Cost Comparison Fact Sheet

to Meet 2012 Energy Code

With the implementation and enforcement of the 2012 International Energy Conservation Code (IECC), this fact sheet was developed to provide you a comparison of Perma Form Vertical to conventional poured walls. Below is a comparison of various methods of insulating conventional poured basement walls, the costs involved, and problems that may arise with each, and show you how Perma Form Vertical will save you money.

For this comparison, the following assumptions were used:

- 30' x 50' x 8' high basement wall
- R-15/19 IECC requirement for zones 5, 6 and 7, which includes Iowa & states to the north
- Concrete at $100 per yard
- Insulation, material cost, & poured wall estimates were from contractors & lumberyards in north central Iowa
- Labor rate of $30.00 per hour (Labor hours were estimated by a local contractor)

	PERMA FORM VERTICAL	Conventional Poured Wall **Option 1**	Conventional Poured Wall **Option 2**	Conventional Poured Wall **Option 3**	Conventional Poured Wall **Option 4**
Cost	**$12,084**	$13,243	$13,882	$14,150	$15,659
IECC Requirement	**R-15**	R-19	R-19	R-15	R-19
R-Value Met	**R-21**	R-20	R-21	R-21	R-20

PERMA FORM VERTICAL

- 2" Insulation
- 8" core
- Finishing top 2' with Stuccon foundation coating
- Needs to meet R-15 energy rating

OPTION 1: Conventional Wall - Continuous Insulation Interior & Cavity Insulation

- 8" concrete wall
- 1 1/2" sheet insulation on interior
- 2x4 stud wall built inside of sheet insulation
- R-11 fiberglass batt insulation in the cavities
- Needs to meet R-19 energy rating

OPTION 2: Conventional Wall - Spray Foam Insulation Interior & Cavity Insulation

- 8" concrete wall
- 1.5" of spray foam on the interior
- 2x4 stud wall built inside of spray insulation
- R-11 fiberglass batt insulation in the cavities
- Needs to meet R-19 energy rating

OPTION 3: Conventional Wall - Continuous Insulation Both Sides

- 8" concrete wall
- Insulated with 2" sheet insulation on exterior prior to backfilling
- 1 1/2" sheet insulation on interior with 1 1/2" furring strips attached to wall
- Needs to meet R-15 energy rating

OPTION 4: Rent forms from local forms supplier

- 8" concrete wall
- Insulate wall the same as option 3
- Needs to meet R-19 energy rating

CONCERNS WITH OPTION 1:

- With all the insulation on the interior of the wall, the dew point of the concrete wall has now moved from the exterior of the wall to the interior. This can result in a:

  * Damp clammy basement feeling instead of a dry cozy atmosphere like the main house floor
  * Mold-friendly environment behind the sheet insulation

- Option 2 will help with the mold growth since the spray foam will adhere to the concrete helping to seal the surface where mold likes to grow.

The pictures below show a couple examples of potential problems. Both these buildings have heated concrete floors.

This insulation was placed on the exterior of the 4' frost footing. Each spring, approximately 2-3" of insulation has to be removed as the frost has pushed it up.

This building only had the insulation installed on the exterior and only went down approximately 1'. You can see that much of the insulation is gone.

CONCERNS WITH OPTION 3:

- Placing the insulation on the exterior and backfilling allows the insulation to work up in the freeze thaw cycle
- The insulation that is exposed has to be covered and protected
- Many of the EIFS products that are available require a stable surface to keep them from cracking and breaking
- The movement of the insulation in the freeze thaw cycle will not allow many of these products to be used

PERMA FORM VERTICAL:

- Eliminates all the concerns listed above
- Meets the current energy code requirement
- The combination of the wire structure and the bonding that takes place between the insulation and the concrete binds the insulation to the concrete
- Frost heave will not move the insulation upward
- This securing of the insulation, along with the wire lathe option, provides a solid base and reinforcement to securely hold our Stuccon or other EIFS/stucco products
- R-21 with the 2" insulation meets the current energy code when the foundation is poured
- Significant cost savings
- Warm, dry basement

THE BIGGEST ADVANTAGES OF PERMA FORM VERTICAL:

- The continuous insulation on both the interior and exterior of the wall
- The dew point is moved from the interior of the wall to the exterior
  * Eliminates the cool damp basement feeling
  * Virtually eliminates the potential for mold growth
  * The wires provide a small air gap between the sheetrock and insulation which helps deter the mold growth