Fireproofing Without Getting Burned

Here’s a quick guide to help you do it right, so you do it once.

When it comes to re-fireproofing a building, what you may not know can hurt you. Re-fireproofing isn’t simply a matter of removing the old material and replacing it with the new. There are decisions to be made.

First establish the required hourly fire rating. Every building has a level of fire protection based on its type of construction and occupancy classification. This hourly fire rating, as it’s called, is established by municipal building codes for the express purpose of protecting lives and property in the event of fire.

Fire ratings assigned to fire-resistive construction are designed to prevent the spread of fire from one area of the building to another, and to maintain the structural integrity of the building for the rating period, in order to buy time for occupants to evacuate the building and firefighters to extinguish a blaze.

How, then, do you determine how a particular construction element (a floor/ceiling assembly, for example) can be protected for a given hourly rating? By consulting The Underwriters Laboratories Fire Resistance Directory. The FRD lists almost 1000 different types of construction assemblies with instruction on providing them with given hourly ratings. Everything on the list has passed an actual test run under ASTM test method E-119 (also called UL method 263).

Pay particular attention to the material’s contents.

To determine the proper UL design and the appropriate thicknesses of fireproofing for the hourly ratings required, obtain the “as-built” drawings. This step also goes a long way toward assuring you give a competent and competitive re-fireproofing estimate. The following sheets should do the job:

*The cover sheet* indicates the class of building construction and often lists the required hourly ratings that applied to the building when it was built.

*The architectural sheet(s)* are usually numbered with the prefix A, and show cross-sections of the building’s floor and roof assemblies.

*The structural sheet(s)* are usually numbered with the prefix S. They show the structural steel framing plan for each floor and roof level, and indicate: beam and joist sizes, the manufacturer and type of deck specified, the column schedule, and the concrete type and unit weight.

*The fireproofing specification section* 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.

*The electrified floor plan sheets* (if applicable) are usually numbered with the prefix E. These show the location and type of trench headers, and the type of electrical inserts used for pulling those services out of the floor.

How do you properly re-fireproof if the original or “as-built” drawings aren’t in your possession? Here are a few tips:

Get in touch with the original architect or engineer if you know them. They normally retain drawings on jobs they’ve done. If you know the contractor who built the building, talk to him.

Plans may be on file in the municipal buildings department in your city. And they may be able to tell you the current hourly ratings required for your building.

If all else fails, the building owner should retain an architect or professional engineer to advise about hourly ratings.

Now that you’ve determined hourly fire ratings and proper UL designs, are you home free on retrofit fireproofing? Not quite yet. Remember, it’s an expensive undertaking, and you only want to do it once.

While there is no “wrong” choice among currently available and approved replacement fireproofing materials, you are well advised to
pay particular attention to a material’s contents. Does it contain materials which are currently regulated, or may be regulated in the future? Perhaps banned outright?

In choosing a replacement fireproofing, consider also how resistant to accidental damage the material is, whether or not it bonds securely for the design life of the building, and the degree to which its application will or will not disrupt building occupants in adjacent areas.

About the Author...