

3M Fire Protection Products

3M™ Interam™ Endothermic Mat

Case Study

A Specialized Solution for Fire Protection Challenges

3M™ Interam™ Endothermic Mat is a flexible sheet material designed to seal one-side membrane penetrations and solve special fire protection challenges in both new construction and building rehab.

This proprietary Endothermic Mat material consists of a foil backing supporting a flexible, fire-resistant foam structure that contains chemically bound water. Under fire conditions, water is released to cool surrounding surfaces and retard heat transfer. Conformable 3M™ Interam™ Endothermic Mat also forms a smoke and flame barrier around protected surfaces to maintain the integrity of rated spaces.

Specified Products, Inc., one of 3M's largest specialty firestop distributors in the nation, saw the opportunity and capabilities of this unique material and developed design ideas that helped customers meet a range of demanding fire protection circumstances using 3M™ Interam™ Endothermic Mat, saving time and reducing costs.

Electrical Panels

For example, 3M™ Interam™ Endothermic Mat was used to seal 4,500 low-voltage panels in a very large new hotel and casino development. The contractor had initially planned to wrap these steel boxes on five sides with taped gypsum at a cost of \$300 each. However, there was insufficient space in the wall cavity for this conventional treatment.

According to Jim Koehler of Specified Products, his company was able to wrap the low voltage panels on five sides with 3M™ Interam™ Endothermic Mat, thus enabling them to fit the available space and satisfy the fire code at one-third the cost.

Koehler reports that Specified Products developed similar work on 1,200 electrical boxes for another casino hotel, with comparable savings, and the 3M material has also been used to insulate and firestop elevator call boxes.

Hotel Wall Safes

A major Las Vegas hotel and casino found that wall safes placed in rated walls were not properly firestopped, and planned to move 4,000 of these units to non-rated walls in order to eliminate this code violation and potential fire hazard. The move would involve patching wall openings, repapering walls, and reinstalling safes at an estimated cost per room of \$1,000 to \$1,500.

Once again, Specified Products, Inc. brought a 3M™ Interam™ Endothermic Mat solution to the contractor and was able to remove the safes, cover them with firestop material, and replace them in the same openings for only about \$200 per room, and with far less disruption to hotel services.



Low voltage electrical boxes for a very large construction project in Las Vegas were firestopped on five sides with 3M™ Interam™ Endothermic Mat. Segments were attached with adhesive, and seams sealed with aluminum foil tape.

Electrical Circuits

A new Las Vegas hotel was scheduled to open recently when inspectors found that the electrical conduit network for emergency circuits in the building was improperly firestopped. This conduit extended vertically for nine floors, and fanned out to deliver wiring for critical building functions. A rated closure was required, and the problem had to be rectified before an occupancy permit could be issued. Specified Products suggested Endothermic Mat for this project, worked with 3M to prepare a qualified engineering judgment, and the contractor was able to complete the project in restricted spaces and avoid a very costly schedule delay.

A similar crisis arose at a large condominium project, again involving emergency conduit. Specified Products was able to deliver a large quantity of 3M™ Interam™ Endothermic Mat on an overnight basis, and an army of installers completed the work in a matter of hours. Timing was extremely critical in this case because a delay in project completion would have potentially released condo buyers from contractual obligations.

Medical Gas Cabinets

The 3M™ Interam™ Endothermic Mat also finds application in firestopping medical gas access cabinets found in hospital rooms. These wall-mounted metal housings serve as delivery points for oxygen and other gases, and must be firestopped to maintain rated space protection. As with electrical box insulation, Interam™ Endothermic Mat met the applicable medical gas cabinet insulation and firestop standards, was installed quickly, and protected boxes fit within limited wall cavity space.

Fuel Lines

Yet another important fire protection element in commercial and large residential construction is insulation of fuel lines for emergency power generation equipment. 3M™ Interam™ Endothermic Mat serves as a cost-effective and compact alternative to shaft walls for this purpose, and can be assembled to achieve a one, two or three-hour rating.

Fire Sprinkler Boxes

Wall and ceiling-mounted boxes that penetrate rated barriers at fire sprinkler points must be firestopped to restrict passage of flame and toxic gases. These metal boxes pose the same challenges as electrical panels because of limited wall and ceiling cavity space. 3M™ Interam™ Endothermic Mat satisfies the dual functions of sealing and insulating these metal housings.

"In our experience, 3M™ Interam™ Endothermic Mat is invaluable in meeting critical firestop requirements," concluded Jim Koehler of Specified Products. "It is particularly suited to construction applications where space is limited, cost constraints are high, and work must be completed quickly. This UL-rated 3M material is flexible in both form and function, and fully satisfies governing codes."



Conduit for emergency wiring in a building can be protected from fire with 3M™ Interam™ Endothermic Mat, per governing regulations.



3M™ Interam™ Endothermic Mat meets the stringent requirements of firestopping for wall-mounted medical gas access cabinets commonly found in hospital patient rooms.



3M™ Interam™ Endothermic Mat provides effective and very compact fire protection for fuel lines that serve backup power generation equipment inside hospitals and commercial buildings.



A single layer of 3M™ Interam™ Endothermic Mat material on fire extinguisher boxes meet the International Building Code for a one-hour fire barrier.

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