



## Heating and Cooling

Heating and cooling commercial buildings is expensive. Products that contribute thermal resistance can help improve energy costs.

Products with Dow polyurethane backing technology demonstrate an R-value up to 65% greater than conventional carpet products.

## R-Value Assessment

### R-value assessment – Test Method ASTM C 518

Thermal resistance is measured with a heat flow meter. The higher the R-value, the greater the insulating properties. Typical ratings as measured by an independent test lab include:

Carpet with conventional backing (26 oz)	0.51 R-value
Carpet with ENHANCER™ Technology (26 oz)	0.84 R-value
Modular carpet with ENHANCER Technology (24 oz)	0.95 R-value

Thermal resistance can also be expressed as an R-per-inch value, or the R-value of a one-inch thickness of material. By converting the above R-values to R-per-inch equivalents, the insulating ability of carpet products can be compared to that of other common building products:

Concrete	0.10 R-per-inch
Plywood	1.25 R-per-inch
Carpet with conventional backing (26 oz)	1.89 R-per-inch
Carpet with ENHANCER Technology (26 oz)	2.11 R-per-inch
Modular carpet with ENHANCER Technology (24 oz)	2.31 R-per-inch
Fiberglass insulation	3.20 R-per-inch

Note: In general, testing has shown that R-value is influenced more by pile height and underlayment thickness than by fiber or yarn type. The presence of a cushioned backing serves to increase insulating properties.

## Radiant Floor Heating

Radiant floor heating is a method of heating a space by using heated water circulated through tubes imbedded in the subfloor. According to the Carpet and Rug Institute in *CRI104, Standard for Installation of Commercial Textile Floorcovering Materials*, commercial carpet products installed over cushion are compatible with radiant floor heating systems.

Although carpet made using Dow polyurethane backing technology has a greater R-value than conventional broadloom installed without cushion, the Radiant Panel Association, in a letter, has commented: "The R-value of [carpet products with] these backings is well within...the acceptable limits for most radiant heating systems."

Note: Subflooring with radiant floor heating requires the same preparation, techniques, and adhesive application as conventional subflooring. However, heat must be lowered before installation to prevent adhesive from setting too quickly.

Note: For copies of CRI 104, contact the Carpet and Rug Institute, Publications Dept., P.O. Box 2048, Dalton, GA 30722-2048, 706-278-0232.

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