TUFF-R™ Commercial and Super TUFF-R™ Commercial Insulation

1. PRODUCT NAME
TUFF-R™ Commercial and Super TUFF-R™ Commercial Insulation

2. MANUFACTURER
The Dow Chemical Company
Dow Building Solutions
200 Larkin Midland, MI 48674
1-866-583-BLUE (2583)
Fax 1-989-832-1465
www.dowbuildingsolutions.com

3. PRODUCT DESCRIPTION
TUFF-R™ Commercial and Super TUFF-R™ Commercial polyisocyanurate insulation products consist of a patented, high-insulating-value, closed-cell polyisocyanurate foam core sandwiched between a choice of durable, exterior facers.

TUFF-R™ Commercial insulation has reflective foil facers on both sides of the board. When additional durability is required, Super TUFF-R™ Commercial insulation is the product of choice. The Super TUFF-R™ facers are composed of a reinforced, coated three-ply polymer/foil facer on one side. The other side is an equally reinforced polymer/foil super Tri-Plex non-reflective facer. The three-ply facers of Super TUFF-R™ improve shipping, storage and job site durability.

TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation products offer high, long-term R-value*. The facers reduce intrusion by water and water vapor into the foam insulation core, and allow the foam R-value to stabilize at a higher value. TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation can be detailed as an air barrier.

Basic Use
TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation products can be used in commercial interior wall construction behind a minimum 1/2” gypsum board or equivalent thermal barrier interior finish.

Sizes
Product thicknesses and R-values are shown in Table 1. Not all products are available in all parts of the country. Other product sizes are available by custom order. Consult a Dow representative for board sizes and additional thickness information.

4. TECHNICAL DATA

Table 1: Sizes and R-Values for TUFF-R™ Commercial and Super TUFF-R™ Commercial Insulation

<table>
<thead>
<tr>
<th>Nominal Board Thickness (in.)</th>
<th>R-Value</th>
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<tbody>
<tr>
<td></td>
<td>TUFF-R™</td>
</tr>
<tr>
<td>1.0</td>
<td>6.5</td>
</tr>
<tr>
<td>1.5</td>
<td>9.8</td>
</tr>
<tr>
<td>1.75</td>
<td>N/A</td>
</tr>
<tr>
<td>2.0</td>
<td>13.0</td>
</tr>
</tbody>
</table>

(1) Not all product sizes are available in all regions.
(2) R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft²•h•°F/Btu. R-value determined by ASTM C518.

Applicable Standards

Physical Properties
TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation products exhibit physical properties as indicated in Table 2 when tested as represented.

Environmental Data
TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation products are manufactured with hydrocarbon blowing agents, which have no ozone depletion potential.
Fire Protection
TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation products are combustible; protect from high heat sources. Local building codes may require a protective or thermal barrier. CAUTION: This product is combustible and shall only be used as specified by the local building code with respect to flame spread classification and to the use of a suitable thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400.

Code Compliances
TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation products comply with the following standards and codes:
- 2009 IRC – International Oneand Two-Family Dwelling Code, Section 316; 2009 International Building Code, Section 2603
- ICC-ES ESR 3089

5. INSTALLATION
TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation boards are easy to handle, cut and install. They can be cut with a utility knife or any sharp blade. Contact a local Dow representative or access the literature library at www.dowbuildingsolutions.com for more specific instructions.

6. AVAILABILITY
TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation products are distributed through an extensive network. For more information, contact your local Dow representative or call 1-800-232-2436.

7. WARRANTY
A 15-year limited thermal warranty is available. Ask your Dow representative for details.

8. MAINTENANCE
Not applicable.

9. TECHNICAL SERVICES
Dow can provide technical information to help address questions when using TUFF-R™ Commercial and Super TUFF-R™ Commercial insulation products. Technical personnel are available to assist with any insulation project. For technical assistance, call: 1-866-583-BLUE (2583)

10. FILING SYSTEMS
www.dowbuildingsolutions.com
www.sweets.com

TABLE 2: Physical Properties of TUFF-R™ Commercial and Super TUFF-R™ Commercial Insulation

<table>
<thead>
<tr>
<th>Property and Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Strength, ASTM D1621, psi, min.</td>
<td>25</td>
</tr>
<tr>
<td>Water Absorption, ASTM C272, % by volume, core foam, max.</td>
<td>0.1</td>
</tr>
<tr>
<td>Water Vapor Permeance, ASTM E96, perm</td>
<td>&lt;0.03</td>
</tr>
<tr>
<td>Maximum Use Temperature, °F</td>
<td>190</td>
</tr>
<tr>
<td>Flexural Strength for 1” core foam, ASTM C203, psi, min.</td>
<td>40</td>
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