

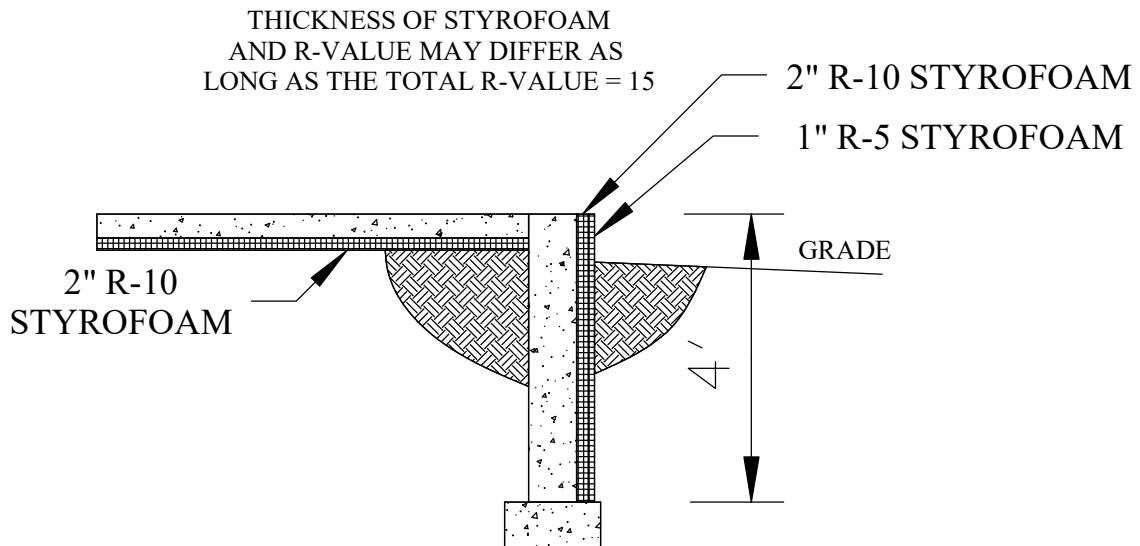
# IN-FLOOR HEAT INSULATION REQUIREMENTS & EXAMPLES FOR A WALKOUT BASEMENT (OR ANY SLAB WITHIN 12" OF GRADE)

SPS 322.33 Slab Floors. (1) Heated or unheated Slabs.  
(a) Any heated or unheated slab floor, the bottom of which is less than 12 inches below adjacent grade, shall be provided with perimeter insulation in accordance with Table 322.31-1 or Table 322.31-4, except as provided in par. (b).

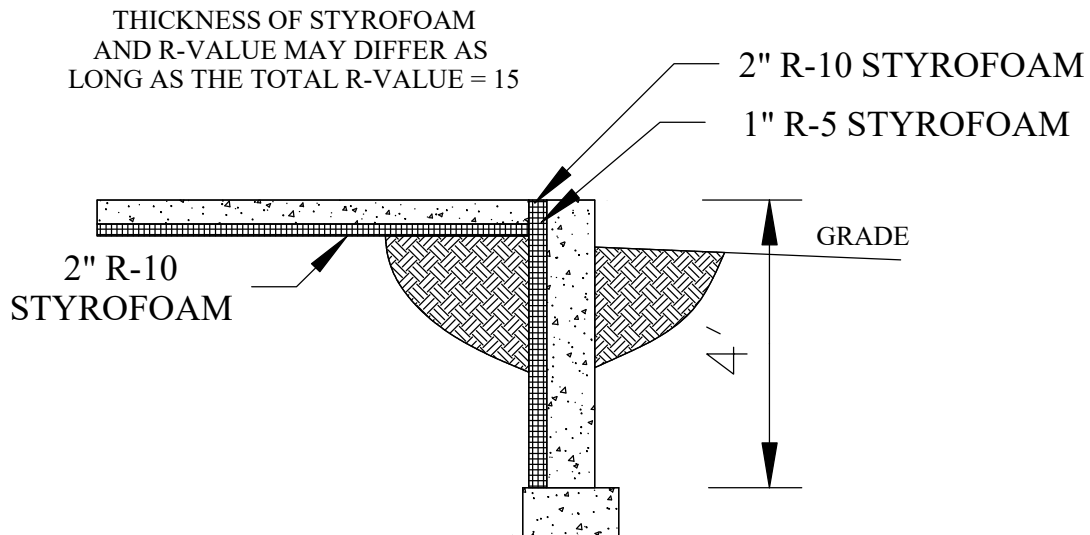
Table 322.31-1 Requires a heated slab (in-floor heat) to have R-Values of 10/15  
The first R-value applies under the entire slab, regardless of depth below grade.  
The second R-value applies to the slab edge where the bottom of the slab is less than 12 inches below adjacent grade. Slab edge insulation shall extend downward from the top of the slab for a minimum of 48 inches or downward to at least the bottom of the slab and then horizontally to the interior or exterior for a total distance of 48 inches. This is required for a heated slab regardless of what the energy analysis has for R-value or depth below grade.

FOLLOWING ARE 8 EXAMPLES OF COMPLIANT WAYS TO ACHIEVE THE REQUIREMENTS OF TABLE 322.31-1 & 1 EXAMPLE OF A NON-COMPLIANT INSTALLATION. OTHER COMPLIANT WAYS MAY EXIST THE EXAMPLES ARE MEANT TO ASSIST YOU IN THE PLANNING STAGES TO REDUCE DOWNTIME IN THE FIELD DUE TO THIS DETAIL NOT BEING INCLUDED ON THE CONSTRUCTION PLANS PLEASE REMEMBER THIS HAS NOTHING TO DO WITH FROST PROTECTION OR FPSF FOUNDATIONS.

## EXAMPLE 1: INSULATION BELOW SLAB & SLAB EDGE INSULATION ON EXTERIOR OF FROST WALL FOR A TOTAL OF 48" & A TOTAL R-VALUE OF 15



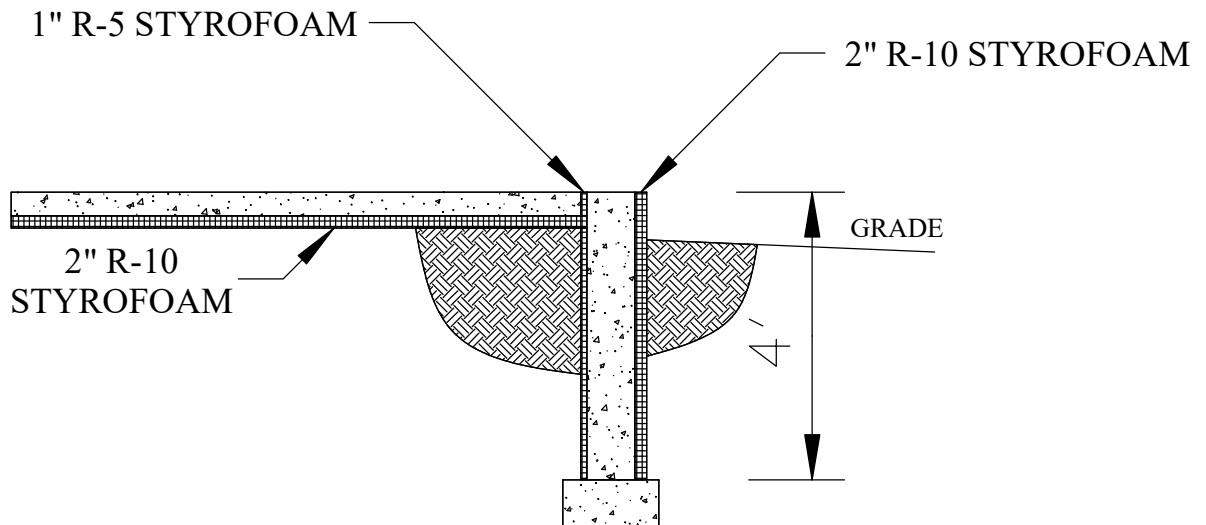
**EXAMPLE 2:  
INSULATION BELOW SLAB & SLAB EDGE INSULATION  
ON INTERIOR OF FROST WALL FOR A TOTAL OF 48"  
& A TOTAL R-VALUE OF 15**



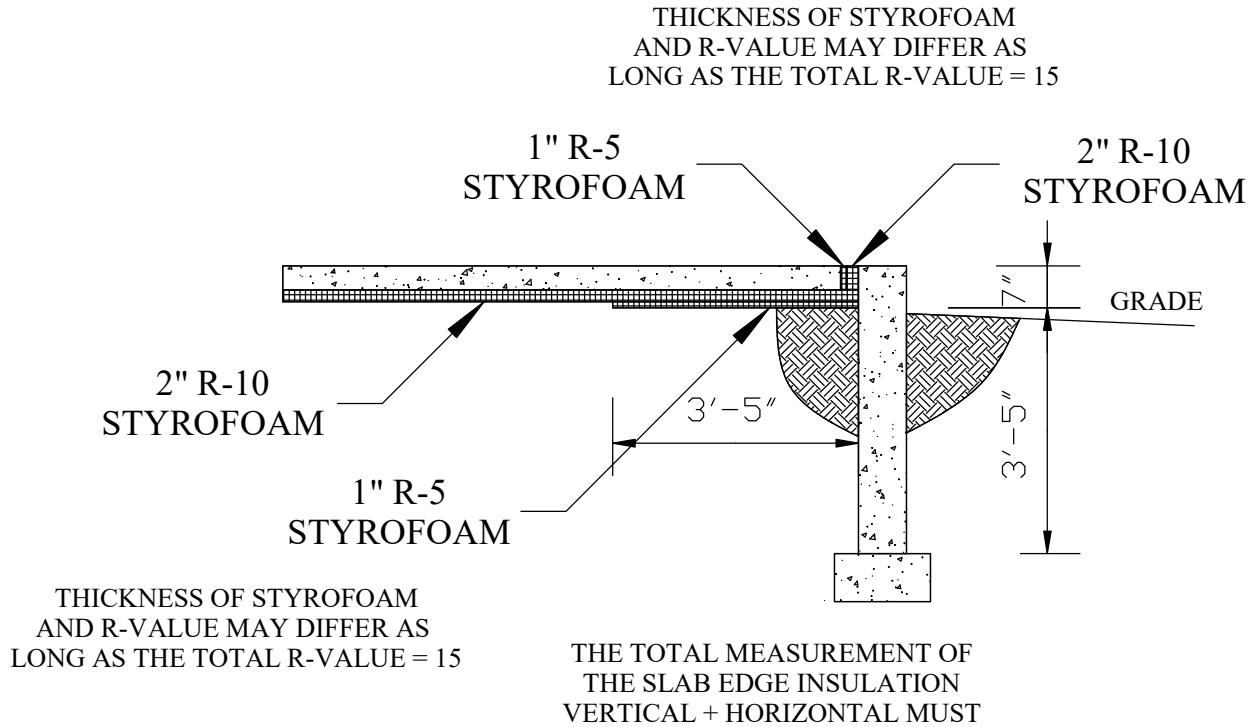
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**EXAMPLE 3:  
INSULATION BELOW SLAB & SLAB EDGE INSULATION  
ON THE EXTERIOR & INTERIOR FOR A TOTAL OF 48"  
& A TOTAL R-VALUE OF 15**

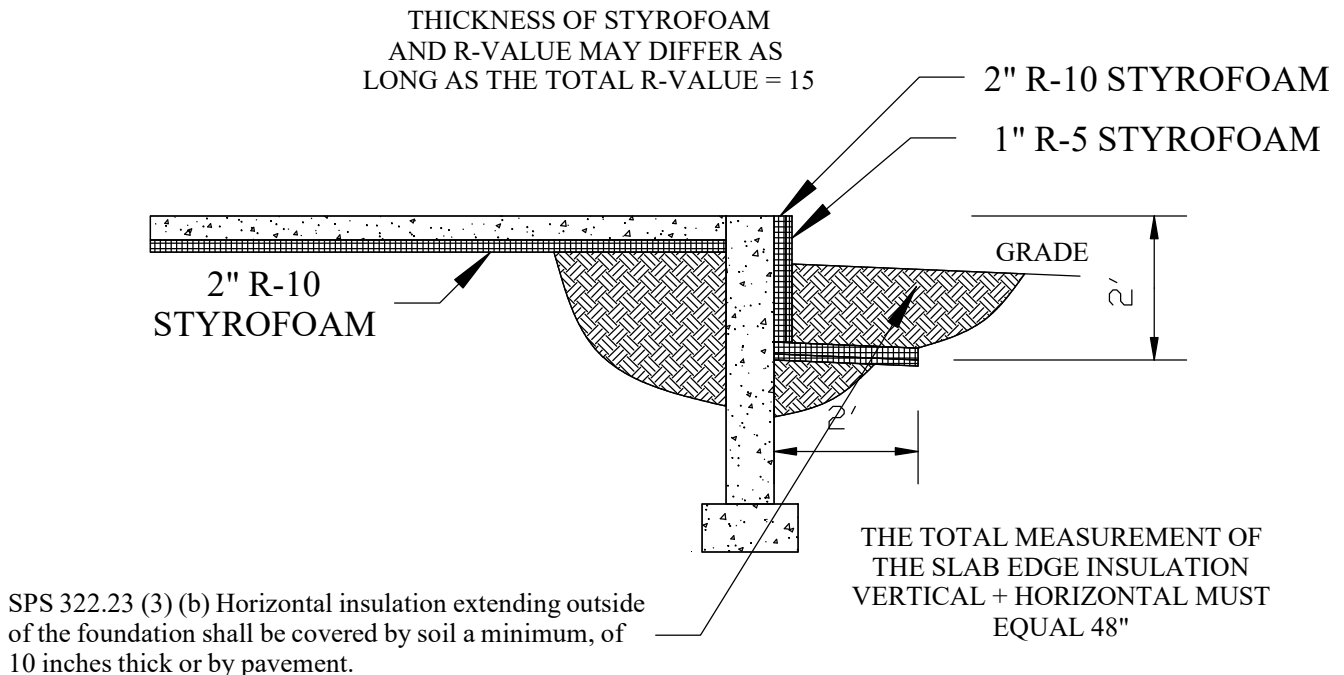
THICKNESS OF STYROFOAM  
AND R-VALUE MAY DIFFER AS  
LONG AS THE TOTAL R-VALUE = 15



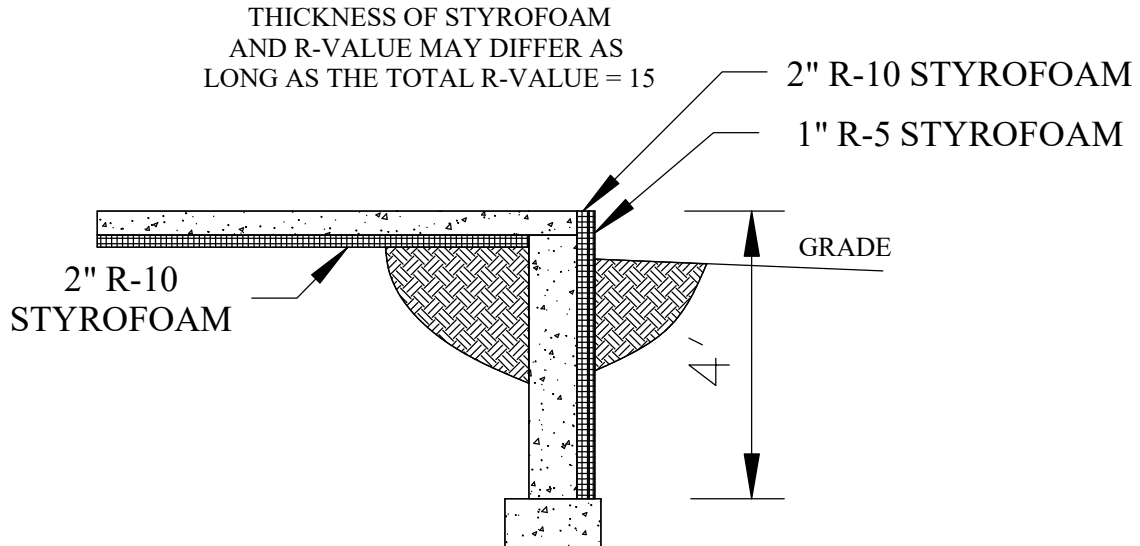
**EXAMPLE 4:  
INSULATION BELOW SLAB & ALL SLAB EDGE INSULATION  
ON INTERIOR OF FROST WALL EXTENDING DOWN &  
HORIZONTALLY FOR A TOTAL OF 48"  
& A TOTAL R-VALUE OF 15**



**EXAMPLE 5:  
INSULATION BELOW SLAB & SLAB EDGE INSULATION  
ON EXTERIOR EXTENDING DOWN & OUT HORIZONTALLY  
FOR 48" & A TOTAL R-VALUE OF 15**



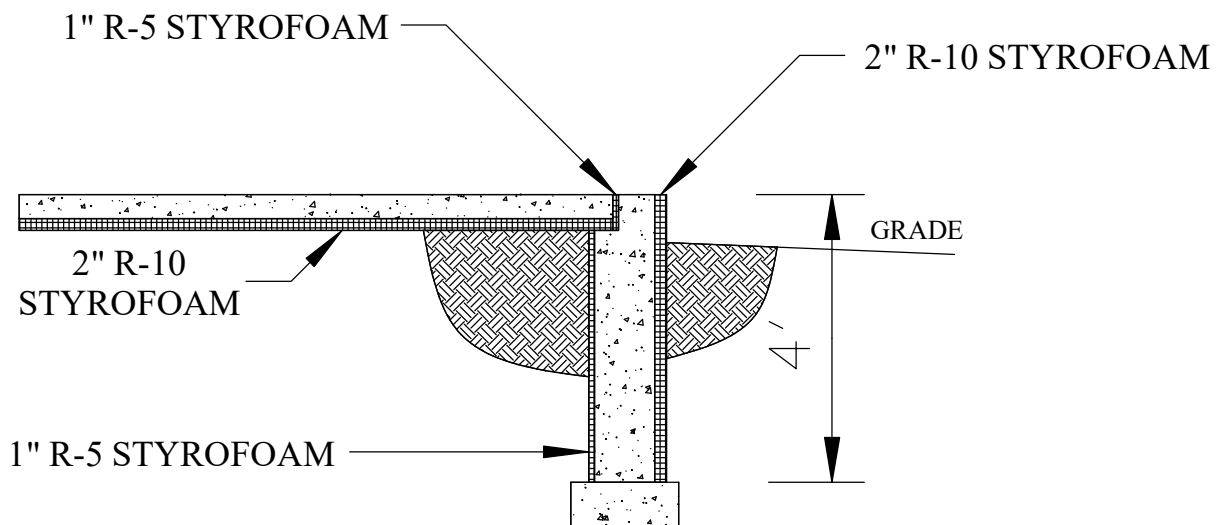
**EXAMPLE 6:  
INSULATION BELOW SLAB, SLAB OVER FROST WALL & ALL SLAB  
EDGE INSULATION ON EXTERIOR OF FROST WALL FOR A TOTAL OF 48"  
& A TOTAL R-VALUE OF 15**



**EXAMPLE 7:  
INSULATION BELOW SLAB & SLAB EDGE INSULATION  
ON EXTERIOR OF FROST WALL & INTERIOR OF SLAB EDGE  
& INTERIOR OF FROST WALL WITH FROST WALL  
NOTCHED FOR FLOOR**

THICKNESS OF STYROFOAM  
AND R-VALUE MAY DIFFER AS  
LONG AS THE TOTAL R-VALUE = 15  
THE R-5 AND R-10 MAY BE PLACED  
ON EITHER THE INSIDE OR OUTSIDE

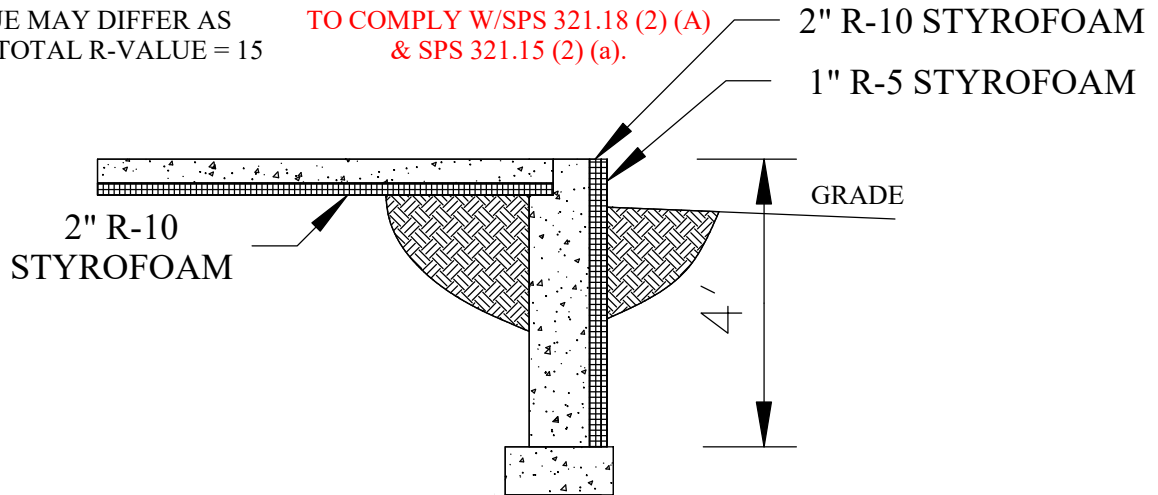
**THIS METHOD REQUIRES A  
MINIMUM 10" THICK WALL &  
A MINIMUM 18" WIDE FOOTING  
TO COMPLY W/SPS 321.18 (2) (A)  
& SPS 321.15 (2) (a).**



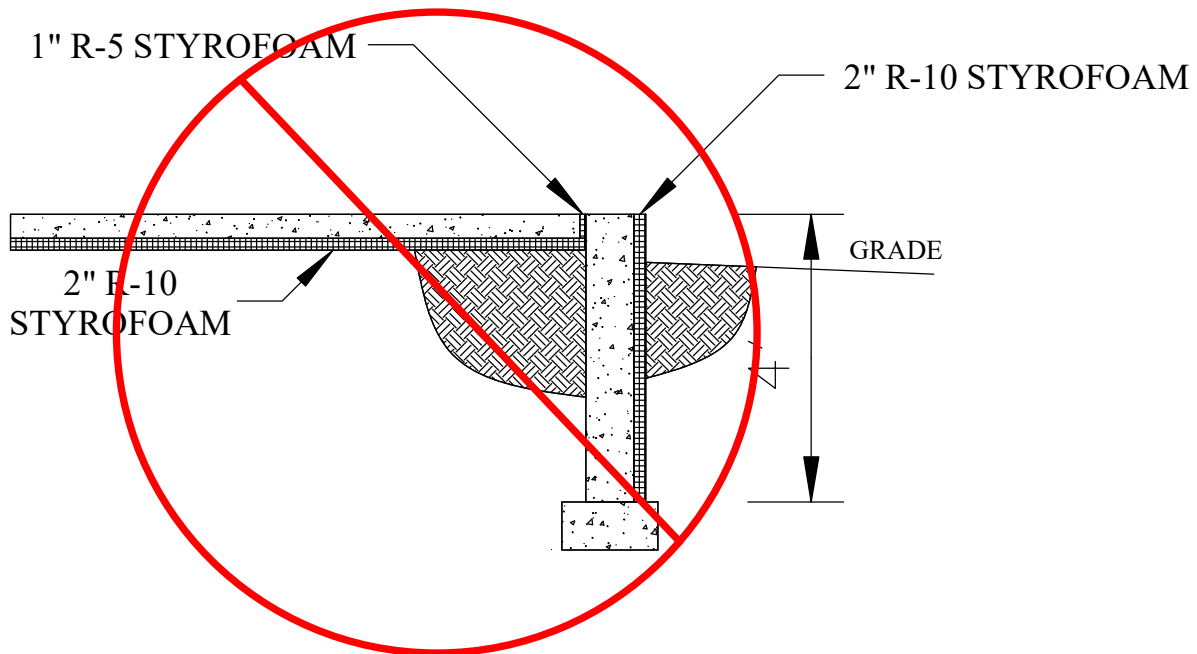
**EXAMPLE 8:  
INSULATION BELOW SLAB & SLAB EDGE INSULATION  
ON EXTERIOR OF FROST WALL FOR A TOTAL OF 48"  
& TOTAL R-VALUE OF 15 WITH FLOOR NOTCHED INTO  
FROST WALL**

THICKNESS OF STYROFOAM  
AND R-VALUE MAY DIFFER AS  
LONG AS THE TOTAL R-VALUE = 15

THIS METHOD REQUIRES A  
MINIMUM 10" THICK WALL &  
A MINIMUM 18" WIDE FOOTING  
TO COMPLY W/SPS 321.18 (2) (A)  
& SPS 321.15 (2) (a).



**EXAMPLE 9:  
INSULATION BELOW SLAB & SLAB EDGE INSULATION  
ON EXTERIOR OF FROST WALL & INTERIOR OF SLAB EDGE**



NON-COMPLIANT R-15 ONLY EXTENDS FROM THE TOP OF THE SLAB  
TO THE BOTTOM OF THE INSULATION BENEATH THE SLAB FOR  
A TOTAL OF 6" NOT THE REQUIRED 48"