## Calculating R-Value
## AEROFLEX® EPDM Closed-Cell Elastomeric Foam Insulation

**WHY THERMAL INSULATION?**

Mechanical insulation effectively reduces heat exchange between a pipe, duct, or equipment and its environment. An insulation's thermal efficiency is measured by thermal conductivity (K-value). The lower the K-value, the more thermally efficient insulation is. For example, a K-value of 0.245 is preferable to .280.
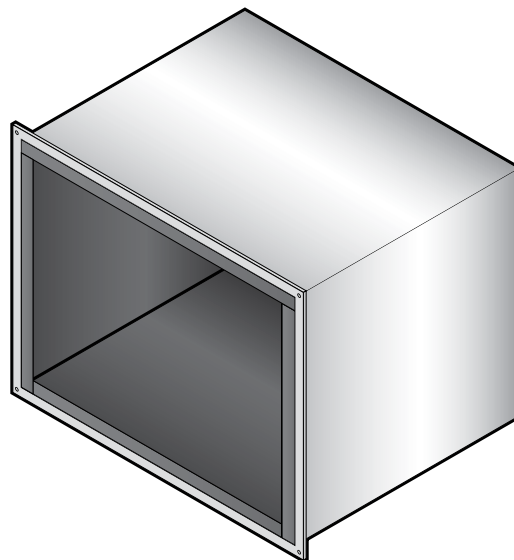
**WHAT IS R-VALUE?**

Thermal resistance to heat flow. The higher the number, the better. For example, an R-value of 8.2 is more thermally efficient than 7.1.

**HOW TO CALCULATE R-VALUE?**
**SHEETS / ROLLS (FLAT)**

**R = Thickness / K-value**
**R = 2.0" / 0.245**

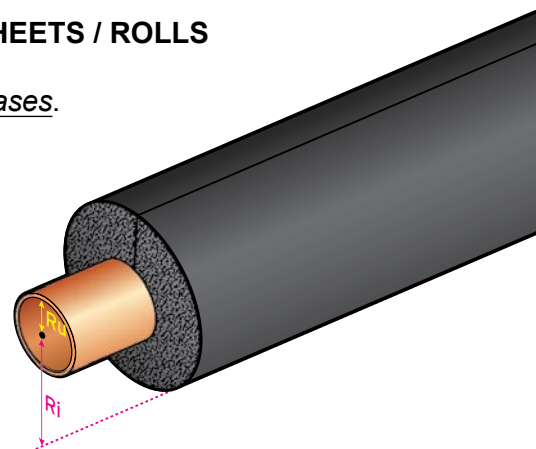$$\frac{\text{Thickness (2.0)}}{\text{K-value (0.245)}} = \text{R } 8.2$$

**TUBES (RADIAL) - TUBES ARE CALCULATED DIFFERENTLY THAN SHEETS / ROLLS**

Tip: R-value increases as insulation thickness _increases_ and pipe size _decreases_.
Example: 1-1/2" thick insulation will generate a higher R-value on a 7/8" pipe than 2-1/8" pipe.

**Ru = radius of uninsulated pipe**
**Ri = radius of insulated pipe**
**K = K-value**
**ln = natural logarithm**

$$R = Ri * \ln * (Ri / Ru) / K$$

**Note: Thermal conductivity (K-values) and R-values are listed on AEROFLEX® technical data sheets.**

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