

# APPEAL FORM

Questions for this promotional examination were taken solely from the source material listed in the Source Material List. Information contained in any other material will not be considered in determining the correct answer to any question.

Houston Fire Department

HFD Investigator 1/7/2015

You may only appeal **ONE** question per form.

For Question # 77 I would like the Test Review Committee to take the following action (please check one or explain in the space provided):

- Make A the only correct answer.
- Make B the only correct answer.
- Make C the only correct answer.
- Consider the following as correct answers (circle the answers you feel are correct):  
A                      B                      C
- Give all applicants credit
- Remove the question from the exam.
- Other (please explain below):

Explanation: Please provide a detailed explanation of your appeal / rebuttal. **DO NOT WRITE THE TEST QUESTION ON THIS FORM.** Print/ Write legibly.

The Building Construction Book Does NOT TEACH Construction of WALLS AND Foundation MADE of the natural Stone GRANITE IS PARTICULARLY subject to Spalling. THE Book Only teaches Natural Stone are also used FOR the construction of WALLS AND Foundations. THE Book Also teaches that Natural Stone buildings will Spall when exposed to Fire. This Includes MARBLE, Limestone, AND Granite.

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Random Test Number

DATE

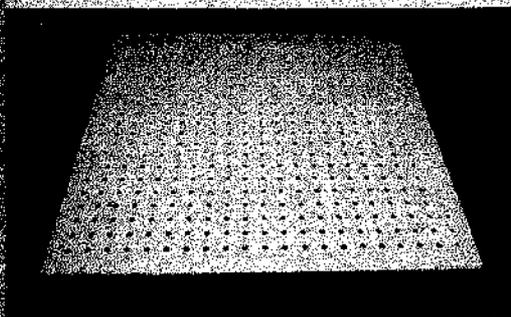
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Approved                       Denied

Committee Chairman Signature \_\_\_\_\_

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**Figure 3-15** A combustible fiberboard ceiling tile.

Courtesy of Glenn Corbett

Keep in mind that wood burns and thus loses structural strength and integrity. The vast majority of structural fires are fought by fire fighters standing on or under wooden structures. Combustible fiberboard, for example, was at one time used for wall paneling, ceiling tiles, and sheathing. It burns persistently. Even when codes require new ceilings to meet flame-spreading requirements, this dangerous old tile is often left above the new ceiling, increasing the dead load. This was a significant factor in the loss of 16 lives in a Tennessee retirement home fire in 1989.

### Masonry and Stone

Bricks are smooth-sided pieces of clay that have been fired in an oven. This type of **masonry unit** is quite fire resistant, but can **spall** (lose surface material) when subjected to fire. Like other masonry materials, brick cannot be effectively considered apart from the mortar used with it. Prior to 1880, when **Portland cement mortar** became available, the only mortar used was sand-lime, which is water soluble. Even today, regulations require the use of **sand-lime mortar** in the restoration of old buildings built with soft bricks. Ordinary water leaks or fire hose streams have dissolved sand-lime mortar and caused collapse. Adobe, which is made of sand, water, clay, and a fibrous material like manure or straw, has been long



**Figure 3-16** Spalling effects on concrete from a fire.

Courtesy of Dave Casey

used to make blocks. Formed and dried in the sun, these adobe blocks have been used in construction for centuries, particularly in the Southwest.

Another type of masonry unit is the hollow-core **concrete masonry unit (CMU)**. This is the typical 8-by-16-inch concrete block, or "cinder block" as it is sometimes called, erroneously. (Cinders were used in the past in the manufacture of these blocks.) When used for the construction of walls, CMUs are sometimes reinforced with steel **reinforcement bars (rebar)** and their hollow cores (also known as **cells**) are filled with concrete.

As noted earlier, natural stones are also used for the construction of walls and foundations. These materials include fieldstone and **quarried stone** such as granite, marble, limestone, and sandstone. Natural stone buildings will **spall** (break off in chunks) when exposed to fire. Granite particularly is subject to spalling. In older buildings, slate and marble were used for stairways, and sometimes for unsupported flooring in library stacks. These structures should be examined for support. If only self-supported, they should be avoided after exposure to heat. Marble can look perfect yet actually may have turned to chalk. In such a case, it will collapse under the weight of a fire fighter.



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A. ~~Marble~~ • turns to chalk (not spalling)

B. ~~Marble~~ - should be considered as an answer ~~because~~ because it is a natural stone that will spall when exposed to fire.

C. ~~Marble~~ - also right for the same reason that B should be right.

Marble is singled out specifically as turning into chalk

22053620  
Random Test Number

1/23/15  
DATE

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Approved       Denied

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