Insulworks®
Specification Sheet

AMC
Foam Technologies Inc.

INSULWORKS
Hydronic Heating Insulation

Insulworks is a unique insulation panel designed especially for hydronic heating applications. Its primary functions are to conserve energy and reduce cost and labour. Insulworks provides an efficient thermal barrier between the heated slab and the underlying ground. Also, in preventing the ground from becoming a linked "thermal flywheel" to the slab, Insulworks permits fast and accurate room temperature response to temperature controllers. The use of insulworks may also reduce the size and cost of system hardware.

Using Insulworks will reduce project costs and speed installation because the usual method for positioning tube by tying it down to wire mesh has been replaced. The tube is simply "stepped" into the Insulworks panels, saving a great deal of backbreaking labour. The cost to purchase and install wire mesh may also be eliminated. Insulworks is manufactured in a 4' x 4' (1220 mm2) panel in several thickness' for 13 mm (1/2") and 15.8 mm (5/8") tubing and 19 mm (3/4") I.D. tubing, and R-Values ranging from R-6 to R-12, and over. Insulworks is produced from Type 2 expanded polystyrene (EPS), a high density, close cell foam insulation. It is appropriate for use on and under ground, and concrete structures.

It will never rot, support mold or mildew, and has no pest nutrient value. Since EPS contains ordinary air, insulation values will not break down due to the escape of CFC or HCFC insulating blowing agents. EPS is relatively permeable, and will breathe moisture vapor. At a minimum compressive strength of 16 psi (110kPa.), Insulworks will support the weight of 16 vertical feet (4.8 meters) of concrete, or equivalent.

Applications

Insulworks can be used under slab-on-grade, in sandwich slab application, snow melt systems and other applications under concrete where radiant panel heating is required. Insulworks has been designed to support the weight of cast-in-place concrete, construction activity and working loads, machinery and heavy vehicle loading where the concrete slab has been designed for such purposes.

Specifications and Compliancies

AMC is registered by the International Standards Organization under the ISO 9001:2000 registered company Quality System Standard, a set of standards and criteria that is internationally recognized as an assurance of product quality and consistency. Insulworks is manufactured to meet the intent of ASTM C578-01 Type 2 and CAN/ULC S701-97 Type 2. AMC's products are certified under the Warnock Hersey Third Party Certification Program.

Health and Environment

Insulworks is one of the few foam plastics insulation available that contains absolutely no CFCs, HCFCs, or other refrigerant gases. Its atmospheric ozone depletion potential (O.D.P.) is a zero. It is non-toxic and hypo-allergenic and will not irritate sensitive skin on exposure.

Flammability Characteristics

Insulworks contains a chemical additive to inhibit accidental ignition from a small fire source. This additive, however, will not prevent burning when the material is exposed to a large continuous fire source or intense heat. Observe normal fire precautions and good housekeeping during product storage and application.

Insulworks Large Diameter Conduit Insulation

Made expressly for wood and coal fired boilers. Insulworks Large Diameter Conduit Insulation was specifically designed to conserve energy loss from buried hydronic tubing. Insulworks L.D.C. is manufactured from high density expanded polystyrene (EPS). It is a closed cell foam material that will never rot or decompose. It has no pest nutrient value.

Insulworks L.D.C. was designed to contain any diameter of tube up to 1.5 inches outside diameter. Each piece is 4 feet long, which will yield 2 lineal feet of pipe cover. Other variations can be produced for special applications.

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INSULWORKS INSTALLATION INSTRUCTIONS

- Order enough Insulworks for the job, without over-ordering, as there is usually very little waste. Whatever part of a sheet is cut off the last in a row can be used to start out the next.
- Install Insulworks over reasonably level ground. Properly installed tubing will connect individual sheets into one mat. However, large lumps and bumps under the insulation could result in one edge raising up when concrete is being placed. Concrete must never be allowed to run under a panel, as this would cause it to float upwards.
- A polyethylene barrier is not necessary either under or over Insulworks, as EPS is in itself a capillary break to moisture movement.
- Decide on the orientation of the tubing. Simple is easiest, but it is possible to change directions (North-South to East-West) throughout the job. Start at one corner working to the end wall, and cut as required with ordinary hand saw. Begin the next row with the cut-off piece.
- Uncoil the tubing, "stepping" it into place. Tube spacing is usually 12" apart. However, tightening the tube spacing where more heat is desired (like next to a door in a walkout basement) can be a good thing to do.
- Some radiant tubing strongly resists uncoiling, and may want to "snap back" if not firmly attached to the Insulworks. A few tubing clips may be required where this occurs and also as the tube runs perpendicular to the fastening slots such as when returning to the manifold. We recommend having available 2 clips per 180 turn of the tube if and when required.
- Point loads on hydronic tube, such as from high chairs supporting heavy rebar should be avoided, as some tube manufacturers strongly warn against kinks and sharp bends.
- Wire mesh may be placed directly over the installed tube when required, as in some exterior driveway applications.
- Protect both the Insulworks and the tube from heavy loads (buggy or wheelbarrow wheels) with plywood runners.
- Filling the hydronic tubing with water will reduce buoyancy, helping to keep the tube in place at the bottom of the slab.
- Cover with concrete.

If you require further technical data visit our website: www.amcfoam.com

MAY 2008

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