

## INSULWORKS®

### HYDRONIC HEATING INSULATION

#### PRODUCT DESCRIPTION

INSULWORKS™ is a unique insulation panel designed especially for hydronic heating applications. Its primary functions are to conserve energy and reduce cost and labor. 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 labor. The cost to purchase and install wire mesh may also be eliminated.

INSULWORKS is manufactured in a 4' x 4' (1220 mm<sup>2</sup>) panel in several thickness' for both 1/2" and 3/4" I.D. tubing, and R-Values ranging from R-6 to R-12, and over.

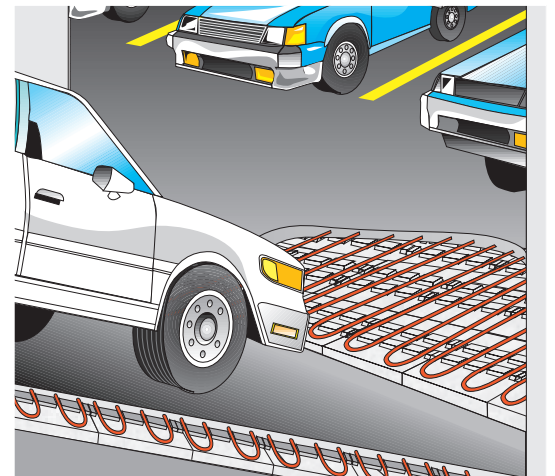
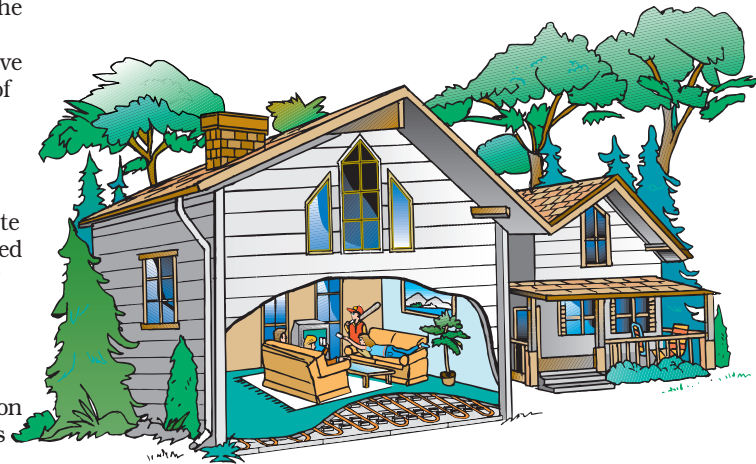
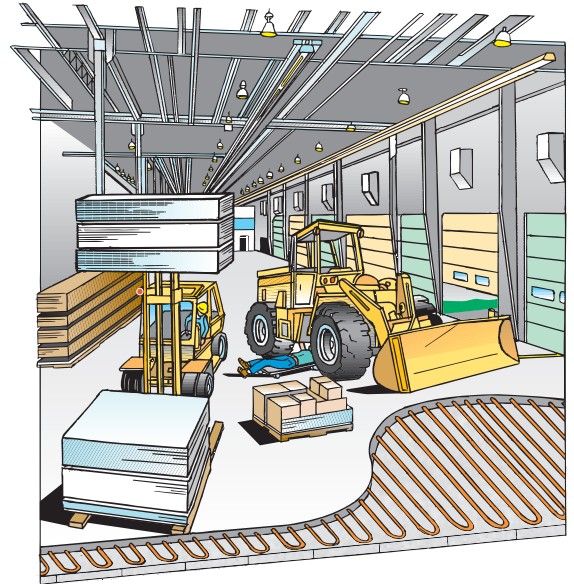
INSULWORKS is produced from Type 2 expanded polystyrene (EPS), a high density, closed cell foam insulation. It is appropriate for use on and under ground, and under concrete structures. It will never rot, support mold or mildew, and has no pest nutrient value. Since EPS contains ordinary air, insulation 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

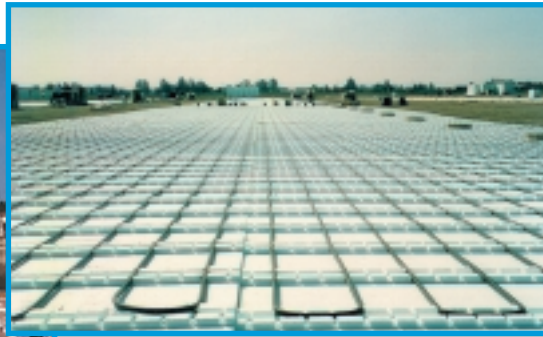
Beaver Plastics is registered by the International Standards Organization under the ISO 9002 Quality Assurance Program, a set of standards and criteria that is internationally recognized as an assurance of product quality and consistency. Insulworks is manufactured to meet the intent of ASTM C578-95 Type 2 and CAN/ULC S701-97 Type 2. Beaver Plastics' products are certified under the Warnock Hersey Third Party Certification Program.



#### INSULWORKS PERFORMANCE CHART

PHYSICAL PROPERTY	UNITS IMPERIAL R VALUE	UNITS SI (METRICS)	ASTM TEST PROCEDURE	VALUES	
				IMPERIAL	METRIC
Thermal Resistance (min) (R-Value) at 75°F/24°C	hr.ft <sup>2</sup> °F BTU / 1 in.	hm <sup>2</sup> °C W / 25 mm	C-177-76 or C-518-76	4.00	0.70
Coefficient of Thermal expansion (max)	in / in / °F	m / m °C	D-696-79	3.5 x 10 <sup>-5</sup>	6 x 10 <sup>-5</sup> c <sup>-1</sup>
Compressive strength (min) at 10% deformation	psi	k.PA	D-1621-73	16	110
Capillary Action	—	—	—	none	none
Water vapor permanence (max)	perm - in	ng / Pa.s.m. <sup>-2</sup>	E96-80	3.5	200
Water absorption % (max)	%	%	D 2842-69	3.0	3.0

## TYPICAL INSTALLATIONS



*Insulworks*  
 The Greatest Thing  
 To Hit Hydronic Heating  
 Since Water!



## HEALTH AND THE ENVIRONMENT

INSULWORKS is one of the few foam plastic insulations available that contains absolutely no CFCs, HCFCs, or other refrigerant gases. Its atmospheric ozone depletion potential (O.D.P.) is 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 methods during product storage and application.

## SIZES/ORDER CODES/PACKAGING

DESCRIPTION	INSULATION	ORDER CODE	ORDER CODE	PIECES	SQ. FT.	SQ. M
	THICKNESS	FOR 1/2" ID TUBE	FOR 3/4" ID TUBE	/PACK	/PACK	/PACK
INSULWORKS R6	1 1/2" (38mm)	55803	N/A	20	320	29.7
INSULWORKS R7.5	1 7/8" (48mm)	55806	55816	16	256	23.8
INSULWORKS R10	2 1/2" (64mm)	55805	55815	12	192	17.8
INSULWORKS R12	3" (76mm)	55808	55818	10	160	14.8

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