Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 01/28/14

EF-1: Existing Floor Ceiling Assembly
Equivalent to 1 Hour Rated

1. 1x wood flooring
2. 2⅝ x 6 wood tongue and groove decking
3. 6x15 timber joists
4. strapping
5. metal lath
6. plaster

I hour rating of existing floor system based on similarity to the following items:

UL Design L 501
UL Design L 512
IBC Table 720.1 item 13-1.2
GAF File No FC 5510

International Existing Building Code, section 1.2:
"mill" or "heavy timber" construction has approximately 1 hour fire resistance

This floor will provide the 1 hour horizontal separations above and below the cardio room on the 1st floor and above and below the lunch room at the 2nd floor. The contractor shall firestop and seal all joints in the existing floor at these locations

One hour protections for existing steel pipe columns:
UL Design No. X531

Note:
A. Provide this design for protection of columns partially or completely buried in non rated walls

1. Steel Column - Steel pipe column with a minimum outside diameter of 4-1/2 in., a minimum wall thickness of 0.109 in. and a minimum weight of 5.1 lb. per ft.
2. Wallboard Attachment Studs - 1-5/8 in. deep with nom 1-3/8 in. legs, and 1/4 in. stiffening flanges fabricated from No. 26 MSG (minimum) galvanized steel. Channels cut 1/2 to 3/4 in. less in length than column height.
3. Wallboard Attachment Channels - 1-5/8 in. deep with nom 1-1/4 in. legs, fabricated from No. 26 MSG (minimum) galvanized steel. Channels tied to column with No. 18 SWG tie wire spaced approximately 4 ft on center.
4. Gypsum Board - 1/2 in. thick, two layers applied vertically. Inner layer attached to steel studs and channels with 1 in. long steel screws spaced 12 in. on center. Outer layer attached through inner layer into steel studs with 1-5/8 in. long screws spaced 12 in. on center.

   AMERICAN GYPSUM CO - Type AG-C .
   CERTAINTEED GYPSUM INC - Type FRPC, Type C.
   CERTAINTEED GYPSUM CANADA INC - Type C.
   CGC INC - Types C, IP-X2.
   GEORGIA-PACIFIC GYPSUM LLC - Types 5, DAPC, TG-C.
   LAFARGE NORTH AMERICA INC - Types LGFC-C, LGFC-C/A.
   NATIONAL GYPSUM CO - Types FSK-C, FSW-C.
   PABCO BUILDING PRODUCTS LLC, DBA PABCO GYPSUM - Type PG-C.
   PANEL REY S A - Type PRC
   THAI GYPSUM PRODUCTS PCL - Type C.
   UNITED STATES GYPSUM CO - Types C, IP-X2.
   USG MEXICO S A DE C V - Types C, IP-X2.

5. Screws - Self-drilling and self-tapping bugle head Type S wallboard screws, 1 and 1-5/8 in. long.

6. Corner Bead - No. 28 MSG galvanized steel, two 1-1/4 in. legs, attached to wallboard with Type 4d gypsum wallboard nails spaced vertically 12 in. O.C.

7. Finishing System - Joint compound, 1/16 in. thick, applied over corner beads, joints and surfaces of wallboard.

CT-01 UL Design No. U415, 1 hour rated shaftwall ceiling
WT-04 UL Design No. U415, 1 hour rated shaftwall chase

NOTES:
A. Shaft wall studs span between side walls of stair. Consult manufacturer's requirements for maximum span length for depth of stud.

1 Floor, Side and Ceiling Runners (not shown) "J" - shaped runner, minimum 2-1/2 in. deep (minimum) 4 in. deep when System C is used), with unequal legs of 1 in. and 2 in., fabricated from minimum 24 MSG (minimum) 20 MSG when Item 4A, 4B or 7 are used) galvanized steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. O.C. "E" - shaped studs (Item 2A) may be used as side runners in place of "J" - shaped runners.

2 Steel Studs "C-H" - shaped studs, minimum 2-1/2 in. deep (minimum) 4 in. deep when System C is used), fabricated from (minimum) 25 MSG (minimum) 20 MSG when Items 2D, 4A, 4B or 7 is used) galvanized steel. Cut to lengths 3/8 to 1/2 in. less than floor-to-ceiling height and spaced 24 in. or 600 mm O.C.

3 Gypsum Board: Gypsum liner panels, nom 1 in. thick, 24 in. or 600 mm (for metric spacing) wide. Panels cut 1 in. less in length than floor to ceiling height. Vertical edges inserted in "H" portion of "C-H" studs or the gap between the two 3/4 in. legs of the "E" studs. Free edge of end panels attached to long leg of vertical "J" - runners with 1-5/8 in. long Type S steel screws spaced not greater than 12 in. O.C. When wall height exceeds liner panel length, liner panel may be butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing. In System I, butt joints in liner panels are staggered minimum 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4). Wallboard strips centered over butt joints and secured to liner panels with six 1-1/2 in. long Type G steel screws, three screws along the 22 in. dimension at the top and bottom of the strips.

   CGC INC. — Type SLX
   UNITED STATES GYPSUM CO — Type SLX
   USG MEXICO S A DE C V — Type SLX

4. Gypsum Board, System A, 1 Hr

   Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. when installed vertically or 8 in OC when installed horizontally. Horizontal joints need not be backed by steel framing.

   CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WRC, WRX
   UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX,ULX, WRC, WRX, USGX.
   USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, WRC, WRX

5. Joint Tape and Compound (Not Shown)
   Systems A, B, C, E, F, G, H, I

   Joints on outer layers of gypsum boards (Item 4 and 4A) covered with paper tape and joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. Exposed screw heads covered with joint compound.

6. Batts and Blankets Systems A, Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt mineral bearing the UL Classification Marking as to Fire Resistance.

WT-01 Design No. U465, 1 hour rated wall

NOTES:
A. This wall type continuous from top of subfloor to underside of plaster ceiling
B. All Penetrations in this wall type to be fire stopped and fire caulked

1. Floor and Ceiling Runners. (Not shown). Channel shaped runners, (minimum) 3-5/8 in. deep, 1-1/4 in. legs, formed from minimum No. 25 MSG galvanized steel, attached to floor and ceiling with fasteners spaced 24 in. O.C. maximum

2. Steel Studs. Channel shaped, 3-5/8 in. deep (minimum) formed from minimum No. 25 MSG galvanized steel spaced 24 in. OC max. Studs to be cut 3/4 in. less than assembly height.

3. Batts and Blankets. (Optional). Mineral wool or glass fiber batts partially or completely filling stud cavity.

3B. Fiber, Sprayed. NU-WOOL CO INC Cellulose Insulation. Alternate to Batts and Blankets (Item 3). Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

4. Gypsum Board. 5/8 in. thick, 4 ft wide, attached to steel studs and floor and ceiling track with 1 in. long, Type S steel screws spaced 8 in. OC. along edges of board and 12 in. OC in the field of the board. Joints oriented vertically and staggered on opposite sides of the assembly. When attached to item 6 (resilient channels) or 6A or 6C (furring channels), gypsum board is screw attached to furring channels with 1 in. long, Type S steel screws spaced 12 in. OC. Provide one of the following:

   ACADIA DRYWALL SUPPLIES LTD. Type X
   AMERICAN GYPSUM CO: Types AG-C, AGX-1, M-Glass
   BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO: Type DBX-1.
   CGC INC: Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or WRX.
   CERTAINTEED GYPSUM INC: Types 1, EGRG, GlasRoc, Type X, Type C, SilentFX, 5/8" East-Lite Type X.
   CERTAINTEED GYPSUM CANADA INC.: Type C, Type X, Type Abuse-Resistant, 5/8" East-Lite Type X.
   GEORGIA-PACIFIC GYPSUM L L C — Types 5, 6, 9, C, DAP, DD, DA, DAPC, DGG, DS, GPFS6, LS, , Typ X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, TG-C, GreenGlass Type X, Type X ComfortGuard Sound Deadening Gypsum Board
   LAFARGE NORTH AMERICA INC. Types LGFC2, LGFC2A, LGFC6, LGFC6A, LGFC-C, LGFC-C/A, LGFC-WD, LGLLX.
   NATIONAL GYPSUM CO: Types FSK, FSK-C, FSK-G, FSW-C, FSW-G, FSW, FSW-3, FSW-5, FSW-6, FSL.
   PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-C, PG-9, PG-11, PGS-WRS.
   PANEL REY S A: Types GREX, PRX, RHX, MDX, ETX.
   SIAM GYPSUM INDUSTRY (SARABURI) CO LTD Type EX-1
   THAI GYPSUM PRODUCTS PCL Type X, Type C.
   UNITED STATES GYPSUM CO Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX, USGX (Joint tape and compound, Item 5, optional for use with Type USGX).
   USG MEXICO S A DE C V — Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or WRX.

5. Joint Tape and Compound. Vinyl, dry or premixed joint compound, applied in two coats to joints and screw heads, paper tape, 2 in. wide, embedded in first layer of compound over all joints. As an alternate, nominal 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges.

6. Resilient Channel. (Optional) 25 MSG galv steel resilient channels spaced vertically max 24 in. OC, flange portion attached to each intersecting stud with 1/2 in. long type S-12 pan head steel screws.

6A. Steel Framing Members, (Optional) As an alternate to Item 6, furring channels and resilient sound isolation clip as described below:

   a. Furring Channels Formed of No. 25 MSG galvanized steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galvanized steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, minimum 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel.

   b. Framing Members Used to attach furring channels (Item a) to studs (Item 2). Clips spaced 48 in.).C. and secured to studs with 1-5/8 in. wafer or hex head Type S steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.

WT-04 existing multi wythe brick bearing wall required to be 1 hour rated

1. existing brick wall is 20" wide
2. IBC Table 720.1(2) Item 1-1.1 provides 1 hour rating for 2.7" thickness

WT-02 EXISTING INTERIOR PARTITION WALL required to be 1 hour rated

1. verify thickness of gypsum board on each side of wall
2. If ⅝" type X gypsum board is on each side the wall may be considered to comply with GA File No WP1072, Generic 1 hour rated wall assembly, UL Design No. W415
3. If ½" type X gypsum board is on each side of the wall provide an additional layer of ⅝" type X gypsum board in accoadance with GA File No. WP 1021, generic 1 hour rated wall assembly

WT-03 NON-RATED INTERIOR PARTITION WALL

⅝" gypsum board each side of 3⅝" steel studs with insulation, accoustical sealant

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WHITED
PLANNING + DESIGN

List of Drawings

A0.01 Life Safety Plans
A1.01 First Floor Plan (north)
A1.02 First Floor Plan (south)
A1.03 Second Floor Plan
A1.04 3d Floor Plan
A1.05 1st Flr Reflected Ceiling Plan
A1.06 2nd Flr Reflected Ceiling Plan
A2.01 Interior Elevations
A2.02 Interior Elevations
A3.01 Stair #3, HVAC chase
A3.02 Stair #4
A4.01 Changing Rooms (Lockers)
A5.01 Wall Types
A6.01 Schedules

Purpose of these drawings: permit and construction

Date of these drawings: November 22, 2013

Diversified Communications
Proposed Tenant Improvements
121 Free Street,
Portland Maine, 04101

Wall Types, Floor Types

A5.01