

## Long Term Thermal Resistance (LTTR) What's the real R-value?



LTTR is a 15-year, time weighted average of thermal resistance, equivalent to a 5-year aged R-Value test at lab conditions. Rather than the actual 15-year aged R-Value, LTTR is a calculation based on the "Aging Process", which averages the R-Value over a given period of time.

Make sure that the estimate you receive is quoting the LTTR R-value. The initial R-value rating is being used by some contractors, resulting in cheap prices up front for clients and a sub-standard installation that at times becomes less than is required by Municipal Building Standards, let alone the impact on energy usage and comfort.

At KB Insulators, we always quote the LTTR R-value, which represents the true R-value of your insulation, not the often misrepresented Initial R-value.

If you have any questions about LTTR and how it applies to your spray foam installation, please feel free to contact us at KB Insulators by phone to (705) 740-7200 or by email to [info@kbinsulators.com](mailto:info@kbinsulators.com)

### Type 2 Spray Foam

Most Type 2 Spray Foams have an RSI value of 2.0. Most Type 1 Spray Foams have an RSI value of 1.8.

#### R-Value & RSI

$$\text{R-value} = \text{RSI} \times 5.678263337 \quad \text{RSI} = \text{R-value} \times 0.1761101838$$

#### Calculating the LTTR RSI-Value For Type 2 Spray Foam

$$(2.0 \text{ RSI} \times 5.678) / 2 \text{ inches} = \text{R-5.7 per Inch}$$

#### Determining Thickness for an LTTR value R-20 installation using Type 2 Spray Foam

$$\text{R-20} / 5.7 \text{ RSI} = 3.51 \text{ inches}$$

#### Determining Thickness for an Initial value R-20 installation using Type 2 Spray Foam\*

$$\text{R-20} / 6.6 \text{ RSI} = 3.0 \text{ inches}$$

\*FoamsulateECO has a published Initial RSI Value of 2.26 (R6.6)

#### A 3.51 inch installation of FoamsulateECO Spray Foam will result in:

**An Initial R-Value of:** **R-23** (3.51 inches X 6.6 RSI = R-23)

**An LTTR R-value of:** **R-20** (3.51 inches X 5.7 RSI = R-20)

#### Example of an ambiguous estimate

**"R-Value 20:** 3.0 inches Type 2 Spray Foam"

This will result in an LTTR R-value of 17 --> 3 inches X 5.7 RSI = R-17

For a true LTTR R-20 installation, you will require 3.51 inches of FoamsulateECO Type 2 Spray Foam.

## Determine the LTTR using the stated Thickness for Type 1 Spray Foam

#### Calculating LTTR R-value For Type 1 Spray Foam

$$(1.8 \text{ RSI} \times 5.678) / 2 \text{ inches} = \text{R-5.1 per Inch}$$

#### Determining Thickness for an LTTR value R-20 installation using Type 1 Spray Foam

$$\text{R-20} / 5.1 \text{ RSI} = 4 \text{ inches}$$