



Beaver Plastics

INSULWORKS®

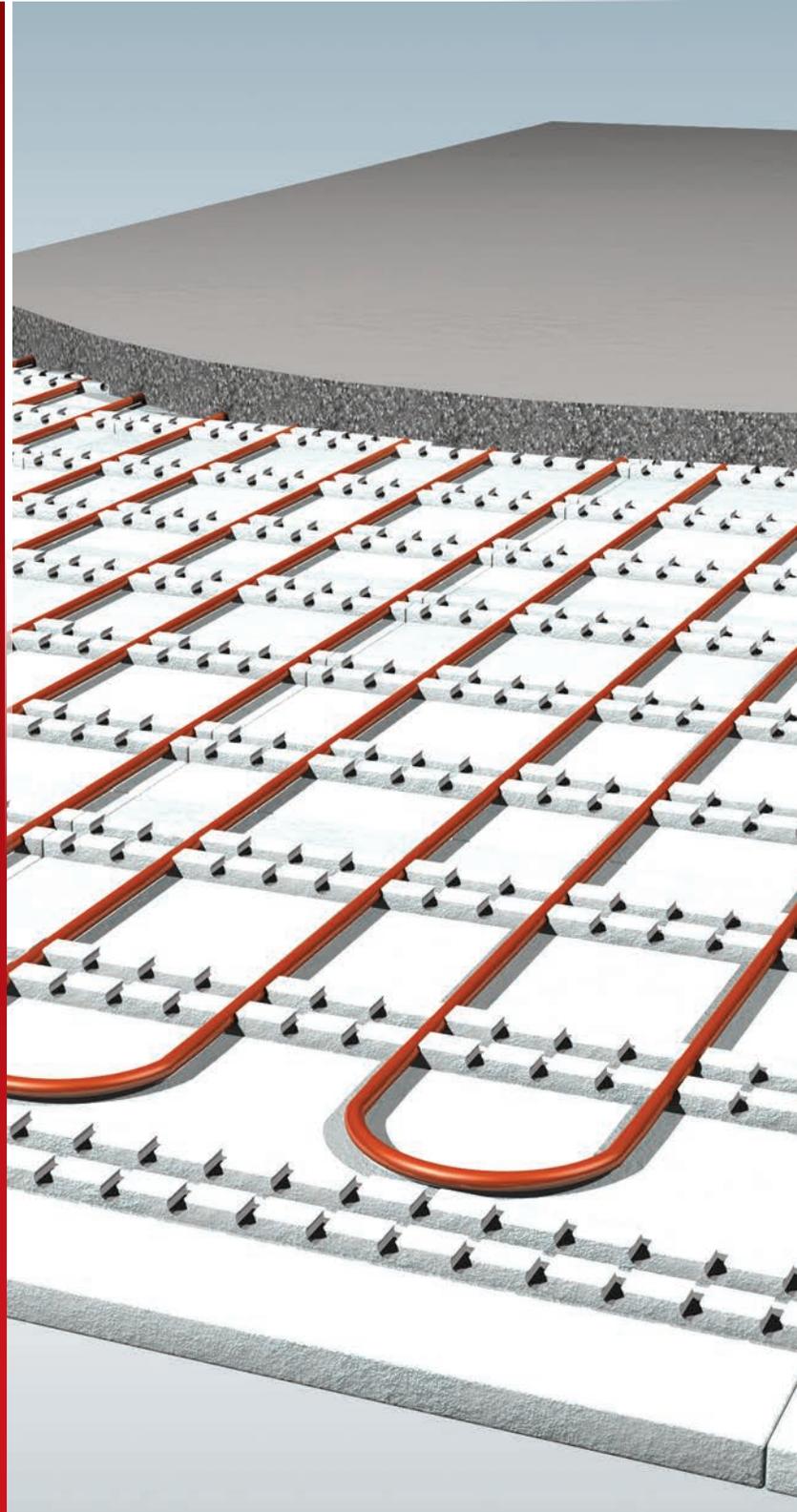
Hydronic Heating Insulation

INSULWORKS®™ is an insulation panel designed for hydronic heating applications. It's used in building and construction applications where there is a need to conserve energy, and reduce labor costs. INSULWORKS provides an efficient thermal barrier between the heated slab and the underlying ground. In preventing the ground from becoming a linked 'thermal flywheel' to the slab, INSULWORKS permits fast and accurate room temperature response to temperature controllers.

Using INSULWORKS reduces project costs by; reducing the installation time involved with the typical tube positioning method of tying it down to wire mesh, and thus, eliminating the additional cost of purchasing wire mesh. The tube is simply 'stepped' into the Insulworks panels, saving a great deal of backbreaking labor.

INSULWORKS is manufactured in a 4' x 4' (1220 mm²) panel in several thickness' for 1/2", 5/8" and 3/4 " I.D. tubing. R-Values range from R-6 to R-16.

INSULWORKS is produced from expanded polystyrene (EPS), an advanced 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.



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

Insulworks is manufactured to meet the intent of ASTM C578-95 and CAN/ULC S701-97 Type 2. Insulworks HS meets ASTM C578-14 Type XIV.

INSULWORKS PERFORMANCE CHART

PHYSICAL PROPERTY	UNITS IMPERIAL R VALUE	UNITS SI (METRICS)	ASTM TEST PROCEDURE	Insulworks		Insulworks HS	
				Imperial	Metric	Imperial	Metric
Thermal Resistance (min) (R-Value) at 75°F/24°C	hr. ft ² °F / BTU / 1 in.	hm ² °C / W / 25 mm	C-177-76 or C-518-76	4.04	0.70	4.3	0.75
Coefficient of Thermal expansion (max)	in / in / °F	m / m°C	D-696-79	3.5 x 10 ⁻⁵	6 x 10 ⁻⁵	2.7 x 10 ⁻⁵	4.9 x 10 ⁻⁵
Compressive strength (min) at 10% deformation	psi	kpa	D-1621-73	16	110	40	275
Capillary Action	---	---	---	none	none	none	none
Water vapor permanence (max)	perm/in	ng/Pa.s.m ⁻²	E 96-80	3.5	200	2.5	143
Water absorption % (max)	%	%	D 2842-69	3.0	3.0	1.0	1.0

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/SHIPPING WEIGHTS

Description	Insulation Thickness	Order Code for 1/2" ID Tube	Order Code for 3/4" ID Tube	Pieces /pack	Square Ft /Pack	Square M /Pack
INSULWORKS R6	1 1/2" (38mm)	55803	N/A	16	256	23.8
INSULWORKS R7.5	1 7/8" (48mm)	55806	55816	12	192	17.8
INSULWORKS R10	2 1/2" (64mm)	55805	55815	9	144	13.4
INSULWORKS R12	3" (76mm)	55808	55818	8	128	11.9
INSULWORKS R13.2	3 1/4" (83mm)	55832	55836	7	112	10.4
INSULWORKS R16.1	4" (102mm)	55841	55818	6	96	8.9



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