Foundation Backfill

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Foundation Backfill Design and Inspection

The foundation design must specify the soil classification of the backfill, and the foundation must be designed in accordance with IRC, Section R404 Foundation Walls. The required backfill inspections are:

- If the foundation wall is designed for a 60 psf soil lateral pressure per foot height of wall and the proposed backfill material is classified as non-expansive SC or ML-CL, the proposed backfill must be located on the lot or the adjacent lot to allow for the inspection of the soil to ensure compliance with the approved design. (Note: CH material and/or organic material are not allowed in backfill material.)
- If the foundation wall is designed for a 60 psf soil lateral pressure per foot height of wall and the backfill material used is classified as non-expansive MH or inorganic CL, the proposed backfill material must be tested to ensure that the soil is non-expansive. The proposed backfill must be located on the lot or the adjacent lot. At least 2 samples from the stockpile shall be tested by an accredited testing laboratory, and the results must be attached to the Building Inspection Certification Form certified by an approved Third Party Engineer. (Note: CH material and/or organic material are not allowed in backfill material.)
- If the foundation wall is designed for a 30 or 45 psf soil lateral pressure per foot height of wall, the in-place backfill must be tested in two locations on each side of the house where backfill was placed. The test must be conducted by an accredited testing laboratory, and the results must be attached to the Building Inspection Certification Form certified by an approved Third Party Engineer.

  (NOTE: The IRC permits the use of soil classified as: GW, GP, SW and SP for backfill for a foundation wall designed for only 30 psf soil lateral pressure per foot height of wall; and GM, GC, SM, SM-SC and ML for backfill for a foundation wall designed for only 45 psf soil lateral pressure per foot height of wall.)

The County reserves the right to conduct quality control testing of the backfill after accepting a Building Certification form submitted by a Third Party Engineer.

Backfill Placement

In accordance with IRC, backfill shall not be placed against the wall until the concrete has sufficient strength and has been anchored to the floor above or has been sufficiently braced to prevent damage by the backfill. For concrete walls, sufficient strength is achieved within the number of days of curing specified below:

Concrete Foundation Walls Average Daily Temperature and Minimum Curing Before Backfill Placement[1]		
Average Daily Temperature 40°F to 55°F	Average Daily Temperature 55°F to 73°F	Average Daily Temperature > 73°F
14 days	7 days	3 days

[1] Exception: The average test results of at least two standard cylinder specimens, molded, field cured and tested in accordance with the applicable edition of the ASTM-C39, indicate the attainment of at least 1700 psi compressive strength.

Walls that support 4 feet or more of unbalanced fill shall be anchored to the floor above. If temporary bracing is used in lieu of being anchored to the floor above, the temporary bracing must be detailed on the County approved plans. An additional option is to design the foundation wall as a cantilevered retaining wall.

The builder will be responsible to provide reliable evidence to the Inspector (e.g., County Inspector or Third Party Engineer) to show when the concrete was placed. Based on that evidence, the Inspector will be responsible for verifying that the wall has cured for the minimum number of days specified prior to approving the backfill inspection. The Inspector will be responsible to ensure the floor above or the approved wall bracing has been installed prior to approving the backfill inspection.

Attachments/Hyperlinks:

- Building Inspection Certification Form