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Legacy report on the BOCA® National Building Code/1999, the 1998 International Mechanical Code® and the 1999 Supplement to the International Mechanical Code

DIVISION: 15—MECHANICAL

Section: 15810—Ducts

EVALUATION SUBJECT:

THERMO-PAN® PANELS

MANUFACTURER:

THERMO MANUFACTURING, INC.
3709 COLUMBUS ROAD N.E.
CANTON, OH 44705

EVALUATION SCOPE

Compliance with the following codes:

BOCA® *National Mechanical Code/1999*

- Section 2807.4 Stud cavity and joist space plenums

1998 *International Mechanical Code®* and the 1999 *Supplement to the International Mechanical Code*

- Section 602.3 Stud and joist spaces

DESCRIPTION

The Thermo-Pan® Panels by Thermo Manufacturing, Inc., are aluminum-clad sandwich panels that are used to enclose the bottom portion of return air plenums that are constructed between the stud cavities and joist spaces in wood frame construction. The Thermo-Pan® assembly is intended for use in Use Groups R-1, R-2, R-3 and I-1 occupancies of Type 3B and 5B construction. The panels are manufactured in sizes of 16 inches by 47 1/2 inches (406 mm by 1207 mm), 19 1/2 inches by 47 1/2 inches (495 mm by 1207 mm), 22 inches by 47 1/2 inches (559 mm by 1207 mm), 24 inches by 47 1/2 inches (610 mm by 1207 mm), and 32 inches by 35.5 inches (813 mm by 902 mm). The Thermo-Pan® Panels are constructed of aluminum foil facing with a thickness of 0.00025 inch (0.00635 mm), adhered to a fiberboard core consisting of type-B flute, corrugated cardboard. The Thermo-Pan® Panels are fastened to the wood joist with 3/8 inch (9.5 mm) staples or roofing nails. The joints formed between return air ducts or adjacent Thermo-Pan® panels are sealed with 2-inch-wide (51 mm) aluminum tape or polypropylene Thermo-Connectors™. Refer to Figure 1 of this report for an illustration of the installed Thermo-Pan® assembly.

CONDITIONS OF USE

This report is limited to the applications and products as stated in this report. The ICC-ES Subcommittee on National Codes intends that the report be used by the code official to determine that the report subject complies with the code requirements specifically addressed, provided that this product is installed in accordance with the following conditions:

- The Thermo-Pan® Panels shall not convey air from more than one floor level via a continuous stud cavity.
- The Thermo-Pan® Panels shall not be used in fire-resistance-rated assemblies.
- Installation of the panels is limited to the floors of buildings that are of Type 3B and 5B construction and classified as a Use Group R-1, R-2, R-3 or I-1 occupancy.
- The Thermo-Pan® Panels shall not be used as firestopping material.
- The Thermo-Pan® Panels shall not be placed in locations where the material is in contact with water.
- The Thermo-Pan® Panels shall not be used as a supply air plenum.
- The Thermo-Pan® Panels shall be limited to a design pressure not exceeding a positive or negative 0.25 inches of water (62.2 Pa).
- The wood construction components used to attach the Thermo-Pan® Panels to are outside the scope of this report.
- The Thermo-Pan® Panels shall be installed in accordance with the manufacturer's installation instructions, subject to the limitations of this report.
- This report is subject to periodic re-examination. For information on the current status of this report, contact the ICC-ES.

APPLICATION FOR PERMIT

To aid in the determination of code compliance of this report, the following represents the minimum level of information to accompany the application for permit.

- The language "See ICC-ES Legacy Report No. 95-41" or a copy of this report.

ICC-ES legacy reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, Inc., express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

- The size and width of the panels.
- Method of attachment of the panels to the joist.
- Design pressure of the system.
- The use group and construction type of the building.

PRODUCT IDENTIFICATION

All Thermo Manufacturing, Inc., Thermo-Pan® Return Panels manufactured in accordance with this report shall be marked at the plant with the identifying language:

- “See ICC-ES Legacy Report No. 95-41.”

INFORMATION SUBMITTED

- Tests performed by ETL Testing Laboratories, Inc., illustrating that the Thermo-Pan® vapor permeability, structural rigidity, airflow friction coefficient, flexibility and combustibility characteristics were submitted. Refer to Table 1 of this report for a summary of the test report and results information.

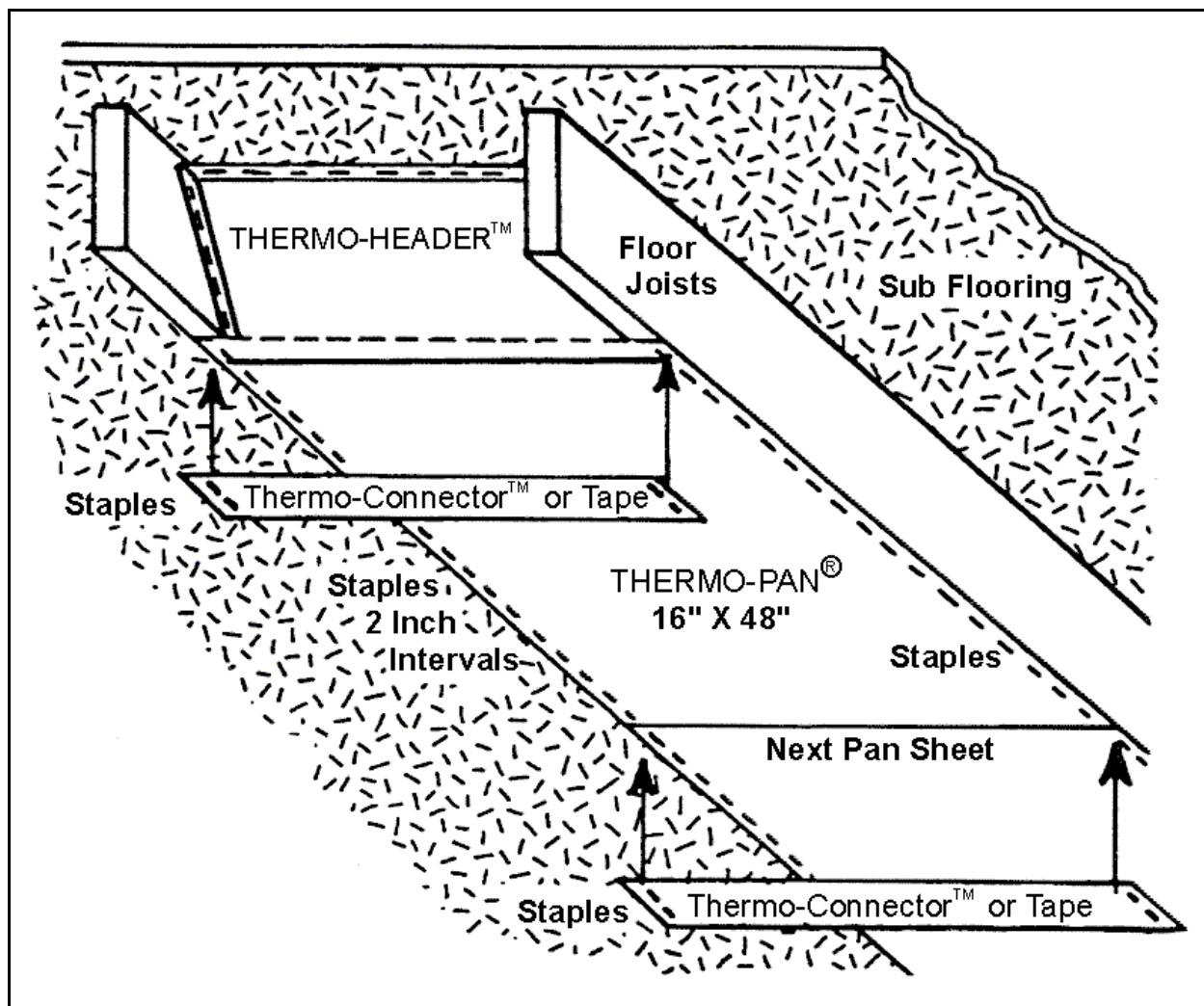


FIGURE 1*—INSTALLED THERMO-PAN

*THIS DRAWING IS FOR ILLUSTRATION PURPOSES ONLY. IT IS NOT INTENDED FOR USE AS A CONSTRUCTION DOCUMENT FOR THE PURPOSE OF DESIGN, FABRICATION OR ERECTION.

TABLE 1

TEST NAME	Standard test methods for Water Vapor Transmission of Materials	Pressure Test	Collapse Test	Mold Growth and Humidity Test	Performance Criteria "Fibrous Glass Duct Characteristics and Limitations" and "Board Fatigue"	Surface-Burning Characteristics of Building Materials	
TEST PERFORMED	ASTM E96-92	UL 181-90 Section 17	UL 181-90 Section 18	UL 181-90 Section 12	SMACNA "Fibrous Glass Duct Construction Standards-Sixth Edition" Chapters 1 and 6	ASTM E84-91a	
TEST AGENCY	ETL Testing Lab., Inc.	ETL Testing Lab., Inc.	ETL Testing Lab., Inc.	ETL Testing Lab., Inc.	ETL Testing Lab., Inc.	ETL Testing Lab., Inc.	
TEST NUMBER	95763-214	100459-214	100459-214	547728	554875	537624	
TEST DATE	04/05/95	06/12/95	06/12/95	01/12/95	8/22/95	03/04/94	
RESULTS	Average Permeability is 0.4467 perms.	Passed manufacturer's rated pressure of 0.25 inches of H ₂ O	Passed manufacturer's rated pressure of - 0.25 inches of H ₂ O ¹	Passed requirements of UL 181-90, Section 12 for Mold Growth and Humidity Test	No evidence of deformation or deficiency of the duct sections	Flame Spread Index	Smoke-Developed Index
						35	25

*Note 1: The specimen is judged by ETL Testing Lab, Inc., to be in compliance with SMACNA Fibrous Glass Duct Construction Standard for maximum deflection for pressure from 0 to -0.40 inches of H₂O.