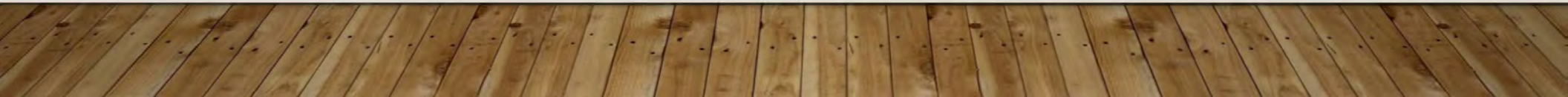


INSULAPACK INSULATION

INSULAPACK™ IS A DIVISION OF UTHANE RESEARCH LTD, AN INDUSTRIAL TECHNOLOGY, ORIENTED COMPANY ESTABLISHED IN 1976 IN TORONTO, ONTARIO, CANADA.

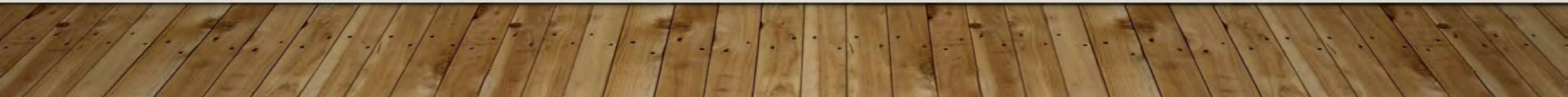
WHAT IS INSULAPACK

- Insulapack™ is a multi-layered, laminated plastic cellular material filled with insulating gas complete with a metallic reflective outer layer which provides a very high thermal resistance (R value) to insulate wall cavities, crawl spaces, ceilings, mechanical duct work and piping.
- The outer metallic foil layer of Insulapack™ ensures that the product will reduce 99.5% of radiant heat transfer and its plastic cellular construction makes the product impervious to humidity.
- The insulated gas within the plastic cells is inert, non-reactive and not flammable.
- The multi-laminated plastic cells will not leak and the material has been aged tested to perform effectively for a minimum of 20 years and up to 50 years.
- This material ensures extremely low water vapour permeance acting as a vapour barrier and will not corrode.
- Standard width, 48" & standard roll length from 20' to 100' (limited by thickness)



HOW DOES INSULAPACK™ DIFFER FROM OTHER INSULATION PRODUCTS.

- Generally, batt insulation products such as Glass Fiber, cellulose or mineral wool insulation have thermal conductivity R values of approximately R3.5 to R4.3 per inch. The effectiveness of Glass Fiber is due to its thickness. Glass Fiber is good at reducing convection & conduction heat but NOT radiant heat which makes up 75% of total heat lost. Foil insulation reflects heat therefore reduces radiant heat loss.
- Glass Fiber is made from recycled limestone & glass therefore causes lung damage if inhaled. Should not be installed in a humid environment as it is very susceptible to mold.
- Rigid board insulation such as polyurethane, polyisocyanurate, Styrofoam or polystyrene have a thermal conductivity R value of approximately R3.6 - R5 per inch.
- Spray foam insulation has a thermal R value of approximately R5 per inch which does not match Insulapack's effective R value of R10.6 per inch. Reports of health problems have been reported.



PROS OF INSULAPACK™

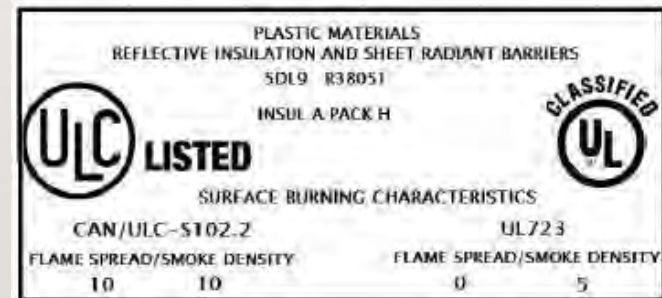
- Lightweight & strong
- Unaffected by humidity or “thermal bridging”
- Can combine with other insulation
- Resists humidity & moisture
- Does not lose effectiveness & maintains the same R-value over the entire time
- Easier and faster to install than other insulation products
- Completely safe – NO special equipment or safety clothing required.
- Certified by third party laboratory, UL & ULC for both Canada & USA for HVAC & Renovations.
- Provides its own vapour barrier
- Certified to beat flame spread and smoke requirements
- Helps keep energy costs down & can extend the life of air conditioners that are normally overworked in the summer months.
- Certified R-value R10.6 per inch
- Available in thicknesses from ¼’ to 4”
- Installation space remains clean & fibre and dust-free
- Samples and pricing available upon request.

FEATURES & BENEFITS OF INSULAPACK™

- Current aging tests are for an accelerated period to represent 50 years.
- Will prevent up to 99.5% of Radiant heat transfer.
- Bubbles are filled with Insulating Gas maintaining same R value over entire time installed.
- Elastic thereby keeps it's thickness over time. (Does not collapse)
- Water and Moisture Resistant. Does not adsorb/absorb moisture.
- Made with Recyclable Sustainable materials.
- Resistant to mold or mildew, and uninhabitable for nesting of rodents, birds or insects
- Safe and easy-to-use – no gloves, goggles, coveralls or masks required at installation.
- Does not lead to skin irritation.
- Easy clean surfaces
- HVAC foil insulation does not require spacers
- **Insulapack™** is patented in Canada, USA, and Europe
- Certified R-value R10.6 per inch
- Non-Toxic and no off gases.
- Samples and pricing available upon request.

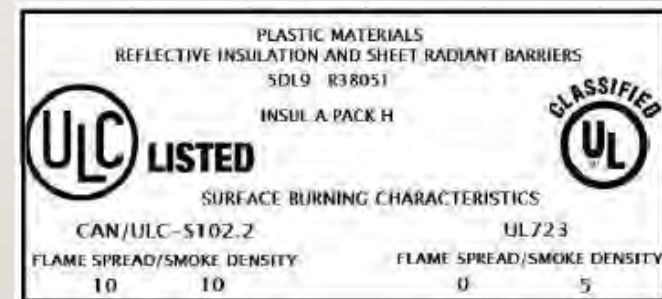
PHYSICAL PROPERTIES & UL & ULC TEST RESULTS

Test Method	Description	Results
CAN/ULC-S102.2	Standard Method of Test for Surface Burning Characteristics of Miscellaneous Materials and Assemblies Flame Spread Rating Smoke Developed Classification	Pass 10 10
ASTME84-13a (UL 723, UBC 8-1, NFPA 255)	Test for Surface Burning Characteristics of Building Materials Flame Spread Index Smoke Developed Index	Pass 5 25
ASTM C335	Standard test Method for Steady-State Heat Transfer Properties of Horizontal Pipe Insulation Thermal Resistance between Duct Surface and Surrounding Air Thermal Resistance between Duct Surface and Exterior Insulation Surface	8.8ft ² h°F/Btu (RSI=1.55m ² k/w) 7.5ft ² h°F/Btu (RSI=1.32m ² k/w)
ASTM C1371	Test Method for Determination of emittance of Materials near Room Temperature Using Portable emissimeters	IR Emittance:0.062 Standard Deviation 0.002



PHYSICAL PROPERTIES & UL & ULC TEST RESULTS

Test Method	Description	Results
ASTM E96	Standard test Methods for Water Vapor Transmission of Materials	31 (ng/Pa*s*m ²) 0.35 Perms (metric)
ASTM C1258	Standard Test for Elevated Temperature and Humidity Resistance to Vapor Retarders for Insulation	Pass
ASTM C411	Standard Test Method for Hot Surface Performance of High Temperature Thermal Insulation Operating Temperature Range	Pass -50°F to +180°F
ASTM E903	Standard Test for Solar Absorption, Reflectance and Transmission of Materials	0.096
ASTM C1338	Standard Method for Determining Fungi Resistance of Insulating Materials and Facings	Pass Does not promote growth
ASTM C518 Thermal Resistance	Thermal Transmission Measurement of Insulation Integrity Testing Laboratory Inc. (ISO 9001:2008 Company)	R10.6 RSI 1.9
Size of Product	Roll or Plank sheets 48" wide x 50' or 100' lengths Thickness ¼", ½", 1", 1.5", 2", 3"	





INSULAPACK™ CAN BE USED AS BUILDING CLADDING

PICTURE SHOWS A PART OF A 240-UNIT LOW-RISE BUILDING ENCASED IN INSULAPACK™
INSULATION PRIOR TO FINAL EXTERIOR COVERING BEING INSTALLED.

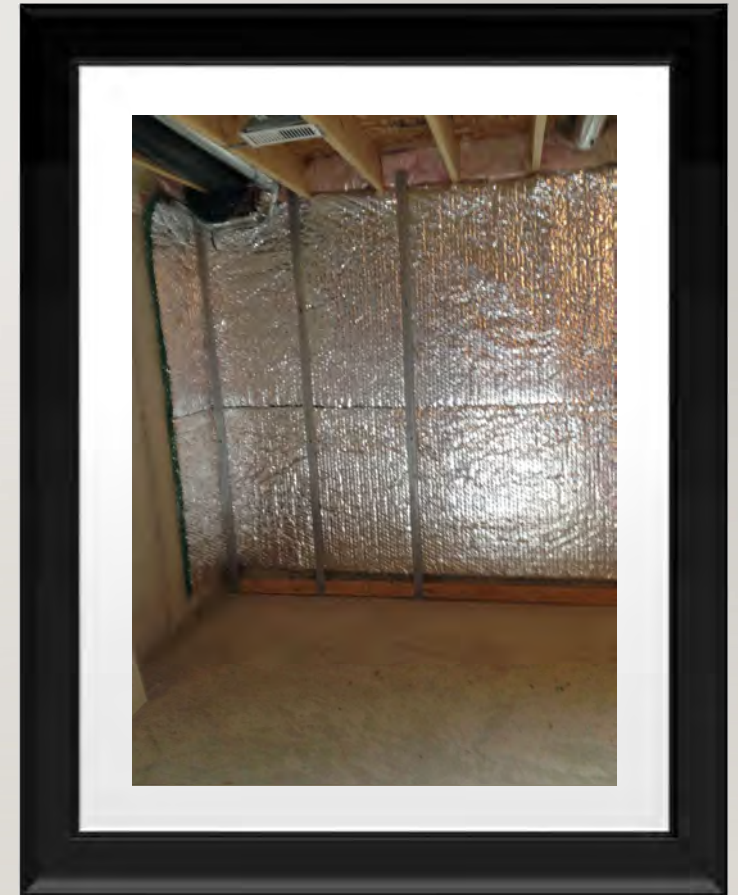
INSULAPACK™ CAN BE CUSTOM CUT TO FIT BATT DIMENSIONS

- Insulapack can be custom cut to fit non-standard spaces. Due to the superior insulation (R10.6 per inch) the frame thickness required is far less than any other insulation products. This narrower frame is a lot more cost effective. Easy installation reduces time therefore labour costs.



INSULAPACK™ CAN BE MOUNTED DIRECTLY ONTO THE INSIDE OF THE EXTERIOR WALL

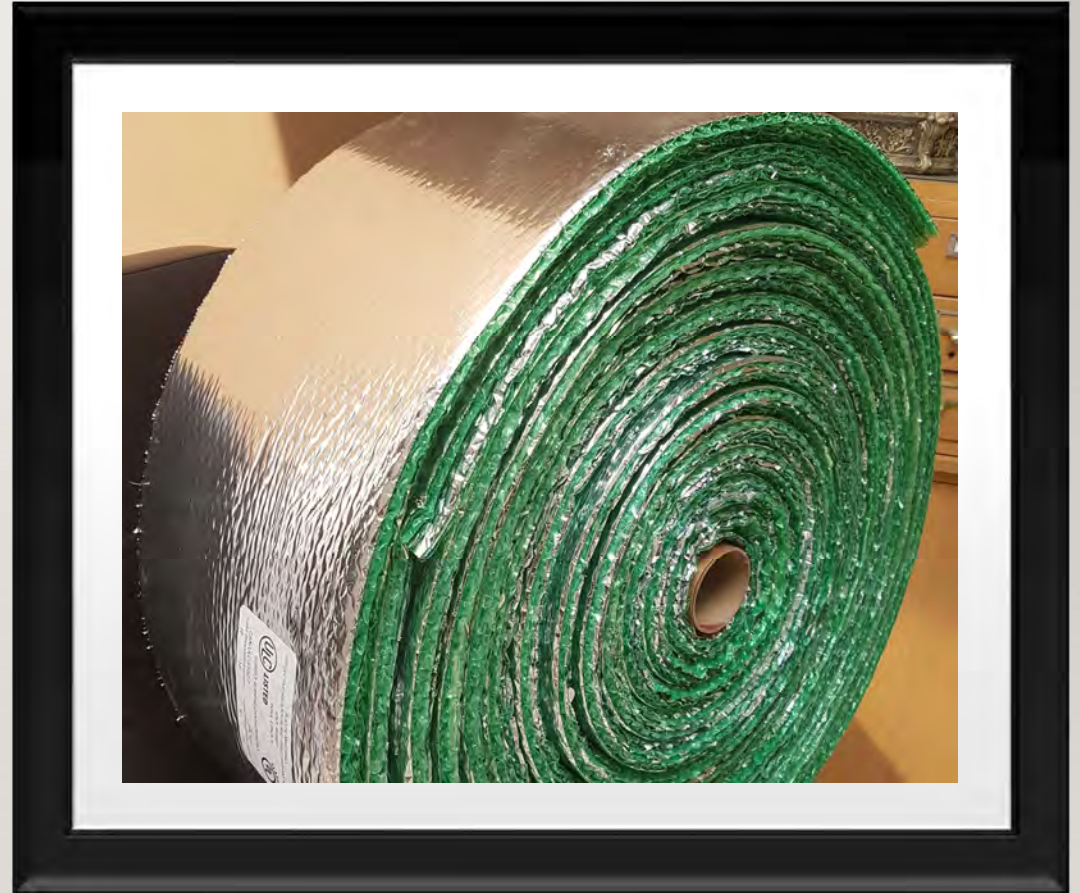
48" rolls being light weight easily attached to wall and with a small amount of spray glue and tape will remain in place until cover frame installed. Very quick process substantially reducing labour costs.



INSULAPACK™ IS SHIPPED IN ROLLS, LENGTH DEPENDANT ON THICKNESS

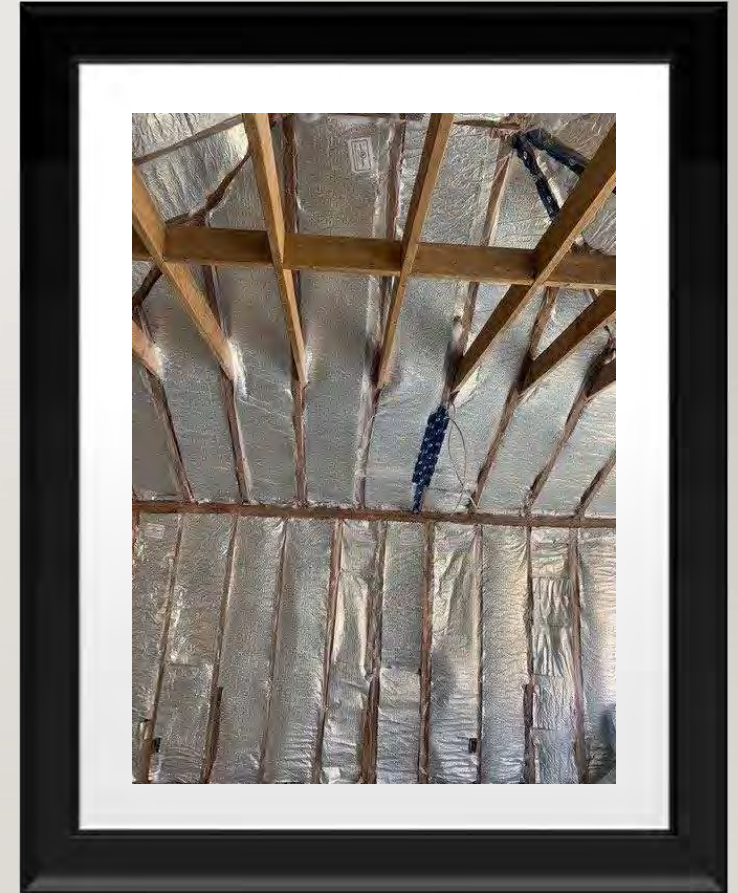
Insulapack thickness ranges from 1/4" to 4". Regular width 48" and the length ranges between 20' & 100' depending on thickness.

Custom sizes available



INSULAPACK™

Insulapack™ Can be cut to size and easily installed under the roof between the joists, using a bit of spray glue and tape. Being light weight, the Insulapack™ will remain in place during installation with very little effort.



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