COMMERCIAL & RESIDENTIAL GARAGE DOOR DIVISION
DASMA TECHNICAL DATA SHEET
#159

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Garage Doors and Foam Plastics: Fire Protection – 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), extruded polystyrene (XPS), 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. The use of foam plastic creates fire protection concerns, due to the high flammability of some foam products. This TDS explains how those concerns are addressed in Canadian building codes.

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 developed based on testing in accordance with CAN/ULC-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 rating should not exceed 200 and the smoke developed classification should not exceed 300.[1]

Covering Foam Plastics

When foam plastic is used in a garage door, the foam plastic is typically covered with a less flammable material to minimize the foam's contribution to a fire. The NBCC contains no prescriptive requirements on the material type or thickness of such coverings.

By comparison, U.S. model building codes require that foam plastic in garage doors be covered with minimum 1/8" wood, .010" steel, or .032" aluminum, or else pass a test to ANSI/DASMA 107, *Room Fire Test Standard for Garage Doors Using Foam Plastic Insulation*[2]. Garage doors used in conjunction with one- and two-family dwellings are exempt from these requirements.

A Canadian document designated as ULC/ORD-C263.7 and entitled *Room Fire Test Method for Garage Doors Using Foamed Plastic Insulation* addresses the covering and the testing of foam plastic in garage doors. This document is not currently code referenced but may potentially form the basis of a Canadian equivalent to ANSI/DASMA 107 and the prescriptive requirements of the U.S. model building codes.

IMPORTANT NOTES

(1) 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.
(2) Foam plastic in garage doors is not addressed in either the International Wildland Urban Interface Code or in Chapter 7A ("Exterior Wildfire Exposure") of the California Building Code. See DASMA TDS 186.
(3) See DASMA TDS 157 for U.S. applications.

[1] Sources of information:
2020 NBCC Sections 3.1.13.2.2) and 9.10.17.1.2)
2020 NBCC Table 3.1.13.7 (applies for high buildings only). Lower flame spread limits apply for buildings used for the production and viewing of the performing arts (Table 3.1.13.2).

[2] Sources of information:
2012/2015/2018/2021 International Building Code, Section 2604.1.9
2012/2015/2018/2021 International Residential Code, Section R316.5.6