

**In Class 4****Propose alternative designs for a fire barrier****Organization**

Break into your groups

Do, and report on the in-class problem

Turn in materials produced, with names of participants, for credit

**Background Information**

780 CMR 7 provides this definition for a Fire Barrier:

"A fire-resistance-rated vertical or horizontal assembly of materials designed to restrict the spread of fire in which openings are protected."

780 CMR 7 goes on to say:

"706.1 General. Fire barriers used for separation of shafts, exits, exit passageways, horizontal exits or incidental use areas, to separate different occupancies, to separate a single occupancy into different fire areas, or to separate other areas where a fire barrier is required elsewhere in 780 CMR or the International Fire Code, shall comply with 780 CMR 706.0."

"706.2 Materials. The walls and floor assemblies shall be of materials permitted by the building type of construction."

780 CMR 10 says, in part:

"1019.1 Enclosures Required. Interior exit stairways and interior exit ramps shall be enclosed with fire barriers. Exit enclosures shall have a fire-resistance rating of not less than two hours where connecting four stories or more and **not less than one hour where connecting less than four stories**. The number of stories connected by the shaft enclosure shall include any basements but not any mezzanines. An exit enclosure shall not be used for any purpose other than means of egress. Enclosures shall be constructed as fire barriers in accordance with 780 CMR 706."

This in-class problem will disregard the exceptions for exit enclosure that are in 780 CMR

This in-class problem will consider alternative fire barrier designs based on their relative resistance to catastrophies other than fire - such as explosions.

**Discussion / Writing (use the overhead projector transparencies)**

- 1 Propose, and list, alternative sets of details for a fire-barrier for the stair described by excerpts of a prototype stair taken from the internet
- 2 Rank, and list, your proposals based on their resistance to catastrophies other than fire. Explain your reasoning.

**Sketching - not required, but feel free to use illustrations if you think they will be helpful in explaining your logic**

**Presentation: Report out your results to the class**

