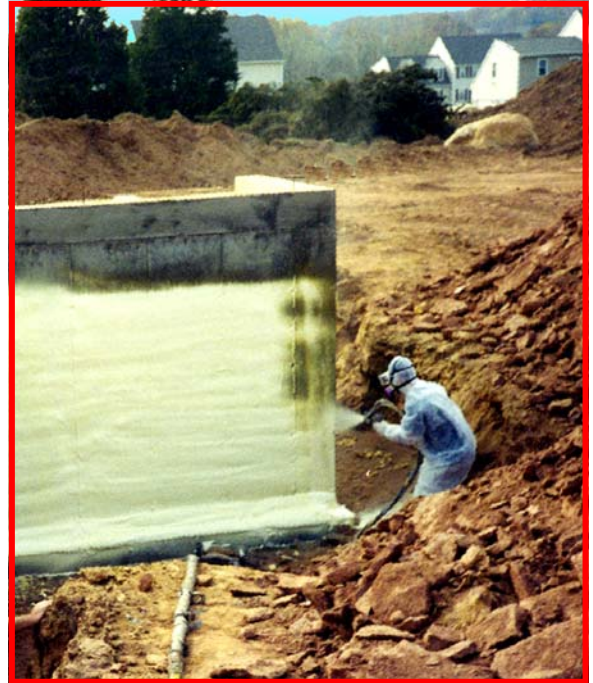




SPRAY POLYURETHANE INSULATION FOR SUB-GRADE APPLICATIONS

NCFI spray-in-place, closed-cell polyurethane insulation can be applied to the exterior side of basement walls to provide both insulation and dampproofing. Additionally, closed cell spray polyurethane insulation may be applied to a bed of gravel prior to pouring a concrete slab.

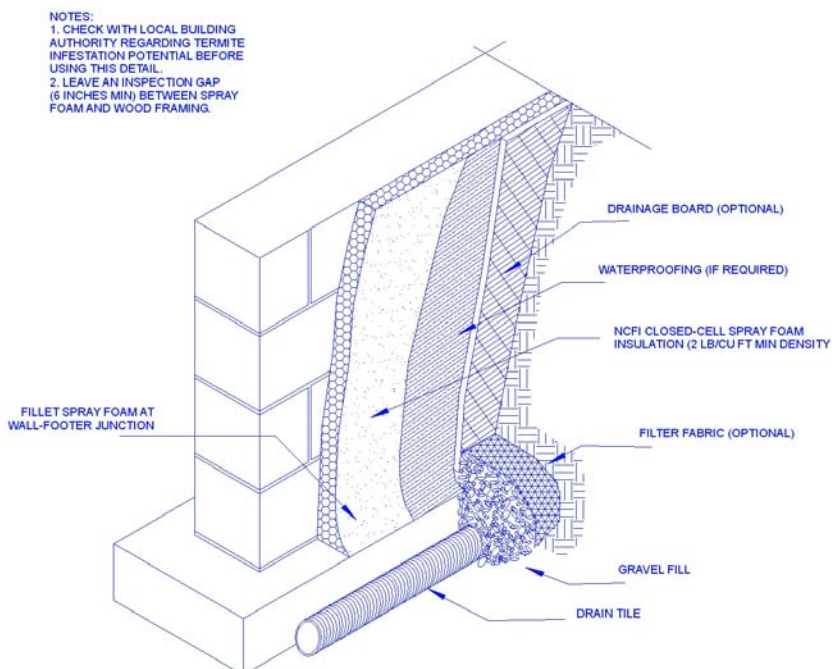
- ◆ Seamless
- ◆ Fully adhered
- ◆ Highly energy efficient
- ◆ Eliminates condensation
- ◆ Masonry/concrete becomes a thermal mass
- ◆ Seals all thru-wall penetrations
- ◆ Seals construction joints/gaps/cracks



Spray Application to Exterior Foundation Wall

Spray-in-place polyurethane has been the insulation of choice for masonry construction in commercial applications since the 1980's. As homeowners demand more energy efficient designs, the use of polyurethane insulation has been rapidly expanding. One of the best residential applications derived from the commercial market is below grade

(sub-grade) exterior insulation of masonry and concrete walls, floors, and slabs. Unlike other types of insulation, polyurethane insulation resists water penetration, retaining its high R-value. Because spray-in-place polyurethane insulation is both fully adhered and closed-cell, it provides dampproofing to your structure as well as insulation.



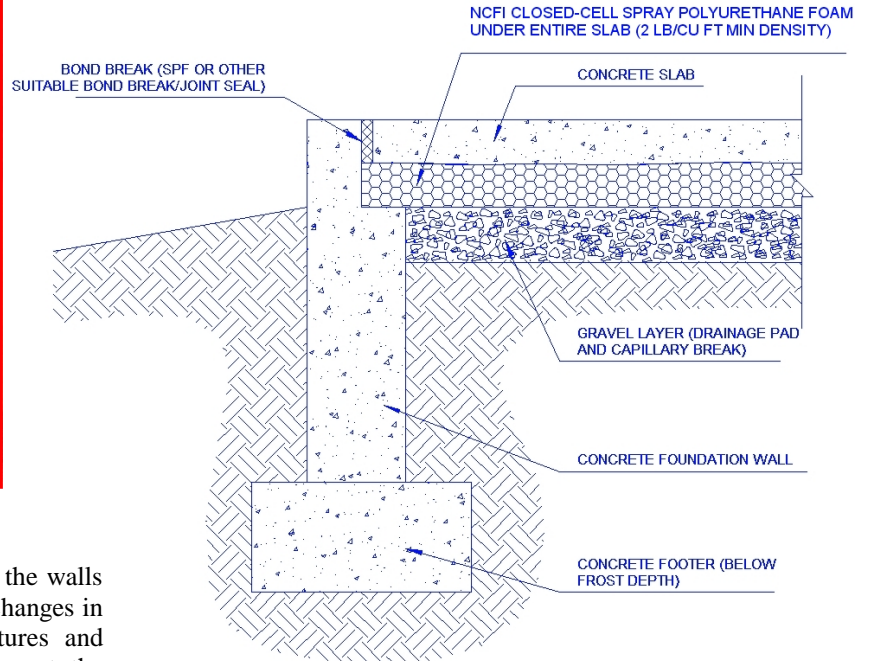
A two year sub-grade test by NRC-CNRC¹ concluded:

1. SPF exterior basement insulation thermal performance was stable and sustainable.
2. Moisture management capabilities of sub-grade SPF were confirmed.
3. Physical properties were retained.

¹NRC-CNRC, "In-situ Performance Evaluation of Exterior Insulation Basement System (EIBS)--Spray Polyurethane Foam Summary Report."

WHEN JUST INSULATION ISN'T ENOUGH®

Spray Polyurethane Insulation Application to Gravel sub-floor prior to pouring Concrete Slab



Thermal Mass = Energy Savings

By insulating the **exterior** of concrete or masonry, the walls and floors function as a **thermal mass** that resists changes in temperature. This leads to stable room temperatures and reduces the energy required to maintain the room at the desired temperature. Thermal mass saves you money.

PHYSICAL PROPERTIES

NCFI Spray-in-Place 11-002 is a two-part, closed-cell system with high R-value designed to provide an air and moisture barrier for general construction

		Thickness (inches)	R-Value (aged) (°F•hr•ft ² /Btu)
Core Density	2.0 lb/ft ³		
Moisture Vapor Transmission	0.9 perm @ 2 inches thick		
Flame Spread (ASTM E 84)	Less than 25 @ 2 inches thick	1/2	3.4
Smoke Development (ASTM E 84)	Less than 450	1	6.8
Air Leakage (ASTM E 285)	0.0 cfm/ft ² @ 6.24 psf	2	13
Water Resistance (AATCC 127 Suter Hydrostatic Pressure Resistance Test)	No leakage @ 184.5 cm H ₂ O	3	20
FEMA Flood Resistant Material	Class 4		

Winner of the
**EPA 2004 Stratospheric
 Ozone & Climate Protection
 Award**
 for extraordinary
 accomplishments and
 significant contributions to
 protect the environment.



Using products with the Energy Star label can save energy. Saving energy reduces air pollution and lowers utility bills. As an Energy Star Partner, NCFI has determined that this product can significantly contribute to meeting the Energy Star guidelines for energy efficiency.

NCFI insulation systems are formulated with renewable agricultural resources.



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