DUCHESNE
BUILDING MATERIALS

HIGH PERFORMANCE

# REFLECTIVE INSULATION

THE POWER OF REFLECTION TO MAXIMIZE ENERGY SAVINGS

# The Power of Reflection

Duchesne's reflective insulation is made of high quality (over 99% pure) aluminum and one or two layers of air bubbles, trapped between two layers of polyethylene film.

## USING DUCHESNE'S REFLECTIVE INSULATION: A SENSIBLE CHOICE

- *It increases the comfort level of your home while reducing energy costs (heating & air conditioning)*
- *It contributes to increasing the R value*
- *It eliminates radon gas infiltrations (inert, odourless and colourless gas that emanates from the ground and may infiltrate buildings)*
- *It is an excellent vapour barrier*
- *It reduces the rate of flame spread*

## FEATURES:

- *Light and resistant*
- *Waterproof*
- *Resists mildew and moisture*
- *Easy to install*
- *Environmentally safe*
- *Multipurpose*

## MAIN USES:

**A Attic** **B Ceiling**
THERMAL VALUE
OF THE INSTALLATION: **R4 added**
RECOMMENDED PRODUCT: **DBA, DBW**

**C Wall** (interior wall)
THERMAL VALUE
OF THE INSTALLATION: **up to R7**
RECOMMENDED PRODUCT: **DBW, SBW, SBA and DBA**

**D Wall** (exterior wall)
THERMAL VALUE
OF THE INSTALLATION: **R5 added**
RECOMMENDED PRODUCT: **DBW, SBW, SBA and DBA**

**E Ventilation Ducts**
THERMAL VALUE
OF THE INSTALLATION: **up to R6**
RECOMMENDED PRODUCT: **DBA**

**F Piping**
REDUCES THERMAL LOSSES
RECOMMENDED PRODUCT: **DBA**

**G Radiant Floor**
THERMAL VALUE
OF THE INSTALLATION: **up to R12**
RECOMMENDED PRODUCT: **DBA, DBW**

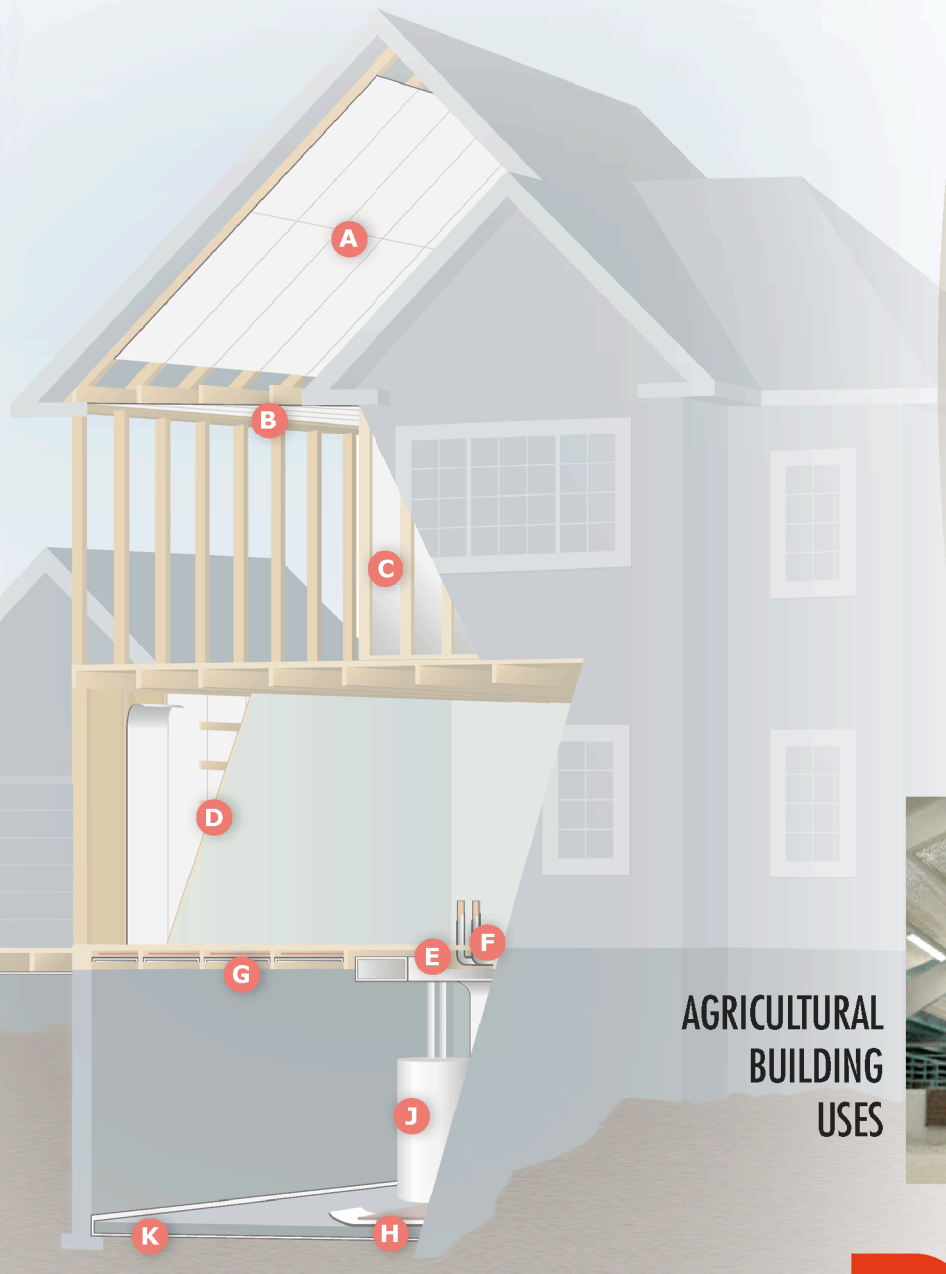
**H Basement Floor / Sub-Floor**
THERMAL VALUE
OF THE INSTALLATION: **up to R15**
RECOMMENDED PRODUCT: **DBW, SBW and DBA**

**I Crawl Space**
THERMAL VALUE
OF THE INSTALLATION: **up to R14**
RECOMMENDED PRODUCT: **DBA**

**J Water Heater**
THERMAL VALUE
OF THE INSTALLATION: **up to R6**
RECOMMENDED PRODUCT: **DBA, DBW**

**K Concrete Slab**
THERMAL VALUE
OF THE INSTALLATION: **up to R3**
RECOMMENDED PRODUCT: **SBW and DBW**

**L Garage Door**
THERMAL VALUE
OF THE INSTALLATION: **up to R5**
RECOMMENDED PRODUCT: **DBA, SBA**




## R VALUE

***R value*** **measures the thermal resistance of a material to heat transfer either by conduction or convection.**

**The higher the *R value*, the better the insulation.**

## IMPORTANT!

***R value*** **calculations do not take into account the reflectivity of Duchesne's reflective insulation. The reflectivity greatly helps reduce heat loss by radiation, which accounts for 75% of all heat loss in residential buildings.**

AGRICULTURAL BUILDING USES

## OTHER USES

*• commercial and agricultural buildings (warehouses, barns, poultry buildings) • wine cellars • cold storage • refrigerators • freezers • under pools • sidewalks • windows • radiator reflectors • groundsheet (camping), etc.*

DUCHESNE
BUILDING MATERIALS

***DBA*** *Double Bubble Aluminum*
***SBA*** *Single Bubble Aluminum*
***DBW*** *Double Bubble White*
***SBW*** *Single Bubble White*

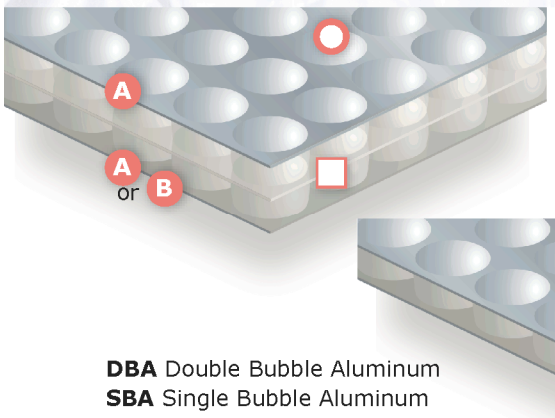
www.duchesne.ca

HIGH PERFORMANCE

# REFLECTIVE INSULATION

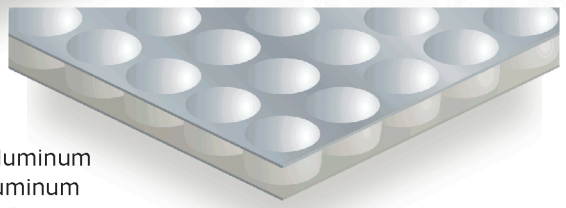
## WHAT IS IT MADE OF?

- **A ALUMINUM** – Provides excellent heat reflection
- **B WHITE POLYETHYLENE** – Increases resistance to abrasive materials (e.g. concrete)
- **CLEAR POLYETHYLENE** – Acts as a vapour and air barrier
- **AIR BUBBLES** – Provide thermal insulation




**DOUBLE BUBBLE**
DBA - DBW

**SINGLE BUBBLE**
SBA - SBW



**DBA** Double Bubble Aluminum
**SBA** Single Bubble Aluminum
**DBW** Double Bubble White
**SBW** Single Bubble White

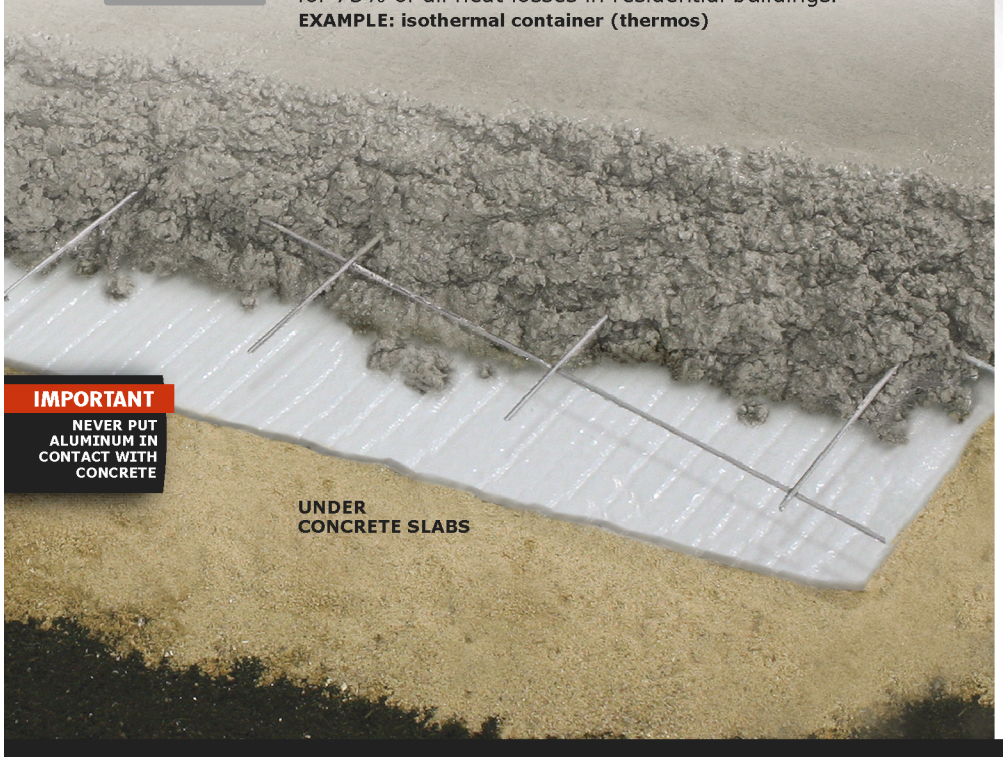
## Duchesne's reflective insulation contributes to breaking thermal transfers that are responsible for about 75% of all heat loss in residential buildings.

**Here are three types of thermal transfer:**

### CONDUCTION
Thermal transfer through a solid body or two conductive bodies that are in contact. Advantage of Duchesne reflective insulation: air bubbles reduce conduction.
**EXAMPLE: stove or oven**

### CONVECTION
Fluid movement *(e.g. air, water)* which under the influence of temperature variations will transport heat. Advantage of Duchesne reflective insulation: reduces the movement of air within structures.
**EXAMPLE: convection oven**

### RADIATION
Heat, under the form of electromagnetic waves, propagates from a high to a low temperature body. Advantage of Duchesne reflective insulation: contributes to reducing heat losses by radiation, which accounts for 75% of all heat losses in residential buildings.
**EXAMPLE: isothermal container (thermos)**




**UNDER CONCRETE SLABS**

# Easy and Safe Installation

## The only things you will require for installation are a utility knife, a tape measure, a stapler and especially your safety glasses.

**Here are some useful basic principles:**

- Before any renovation, one must remove the original vapour barrier before installing any reflective insulation. Furthermore, make sure that the surface you will insulate does not require any repairs.
- The R value increases when you leave an air space on the aluminum side. The air space should never be less than 16 mm (0.6 in.).
- Maintain perforations in your insulation to a minimum. If you have wiring to do, it is recommended to let the wires run in the air space, behind the reflective insulation, in order not to reduce the insulation's efficiency. Once the reflective insulation is installed, make sure that all the openings are well covered with the proper finishing tape.
- Apply the recommended finishing tape so that it adheres perfectly to the insulation.
- The application of a sealant bead is recommended around electrical boxes and power outlets in order to prevent air infiltration.
- We recommend the use of stainless steel staples for the installation of reflective insulation inside agricultural buildings.

**For each application, the installation instructions are provided on the back of the appropriate product label.**

**WATER HEATER COVERING**

**AROUND PIPING AND VENTILATION DUCTS**

**UNDER FLOORING**

## INSULATION PERFORMANCE **COMPARISON** CHART

| | DUCHESNE REFLECTIVE INSULATION | 152.4 mm (6 in.) thick FIBERGLASS | 101.6 mm (4 in.) thick CELLULOSE | 19.05 mm (3/4 in.) thick RIGID INSULATION |
|---|---|---|---|---|
| Reflectivity | **97%** | 5 to 10% | 5 to 10% | 5 to 10% |
| Emissivity | **.03** | .90 to .95 | .90 to .95 | .90 to .95 |
| Condensation and mildew | **NONE** | yes | yes | yes |
| Shrinkage / Compaction | **NONE** | yes | yes | yes |
| Health hazard | **NONE** | caution | none | none |
| Special clothes | **NONE** | required | required | - |
| Water contact damage | **NONE** | yes | yes | yes |
| Protection against radon | **YES** | NO | NO | NO |
| Reduces the rate of flame spread | **YES** | - | - | - |

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