

STATE BUILDING CODE INTERPRETATION NO. I-06-09

July 27, 2009

The following is being offered in response to your letter in which you seek a formal interpretation. The question applies to exit enclosure penetrations addressed in Section 1019.1.2, of the 2003 International Building Code portion of the 2005 State Building Code.

Question 1:

The concrete slab of the second floor penetrates the exterior membrane of the proposed fire separation of the vertical exit enclosure. Is this noncombustible single membrane penetration allowed if the concrete floor supports the rated enclosure?

(Stair section diagram included.)

Answer 1:

This noncombustible single membrane penetration would be acceptable only when the concrete floor and all its supporting construction is a listed fire rated assembly (having the same minimum code required hourly fire rating as the fire rated wall it is supporting). Section 721 of the 2003 International Building Code portion of the 2005 State Building Code provides information to establish a fire resistance rating if there is existing concrete floor. Supportive information documenting fire rating code compliance needs to be provided in the permit documents.

The diagram submitted is not code compliant due to the limited descriptive information given which does not address the relative components fire rating.

Question 2:

A welded steel clip that supports the interior stairs and landings penetrates both membranes of the vertical exit enclosure. Is this penetration allowed? (Stair section diagram included.)

Answer 2:

The only penetrations allowed in an exit enclosure are addressed in Section 1019.1.2 of the 2003 International Building Code portion of the 2005 State Building Code. However, the diagram submitted illustrates a fire rated shaft wall encasing the stair support clip that penetrates the stair enclosure membrane, (this faces outside the stairway). This detail would be acceptable provided the shaft wall assembly and penetration are listed fire rated assemblies.

Product manufacturers of shaft wall system brochures typically provide details addressing stair hanger rod membrane penetrations and fire rated listed assemblies information that may be helpful.

Question 3:

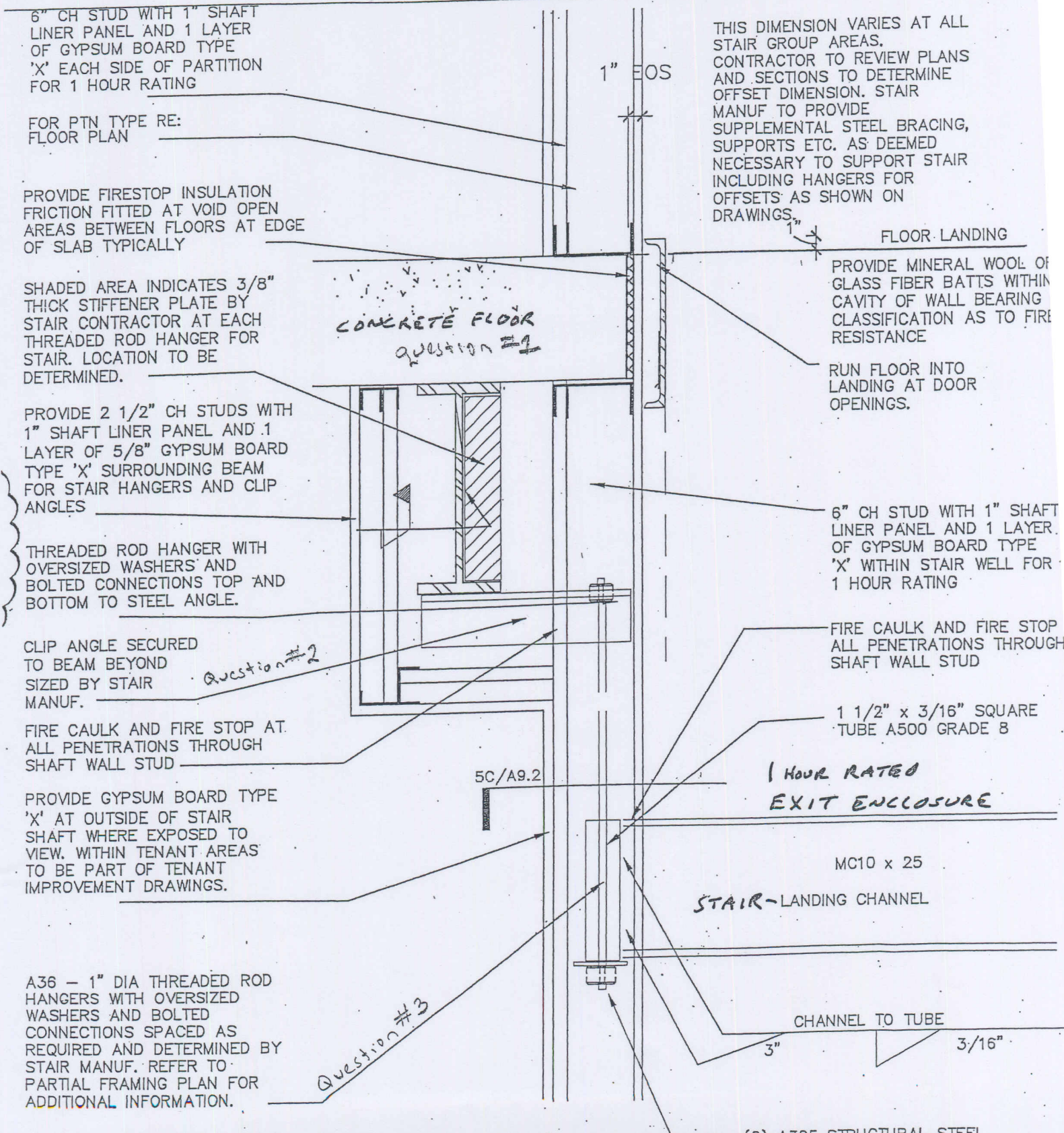
If the penetration of the clip is allowed, will all the steel supporting the clip and landing etc., need to be protected to the foundation as is required for the supporting construction of rated assemblies in the IBC-2003, Section 706.4? (Stair section diagram included.)

Answer 3:

The penetration of the welded steel clip that supports the stair construction is acceptable when the wall assembly and penetration are listed fire rated assemblies. Continuity of the vertical exit enclosure's fire rated construction and its supporting construction is required.

The diagram submitted is not code compliant due to the limited descriptive information given which does not address the relative components fire rating.

I-06-09



6" CH STUD WITH 1" SHAFT LINER PANEL AND 1 LAYER OF GYPSUM BOARD TYPE 'X' EACH SIDE OF PARTITION FOR 1 HOUR RATING

FOR PTN TYPE RE: FLOOR PLAN

PROVIDE FIRESTOP INSULATION FRICTION FITTED AT VOID OPEN AREAS BETWEEN FLOORS AT EDGE OF SLAB TYPICALLY

SHADED AREA INDICATES 3/8" THICK STIFFENER PLATE BY STAIR CONTRACTOR AT EACH THREADED ROD HANGER FOR STAIR. LOCATION TO BE DETERMINED.

PROVIDE 2 1/2" CH STUDS WITH 1" SHAFT LINER PANEL AND 1 LAYER OF 5/8" GYPSUM BOARD TYPE 'X' SURROUNDING BEAM FOR STAIR HANGERS AND CLIP ANGLES

THREADED ROD HANGER WITH OVERSIZED WASHERS AND BOLTED CONNECTIONS TOP AND BOTTOM TO STEEL ANGLE.

CLIP ANGLE SECURED TO BEAM BEYOND SIZED BY STAIR MANUF.

FIRE CAULK AND FIRE STOP AT ALL PENETRATIONS THROUGH SHAFT WALL STUD

PROVIDE GYPSUM BOARD TYPE 'X' AT OUTSIDE OF STAIR SHAFT WHERE EXPOSED TO VIEW. WITHIN TENANT AREAS TO BE PART OF TENANT IMPROVEMENT DRAWINGS.

A36 - 1" DIA THREADED ROD HANGERS WITH OVERSIZED WASHERS AND BOLTED CONNECTIONS SPACED AS REQUIRED AND DETERMINED BY STAIR MANUF. REFER TO PARTIAL FRAMING PLAN FOR ADDITIONAL INFORMATION.

THIS DIMENSION VARIES AT ALL STAIR GROUP AREAS. CONTRACTOR TO REVIEW PLANS AND SECTIONS TO DETERMINE OFFSET DIMENSION. STAIR MANUF TO PROVIDE SUPPLEMENTAL STEEL BRACING, SUPPORTS ETC. AS DEEMED NECESSARY TO SUPPORT STAIR INCLUDING HANGERS FOR OFFSETS AS SHOWN ON DRAWINGS.

PROVIDE MINERAL WOOL OF GLASS FIBER BATTS WITHIN CAVITY OF WALL BEARING CLASSIFICATION AS TO FIRE RESISTANCE

RUN FLOOR INTO LANDING AT DOOR OPENINGS.

6" CH STUD WITH 1" SHAFT LINER PANEL AND 1 LAYER OF GYPSUM BOARD TYPE 'X' WITHIN STAIR WELL FOR 1 HOUR RATING

FIRE CAULK AND FIRE STOP ALL PENETRATIONS THROUGH SHAFT WALL STUD

1 1/2" x 3/16" SQUARE TUBE A500 GRADE 8

1 HOUR RATED EXIT ENCLOSURE

MC10 x 25

STAIR-LANDING CHANNEL

CHANNEL TO TUBE

3"

3/16"

(2) A325 STRUCTURAL STEEL NUTS AND GRADE 8 OR HARDENED STEEL WASHER

4 HANGER DETAIL SCALE: 1 1/2" = 1'-0"