

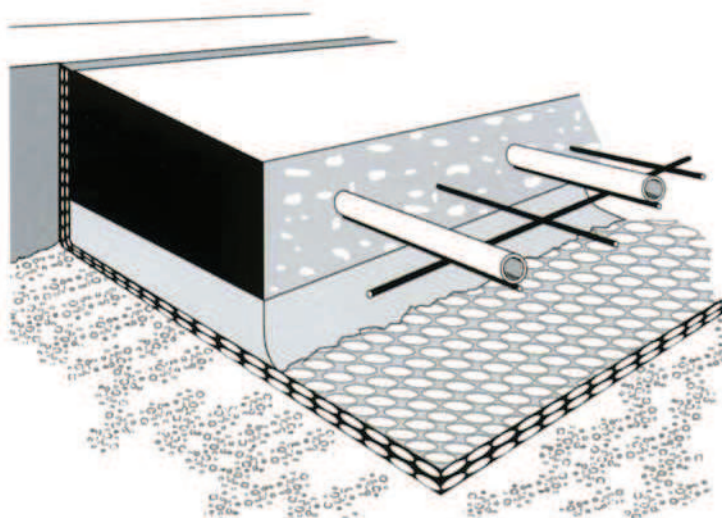


INNOVATIVE ENERGY, INC.

Your Single Source for Reflective Insulation Products

TUFF-STUFF

BELOW HEATED CONCRETE FLOORS For a High-Strength Insulating Moisture Barrier



Typical Slab-On-Grade Installation

Special Features Include:

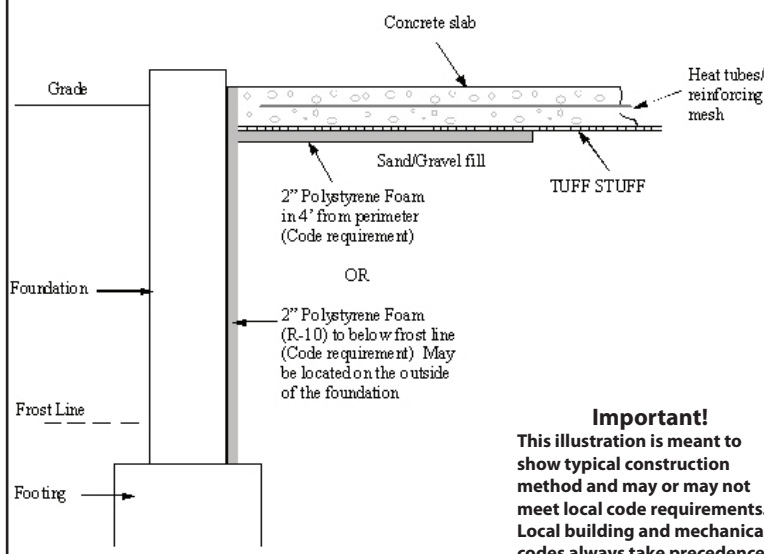
- **Absolute Moisture Barrier**
Keeps heat-robbing ground moisture away from the concrete.
- **Reduces Downward Heat Loss by Over 50%**
Exceeds the requirements of most HVAC load calculation programs.
- **Super-Strong 388 PSI Puncture Resistance**
Will support over 6" of concrete plus floor loads indefinitely.
- **Total Over 19 mil Extruded Polyethylene Film**
Withstands rough handling by installers and finishers.
- **Air-Encapsulating Vacuum Formed Bubbles**
Results in a structure that will not delaminate.
- **PET Coating Strengthens & Protects Foil**
Against Chemical Erosion
TUFF-STUFF can be laid with the foil side up or down, whichever is most convenient.

TUFF-STUFF TECHNICAL DATA

SPECIFICATIONS:

	Rating	Test Method
Water vapor Transmission:	0.002 (Impermeable)	ASTM E 96-95
Puncture Resistance:	388 PSI	ASTM F 1306
		Fed. Test Std.
		101C-Method 2031
Tensile Strength:	85-95 lb/sq. in.	ASTM D 412
Flame & Smoke Rating:	Class 1, Class A	ASTM E 84
System Thermal Resistance:		
Concrete (0.10 R/inch)	0.20 R (2 in.)	ASHRAE Handbook
Sand (0.40 R/inch)	0.60 R (1.5 in.)	ASHRAE Handbook
TUFF STUFF	1.30 R	ASTM C 518
Gravel (0.15 R/inch)	0.45 R (3 in.)	ASHRAE Handbook
Total R Value	2.55 R (system)	
Insect and Fungi Resistant		

Typical Heated Slab Cross Section



Important!
This illustration is meant to show typical construction method and may or may not meet local code requirements. Local building and mechanical codes always take precedence.



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www.insul.net info@insul.net 800.776.3645
219.696.3639

