



DASMA
Door & Access Systems
Manufacturers Association
International

COMMERCIAL & RESIDENTIAL GARAGE DOOR DIVISION

TECHNICAL DATA SHEET

#159

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Garage Doors and Foam Plastics – Canadian Applications

Introduction

The use of foam plastic materials in sectional garage doors throughout Canada has become a choice among many manufacturers because of its insulation value, and in some cases its contribution to the strength of a garage door section. Common types of foam plastics used in garage doors include expanded polystyrene (EPS), polyurethane and polyurethane/isocyanurate. Foam may be purchased in sheets or blocks and attached as a non-structural material, or it may be bonded to facings to form insulated, structural “sandwich” panels. Foam may also be “foamed-in-place” and used as an adhesive between the facings to create an insulated, structural panel.

Canadian Model Building Codes, Foam Plastics, and Garage Doors

Foam Plastics

The predominant Canadian model building code, the National Building Code of Canada (NBCC), requires that the foam plastic itself meet certain ratings. These ratings are to measure the relative flame spread and smoke development based on testing in accordance with CAN4-S102. The ratings determined for a specific product are based on a comparison to the performance of known products such as cement board and wood of a certain set of parameters. The code states that the flame spread index should not exceed 200 (2005 NBCC Sections 3.1.13.2 and 9.10.17.1) and the smoke development index should not exceed 300 (2005 NBCC Table 3.1.13.7.)

Covering Foam Plastics

When foam plastic is used in a garage door, the vertical orientation of the material (when the door is in the closed position) as well as the end use and application of the door itself may result in additional or alternate requirements. The concern for most applications is the covering of the foamed plastic with a lesser flammable material to minimize the foam’s contribution to a fire. These requirements center on either the covering of the foam plastic with various materials of minimum thicknesses and known performances (known as “thermal barriers”), or performance-based “room corner burn” testing in accordance with an established standard.

Note: Technical Data Sheets are information tools only and should not be used as substitutes for instructions from individual manufacturers. Always consult with individual manufacturers for specific recommendations for their products and check the applicable local regulations.

This Technical Data Sheet was prepared by the members of DASMA's Commercial & Residential Garage Door Division Technical Committee. DASMA is a trade association comprising manufacturers of rolling doors, fire doors, grilles, counter shutters, sheet doors, and related products; upward-acting residential and commercial garage doors; operating devices for garage doors and gates, sensing devices, and electronic remote controls for garage doors and gate operators; as well as companies that manufacture or supply either raw materials or significant components used in the manufacture and installation of the Active Members' products.

A Canadian document designated as ULC/ORD-C263.7 and entitled *Room Fire Test Method for Garage Doors Using Foamed Plastic Insulation* addresses covering foamed plastic insulation in lieu of testing. The document states that either of two methods are acceptable: 1) when the foamed plastic is covered with a minimum .015" steel, or 2) when foamed plastic has a flame spread rating of 200 or less where the insulation is covered on the interior with metallic foil, the flame spread rating of the door assembly itself is less than 200 and no air spaces are incorporated within the door assembly. It is expected that there will be efforts made to incorporate into the NBCC the prescriptive requirements.

By comparison, U.S. model building codes exempt garage doors used in conjunction with one and two family dwellings from the thermal barrier requirement. For other applications, those codes state that the thermal barrier requirement can be satisfied with covering the foam plastic with a minimum 1/8" wood, .010" steel, or .032" aluminum.

“Alternate Materials and Methods”

Other garage door constructions using foam plastics and/or thermal barriers that do not meet minimum code requirements can be presented as in compliance by meeting the requirements of testing the complete garage door assembly to ULC/ORD-C263.7. This standard includes a description of the test method, performance data to be obtained, and the acceptance criteria to use in evaluating the performance data. It is expected that there will be efforts made to incorporate into the NBCC the ULC/ORD document. Approvals based on the “alternate materials and methods” section of the code are at the discretion of the local building official. Evaluation Reports based on ULC/ORD-C263.7, based on testing at independent test facilities, are a common means for manufacturers to convey information for approvals based on “alternate materials and methods.”

ULC/ORD-C263.7 versus ANSI/DASMA 107

There are additional differences between the Canadian standard ULC/ORD-C263.7 and the American National Standard ANSI/DASMA 107. Items in the ULC/ORD document that are not in the ANSI/DASMA document include the use of “paper targets” as fire ignition indicators, the requirement of a secondary ignition burner, and the requirement of the use of inorganic reinforced cement board. The ANSI/DASMA document requires the use of either calcium silicate board or gypsum wallboard.

Important Note

Sectional garage doors are not intended for installation in a fire rated wall. There are other products, such as rolling steel fire doors, manufactured for this purpose.

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