

RICHARDS-WILCOX CANADA
(LEED) Leadership in Energy & Environmental Design
POTENTIAL APPLICABLE POINTS

THERMATITE DOOR SYSTEM

This fact sheet provided an overview of the method Richards-Wilcox uses to produce Thermatite polyurethane insulated sandwich sections and describes the recycled content, efficiencies and occupant's comfort by using Thermatite sections.

The sections are generally produced by the following two methods:

a) Batch system

In this system, precut lengths of sheets are positioned between fixed platens that are held tightly in a press. The foam injection time is calculated in accordance to the volume of the cavities and the foam is injected manually from one end of the section. This method produces inferior quality section because of poor ventilation that can trap air in the section and can prevent foam from filling the full cavity. Also, quality of foam is inconsistent because different size section requires different curing time, thus some sections are removed from the press while the foam is not fully cured, this results in poor adhesion and inconsistent foam quality. In case of over shooting (too much foam), the extra foam escapes from the vent hole causing unnecessary waste and pollution. Also, many manufacturers use old type of foam that releases CFC and hydrocarbons in the atmosphere.

b) Continuous process at **Richards-Wilcox**

In this system, two continuous rolled-formed sheets are fed between two moving belt type continuous platens that exert constant pressure and maintain uniform temperature and thickness. The computer-regulated machine dispenses precise amount of foam across the full width of the section at a preprogrammed rate. Also, the speed and the temperature are controlled to ensure that the foam density is consistent and that the foam is cured for handling when it reaches the press end. This phenomenon is recorded with camera, which is constantly monitored. Also, each section is inspected and is printed with batch and date code for quality and traceability. The system is fine tuned to ensure cavity free section, higher thermal resistance and best adhesion, this results in exceptionally strong section that can resist higher wind loads. The sections are cut to the required length by an automatic computer controlled saw thereby eliminating any wastage. Richards-Wilcox uses Neufoam™ technology that is formaldehyde, CFC and HCFC free.

(EA-1) ENERGY & ATMOSPHERE (1- 10 points)

(EA -1) Energy Performance

Richards-Wilcox Thermatite section incorporates thermal break and offers the highest R-value in its class. The horizontal joints between the sections feature two continuous flexible seals that seal against the other section, the perimeter of the door can be weather-stripped with a variety of seals available to suit the site conditions, this combination offers weather resistant installation that results in comfort and energy savings. Exceptionally strong yet lighter sections qualify these doors for higher wind loads and/or larger openings.

(MR) MATERIALS & RESOURCES

(MR- 2.1 & 2.2) Waste Management (1- 2 points)

Richards-Wilcox, Thermatite commercial door sections are shipped in bulk (on skids) on covered flat bed trucks. Large pieces of hardware are shipped on skids and the smaller components are shipped in cardboard boxes made from post consumer materials.

(MR- 4.1 & 4.2) Recycled Content (1- 2 points)

Average recycled content of steel at the mill is 89.7%, of which:

post-consumer	50.6%
pre-consumer	33.3%
home scrap	5.8%

Composition by weight:

Steel:	88.2 %
Foam:	9.4 %
Miscellaneous:	2.4 %

(MR- 5.1 & 5.2) Regional Material (1- 2 points)

Steel:

Steel used to manufacture the Thermatite sections and hardware is directly procured from a steel mill that is located less than 60 km from the factory.

Foam:

Resin used for foaming is transported by truck from a manufacturer located less than 600 km from our factory.

Isocyanate used for foaming is transported by rail from a manufacturer located less than 2400 km from our factory.

(MR- 8) Durable Building (1 point)

Thermatite door innovative design using Neufoam™ technology and modern manufacturing facility allows us to manufacture best quality doors.

In fact the Thermatite commercial door assemblies were tested by an independent engineering company to 100,000 cycles

(EQ) INDOOR ENVIRONMENTAL QUALITY

(EQ- 4.1) Low-Emitting Materials: Adhesives & Sealants (1 point)

The Thermatite door sections are fully cured before leaving the factory. These sections do not emit any contaminants that are odorous, potentially irritating and/or harmful to the comfort and well being of installers and occupants.

The Neufoam™ foam system is free of FORMALDEHYDE, CFC, HCFC.

(EQ- 4.2) Low-Emitting Materials: Paints & Coating (1 point)

The sheet metal used for the manufacturing of the Thermatite sections are prepainted at the steel mill and the coatings are fully cured before leaving the steel mill, no VOC are emitted thereafter.

(EQ- 7.1) Thermal Comfort (1 point)

Thermatite sections incorporates thermal break that improves its thermal resistance value, combined with the sealing system it can provide comfortable environment that helps improve productivity and well being of building occupants. Also, a thermally insulated door system can help reduce the energy requirements and offers better environmental control inside the building.

(ID-1) INNOVATION AND DESIGN PROCESS (1- 4 points)

Thermatite insulated sections are manufactured on a continuous process using the latest Neufam™ technology that is environmentally friendly and zero-ozone depleting. The foaming process renders cavities free panel with higher thermal resistance value as well as provide superior foam steel adhesion and exceptional structural integrity. Sections feature thermal break, incorporates dual replaceable seals between sections and available perimeter seal to provide weather resistant installation.

Innovative linear design face hardware with built-in embossments is designed to resist higher load and to provide greater stability that results exceptional performance and qualifies the door system for larger size and higher wind load applications. Bolted type, field adjustable vertical track system ensures weather resistant seal and serviceability.

Better, Green Buildings

The American Institute of Architects based in the United States has been actively encouraging its architect members to adopt energy efficient building design practices. In response to this the United States Green Building council has created LEED (Leadership in Energy & Environmental Design). This program was developed by the U.S. Green Building Council for the U.S. Department of Energy and is a rating system to assess the architectural design and performance features of a commercial building for "green and sustainable" attributes. Richards-Wilcox Canada Thermatite doors can be credited under this program for the recycled contents, efficiencies, occupant's comfort and innovative design.

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