC) requirements for plain concrete foundation walls, the following guidelines are provided:

- The concrete wall must be restrained at wall top and base prior to placement of fill.
- The 3000psi (28 day strength) plain concrete must be cured for at least three (3) days when the average daily temperature is above 73F, at least seven (7) days when the average daily temperature is between 55F and 73F, and at least fourteen (14) days when the average daily temperature is between 40F and 55F, or the average test results of at least two standard cylinder specimens, molded and field-cured in accordance with ASTM C39-96, and tested in accordance with ASTM C39-96, indicate the attainment of at least 1700 psi compressive strength.
- Only non-saturated, non-expansive and non-compacted unbalanced fill material may be placed adjacent to the plain concrete wall (CH type soil is not allowed in the backfill).

Expansive soils are defined in Section R403.1.8.1 of the IRC. (The example walls below assume non-expansive SC, MH, ML-CL or inorganic CL soils as backfill).

- Maximum permitted unbalanced fill against an 8" thick plain concrete wall 8' or 9' tall is 5'.
- Maximum permitted unbalanced fill against a 10" thick plain concrete wall 8' or 9' tall is 7'.
- Maximum permitted unbalanced fill against a 12" thick plain concrete wall 9' tall is 8'.

NOTE: Brick ledges are allowed to recess into the required wall thickness when designed in strict conformance with American Concrete Institute (ACI) standard ACI 332-04 or ACI 332-05 and the designed detail is incorporated into the county-approved plans.

Other foundation wall designs may be approved provided they are designed and incorporated into the plans submitted to the county prior to construction. Reinforced wall designs and unbalanced fill materials are required to be certified in accordance with the county-approved plan by either the approved third-party certifying engineer or county staff. Foundation system certifications submitted to the county as the basis for inspection approval are subject to quality control inspections conducted under the authority of the Building Official.

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