



DASMA
Door & Access Systems
Manufacturers Association
International

COMMERCIAL & RESIDENTIAL GARAGE DOOR DIVISION

TECHNICAL DATA SHEET

#157

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Garage Doors and Foam Plastics

Introduction

The use of foam plastic materials in sectional garage doors 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.

U.S. Model Building Codes, Foam Plastics, and Garage Doors

Foam Plastics¹

U.S. model building codes require 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 ASTM-E84. 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 codes all concur that the flame spread index should not exceed 75 and the smoke development index should not exceed 450.

Covering Foam Plastics²

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. U.S. model

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.

building codes exempt garage doors used in conjunction with one and two family dwellings from the thermal barrier requirement. For other applications 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”³

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 ANSI/DASMA 107, *Room Fire Test Standard for Garage Doors Using Foam Plastic Insulation*. 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. ANSI/DASMA 107 has been accepted by U.S. Model Building Codes for thermal barrier evaluation. 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 ANSI/DASMA 107, based on testing at independent test facilities, are a common means for manufacturers to convey information for approvals based on “alternate materials and methods.”

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.

¹ Sources of information:

2012/2015/2018 International Building Code, Section 2603.3;
2012/2015/2018 International Residential Code, Section R316.3

² Sources of information:

2012/2015/2018 International Building Code, Section 2604.1.9;
2012/2015/2018 International Residential Code, Section R316.5.6

³ Sources of information:

2012/2015/2018 International Building Code, Section 104.11;
2012/2015/2018 International Residential Code, Section R104.11

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