

2006  
APPROVAL GUIDE

CHAPTER 6  
**BUILDING INSULATIONS**

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Insulating materials may occur in building construction to reduce heat or sound transmission through a wall, roof or floor-ceiling assembly. See DESCRIPTIONS OF ROOFING PRODUCTS Chapter, INSULATIONS FOR ROOF CONSTRUCTION, for roof insulations.

The insulation listed below may be a surface treatment exposed to the building occupancy or as core material faced with metal, gypsum wallboard, concrete or masonry.

The listed assemblies are not intended as long-term fire walls or barriers since fire endurance was not evaluated. See SPECIFICATION TESTED PRODUCTS Chapter, Fire Resistant Constructions, for hourly rated systems.

**FM Approvals Standard 4880 (1994) Wall-Ceiling/Roof Constructions**

Combustible insulations, bonding agents, facing and finish materials contained in walls, ceilings and roof assemblies may exhibit self-propagating fire spreading tendencies when combustible vapors are emitted upon heating and rated Class II requiring sprinkler protection. The quantity of combustible vapors and the maximum rate of heat released by the assembly, in combination with sufficient oxygen and a positive heat balance, will start the self-propagating process.

The following assemblies have been evaluated using FM Approvals Standard 4880 (1994). The Class 1 systems exhibited limited fire spread and fuel contribution and may not require special protection such as sprinklers, when the building walls do not exceed the listed height. Class 2 systems do require automatic sprinkler protection as indicated.

The FM Approved assemblies are not intended as loadbearing or long-term fire barriers, since fire endurance was not evaluated. (See SPECIFICATION TESTED PRODUCTS Chapter, Fire Resistant Constructions, for hourly rated systems.) If building use, occupancy or furnishings are combustible and expected to sustain a prolonged fire beyond 15 minutes, automatic sprinklers should be installed to control the ignition source.

Materials and method of installation are described as they were tested and must be maintained to insure the same fire performance. In cases where the structural framing supporting metal clad insulated panels is on the interior side of the panels, the intent of the listed fastening requirements may be met if the panels are secured to interior framing 1) with clips that in effect fasten the interior panel facer directly to the framing or 2) by fastening through the framing directly into the interior panel facer. Smoke and other products of combustion were not evaluated for toxicity.

This section describes each type of construction. The individual characteristics of each manufacturer's assembly follow the manufacturer's name and address.

**Wall-Ceiling Construction**

**FM Approvals Standard 4880 (1994)**

**Metal-faced — Class 1 Fire Rated to max 30 ft (9.1 m) High**

**The Dow Chemical Co, 200 Larkin Center, 1605 Joseph Drive, Midland MI 48674**

Thermax (TF610) Insulation Board, Plain Factory Finish (Thermax Sheathing), Thermax (TF600S) Insulation Board, Satin Finish **White Finish** or Ag-Therm, Thermax (TF600MB) Metal Building Board, Thermax (TF600) Insulation Board, Embossed Finish or Light Duty (LD), Thermax (TF604) Insulation Board, Heavy Duty Embossed Finish or Heavy Duty (HD), Thermax (TF665) Plus Liner Board or Heavy Duty Plus (HDP) and Thermax (TF610C) Insulation Board, Cavity Wall Insulation. Max 4.25 in. (108 mm) thick by max 4 ft. (1.2 m) wide max 2.1 lb/ft<sup>3</sup> (34 kg/m<sup>3</sup>) density glass fiber reinforced isocyanurate foam core with min 0.0009 in. (0.02 mm) thick aluminum foil skins. Butt side and end joints (no sealant or gasket). Panels secured to wood girts or purlins with min 15 roofing nails (min 1 in. [25 mm] longer than panel thickness) with min 7/16 in. (11 mm) dia. heads or equivalent per 4 by 8 ft (1.2 by 2.4 m) panel; 5 nails per 4 ft (1.2 m) edge and 5 nails parallel to the 4 ft (1.2 m) edges at the panel midpoint. Max 4 ft (1.2 m) girt and purlin spacing.