

## WonderForm™

The WonderForm™ insulated concrete forming system's main component is an expanded polystyrene "stay-in-place" concrete form which combines the benefits of EPS and concrete in an easy to use and cost effective concrete forming system.

Each WonderForm™ weighs only 3 pounds. It measures 48" long x 9.6" deep and 16" tall. The hollow core design of the WonderForm™ incorporates vertical columns and a half horizontal beam in the top and bottom of the WonderForm™. The forms snap together with a unique molded interlocking system of channels and keyways which allow WonderForm™ to be quickly placed, permitting rapid construction of your project with minimal bracing required. Unlike other EPS forming systems, the WonderForm™ Insulated Concrete Forms does not require substantial quantities of lumber for bracing during construction.

WonderForm™ allows the builder to place his concrete in continuous lifts to heights of 10' and more without tedious stop and start methods required with other EPS forming systems. This means reduced construction time and infinitely stronger walls since a WonderForm™ wall is a monolithic wall. Our wall system can be designed and engineered to exceed 350 miles per hour wind loading and high seismic loading.

Concrete cured in WonderForm™ forms reaches much higher cure strengths because it is moist cured rather than conventional air cured concrete typical of plywood formed jobs when the forms are stripped within a few days of the concrete placement. Information from the Portland Cement Association indicates that moist cured concrete can reach strengths up to 32% greater than its original design in a typical 28 day moist cure.

There is no waiting for the cure period as work can proceed the day following the placement of the concrete. Concrete placement can be accomplished in subfreezing temperatures. Again WonderForm™ allows for rapid construction... saving substantial time at competitive costs!

Exteriors are finished conventionally with stucco utilizing WonderForm™'s unique furring strip and the conventional attachment of wire mesh or high rib or acrylic additive can be added to common stucco in the scratch coat which creates the bond between the cement and the EPS. Synthetic acrylic latex finishes can be applied directly to exterior surface of WonderForm™. Virtually any conventional exterior finishing material can be used. Interior wall surfaces are also finished conventionally using sheet rock applied with conventional screw methods eliminating the extra cost special adhesives found with several EPS form systems.

Plumbing and electrical systems are fitted into the 2.35" interior foam surface of the WonderForm™ form using convenient hot knife cutters or routers to create raceways for utilities placement.

Construction Cost. The cost of construction with the WonderForm™ insulated concrete forms is most competitive with conventional construction. The added benefits of energy efficient R-26 insulation, sound attenuation and resistance to high wind and earth movement make WonderForm™ an outstanding value.

Rapid Construction. The WonderForm™ is constructed with great speed. With the slab in place, the average 1500 sq. ft. home exterior walls are formed in less than two days. There is no additional column or tie beam forming required as these structural elements are designed into the

WonderForm™ forming. With the installation of the window and door bucks, concrete is placed in the WonderForm™ forms by conventional pumping techniques. Truss placement can commence the following day. The above work can be achieved with a four man crew consisting of a good rough carpenter / layout man and three laborers after minimal training, provided by WonderForm™ under our Dealer Program.

WonderForm™ Allows Easy Site Cleanup. When you construct with WonderForm™ you will be afforded another benefit of this simplified building system: Minimal waste disposal. There is a 80 - 90% decrease in site waste over average wood framing waste. This saves you time and converts your former waste costs to the bottom line - more profit! Most city dumps charge by the ton of waste for disposal costs. With the small amount of waste generated from WonderForm™ light weight your dump fees will only be a few dollars compared to your former waste dumping fees.

WonderForm™ Allows Year-Round Construction. The many benefits of WonderForm™ construction can be delivered throughout the year, regardless of climatic conditions! WonderForm™ delivers an insulated environment for the placement of concrete - concrete can be placed in subzero conditions as the forms insulate the concrete from the elements or in heavy rain as the water escapes from the bottom of the forming system and does not present a pooling problem.

Energy Efficient. Expanded polystyrene (EPS) foam has a long and proven history in the construction industry as an outstanding insulator. The filled WonderForm™ “stay-in-place” form incorporates high density EPS foam resulting in a thermal barrier with a rating of R-26. This will mean outstanding energy savings to the home buyer over the life of the home. With equivalent insulation factors in the ceiling, the energy savings can exceed 50% over conventional construction. As an example of potential savings, an energy reduction of just \$100 per month placed in a savings account at 8% would compound to \$150,030 in 30 years! A WonderForm™ house, depending on size, construction and utility cost, when properly designed and built, can literally pay for itself over the life of the mortgage. In just 15 years the savings would be \$59,295; enough for several college degrees for the kids! This fact alone can equate to increased home salability for the builder and the home owner in the future.

Highly Hurricane And Seismic Resistant. The WonderForm™ system can be engineered to exceed 350 mile per hour winds. We have had first hand experience, on St. Croix, U.S. Virgin Islands, during Hurricane Hugo in 1989, to engineer an insulated concrete forming system that can withstand the destructive forces of nature. And engineering analysis indicates a WonderForm™ structure can resist high seismic loading during earthquakes as well.

Great Sound Attenuation. The sound attenuation rating of a WonderForm™ wall with 1/4" stucco and 1/2" sheet rock is a very high Sound Transfer Coefficient of 55. This high level of sound absorption creates a very private interior atmosphere within a home constructed with the WonderForm™ Insulated Concrete Forms. Homes can be constructed close to high sound sources with greatly diminished negative impact on the interior atmosphere of the home. WonderForm™ is excellent for privacy walls where it is beneficial to dramatically reduce the sound level from an annoying source that can not be removed.

Infestation Resistant. Having no nutritional value, WonderForm™ presents no incentive to boring insects. The highly evolved sense of smell of all boring creatures lets them know quickly “there’s no meal here.” There are also no hollow cavities or large open areas, as in cement block or stud walls for insects and rodents to set up shop.

Environmentally Responsive. From our point of manufacture to the disposal of construction debris, WonderForm™ does not pollute the atmosphere or the earth. Our manufacturing process does not use chlorofluorocarbons (CFC's). We use common steam which simply returns to the atmosphere as moisture. Any construction debris which is placed in a land fill is actually beneficial as broken scrap: EPS truly aids in the aeration of the land fill soil allowing for a more rapid breakdown of the surrounding organic material. Unlike CFC, processed expanded polystyrene WonderForm™ does not have any polluting agents to leach into the soil.

The expanded use of the WonderForm™ Insulated Concrete Forms will dramatically reduce the need for lumber in construction, therefore helping to reduce the destruction of our worldwide forests.

The WonderForm™ Insulated Concrete Forms is based upon a method of construction in wide use in Europe for over 40 years.

During the past six years we have developed and refined the WonderForm™ Insulated Concrete Form for the Americas and the global market. The WonderForm™ Insulated Concrete Forming system allows for the construction of high quality, extremely energy efficient homes and buildings of long lasting quality. WonderForm™ brings you all these benefits without negative impact on our environment.

### **WonderForm™ General Product Data**

WonderForm

Length: 48" (1219.2 mm)

Width: 9.6" (243.8 mm)

Height: 16" (406.4 mm)

Area Of Wall Per Form: 5.333 Square Feet (.4955 Square M)

Volume Of Concrete Per Form: 2.35 Cubic Feet (.066 Cubic M)

One Cubic Yard Of Concrete Fills: 11.25 WonderForms

One Cubic Meter Of Concrete Fills: 15.25 WonderForms

Wall Thickness: 2.235" (56.77 mm)

Foam Weight Per Form: 3.5 Pounds

Volume Of Foam Per Form: 1.966 Cubic Feet (.0556 C Meter)

Total Volume Per Form: 4.267 Cubic Feet (.1208 C Meter)

### **Safety Information**

*Toxicity* - These Toxicity Test Results Compare The Total Sum Of Toxicity Factors Of Carbon Monoxide, Carbon Dioxide and Poisonous Chemicals Found In The Smoke Of Burning Materials As Compared To The Smoke From Burning Red Oak.

*Material:* WonderForm  
*Sum Of Toxicity Factors:* 20

*Material:* White Pine  
*Sum Of Toxicity Factors:* 50

*Material:* Red Oak  
*Sum Of Toxicity Factors:* 100 (The Standard)

*Material:* PVC (Poly Vinyl Chloride)  
*Sum Of Toxicity Factors:* 360

*Material:* Wool  
*Sum Of Toxicity Factors:* 390

*Material:* A B S (Plastic Pipe)  
*Sum Of Toxicity Factors:* 280

*Material:* Urethane  
*Sum Of Toxicity Factors:* 290

U S Testing Co. Report No. 03298

*FLAME SPREAD* - The Distance Flame Spreads From The Ignited Flame During A 10 Minute Fire Exposure Under Controlled Test Conditions In A Test Tunnel. The Results Of The Test Are Compared To The Flame Spread On Asbestos Cement Boards And The Flame Spread On An Untreated Red Oak Floor Under Similar Fire Exposure Conditions.

*Material:* Asbestos Cement Board  
*Flame Spread In Feet:* 0

*Material:* WonderForm  
*Flame Spread In Feet:* 10

*Material:* Untreated Red Oak  
*Flame Spread In Feet:* 100

*Smoke Development* - The Amount Of Smoke Developed During A Standardized Burning Test In A Test Tunnel. The Results Are Compared To The Smoke Developed By Burning An Asbestos Cement Board And The Smoke Developed By Burning A Red Oak Floor Under Similar Fire Conditions During A 10 Minute Period. The Amount Of Smoke Developed Is Determined By The Light Absorption Percentage Of The Smoke Using A Photoelectric Circuit Operating Across The Test Furnace Flue Pipe.

*Material:* Asbestos Cement Board  
*Smoke Development:* 0

*Material:* Untreated Red Oak  
*Smoke Development:* 100

*Material:* WonderForm

*Smoke Development: Less Than 300*

*Maximum Accepted By U.B.C.: 450*

Flame Spread And Smoke Development Test Procedures According To ASTM E 84-81A And Similar To The Following: U: -723, ANSI No. 2.5, NFPA No. 255 And UBC 42-1.

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