



Many projects have specifications which have us install a back-coating on the hollow metal frames prior to installing grout. This coating product is usually a bituminous product, which is flammable and will void the UL label of any UL-labeled frame, unless specifically UL tested for both products installed. We also sometimes have specifications that specify using a plaster-based material in lieu of mortar. This plaster material causes more problems with the frames and should not be installed per HMMA (Hollow Metal Manufacturers Association). **We need to discuss with the architect and/or owner should these two issues come up in the project specifications. Please take the time to review your projects.**

Corey Zussman, AIA, NCARB - Director of Quality Management

- The letter from Ceco doors is typical throughout the industry. The door companies have not tested these frames with this coating installed.
- Hollow metal frames DO NOT need to be filled to achieve their fire ratings.
- The UL label is still voided if the bituminous-coated frame is filled with grout.



### TechNotes

HMMA-820 TN01-03



#### Grouting Hollow Metal Frames

Grout, when used in accordance with industry guidelines, can improve frame durability, sound deadening, and, depending on wall construction, increase frame anchorage strength. Grouting of the frame does not increase door durability, nor is it required for fire-rated frames. For most commercial applications, grouting of mullions and other closed sections is not recommended.

For applications covered by ANSI/NAAMM HMMA 862, "Guide Specifications for Commercial Security Hollow Metal Doors and Frames," and ANSI/NAAMM HMMA 863, "Guide Specifications for Detention Security Hollow Metal Doors and Frames," the standards require that "frame jambs shall be fully grouted to provide added security protection against battering, wedging, spreading, and other means of forcing open the door".

Grout is a water-based product. If not used properly, it can destroy the opening in a very short time. Grout can be either "mortar", which is a masonry mixture of lime, cement, sand, and water, or "plaster", which is a gypsum-based product.

Plaster grout dries by exposure to air. When a frame member is filled solid with plaster grout, only those areas exposed to air will dry and harden, while the center remains wet (uncured). The water remaining in the plaster grout can rust the frame from the inside. Plaster grout should not be used.

Mortar grout cures by chemical reaction and hardens throughout. Use mortar grout.

Frames are not designed to act as forms for grout. Grout must have a maximum 4 in. slump and be hand troweled in place. Bracing of the frame may be necessary prior to grouting to prevent sagging of the header or bowing of the jamb due to weight or pressure of the grout. Grout should not be installed after gypsum wallboard is installed, as the liquid within the grout will deteriorate the wallboard.

When dictated by temperatures, anti-freezing agents for mortar may be recommended by specifications. These agents can adversely affect metal, and all surfaces in contact with the grout must be coated with a corrosion resistant material.

It is recommended that the contractor be responsible for the grouting and for any required barrier coating. It is also his responsibility to use care in the application of the grout.



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Subject: Back-painting/Back-coating in the Throat of Fire-rated Street Door Frames

Corey:

This memo is to certify that Ceco Door does not have fire procedure coverage with either Underwriters Laboratories or Warnock Hersey (ITS) to apply any type of undercoating material (commonly referred to as Bituminous coating) in the throat of our fire rated door frames. These backpainted type materials are subject to flaming during fire tests and should not be used on our fire rated frames.

Both Underwriters Laboratories (UL) and Warnock Hersey (ITS) require steel door frames to be tested with the backcoating (sometimes referred to as bituminous coating) regardless of whether the frames will be grouted or not. The reason testing is required is to determine if the amount of flaming would be allowed or could pass the fire test. Frame manufacturers would need to have coverage in their fire procedures in order for these coatings to be applied in their fire rated frames. Ceco does not have coverage in our fire procedures that would allow backcoatings to be used in our fire rated frames. Therefore backcoatings should not be applied to the throat of our fire rated frames and would void the fire label.

Please feel free to let me know if you have any questions regarding this memo.

Sincerely,

*Dwayne Charlton*

Dwayne Charlton  
Technical & Training Manager

UL has also written to Curries, "regarding usage of bituminous coating within the throat (cavity) of steel frames, that bituminous coatings have a high potential to cause flaming on the unexposed surface of a fire rated opening. This would result in that opening not complying with requirements of the appropriate test standards."



Frames today are usually made with Galvaneal steel, which is a stronger sheet steel that resists corrosion better than plain hot-dipped galvanized steel. This new product makes it safer to install grout without the need for coatings.

There are other coatings available which are not flammable that the architect could specify should they choose to. Talk to your hollow metal frame fabricator for more products.

We should never install wet grout against gypsum board or a wood frame.

**PLEASE DO NOT HESITATE TO CONTACT ME SHOULD BACK-COATING BE SPECIFIED ON YOUR PROJECT, OR YOU WOULD LIKE COPIES OF THE MATERIAL I HAVE REGARDING THIS TOPIC.**



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December 20, 2005

CURRIES Division, ASSA ABLOY Door Group, LLC  
Mr. Nelson Kraschel  
1502 12<sup>th</sup> Street NW  
Mason City, IA 50401

File: R5067

Subject: Asphalt Emulsion Coatings

Dear Mr. Kraschel,

This letter is in reply to your e-mail dated December 19, 2005 concerning UL's stance about the use of asphalt emulsion coatings on the frame throats of UL Listed fire door frames.

Currently, UL does not allow manufacturers to coat the frame throats of frames bearing the UL Listing Mark due to concerns about the flammability of the asphalt material when exposed to a fire. As such, UL has required that clients looking to use any type of coating or barrier material in the frame throat to conduct a fire test prior to us allowing use of the requested material. The only exception to this practice is the use of galvanized or zinc-coated steel since those have already been tested and are currently in your UL Follow-Up Service Procedure.

I trust that this satisfies your request and if we can be of any further assistance, please let me know.

Very Truly Yours,



Matthew Schumann  
Senior Project Engineer  
Fire Protection Division

An independent organization working for a safer world with integrity, precision and knowledge.



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