

Replace Fireproofing Without Getting Burned

PLAINTIFF'S
EXHIBIT

WRG-831



A cone calorimeter measures the heat energy within a material or composite.

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Replacing fireproofing materials in a building is not simply a matter of removing the old material and putting up something new. Decisions must be made which will affect the price paid for fireproofing respray, fire insurance rates, and the viability of the building's fire insurance policy. With the cost of removing old fireproofing running around \$30 a square foot, doing it right the first time is essential.

Each building has a level of fire protection based on its construction and occupancy classification. This hourly fire rating is established by municipal building codes to protect lives and property in the event of fire. Fire ratings assigned to construction determine the period of time a building should maintain structural integrity in the event of

a fire.

Hourly fire ratings are mandated by the law. Under the laws of most municipalities, only registered architects and licensed engineers are qualified to interpret the building code to determine ratings.

The Underwriters Laboratories, Inc. (UL) fire resistive directory lists almost 1,000 types of construction assemblies with hourly rates which were determined under ASTM test method E-119. This resource is valuable in determining how a particular construction element can be protected for a given hourly rating.

To determine the proper UL design and the appropriate thickness of fireproofing for the hourly rating required, the applicator should work from

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"as built" drawings. The cover sheet indicates the class of building construction and often lists the required hourly ratings which applied to the building when it was built.

The architectural sheet shows cross-sections of the building's floor and roof assemblies. Structural sheets indicate the structural steel framing plan for each floor and roof level concerning beam and joist sizes, manufacturer and type of deck specified, column schedule, and concrete type and unit weight.

The fireproofing specification from the specification book for the project may list a schedule of UL design numbers under which the project was originally designed and/or the hourly ratings originally required.

Electrified floor plan sheets show the location and type of trench headers and electrical inserts used for pulling those services out of the floor.

When original drawings are not available, contact the architect or engineer involved at time of construction, who usually retain drawings on their projects. Or talk with the contractor on the building. Plans may be on file in the city government's municipal buildings department. That department may be able to provide current hourly ratings for the building.

If these sources do not yield the necessary information, an architect or engineer can advise on hourly ratings.

In choosing a replacement fireproofing, the following criteria should be addressed. Is the product resistant to accidental damage, does it bond securely for the design life of the building, how extensively will its application disrupt building occupants in adjacent areas.

After application, an independent testing agency can verify that the material has been applied in the proper thickness and at the proper density (weight per cubic foot). The laboratory reports will serve as evidence to the building department and insurance company that the building has been reinstated to required hourly fire ratings.

About the author: Gray Winey is product manager at the construction products division of W. R. Grace & Co., manufacturers of Monokote® spray fireproofing for new construction and Retro-Guard® spray fireproofing for retrofit applications.