Fire-Rated Assemblies in Commercial Construction

The Purple Book

National Gypsum®
NATIONAL GYPSUM COMPANY

FIRE-RATED ASSEMBLIES
IN COMMERCIAL CONSTRUCTION
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<td>5/8” Gold Bond® Brand Hi-Impact® XP® Fire-Shield® Gypsum Board, Type X  5/8” Gold Bond® Brand Hi Abuse® XP® Fire-Shield® Gypsum Board, Type X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Type FSW-6</td>
<td>5/8” Gold Bond® Brand EXP® Extended Exposure Sheathing, Type X  5/8” Gold Bond® Brand EXP® Interior Extreme® Gypsum Panel, Type X  5/8” Gold Bond® Brand EXP® Fire-Shield® Tile Backer, Type X  5/8” Gold Bond® Brand EXP® Interior Extreme® IR Gypsum Panel, Type X  5/8” Gold Bond® Brand EXP® Interior Extreme® AR Gypsum Panel, Type X</td>
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<tr>
<td>Type FSW-7</td>
<td>1” Gold Bond® Brand EXP® Extended Exposure Shaftliner, Type X</td>
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<tr>
<td>Type SoundBreak XP</td>
<td>5/8” Gold Bond® Brand SoundBreak® XP® Gypsum Board, Type X</td>
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</tr>
<tr>
<td>Type FSL</td>
<td>5/8” Gold Bond® Brand High Strength Fire-Shield® LITE®, Type X</td>
<td></td>
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</tr>
<tr>
<td>Type FSW-8</td>
<td>5/8” Gold Bond® Brand Fire-Shield® Gypsum Sheathing, Type X</td>
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### ASTM Product Standards

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<td>Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing</td>
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<td>C 1178</td>
<td>Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel</td>
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<td>C 1396</td>
<td>Standard Specification for Gypsum Board</td>
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<td>C 1658</td>
<td>Standard Specification for Glass Mat Gypsum Panels</td>
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### ASTM Test Standards

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<td>Standard Test Methods for Physical testing of Gypsum Panel Products</td>
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<tr>
<td>C 1629</td>
<td>Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels</td>
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<tr>
<td>D 3273</td>
<td>Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber</td>
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<tr>
<td>E 84</td>
<td>Standard Test Method for Surface Burning Characteristics of Building Materials</td>
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<td>E 90</td>
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### ASTM Application Standards

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<td>C 1280</td>
<td>Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing</td>
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### Gypsum Association Standards

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<td>GA-253</td>
<td>Application of Gypsum Sheathing</td>
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WALL PRIORITY LEGEND

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<tr>
<td>2 HOUR FIRE AND SMOKE WALL</td>
<td>Priority 1</td>
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<td>2 HOUR FIRE WALL</td>
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<td>Priority 3</td>
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<tr>
<td>1 HOUR FIRE AND SMOKE WALL</td>
<td>Priority 4</td>
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<tr>
<td>1 HOUR FIRE WALL</td>
<td>Priority 5</td>
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<td>NON-RATED WALL</td>
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</table>
CONCRETE ON FLUTED STEEL DECK

PROFORM QUICK-SET FS-90 COMPOUND

GLASS FIBER INSULATION

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)
CONCRETE ON FLUTED STEEL DECK

3 5/8" STEEL STUD
24" O.C. MAX.

5/8" FIRE-SHIELD GYPSUM BOARD

ELASTOMERIC SPRAY FIRESTOP

MINERAL WOOL INSULATION

STEEL TRACK - MECHANICALLY FASTEN
24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

GLASS FIBER INSULATION (OPTIONAL)

5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN
24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0043
UL DESIGN: HW-D-0292

PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 103

1 HOUR PARTITION TO STEEL DECK

© National Gypsum Properties, LLC
5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0034
UL DESIGN: HW-D-0045

PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438

DATE: 11/05/13
 SCALE: 3"=1'-0"
DETAIL: SS 104

© National Gypsum Properties, LLC
CONCRETE ON FLUTED STEEL DECK

FIRESTOP SEALANT

MINERAL WOOL INSULATION

MECHANICALLY FASTEN DEFLECTION TRACK 24" O.C. MAX. (OPTIONAL)

STEEL TRACK NESTED WITHIN DEFLECTION TRACK WITHOUT ATTACHMENT

5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0034
UL DESIGN: HW-D-0045

PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438
**CONCRETE ON FLUTED STEEL DECK**

**PROFORM QUICK-SET FS-90 COMPOUND**

**MINERAL WOOL INSULATION**

**CUT GYPSUM BOARD PANELS TO FIT DECK CONFIGURATION**

**FIRE TRAK SHADOWLINE MECHANICALLY FASTEN 24" O.C. MAX.**

**TOP ROW OF FASTENERS 3" FROM TOP OF GYPSUM BOARD**

**5/8" FIRE-SHIELD GYPSUM BOARD**

**3 5/8" STEEL STUD 24" O.C. MAX.**

**GLASS FIBER INSULATION (OPTIONAL)**

**5/8" FIRE-SHIELD GYPSUM BOARD**

**STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.**

**FLEXIBLE SEALANT (OPTIONAL)**

**PARTITION - 1 HR**

**UL DESIGN: HW-D-0060**

**DATE: 11/05/13**

**SCALE: 3"=1'-0"**

**DETAIL: SS 107**
5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" STEEL STUD
24" O.C. MAX.
GLASS FIBER INSULATION (OPTIONAL)
5/8" FIRE-SHIELD GYPSUM BOARD
STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.
FLEXIBLE SEALANT (OPTIONAL)

CONCRETE ON FLUTED STEEL DECK

STEEL BEAM
SPRAY-APPLIED FIRE RESISTIVE MATERIAL
20 GA. Z-CLIPS @ 16" O.C. MAX., FASTEN BEFORE APPLICATION OF SPRAY ON FIREPROOFING
FASTEN STEEL TRACK TO Z-CLIPS
MINERAL WOOL INSULATION
ELASTOMERIC SPRAY FIRESTOP

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0252
UL DESIGN: HW-D-0259

PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 108

© National Gypsum Properties, LLC
CONCRETE ON FLUTED STEEL DECK

STEEL BEAM
SPRAY-APPLIED FIRE RESISTIVE MATERIAL
3/8" DIAMOND MESH EXPANDED METAL LATH
MINERAL WOOL INSULATION
1 1/2" Z FURRING OR CHANNELS 24" O.C.

ELASTOMERIC SPRAY FIRESTOP
5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" STEEL STUD 24" O.C. MAX.
GLASS FIBER INSULATION (OPTIONAL)
5/8" FIRE-SHIELD GYPSUM BOARD
STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.
FLEXIBLE SEALANT (OPTIONAL)

PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0617
UL DESIGN: HW-D-0635

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 109

© National Gypsum Properties, LLC
MIN. 4 1/2" THICK REINFORCED CONCRETE

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0079
UL DESIGN: HW-D-0083

FIRESTOP SEALANT
STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" STEEL STUD 24" O.C. MAX.
GLASS FIBER INSULATION (OPTIONAL)

PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438

5/8" FIRE-SHIELD GYPSUM BOARD
STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.
FLEXIBLE SEALANT (OPTIONAL)
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

1 1/4" PROFORM QUICK-SET FS-90 COMPOUND

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

PROFORM QUICK-SET SETTING COMPOUND

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

CONCRETE ON FLUTED STEEL DECK

HEAD OF WALL - 1 HR
WHI-495-PSV-1325

PARTITION - 1 HR
UL DESIGN: V497
PARTITION RATED FROM BOTH SIDES

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 111
CONCRETE ON FLUTED STEEL DECK

3 5/8" STEEL STUD
24" O.C. MAX.

5/8" FIRE-SHIELD GYPSUM BOARD
STEEL TRACK - MECHANICALLY FASTENED
24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

MINERAL WOOL INSULATION
FLEXIBLE SEALANT (OPTIONAL)

ELASTOMERIC SPRAY FIRESTOP

1/2" PERMABASE CEMENT BOARD

3 5/8" STEEL STUD
24" O.C. MAX.

MINERAL WOOL INSULATION

5/8" FIRE-SHIELD GYPSUM BOARD
STEEL TRACK - MECHANICALLY FASTENED
24" O.C. MAX.
FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0043
UL DESIGN: HW-D-0292

PARTITION - 1 HR
UL DESIGN: V452
CONCRETE ON FLUTED STEEL DECK

PROFORM QUICK-SET FS-90 COMPOUND

GLASS FIBER INSULATION

STEEL TRACK - MECHANICALLY FASTENED 24" O.C. MAX.

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTENED 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 2 HR
WHI 495-PSV-1068

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 201
3 5/8" STEEL STUD
24" O.C. MAX.
STEEL TRACK - MECHANICALLY FASTEN
24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

GLASS FIBER INSULATION (OPTIONAL)
FLEXIBLE SEALANT (OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" STEEL STUD 24" O.C. MAX.

POLYETHYLENE BACKER ROD, GLASS FIBER INSULATION, OR MINERAL WOOL INSULATION
CUT GYPSUM BOARD PANELS TO FIT DECK CONFIGURATION

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0103
UL DESIGN: HW-D-0076

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 202

© National Gypsum Properties, LLC
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

FIRESTOP SEALANT

MINERAL WOOL INSULATION

CONCRETE ON FLUTED STEEL DECK

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0034
UL DESIGN: HW-D-0045

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 204
CONCRETE ON FLUTED STEEL DECK

ELASTOMERIC SPRAY FIRESTOP

MINERAL WOOL INSULATION

JOINT FORMING PROFILE MATERIAL

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0363

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 206

© National Gypsum Properties, LLC
CONCRETE ON FLUTED STEEL DECK

PROFORM QUICK-SET FS-90 COMPOUND

MINERAL WOOL INSULATION

CUT GYPSUM BOARD PANELS TO FIT DECK CONFIGURATION

FIRE TRAK SHADOWLINE MECHANICALLY FASTEN 24" O.C. MAX.

TOP ROW OF FASTENERS 3" FROM TOP OF GYPSUM BOARD

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0060

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 207

© National Gypsum Properties, LLC
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

CONCRETE ON FLUTED STEEL DECK

STEEL BEAM

SPRAY-APPLIED FIRE RESISTIVE MATERIAL

20 GA. Z-CLIPS @ 16" O.C. MAX., FASTEN BEFORE APPLICATION OF SPRAY ON FIREPROOFING

FASTEN STEEL TRACK TO Z-CLIPS

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0252
UL DESIGN: HW-D-0259

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 208
3 5/8" STEEL STUD
24" O.C. MAX.
STEEL TRACK - MECHANICALLY FASTEN
24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

GLASS FIBER INSULATION
(FUNCTIONAL)

2 LAYERS 5/8" FIRE-SHIELD
GYPSUM BOARD

3 5/8" STEEL STUD
24" O.C. MAX.

FIRESTOP SEALANT

2 LAYERS 5/8" FIRE-SHIELD
GYPSUM BOARD
STEEL TRACK - MECHANICALLY FASTEN
24" O.C. MAX.

FLEXIBLE SEALANT
(OPTIONAL)

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0079
UL DESIGN: HW-D-0083

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438

2 LAYER PARTITION TO CONCRETE SLAB
SCALE: 3"=1'-0"
DETAIL: SS 210

DATE: 11/05/13

© National Gypsum Properties, LLC
CONCRETE ON FLUTED STEEL DECK

2" PROFORM QUICK-SET FS-90 COMPOUND
GLASS FIBER INSULATION

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FACE OF WALL - 2 HR
WHI-495-PSV-1326
HEAD OF WALL RATED FROM BOTH SIDES

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" STEEL STUD 24" O.C. MAX.
GLASS FIBER INSULATION (OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.
FLEXIBLE SEALANT (OPTIONAL)

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 211

© National Gypsum Properties, LLC
CONCRETE ON FLUTED STEEL DECK

3 5/8" STEEL STUD
24" O.C. MAX.

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN
24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

MINERAL WOOL INSULATION

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0043
UL DESIGN: HW-D-0292

1/4" MIN.

1/2" PERMABASE CEMENT BOARD

5/8" FIRE-SHIELD GYPSUM BOARD

3 5/8" STEEL STUD
24" O.C. MAX.

MINERAL WOOL INSULATION

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTEN
24" O.C. MAX.

ELASTOMERIC SPRAY FIRESTOP

PARTITION - 2 HR
UL DESIGN: V452
CONCRETE ON FLUTED STEEL DECK

3 5/8" STEEL STUD
24" O.C. MAX.

3 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

GLASS FIBER INSULATION
(Optional)

STEEL TRACK - MECHANICALLY FASTEN
24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 3 HR
UL DESIGN: HW-D-0043
UL DESIGN: HW-D-0292

PARTITION - 3 HR
UL DESIGN: V438

3 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 301

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CONCRETE ON FLUTED STEEL DECK

3 5/8" STEEL STUD
24" O.C. MAX.

4 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL TRACK - MECHANICALLY FASTENED
24" O.C. MAX. (SLOTTED TRACK OPTIONAL)

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

GLASS FIBER INSULATION (OPTIONAL)

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 4 HR
UL DESIGN: HW-D-0043
UL DESIGN: HW-D-0292

PARTITION - 4 HR
UL DESIGN: V438

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 401

4 HOUR PARTITION TO STEEL DECK

© National Gypsum Properties, LLC
VERTICAL JOINTS STAGGERED ONE STUD CAVITY ON OPPOSITE SIDES OF PARTITION

HORIZONTAL BASE LAYER JOINTS NEED NOT BE STAGGERED OR BACKED BY FRAMING

5/8" FIRE-SHIELD GYPSUM BOARD

PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438
VERTICAL JOINTS STAGGERED ONE STUD ON OPPOSITE SIDES OF PARTITION

HORIZONTAL BASE LAYER JOINTS NEED NOT BE STAGGERED OR BACKED BY FRAMING

VERTICAL JOINTS STAGGERED ONE STUD CAVITY BETWEEN BASE AND FACE LAYERS

HORIZONTAL JOINTS STAGGERED 12" MIN. BETWEEN BASE AND FACE LAYERS

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438
CONTROL JOINTS FOR FIRE-RATED SYSTEMS

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 503

© National Gypsum Properties, LLC
1 HOUR PARTITION CORNER DETAIL

PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438

TAPE AND JOINT COMPOUND
5/8" FIRE-SHIELD GYPSUM BOARD

CORNER BEAD
INTERSECTIONS OF RATED PARTITIONS

PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438

1 HOUR RATED PARTITION

Tape and joint compound (Typ.)
1 layer required at 1 hour smoke partition
2 hour rated partition (higher priority)

Solid core wood door
Jamb anchor clip
Steel door frame

1 hour corridor partition
Non-rated steel stud partition

Tape and joint compound (Typ.)
1 layer required at 1 hour smoke partition
2 hour rated partition (higher priority)
EXTerior wall cladding

5/8" EXP extended exposure gypsum sheathing

5/8" fire-shield gypsum board

Tape and joint compound

5/8" fire-shield gypsum board

1 hr partition
1 HOUR PARTITION AT NON-RATED EXTERIOR WALL

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SS 507

© National Gypsum Properties, LLC
EXTERIOR WALL CLADDING
5/8" EXP EXTENDED EXPOSURE GYPSUM SHEATHING
FLEXIBLE SEALANT (OPTIONAL)

CONTINUOUS STEEL TRACK CLIPPED TO RECEIVE GYPSUM BOARD

5/8" FIRE-SHIELD GYPSUM BOARD
TAPE AND JOINT COMPOUND
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
2 HR PARTITION
PARTITION - 1 HR
UL DESIGN: U499
UL DESIGN: W419

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0572

CONCRETE ON FLUTED STEEL DECK

MINERAL WOOL INSULATION
ELASTOMERIC SPRAY FIRESTOP
STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

5/8" FIRE-SHIELD GYPSUM BOARD
CT, CH, OR I STUDS 24" O.C.
1" FIRE-SHIELD SHAFTLINER
STEEL J TRACK - MECHANICALLY FASTEN 24" O.C. MAX.
FLEXIBLE SEALANT (OPTIONAL)

1/4" MIN.
CONCRETE ON FLUTED STEEL DECK

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

STEEL DEEP LEG TRACK - MECHANICALLY FASTENED 24" O.C. MAX.

5/8" FIRE-SHIELD GYPSUM BOARD

CT, CH, OR I STUDS 24" O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK - MECHANICALLY FASTENED 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

1/4" MIN.
CONCRETE ON FLUTED STEEL DECK

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

STEEL DEEP LEG TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

5/8" FIRE-SHIELD GYPSUM BOARD

CT, CH, OR I STUDS 24" O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0569

PARTITION - 1 HR
UL DESIGN: U499
UL DESIGN: W419

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SW 105

© National Gypsum Properties, LLC
**1 HOUR SHAFTWALL WITH DEFLECTION TRACK**

**SCALE: 3"=1'-0"**

**DATE: 11/05/13**

**DETAIL: SW 106**

© National Gypsum Properties, LLC
STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX. FLEXIBLE SEALANT (OPTIONAL)

CONCRETE ON FLUTED STEEL DECK

STEEL BEAM SPRAY-APPLIED FIRE RESISTIVE MATERIAL

20 GA. Z-CLIPS @ 24" O.C. MAX., FASTEN BEFORE APPLICATION OF SPRAY ON FIREPROOFING

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

5/8" FIRE-SHIELD GYPSUM BOARD

CT, CH, OR I STUDS 24" O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

1/4" MIN.

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0642
UL DESIGN: HW-D-0571

PARTITION - 1 HR
UL DESIGN: U499
UL DESIGN: W419

DATE: 11/05/13
1 HOUR SHAFTWALL PARTITION TO STEEL BEAM
SCALE: 3"=1'-0"
DETAIL: SW 107

© National Gypsum Properties, LLC
1/4" MIN.
CONCRETE ON FLUTED STEEL DECK

5/8" FIRE-SHIELD
GYPSUM BOARD

CT, CH, OR I STUDS
24" O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK - MECHANICALLY FASTEN
24" O.C. MAX.

FLEXIBLE SEALANT
(OPTIONAL)

1 1/2" Z FURRING OR CHANNELS 24" O.C.

3/8" DIAMOND MESH EXPANDED STEEL LATH

MINERAL WOOL INSULATION

SPRAY-APPLIED FIRE RESISTIVE MATERIAL

Elastomeric spray firestop

5/8" FIRE-SHIELD GYPSUM BOARD

PARTITION - 1 HR
UL DESIGN: U499
UL DESIGN: W419

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0645
UL DESIGN: HW-D-0636

SCALE: 3"=1'-0"
DATE: 11/05/13

1 HOUR SHAFTWALL PARTITION OFFSET FROM BEAM

DETAIL: SW 108

© National Gypsum Properties, LLC
CONCRETE ON FLUTED STEEL DECK

STEEL J TRACK - MECHANICALLY FASTENED
24" O.C. MAX.

CT, CH, OR I STUDS
24" O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK - MECHANICALLY FASTENED
24" O.C. MAX.

TOP ROW OF FASTENERS

FLEXIBLE SEALANT (OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

24" MAX.
UNSUPPORTED LENGTH

HEAD OF WALL - 2 HR
FMJ.I.1J6Q8.AC

PARTITION - 2 HR
UL DESIGN: U497
UL DESIGN: W419

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SW 201

© National Gypsum Properties, LLC
PARTITION - 2 HR
UL DESIGN: U498
UL DESIGN: W419

SCALE: 3'' = 1'-0"
DATE: 11/05/13
DETAIL: SW 202

2 HOUR SHAFTWALL PARTITION AT STAIR

2 1/4" MIN.
HEAD OF WALL - 2 HR
FMJ.I.1J6Q8.AC

HORIZONTAL CONTROL
JOINT 30'-0" O.C.

CONCRETE ON FLUTED
STEEL DECK

5/8" FIRE-SHIELD
GYPSUM BOARD

STEEL J TRACK -
MECHANICALLY FASTEN
24" O.C. MAX.

CT, CH, OR I STUDS
24" O.C.

1" FIRE-SHIELD
SHAFTLINER

5/8" FIRE-SHIELD
GYPSUM BOARD

STEEL J TRACK -
MECHANICALLY FASTEN
24" O.C. MAX.

TOP ROW OF
FASTENERS

5/8" FIRE-SHIELD
GYPSUM BOARD

FLEXIBLE SEALANT
(OPTIONAL)

FLEXIBLE SEALANT
(OPTIONAL)

24" MAX.
UN SUPPORTED LENGTH

MECHANICALLY FASTEN
2" X 2" 20 GA. ANGLE
24" O.C. MAX.

49
2 HOUR SHAFTWALL WITH DEFLECTION TRACK

CONCRETE ON FLUTED STEEL DECK

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0194
UL DESIGN: HW-D-0342

2 LAYERS 5/8"
FIRE-SHIELD GYPSUM BOARD

CT, CH, OR I STUDS
24" O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK - MECHANICALLY FASTEN
24" O.C. MAX.

FLEXIBLE SEALANT
(OPTIONAL)

PARTITION - 2 HR
UL DESIGN: U497
UL DESIGN: W419

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SW 203
CONCRETE ON FLUTED STEEL DECK

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

STEEL DEEP LEG TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

CT, CH, OR I STUDS 24" O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0548

PARTITION - 2 HR
UL DESIGN: U497
UL DESIGN: W419

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SW 204
PARTITION - 2 HR
UL DESIGN: U497
UL DESIGN: W419

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
CT, CH, OR I STUDS
24" O.C.

1" FIRE-SHIELD SHAFTLINER
STEEL J TRACK - MECHANICALLY FASTEN
24" O.C. MAX.
FLEXIBLE SEALANT
(OPTIONAL)

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
MINERAL WOOL INSULATION
ELASTOMERIC SPRAY FIRESTOP
STEEL DEEP LEG TRACK - MECHANICALLY FASTEN
24" O.C. MAX.

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0569

2 HOUR SHAFTWALL TO STEEL DECK
DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SW 205

© National Gypsum Properties, LLC
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

CUT GYPSUM BOARD PANELS TO FIT DECK CONFIGURATION

PROFORM QUICK-SET FS-90 COMPOUND

MINERAL WOOL INSULATION

CONCRETE ON FLUTED STEEL DECK

FIRE TRAK SHADOWLINE MECHANICALLY FASTEN 24" O.C. MAX.

TOP ROW OF FASTENERS 3" FROM TOP OF GYPSUM BOARD

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0119

PARTITION - 2 HR
UL DESIGN: U497
UL DESIGN: W419

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

CT, CH, OR I STUDS 24" O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK - MECHANICALLY FASTEN 24" O.C. MAX.

FLEXIBLE SEALANT (OPTIONAL)

1/4" MIN.
STEEL J TRACK - MECHANICALLY FASTEN 24" O.C. MAX. FLEXIBLE SEALANT (OPTIONAL)

CONCRETE ON FLUTED STEEL DECK

20 GA. Z-CLIPS @ 24" O.C. MAX., FASTEN BEFORE APPLICATION OF SPRAY ON FIREPROOFING

MINERAL WOOL INSULATION

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

CT, CH, OR I STUDS 24" O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL BEAM SPRAY-APPLIED FIRE RESISTIVE MATERIAL

ELASTOMERIC SPRAY FIRESTOP

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0642
UL DESIGN: HW-D-0571

PARTITION - 2 HR
UL DESIGN: U497
UL DESIGN: W419

DATE: 11/05/13

2 HOUR SHAFTWALL PARTITION TO STEEL BEAM
SCALE: 3"=1'-0"
DETAIL: SW 207

© National Gypsum Properties, LLC
PARTITION - 2 HR
UL DESIGN: U497
UL DESIGN: W419

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0645
UL DESIGN: HW-D-0636

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
CT, CH, OR I STUDS 24" O.C.
1" FIRE-SHIELD SHAFTLINER
STEEL J TRACK - MECHANICALLY FASTEN 24" O.C. MAX.
FLEXIBLE SEALANT (OPTIONAL)

ELASTOMERIC SPRAY FIRESTOP
3/8" DIAMOND MESH EXPANDED STEEL LATH
MINERAL WOOL INSULATION

STEEL BEAM
SPRAY-APPLIED FIRE RESISTIVE MATERIAL

1 1/2" Z FURRING OR CHANNELS 24" O.C.

SCALE: 3"=1'-0"
DATE: 11/05/13

2 HOUR SHAFTWALL PARTITION OFFSET FROM BEAM
DETAIL: SW 208

© National Gypsum Properties, LLC
3 LAYERS 5/8" FIRE-SHIELD C GYPSUM BOARD

FLEXIBLE SEALANT (OPTIONAL)

CONCRETE ON FLUTED STEEL DECK

PROFORM QUICK-SET FS-90 COMPOUND
MINERAL WOOL INSULATION
CUT GYPSUM BOARD PANELS TO FIT DECK CONFIGURATION
FIRE TRAK SHADOWLINE MECHANICALLY FASTEN 24" O.C. MAX.

TOP ROW OF FASTENERS 3" FROM TOP OF GYPSUM BOARD

3 LAYERS 5/8" FIRE-SHIELD C GYPSUM BOARD
CT, CH, OR I STUDS 24" O.C.
1" FIRE-SHIELD SHAFTLINER
STEEL J TRACK - MECHANICALLY FASTEN 24" O.C. MAX.
FLEXIBLE SEALANT (OPTIONAL)

HEAD OF WALL - 3 HR
UL DESIGN: HW-D-0119

PARTITION - 3 HR
UL DESIGN: W414
UL DESIGN: W419

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SW 301

© National Gypsum Properties, LLC
PARTITION - 4 HR
UL DESIGN: V451
UL DESIGN: W419

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SW 401

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FIRE TEST - 2 HR
BASED ON WHI-651-0318.1

1 5/8" TYPE S SCREWS
24" O.C.

STEEL STUDS
VINYL OR METAL
CONTROL JOINT

FIRE TEST - 1 HR
BASED ON WHI-647-3024

5/8" FIRE-SHIELD
GYPSUM BOARD
2 LAYERS 5/8" FIRE-SHIELD
GYPSUM BOARD
1/2" MAX.

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SW 501

© National Gypsum Properties, LLC
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK

1" FIRE-SHIELD SHAFTLINER

1" FIRE-SHIELD SHAFTLINER

CT, CH, OR I STUDS

DATE: 11/05/13

SCALE: 6"=1'-0"

DETAIL: SW 601

© National Gypsum Properties, LLC
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

2" x 2" 20 GA. ANGLE FASTENED TO J TRACK WITH TWO 3/8" PAN-HEAD SCREWS AT CEILING AND TWO AT FLOOR

1" FIRE-SHIELD SHAFTLINER

CT, CH, OR I STUDS

2" x 2" 20 GA. ANGLE FASTENED TO J TRACK WITH TWO 3/8" TYPE S-12 SCREWS AT CEILING AND TWO AT FLOOR

12" MAX.
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL J TRACK

PAN-HEAD SCREW 24" O.C.

STEEL J TRACK

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

CT, CH, OR I STUDS

1" FIRE-SHIELD SHAFTLINER

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STEEL J TRACK

1" FIRE-SHIELD SHAFTLINER

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

CT, CH, OR I STUDS

1" FIRE-SHIELD SHAFTLINER

DATE: 11/05/13

SCALE: 6"=1'-0"

DETAIL: SW 604

© National Gypsum Properties, LLC
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

PAN-HEAD SCREW 24" O.C.

STEEL J TRACK

CT, CH, OR I STUDS

1" FIRE-SHIELD SHAFTLINER

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK

2 HOUR SHAFTWALL CORNER DETAIL
CONCRETE ON FLUTED STEEL DECK
5/8" FIRE-SHIELD GYPSUM BOARD
CT, CH, OR I STUDS 24" O.C.
1" FIRE-SHIELD SHAFTLINER
STEEL J TRACK - MECHANICALLY FASTEN 24" O.C. MAX.
CONCRETE ON FLUTED STEEL DECK

FLEXIBLE SEALANT (OPTIONAL)
STEEL J TRACK - MECHANICALLY FASTEN 24" O.C. MAX.
5/8" FIRE-SHIELD GYPSUM BOARD
CT, CH, OR I STUDS 24" O.C.
1" FIRE-SHIELD SHAFTLINER

SCALE: 6"=1'-0"
DATE: 11/05/13
DETAIL: SW 606
© National Gypsum Properties, LLC
J TRACK HEADERS WITH WEBS CUT TO RECEIVE STUDS, FASTEN WITH PAN-HEAD SCREWS SEE DETAIL B

J TRACK CUT AND FOLDED TO FRAME DUCT AND FASTENED WITH PAN-HEAD SCREWS SEE DETAIL A

J TRACK

CEILING LINE

CT, CH, OR I STUDS 24" O.C.

J TRACK CUT AND FOLDED TO FRAME DUCT AND FASTENED WITH PAN-HEAD SCREWS

J TRACK

CUT WEB FROM J TRACK TO RECEIVE CT STUD, FASTEN WITH PAN-HEAD SCREWS

DETAIL A

DETAIL B

DATE: 11/05/13

SCALE: 1/2"=1'-0"

DETAIL: SW 701

© National Gypsum Properties, LLC
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
1" FIRE-SHIELD SHAFTLINER
J TRACK
CLEARANCE GAP
MOUNTING ANGLES

DUCT SURFACE

MOUNTING ANGLES

DUCT SURFACE

FLEXIBLE SEALANT AS REQUIRED FOR SMOKE SEAL
J TRACK
1" FIRE-SHIELD SHAFTLINER
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
CONCRETE OR FLUTED STEEL DECK

8 GA. HANGER WIRE 24" O.C.

6" STEEL C TRACK 25 GA.

2" x 6" MINERAL WOOL

1" FIRE-SHIELD SHAFTLINER

4" CT STUDS 20 GA.

4" J TRACK 20 GA. EACH SIDE OF C TRACK

3 LAYERS 5/8" GOLD BOND FIRE-SHIELD C GYPSUM BOARD

INSTALL 2 PAN HEAD SCREW OPPOSITE C TRACK FLANGES 24" O.C.

C TRACK

FLOOR-CEILING - 2 HR
UL DESIGN: G586

HANGER ASSEMBLY DETAIL (REQUIRED FOR SPANS GREATER THAN 8'-0"

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: SW 703
2 HR RATED FLOOR-CEILING ASSEMBLY

MECHANICALLY FASTEN STEEL J TRACK 24" O.C.

FLEXIBLE SEALANT (OPTIONAL)
1/2" TYPE S OR S-12 PAN-HEAD SCREWS (TWO PER STUD)

DUCT

1" FIRE-SHIELD SHAFTLINER

2 1/2" CT STUDS 24" O.C.

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

1/2" TYPE S OR S-12 PAN-HEAD SCREW 24" O.C.

J TRACK FASTENED TO STUDS 24" O.C. MAX.

3 LAYERS 5/8" FIRE-SHIELD C GYPSUM BOARD

2 HR RATED WALL ASSEMBLY

4" CT STUDS 24" O.C.

J TRACK FASTENED 24" O.C.
2 HR SHAFTWALL ASSEMBLY - UL DESIGN: U498

1" SHAFTLINER FILLER STRIP

FASTEN J TRACKS WITH 1" TYPE S SCREWS 24" O.C.

STEEL COLUMN

NON-RATED STEEL STUD PARTITION

LATERAL STEEL BRACE

2 HR SHAFTWALL ASSEMBLY WITH LINER PANEL ORIENTED TOWARD LATERAL BRACE - UL DESIGN: U497

DATE: 11/05/13
SCALE: 1 1/2"=1'-0"
DETAIL: ST 102
2 HR SHAFTWALL ASSEMBLY WITH LINER PANEL ORIENTED TOWARD LATERAL BRACE - UL DESIGN: U497

FASTEN J TRACKS WITH 1 5/8" TYPE S SCREWS 24" O.C.

1" SHAFTLINER FILLER STRIP

2 HR SHAFTWALL ASSEMBLY WITH LINER PANEL ORIENTED TOWARD LATERAL BRACE - UL DESIGN: U497

LATERAL STEEL BRACE

NON-RATED STEEL STUD PARTITION

STEEL COLUMN
2 HR SHAFTWALL ASSEMBLY WITH LINER PANEL ORIENTED TOWARD LATERAL BRACE
UL DESIGN: U497

CONTROL JOINT

STEEL BEAM

NON-RATED STEEL STUD
PARTITION

LATERAL STEEL BRACE

DATE: 11/05/13
SCALE: 1 1/2"=1'-0"
DETAIL: ST 104

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DETAIL A

2 HR SHAFTWALL ASSEMBLY - UL DESIGN U497

30" x 6" x 1/2" STEEL PLATE

STEEL J TRACK
4" x 4" STEEL TUBE
1 1/2" x 6" x 1/2" STEEL PLATE

FIRE CAULK ALL SIDES OF STEEL PLATE PENETRATION

STEEL J TRACK
1" FIRE-SHIELD SHAFTLINER PANEL FASTENED TO STEEL J TRACKS WITH 1 1/2" TYPE S SCREWS

GUIDE RAIL BRACKET ASSEMBLY

4" x 4" STEEL TUBE
1 1/2" x 6" x 1/2" STEEL PLATE

30" x 6" x 1/2" STEEL ATTACHMENT PLATE FOR GUIDE RAILS

ELEVATOR CAB

MINIMUM HOISTWAY WIDTH

MINIMUM HOISTWAY DEPTH

2"
ELEVATOR SHAFTWALL HEAD AND JAMB DETAILS

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: EV 103

© National Gypsum Properties, LLC
1 HR RATED FLOOR-CEILING ASSEMBLY

1 1/2 HR FIRE-RATED DAMPER

NON-RATED SUSPENDED CEILING

1 HR RATED PARTITION - UL DESIGN: U465 OR V438

DATE: 11/05/13
SCALE: 1/2"=1'-0"
DETAIL: CR 101
DUCT RATED OR NON-RATED FLOOR-CEILING ASSEMBLY

BRACING AS REQUIRED

CORRIDOR WALL PERMITTED TO TERMINATE AT UPPER MEMBRANE OF CEILING ASSEMBLY

CORRIDOR CEILING CONSTRUCTED AS REQUIRED FOR CORRIDOR WALLS - 2009 IBC 709.4

1 HR RATED PARTITION - UL DESIGN: U465 OR V438
DUCT

1 HOUR CORRIDOR ASSEMBLY

DATE: 11/05/13
SCALE: 1/2"=1'-0"
DETAIL: CR 103

RATED OR NON-RATED FLOOR-CEILING ASSEMBLY

BRACING AS REQUIRED

MINERAL WOOL INSULATION

STEEL TRACK - FASTEN TO STUDS WITH 1 5/8" TYPE S SCREWS

1 HOUR GYPSUM BOARD MEMBRANE - 2 LAYERS 5/8" FIRE-SHIELD WALLBOARD PER GYPSUM ASSOCIATION DOCUMENT GA 610

1 HR RATED PARTITION - UL DESIGN: U465 OR V438
2 HR RATED FLOOR-CEILING ASSEMBLY

1 1/2 HR FIRE-RATED DAMPER

NON-RATED SUSPENDED CEILING

2 HR RATED PARTITION - UL DESIGN: U411 OR V438
DUCT

RATED OR NON-RATED FLOOR-CEILING ASSEMBLY

BRACING AS REQUIRED

CORRIDOR WALL PERMITTED TO TERMINATE AT UPPER MEMBRANE OF CEILING ASSEMBLY

CORRIDOR CEILING CONSTRUCTED AS REQUIRED FOR CORRIDOR WALLS - 2009 IBC 709.4

2 HR RATED PARTITION - UL DESIGN: U411 OR V438

SURFACE: 1/2"=1'-0"

DATE: 11/05/13

SCALE: 1/2"=1'-0"

DETAIL: CR 202

© National Gypsum Properties, LLC
RATED OR NON-RATED
FLOOR-CEILING ASSEMBLY

DUCT

BRACING AS REQUIRED

MINERAL WOOL INSULATION

STEEL TRACK - FASTEN TO
STUDS WITH 1 5/8" TYPE S
SCREWS

2 HOUR GYPSUM BOARD
MEMBRANE -
4 LAYERS 5/8" FIRE-SHIELD
WALLBOARD WITH 7/8"
FURRING CHANNEL
BETWEEN 3RD AND FACE
LAYER PER GYPSUM
ASSOCIATION DOCUMENT
GA 610

2 HR RATED PARTITION -
UL DESIGN: U411 OR V438

DATE: 11/05/13
SCALE: 1/2"=1'-0"
DETAIL: CR 203

© National Gypsum Properties, LLC
DUCT

RATED OR NON-RATED FLOOR-CEILING ASSEMBLY

BRACING AS REQUIRED

HORIZONTAL SHAFTWALL ASSEMBLY - UL DESIGN: G586

MINERAL WOOL INSULATION

STEEL J TRACK - FASTEN TO STUDS WITH 1 5/8" TYPE S SCREWS

HORIZONTAL SHAFTWALL ASSEMBLY - UL DESIGN: G586

NOTE:
FOR SPANS GREATER THAN 8'-0" REFER TO DETAIL SW 703
FOR INTERMEDIATE SUPPORTS

2 HR RATED PARTITION - UL DESIGN: U411 OR V438

DATE: 11/05/13
SCALE: 1/2"=1'-0"
DETAIL: CR 204

© National Gypsum Properties, LLC
FLOOR-CEILING - 2 HR
UL DESIGN: G514

MIN. 2 1/2" CONCRETE SLAB
3/8" EXPANDED STEEL RIB LATH

7/8" STEEL FURRING CHANNELS 24" O.C.
MIN. W8X31 STEEL BEAM
MIN. 10J2 OR 10K1 STEEL JOIST 24" O.C.
1/2" FIRE-SHIELD C GYPSUM BOARD
1 HOUR RATED COLUMN

DETAIL: CL 101

- 1 5/8" STEEL STUD
- CORNER BEAD
- 1/2" FIRE-SHIELD C OR 5/8" FIRE-SHIELD GYPSUM BOARD
- MIN. W10X49 STEEL COLUMN

COLUMN - 1 HR
UL DESIGN: X528

DATE: 11/05/13
SCALE: 3"=1'-0"

© National Gypsum Properties, LLC
MIN. W10X49 STEEL COLUMN

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

1 5/8" STEEL STUD

CORNER BEAD

COLUMN - 2 HR
UL DESIGN: X528

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: CL 201

2 HOUR RATED COLUMN

© National Gypsum Properties, LLC
1 5/8" STEEL STUD
CORNER BEAD

COLUMN - 3 HR
UL DESIGN: X510

MIN. W10X49 STEEL COLUMN

3 LAYERS
5/8" FIRE-SHIELD
GYPSUM BOARD

1 5/8" STEEL STUD

CORNER BEAD
MIN. W10X49 STEEL COLUMN

4 LAYERS 5/8" FIRE-SHIELD C GYPSUM BOARD

1 5/8" STEEL STUD

2" x 2" STEEL ANGLE

CORNER BEAD

COLUMN - 4 HR
UL DESIGN: X501

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: CL 401
CONCRETE ON FLUTED STEEL DECK

SPRAY APPLIED FIRE RESISTIVE MATERIAL PROVIDING FLAT SURFACE 1/4" FROM BOTTOM OF FLUTES

1"x2" STEEL ANGLE

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

BEAM - 2 HR
UL DESIGN: N501

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: BM 101
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

2 1/2" MIN. STEEL STUDS 24" O.C. MAX. OR 2x4 WOOD STUDS 16" O.C. MAX.

PROFORM QUICK-SET FS-90 COMPOUND

4" SCHEDULE 5 STEEL PIPE, 4" CONDUIT, OR 3" COPPER TUBING

3 1/2" THICKNESS OF 0.5 PCF GLASS FIBER INSULATION FIRMLY PACKED INTO OPENING

WALL PENETRATION
F RATING - 2 HR
T RATING - 0 HR
UL DESIGN: W-L-1041
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

MAX. 100 PAIR NO. 24 AWG CABLES MIN. 10% TO MAX. 33% OF AGGREGATE CROSS-SECTIONAL AREA OF OPENING

PROFORM QUICK-SET FS-90 COMPOUND

3 1/2" THICKNESS OF 0.5 PCF GLASS FIBER INSULATION FIRMLY PACKED INTO OPENING

2 1/2" MIN. STEEL STUDS 24" O.C. MAX. OR 2x4 WOOD STUDS 16" O.C. MAX.

7" MAX. DIAMETER

WALL PENETRATION
F RATING - 2 HR
T RATING - 0 HR
UL DESIGN: W-L-3035

DATE: 11/05/13
SCALE: 3"=1'-0"
DETAIL: PN 202

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MIN. 1" THICKNESS PROFORM QUICK-SET FS-90 COMPOUND

MIN. 4 1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR

NOM. 8" DIAMETER OR SMALLER STEEL EMT, CONDUIT OR PIPE GROUTED FLUSH WITH FLOOR OR WALL ASSEMBLY (OPTIONAL)

3" THICKNESS OF 6 PCF MINERAL WOOL INSULATION FIRMLY PACKED INTO OPENING

4" SCHEDULE 5 STEEL PIPE, 4" CONDUIT, OR 3" COPPER TUBING

NOTE: WALL ASSEMBLIES MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS

FLOOR PENETRATION
F RATING - 3 HR
T RATING - 0 HR
UL DESIGN: C-AJ-1163
MAX. 100 PAIR NO. 24 AWG CABLES
MIN. 10% TO MAX. 40% OF AGGREGATE CROSS-SECTIONAL AREA OF OPENING
MIN. 1" THICKNESS PROFORM QUICK-SET FS-90 COMPOUND
MIN. 4 1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR MIN. 5" THICK CONCRETE WALL
NOM. 6" DIAMETER OR SMALLER SCHEDULE 40 STEEL EMT, CONDUIT OR PIPE GROUTED FLUSH WITH FLOOR OR WALL ASSEMBLY (OPTIONAL)
3" THICKNESS OF GLASS FIBER INSULATION FIRMLY PACKED INTO OPENING
MAX. 100 PAIR NO. 24 AWG CABLES MIN. 10% TO MAX. 40% OF AGGREGATE CROSS-SECTIONAL AREA OF OPENING
NOTE: WALL ASSEMBLIES MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS

FLOOR PENETRATION
F RATING - 3 HR
T RATING - 1/4 HR
UL DESIGN: C-AJ-3073

DATE: 11/05/13
CABLE PENETRATION THROUGH FLOOR
SCALE: 3"=1'-0"
DETAIL: PN 302
MIN. 2" THICKNESS PROFORM QUICK-SET FS-90 COMPOUND

MIN. 4 1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR

NOM. 6" DIAMETER OR SMALLER STEEL EMT, CONDUIT OR PIPE GROUTED FLUSH WITH FLOOR OR WALL ASSEMBLY (OPTIONAL)

2" THICKNESS OF MIN. 6 PCF MINERAL WOOL INSULATION FIRMLY PACKED INTO OPENING

NOTE: WALL ASSEMBLIES MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS
SOUND RATINGS FOR 1 HOUR PARTITIONS

5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 16" O.C.
3 1/2" GLASS FIBER INSULATION
5/8" FIRE-SHIELD GYPSUM BOARD

UL DESIGN: U465, V438

STC 43
TEST: NGC 2502

5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 16" O.C.
3 1/2" GLASS FIBER INSULATION
5/8" SOUNDBREAK XP GYPSUM BOARD

UL DESIGN: U465, V438

STC 49
TEST: NGC2009058

5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 16" O.C.
3 1/2" GLASS FIBER INSULATION
5/8" FIRE-SHIELD GYPSUM BOARD

UL DESIGN: U465, V438

STC 52
TEST: RAL-TL07-148

5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 16" O.C.
3 1/2" GLASS FIBER INSULATION
5/8" SOUNDBREAK XP GYPSUM BOARD

UL DESIGN: U465, V438

STC 47
TEST: NGC 2386

5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 24" O.C.
2 1/2" GLASS FIBER INSULATION
5/8" FIRE-SHIELD GYPSUM BOARD

UL DESIGN: U465, V438

STC 54
TEST: RAL-TL07-389

5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 24" O.C.
3" MINERAL FIBER INSULATION
5/8" SOUNDBREAK XP GYPSUM BOARD

UL DESIGN: U465, V438

STC 57
TEST: RAL-TL06-334

5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 24" O.C.
3 1/2" GLASS FIBER INSULATION
1/2" SOUNDBREAK XP GYPSUM BOARD
5/8" FIRE-SHIELD GYPSUM BOARD

DATE: 11/05/13
SCALE: 1 1/2"=1'-0"
DETAIL: SN 101

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SOUND RATINGS FOR 2 HOUR PARTITIONS

**STC 50**

TEST: NGC 2500

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 16" O.C.
3 1/2" GLASS FIBER INSULATION
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

**STC 53**

TEST: NGC2007002

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 24" O.C.
3 1/2" GLASS FIBER INSULATION
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

**STC 56**

TEST: NGC 3022

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 24" O.C.
3" MINERAL FIBER INSULATION
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

**STC 60**

TEST: RAL-TL07-168

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" 25GA. STEEL STUDS 24" O.C.
3 1/2" GLASS FIBER INSULATION
5/8" FIRE-SHIELD GYPSUM BOARD
5/8" SOUNDBREAK XP GYPSUM BOARD

DATE: 11/05/13

SCALE: 1 1/2"=1'-0"

DETAIL: SN 102

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SOUND RATINGS FOR SHAFTWALL PARTITIONS

1" FIRE-SHIELD SHAFTLINER
2 1/2" 25GA. CT, CH, OR I STUDS 24" O.C.
1 1/2" GLASS FIBER INSULATION
5/8" FIRE-SHIELD GYPSUM BOARD

STC 42
TEST: NGC 2542

1" FIRE-SHIELD SHAFTLINER
2 1/2" 25GA. CT, CH, OR I STUDS 24" O.C.
1 1/2" GLASS FIBER INSULATION
1/2" RESILIENT CHANNEL 24" O.C.
5/8" FIRE-SHIELD GYPSUM BOARD

STC 48
TEST: NGC 2541

1" FIRE-SHIELD SHAFTLINER
2 1/2" 25GA. CT, CH, OR I STUDS 24" O.C.
1 1/2" GLASS FIBER INSULATION
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STC 48
TEST: NGC 2507

1" FIRE-SHIELD SHAFTLINER
2 1/2" 25GA. CT, CH, OR I STUDS 24" O.C.
1 1/2" GLASS FIBER INSULATION
1/2" RESILIENT CHANNEL 24" O.C.
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

STC 51
TEST: NGC 2540

5/8" FIRE-SHIELD GYPSUM BOARD
1" FIRE-SHIELD SHAFTLINER
2 1/2" 25GA. CT, CH, OR I STUDS 24" O.C.
1 1/2" GLASS FIBER INSULATION
5/8" FIRE-SHIELD GYPSUM BOARD

STC 48
TEST: NGC 2534

5/8" FIRE-SHIELD GYPSUM BOARD
1" FIRE-SHIELD SHAFTLINER
2 1/2" 25GA. CT, CH, OR I STUDS 24" O.C.
1 1/2" GLASS FIBER INSULATION
1/2" RESILIENT CHANNEL 24" O.C.
5/8" FIRE-SHIELD GYPSUM BOARD

STC 52
TEST: NGC 2538

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FLUSH PATCH IN RATED PARTITION
FOR MEMBRANE PENETRATIONS LESS THAN 10" IN DIAMETER

NOTES:
FOR MULTIPLE LAYER SYSTEMS STAGGER VERTICAL
AND HORIZONTAL PATCH JOINTS 12" MINIMUM AND
FASTEN VERTICAL EDGES TO STUD FRAMING

FOR MINOR SURFACE ABRASIONS, PAPER TEARS, OR
SMALL DENTS, REMOVE ALL LOOSE PAPER AND
APPLY SETTING COMPOUND OVER THE DAMAGED
AREA.
1-800-NATIONAL®
Construction Services

A Valuable Resource.

With over 70 years of accumulated research, on-the-job experience and knowledge of building products and their application, National Gypsum is your resource for technical information. Beyond simply manufacturing and providing quality building products, National Gypsum has made a total commitment to technical assistance for our customers all along the line at every stage of a project’s development.

Corporate Headquarters
National Gypsum Company
2001 Rexford Road
Charlotte, NC 28211
Phone: (704) 365-7300
Web: nationalgypsum.com

Technical Information
Phone: (800) NATIONAL
(800) 626-4662
Fax: (800) FAX-NGC1
(800) 326-6421

You've got the questions ... we've got the answers.
From left, the technical service team: Mark Chapman, Sam Halverson and Jim Farrell.

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