Fire-Rated Assemblies in Commercial Construction

Second Edition

The PURPLE BOOK II

National Gypsum
The PURPLE Book® II is the second edition of National Gypsum Company’s Fire-Rated Assemblies in Commercial Construction. Originally published in 2013, The PURPLE Book® has proven to be a trusted resource for architects, contractors and inspectors for assembly details pertaining to National Gypsum Company product applications in fire-rated construction. The PURPLE Book® II features:

- GridMarX® detail, highlighting National Gypsum’s patented pre-printed installation guide marks
- MaX 12™ fastener pattern detail, highlighting National Gypsum’s 12-inch on center fastener pattern for 1-hour assemblies
- New National Gypsum Company fire-rated wall and ceiling assemblies
- New corner details for steel stud partitions
- New corner details for shaftwall assemblies
- New repair details for shaftwall assemblies

Whatever stage your project is in, our 1-800-NATIONAL® Construction Services experts are here to support you. Whether you have questions regarding fire-rated assemblies, products, specifications or building codes, we can help. Just call 1-800-NATIONAL – it’s that easy.

These gypsum board system details are intended solely as technical support incident to the sale and use of National Gypsum Company products. Architects, engineers, design professionals, contractors, building code officials, or competent construction industry trade personnel should consider this information for the selection, specification and use of National Gypsum Company products in these systems.

Architects, engineers, designers and/or contractors involved should review these details with the governing code or inspection official at the time of the job submittal to determine if there are any discrepancies with local code or regulatory requirements. A design professional must provide a complete evaluation and verify the suitability of the system for a given application before beginning a project.

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For a guide to fire-safety information relating to certain systems described in The PURPLE Book® II, please refer to the information on National Gypsum’s website at ngcfireandsafety.info or call Construction Services at 1-800-NATIONAL.
### GN Series - General Information
- GN 101: UL Designations for Gold Bond® Products
- GN 102: ASTM and Gypsum Association Standards
- GN 103: Wall Priority Legend

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- SS 103
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<td>FC 201</td>
<td>2 Hour Floor-Ceiling Assembly</td>
<td>G514</td>
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<tr>
<td><strong>CL Series - Steel Column Assemblies</strong></td>
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<tr>
<td>CL 101</td>
<td>1 Hour Rated Column</td>
<td>X528</td>
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<td>CL 201</td>
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<td>CL 301</td>
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<td><strong>BM Series - Rated Steel Beam Assemblies</strong></td>
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<td>N501</td>
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<td><strong>PN Series - Penetrations Through Rated Wall and Floor Assemblies</strong></td>
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<td>PN 201</td>
<td>Pipe Penetration Through Wall</td>
<td>W-L-1041</td>
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<td>PN 202</td>
<td>Cable Penetration Through Wall</td>
<td>W-L-3035</td>
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<td>PN 301</td>
<td>Pipe Penetration Through Floor</td>
<td>C-AJ-1163</td>
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<td>Void Fill Assembly</td>
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<td>Sound Ratings for Shaftwall Partitions</td>
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<td><strong>ASTM Product Standards</strong></td>
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<td>C475</td>
<td>Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board</td>
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<td>Standard Specification for Gypsum Board</td>
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<tr>
<td>C473</td>
<td>Standard Test Methods for Physical testing of Gypsum Panel Products</td>
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<td>C474</td>
<td>Standard Test Methods for Joint Treatment Materials for Gypsum Board Construction</td>
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<tr>
<td>C1629</td>
<td>Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels</td>
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<td>D3273</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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<td>E84</td>
<td>Standard Test Method for Surface Burning Characteristics of Building Materials</td>
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<tr>
<td>E90</td>
<td>Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements</td>
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<tr>
<td>E96</td>
<td>Standard Test Methods for Water Vapor Transmission of Materials</td>
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<tr>
<td>E136</td>
<td>Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C</td>
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<td>G21</td>
<td>Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi</td>
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<td>C840</td>
<td>Standard Specification for Application and Finishing of Gypsum Board</td>
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<td>C1280</td>
<td>Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing</td>
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<tr>
<td>GA-214</td>
<td>Recommended Levels of Gypsum Board Finish</td>
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<td>GA-216</td>
<td>Application and Finishing of Gypsum Panel Products</td>
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<td>Application of Gypsum Sheathing</td>
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WALL PRIORITY LEGEND

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<th>Description</th>
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<tr>
<td>2 HOUR FIRE AND SMOKE WALL</td>
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<td>2 HOUR FIRE WALL</td>
<td>PRIORITY 2</td>
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<td>2 HOUR SHAFTWALL</td>
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<tr>
<td>1 HOUR FIRE AND SMOKE WALL</td>
<td>PRIORITY 3</td>
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<td>1 HOUR FIRE WALL</td>
<td>PRIORITY 4</td>
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<tr>
<td>NON-RATED WALL</td>
<td>PRIORITY 5</td>
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VERTICAL APPLICATION

1" TYPE S SCREWS 12" O.C. AT PERIMETER, FIELD, AND TOP AND BOTTOM TRACKS

GRIDMARX PREPRINTED FASTENING GUIDE

GRIDMARX PREPRINTED GUIDE MARKS run the length of the board at five points in four-inch increments. Marks run along both long edges and at 16", 24", and 32". In vertical applications, GRIDMARX serve as guide marks to identify the location of framing members behind the gypsum board and a reference point for the installation of fasteners. In horizontal applications, GRIDMARX serve as a reference point to help identify the location of framing members.

HORIZONTAL APPLICATION

1" TYPE S SCREWS 12" O.C. AT PERIMETER, FIELD, AND TOP AND BOTTOM TRACKS

GRIDMARX PREPRINTED FASTENING GUIDE

PARTITION - 1 HR
UL DESIGN: U420
UL DESIGN: U465
UL DESIGN: V417
UL DESIGN: V438
UL DESIGN: V450
UL DESIGN: V482
UL DESIGN: V483
UL DESIGN: V486
UL DESIGN: V488
UL DESIGN: W417
UL DESIGN: W421
UL DESIGN: W444
1" MIN.

5/8" FIRE-SHIELD GYPSUM BOARD

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

GLASS FIBER INSULATION (OPTIONAL); REQUIRED FOR HIGH STRENGTH FIRE-SHIELD 60 APPLICATIONS

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-0103
UL DESIGN: HW-D-0076

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 102
5/8" FIRE-SHIELD GYPSUM BOARD
3 5/8" STEEL STUD 24" O.C. MAX.

GLASS FIBER INSULATION (OPTIONAL): REQUIRED FOR HIGH STRENGTH FIRE-SHIELD 60 APPLICATIONS

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

CONCRETE ON FLUTED STEEL DECK

FIRESTOP SEALANT
MINERAL WOOL INSULATION

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: 09/01/18
SCALE: 3"=1'-0" DETAIL: SS 104

© National Gypsum Properties, LLC
1 HOUR PARTITION TO STEEL DECK

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)

5/8" FIRE-SHIELD GYPSUM BOARD

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

GLASS FIBER INSULATION (OPTIONAL); REQUIRED FOR HIGH STRENGTH FIRE-SHIELD 60 APPLICATIONS

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-0363

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); REQUIRED FOR HIGH STRENGTH FIRE-SHIELD 60 APPLICATIONS

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-0060

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 107

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

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

5/8" FIRE-SHIELD GYPSUM BOARD

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

GLASS FIBER INSULATION (OPTIONAL); REQUIRED FOR HIGH STRENGTH FIRE-SHIELD 60 APPLICATIONS

5/8" FIRE-SHIELD GYPSUM BOARD

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

FLEXIBLE SEALANT (OPTIONAL)

CONCRETE ON FLUTED STEEL DECK

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: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 108

© National Gypsum Properties, LLC
HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0617
UL DESIGN: HW-D-0635

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 109

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); REQUIRED FOR HIGH STRENGTH FIRE-SHIELD 60 APPLICATIONS

5/8" FIRE-SHIELD GYPSUM BOARD

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

FLEXIBLE SEALANT (OPTIONAL)

1 HOUR PARTITION OFFSET FROM BEAM

UL DESIGN: U465
UL DESIGN: V438

© National Gypsum Properties, LLC
HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0079
UL DESIGN: HW-D-0083

MIN. 4 1/2" THICK
REINFORCED CONCRETE

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); REQUIRED FOR HIGH STRENGTH FIRE-SHIELD 60 APPLICATIONS

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 110

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

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

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

GLASS FIBER INSULATION (OPTIONAL)

FLEXIBLE SEALANT (OPTIONAL)

FIRESTOP SEALANT

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

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

PROFORM QUICK-SET SETTING COMPOUND

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 111

© National Gypsum Properties, LLC
2 1/2" MIN. STEEL STUD

5/8" FIRE-SHIELD GYPSUM BOARD

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

HORIZONTAL BRACE 5'-0" O.C. MAX.

5/8" FIRE-SHIELD GYPSUM BOARD

2 1/2" MIN. STEEL STUD

GLASS FIBER INSULATION (OPTIONAL)

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

CONCRETE ON FLUTED STEEL DECK

PARTITION - 1 HR
UL DESIGN: V488

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 112

© National Gypsum Properties, LLC
CONCRETE ON FLUTED STEEL DECK

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)

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

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

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

2 LAYERS 5/16" XP FIRE-SHIELD GYPSUM BOARD

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

GLASS FIBER INSULATION (OPTIONAL)

2 LAYERS 5/16" XP FIRE-SHIELD GYPSUM BOARD

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

FLEXIBLE SEALANT (OPTIONAL)

1" MIN.
4" MAX.

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 114

© National Gypsum Properties, LLC
3 5/8" STEEL STUD
24" O.C. MAX.

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

GLASS FIBER INSULATION
(OPTIONAL)

FIRESTOP SEALANT

POLYETHYLENE BACKER ROD, GLASS FIBER INSULATION, OR MINERAL WOOL INSULATION

CUT GYPSUM BOARD PANELS TO FIT DECK CONFIGURATION

CONCRETE ON FLUTED STEEL DECK

FLEXIBLE SEALANT
(OPTIONAL)

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

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

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

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.

FLEXIBLE SEALANT
(OPTIONAL)
CONCRETE ON FLUTED STEEL DECK

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

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

ELASTOMERIC SPRAY FIRESTOP

MINERAL WOOL INSULATION

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

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

GLASS FIBER INSULATION (OPTIONAL)

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

FLEXIBLE SEALANT (OPTIONAL)

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

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 203

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CONCRETE ON FLUTED STEEL DECK

FIRESTOP SEALANT

MINERAL WOOL INSULATION

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-0034
UL DESIGN: HW-D-0045

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438
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-0034
UL DESIGN: HW-D-0045

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 205

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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: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 206

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CONCRETE ON FLUTED STEEL DECK

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

CUT GYPSUM BOARD PANELS TO FIT DECK CONFIGURATION

PROFORM QUICK-SET FS-90 COMPOUND

MINERAL WOOL INSULATION

TOP ROW OF FASTENERS 3" FROM TOP OF GYPSUM BOARD

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

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

GLASS FIBER INSULATION (OPTIONAL)

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

SCALE: 3"=1'-0"
DETAIL: SS 207

DATE: 09/01/18

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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

© National Gypsum Properties, LLC
DETAIL: SS 209

CONCRETE ON FLUTED STEEL DECK

SCALE: 3"=1'-0"

DATE: 09/01/18

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2 HOUR PARTITION OFFSET FROM BEAM

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0617
UL DESIGN: HW-D-0635

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

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

FLEXIBLE SEALANT (OPTIONAL)

1 4" MIN.

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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)

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 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)

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 210

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CONCRETE ON FLUTED STEEL DECK

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

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

3" MINERAL WOOL INSULATION

FLEXIBLE SEALANT (OPTIONAL)

ELASTOMERIC SPRAY FIRESTOP

MINERAL WOOL INSULATION

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

3/4" ULTRA-SHIELD FS GYPSUM BOARD

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

3" MINERAL WOOL INSULATION

3/4" ULTRA-SHIELD FS GYPSUM BOARD

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

FLEXIBLE SEALANT (OPTIONAL)

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

PARTITION - 2 HR
UL DESIGN: W432
UL DESIGN: V438

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 215

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CONCRETE ON FLUTED STEEL DECK

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

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

FLEXIBLE SEALANT (OPTIONAL)

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

PARTITION - 3 HR
UL DESIGN: W455
UL DESIGN: V438

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

2 LAYERS 3/4" ULTRA-SHIELD FS GYPSUM BOARD

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

GLASS FIBER INSULATION (OPTIONAL)

2 LAYERS 3/4" ULTRA-SHIELD FS 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.

4 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

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

GLASS FIBER INSULATION (OPTIONAL)

FLEXIBLE SEALANT (OPTIONAL)

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESTOP

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

PARTITION - 4 HR
UL DESIGN: V438

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 401
© National Gypsum Properties, LLC
VERTICAL JOINTS
STAGGERED ONE STUD
CAVITY ON OPPOSITE
SIDES OF PARTITION

HORIZONTAL JOINTS
NEED NOT BE
STAGGERED OR BACKED
BY FRAMING

5/8" FIRE-SHIELD
GYPSUM BOARD

1" TYPE S SCREWS 12"
O.C. PERIMETER AND
FIELD

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

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

HORIZONTAL JOINTS
NEED NOT BE
STAGGERED OR BACKED
BY FRAMING

5/8" FIRE-SHIELD
GYPSUM BOARD

1" TYPE S SCREWS 12"
O.C. PERIMETER AND
FIELD
VERTICAL JOINTS
STAGGERED ONE STUD
CAVITY 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

FASTENERS - 1" TYPE S
SCREWS 16" O.C.
PERIMETER AND FIELD
(BASE LAYER) 1-5/8" TYPE
S SCREWS 16" O.C.
PERIMETER AND FIELD
(FACE LAYER)

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438
VERTICAL JOINTS
STAGGERED ONE STUD
CAVITY ON OPPOSITE
SIDES OF PARTITION

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

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

VERTICAL JOINTS
STAGGERED ONE STUD
CAVITY BETWEEN BASE
AND FACE LAYERS

2 LAYERS 5/8" FIRE-SHIELD
GYPSUM BOARD

FASTENERS - 1" TYPE S
SCREWS 16" O.C.
PERIMETER AND FIELD
(BASE LAYER) 1-5/8" TYPE
S SCREWS 16" O.C.
PERIMETER AND FIELD
(FACE LAYER)

PARTITION - 2 HR
UL DESIGN: U411
UL DESIGN: V438
**STEEL STUDS**

**VINYL OR METAL**

**CONTROL JOINT**

1 2" MAX.

2 LAYERS 5/8"

**FIRE-SHIELD**

**GYPSUM BOARD**

1 5/8" TYPE S SCREWS

24" O.C.

**FIRE TEST - 2 HR**

WHI-651-0318.1

**FIRE TEST - 1 HR**

WHI-647-3024
PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438
PARTITION - 1 HR
UL DESIGN: U465
UL DESIGN: V438

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

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

TWO LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

TAPE AND JOINT COMPOUND

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

TWO LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

TAPE AND JOINT COMPOUND

CORNER BEAD

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SS 604
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)
1 HR EXTERIOR WALL
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

- NON-RATED EXTERIOR WALL
- EXTERIOR WALL CLADDING
- EXP EXTENDED EXPOSURE GYPSUM SHEATHING
- FLEXIBLE SEALANT (OPTIONAL)
- TAPE AND JOINT COMPOUND
- 5/8" FIRE-SHIELD GYPSUM BOARD
- 5/8" FIRE-SHIELD GYPSUM BOARD
- 1 HR PARTITION
STEEL STUDS @ 12" O.C.

2 LAYERS 5/16" XP FIRE-SHIELD GYPSUM BOARD. EACH LAYER FASTENED 8" O.C.

CONTINUE DOUBLE LAYER OF 5/16" BOARD OVER MIN. ONE STUD CAVITY OF STRAIGHT PORTION OF WALL (TYP.)

STAGGER VERTICAL JOINTS OF DOUBLE 5/16" GYPSUM BOARD ON OPPOSITE SIDES OF PARTITION

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

DATE: 09/01/18
SCALE: 3/4"=1'-0"
DETAIL: SS 615

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STAGGER VERTICAL BASE LAYER JOINTS OF DOUBLE 5/16" GYPSUM BOARD ON OPPOSITE SIDES OF PARTITION

CONTINUE INNER 2 LAYERS OF 5/16" BOARD OVER MIN. ONE STUD CAVITY OF STRAIGHT PORTION OF WALL (TYP.)

STEEL STUDS @ 12" O.C.

STEEL STUDS @ 10" O.C.

R6'-0"

R3'-0"

R2'-0"

4 LAYERS 5/16" XP FIRE-SHIELD GYPSUM BOARD

STEEL STUDS @ 8" O.C.

CONTINUE INNER 2 LAYERS OF 5/16" BOARD OVER MIN. ONE STUD CAVITY OF STRAIGHT PORTION OF WALL (TYP.)

4 LAYERS 5/16" XP FIRE-SHIELD GYPSUM BOARD

STAGGER VERTICAL BASE LAYER JOINTS OF DOUBLE 5/16" GYPSUM BOARD ON OPPOSITE SIDES OF PARTITION

STAGGER VERTICAL BASE LAYER JOINTS OF DOUBLE 5/16" GYPSUM BOARD ON OPPOSITE SIDES OF PARTITION

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

DATE: 09/01/18
SCALE: 3/4"=1'-0"
DETAIL: SS 616

2 HOUR RATED CURVED CORNER DETAILS

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1 HOUR SHAFTWALL WITH DEFLECTION TRACK

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SW 102

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

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0194

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)

FIRESTOP SEALANT

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

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

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

© National Gypsum Properties, LLC
PARTITION - 1 HR
UL DESIGN: U499
UL DESIGN: W419

HEAD OF WALL - 1 HR
UL DESIGN: HW-D-0548

1 HOUR SHAFTWALL TO STEEL DECK

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CONCRETE ON FLUTED STEEL DECK

STEEL BEAM
SPRAY-APPLIED FIRE RESISTIVE MATERIAL

3/8" DIAMOND MESH EXPANDED STEEL LATH
MINERAL WOOL INSULATION
1 1/2" Z FURRING OR CHANNELS 24" O.C.

ELASTOMERIC SPRAY FIRESTOP

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-0645
UL DESIGN: HW-D-0636

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

DATE: 09/01/18
1 HOUR SHAFTWALL PARTITION OFFSET FROM BEAM
SCALE: 3"=1'-0"
DETAIL: SW 108
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HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0548

PARTITION - 2 HR
UL DESIGN: U498
UL DESIGN: W419

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

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

5/8" FIRE-SHIELD GYPSUM BOARD

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

FLEXIBLE SEALANT (OPTIONAL)
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: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SW 205

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2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

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

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-0119

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SW 206
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

ELASTOMERIC SPRAY FIRESTOP

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

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

HEAD OF WALL - 2 HR
UL DESIGN: HW-D-0642
UL DESIGN: HW-D-0571
CONCRETE ON FLUTED STEEL DECK

STEEL BEAM
SPRAY-APPLIED FIRE RESISTIVE MATERIAL

3/8" DIAMOND MESH EXPANDED STEEL LATH

MINERAL WOOL INSULATION

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

ELASTOMERIC SPRAY FIRESTOP

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-0645
UL DESIGN: HW-D-0636

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

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CONCRETE ON FLUTED STEEL DECK

MINERAL WOOL INSULATION

ELASTOMERIC SPRAY FIRESSTOP

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

3" MINERAL WOOL INSULATION

3/4" ULTRA-SHIELD FS GYPSUM BOARD

MIN. 4" 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: W441
UL DESIGN: W419
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)

TOP ROW OF FASTENERS 3" FROM TOP OF GYPSUM BOARD

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

CUT GYPSUM BOARD PANELS TO FIT DECK CONFIGURATION

MINERAL WOOL INSULATION

PROFORM QUICK-SET FS-90 COMPOUND

CONCRETE ON FLUTED STEEL DECK

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

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

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

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SW 301

© National Gypsum Properties, LLC
FIRE TEST - 2 HR
BASED ON WHI-651-0318.1

STEEL STUDS
VINYL OR METAL
CONTROL JOINT

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

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
VINYL OR METAL
CONTROL JOINT

DATE: 09/01/18

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

STEEL STUDS
VINYL OR METAL
CONTROL JOINT

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

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
VINYL OR METAL
CONTROL JOINT

DATE: 09/01/18

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

STEEL STUDS
VINYL OR METAL
CONTROL JOINT

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

2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD
VINYL OR METAL
CONTROL JOINT

DATE: 09/01/18

CONTROL JOINTS FOR SHAFTWALL SYSTEMS

SCALE: 3"=1'-0"
DETAIL: SW 501

© National Gypsum Properties, LLC
PARTITION - 1 HR
UL DESIGN: U499
UL DESIGN: W419

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

DATE: 09/01/18
SCALE: 6"=1'-0"
DETAIL: SW 601

SHAFTWALL END CONDITIONS
1" FIRE-SHIELD SHAFTLINER

CT, CH, OR I STUDS

5/8" FIRE-SHIELD GYPSUM BOARD

STEEL J TRACK

PAN-HEAD SCREW 24" O.C.

STEEL J TRACK

5/8" FIRE-SHIELD GYPSUM BOARD
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

12" MAX.

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.
1" FIRE-SHIELD SHAFTLINER
CT, CH, OR I STUDS

STEEL J TRACK

PAN-HEAD SCREW 24" O.C.

5/8" FIRE-SHIELD GYPSUM BOARD

DATE: 09/01/18
SCALE: 6"=1'-0"
DETAIL: SW 613

© National Gypsum Properties, LLC
5/8" FIRE-SHIELD GYPSUM BOARD
2" x 2" 20 GA. ANGLE FASTENED TO J TRACK WITH 3/8" PAN-HEAD SCREWS 24 O.C.

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK

PAN-HEAD SCREW 24" O.C.

1" FIRE-SHIELD SHAFTLINER

CT, CH, OR I STUDS

STEEL J TRACK

DATE: 09/01/18
1 HOUR SHAFTWALL CORNER DETAIL
SCALE: 6"=1'-0"
DETAIL: SW 614

© National Gypsum Properties, LLC
1 HOUR SHAFTWALL CORNER DETAIL

DATE: 09/01/18
SCALE: 6"=1'-0"
DETAIL: SW 615

© National Gypsum Properties, LLC
2 HOUR SHAFTWALL CORNER DETAIL

1" FIRE-SHIELD SHAFTLINER

CT, CH, OR I STUDS

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
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: 09/01/18

SCALE: 6"=1'-0"

DETAIL: SW 621

© 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

12" MAX.

DATE: 09/01/18

SCALE: 6"=1'-0"

2 HOUR SHAFTWALL CORNER DETAIL

CT, CH, OR I STUDS

1" FIRE-SHIELD SHAFTLINER

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.

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

CT, CH, OR I STUDS

1" FIRE-SHIELD SHAFTLINER

STEEL J TRACK

PAN-HEAD SCREW 24" O.C.

STEEL J TRACK

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

2" x 2" 20 GA. ANGLE FASTENED TO J TRACK WITH 3/8" PAN-HEAD SCREWS 24 O.C.

DATE: 09/01/18

PAN-HEAD SCREW 24" O.C.

2" x 2" 20 GA. ANGLE FASTENED TO J TRACK

STEEL J TRACK

STEEL J TRACK

1" FIRE-SHIELD SHAFTLINER

1" FIRE-SHIELD SHAFTLINER

CT, CH, OR I STUDS

© National Gypsum Properties, LLC
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)

5/8" FIRE-SHIELD GYPSUM BOARD

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

1" FIRE-SHIELD SHAFTLINER

DATE: 09/01/18
SCALE: 6"=1'-0"
DETAIL: SW 650
© National Gypsum Properties, LLC
J TRACK CUT AND FOLDED TO FRAME DUCT AND FASTENED WITH PAN-HEAD SCREWS
SEE DETAIL A

J TRACK HEADERS WITH WEBS CUT TO RECEIVE STUDS, FASTEN WITH PAN-HEAD SCREWS
SEE DETAIL B

J TRACK

CEILING LINE

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

J TRACK

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

DETAIL A

DETAIL B

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

DATE: 09/01/18
SCALE: 1/2"=1'-0"
DETAIL: SW 701

© National Gypsum Properties, LLC
FRAMING NOT REQUIRED AROUND DUCT WHEN CONFINED TO ONE STUD BAY

J TRACK

CEILING LINE

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

J TRACK

DATE: 09/01/18
SCALE: 1/2"=1'-0"
DETAIL: SW 702

© National Gypsum Properties, LLC
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.

2 HR RATED WALL ASSEMBLY

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

J TRACK FASTENED 24" O.C.

4" CT STUDS 24" O.C.
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" I-STUDS 24" O.C.

2 LAYERS 1/2" FIRE-SHIELD C GYPSUM BOARD

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

J TRACK FASTENED 24" O.C.

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

2 HR RATED WALL ASSEMBLY

3 LAYERS 1/2" FIRE-SHIELD C GYPSUM BOARD

2-1/2" I-STUDS 24" O.C.

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VERTICAL - 2 HR
UL DESIGN: U497
HORIZONTAL - 2 HR
WHI 694-0300.1

DATE: 09/01/18
SCALE: 2"=1'-0"
DETAIL: SW 705

2 HOUR HORIZONTAL DUCT PROTECTION

National Gypsum
2 HR SHAFTWALL ASSEMBLY - UL DESIGN: U498

1" SHAFTLINER FILLER STRIP

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

10"

STEEL COLUMN

NON-RATED STEEL STUD PARTITION

LATERAL STEEL BRACE

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

© National Gypsum Properties, LLC
2 HR SHAFTWALL ASSEMBLY WITH LINER PANEL ORIENTED TOWARD LATERAL BRACE - UL DESIGN: U497

LATERAL STEEL BRACE

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

NON-RATED STEEL STUD PARTITION

STEEL COLUMN

STAIR SHAFTWALL CORNER AT LATERAL BRACE

DATE: 09/01/18
SCALE: 1 1/2"=1'-0"
DETAIL: ST 103

© National Gypsum Properties, LLC
2 HR SHAFTWALL ASSEMBLY WITH LINER PANEL ORIENTED TOWARD LATERAL BRACE
UL DESIGN: U497

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

STEEL BEAM

NON-RATED STEEL STUD PARTITION

LATERAL STEEL BRACE

CONTROL JOINT
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

4" x 4" STEEL TUBE

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

ATTACHMENT PLATE FOR GUIDE RAILS

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

GUIDE RAIL BRACKET ASSEMBLY

2" MINIMUM HOISTWAY WIDTH

2 HR SHAFTWALL ASSEMBLY - UL DESIGN: U497

MINIMUM HOISTWAY DEPTH

GUIDERAIL BRACKET ASSEMBLY

PIT LADDER

DETAIL A

ELEVATOR CAB

DETAIL A

DATE: 09/01/18

ELEVATOR SHAFT ENCLOSURE PLAN

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

DETAIL: EV 101

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SECTION A-A

25 GA. 3" x 28" SHEET STEEL

25 GA. 3" x 14" SHEET STEEL

4" SHAFTWALL STUD

SECTION B-B

1/2" FIRE-SHIELD C OR 5/8" FIRE-SHIELD GYPSUM WALLBOARD

25 GA. 3" x 28" SHEET STEEL

16" x 30" x1" FIRE-SHIELD SHAFTLINER

3/4" STEEL CHANNEL

CALL BOX

SECTION C-C

1" FIRE-SHIELD SHAFTLINER

FIREMAN SWITCH

25 GA. x 3" x 28" SHEET STEEL

18 GA.x3/4"x1" ANGLE 2-1/2" LONG

CALL BOX

3/4" CHANNEL

5/8" FIRE-SHIELD OR 1/2" FIRE-SHIELD C GYPSUM WALLBOARD

SECTION D-D

RIGID ELBOW AND CONDUIT

1" FIRE-SHIELD SHAFTLINER

25 GA. 3" x 28" SHEET STEEL

25 GA. 3" x 14" SHEET STEEL

16" x 30" x1" FIRE-SHIELD SHAFTLINER

3/4" STEEL CHANNEL

POSITION INDICATOR

16" x 22" x1" FIRE-SHIELD SHAFTLINER

SECTION A-A

TEST REFERENCE:
FM WP-612
FM WP-621

DATE: 09/01/18

POSITIVE INDICATOR AND CONTROL BOX PROTECTION IN ELEVATOR SHAFTWALL

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

DETAIL: EV 102

© National Gypsum Properties, LLC
ELEVATOR SHAFTWALL HEAD AND JAMB DETAILS

SCALE: 3"=1'-0"
DETAIL: EV 103

DATE: 09/01/18

© National Gypsum Properties, LLC
10" MAXIMUM OPENING

SCALE: 3"=1'-0"

DATE: 09/01/18
SCALE: 3"=1'-0"

2 HR SHAFTWALL REPAIR DETAIL
DETAIL: SR 101

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MAXIMUM 10" x 10" FLUSH PATCH MADE FROM 1"
FIRE-SHIELD SHAFTLINER
STEEL TRACK OR STRAPPING FOR 5/8" PATCH
ATTACHMENT ON ALL SIDES OF OPENING

MAXIMUM 10" x 10" FLUSH PATCH MADE FROM 5/8"
FIRE-SHIELD GYPSUM BOARD
FASTENED TO STEEL TRACK
WITH 1" TYPE S SCREWS 5" O.C.

REPLACE FACE LAYER WITH 5/8"
FIRE-SHIELD GYPSUM BOARD
FASTENED TO STUDS AND TRACK
WITH 1 5/8" TYPE S SCREWS 12" O.C.
JOINTS STAGGERED 24"
HORIZONTALLY AND 12" VERTICALLY
FROM BASE LAYER JOINTS

5/8" FIRE-SHIELD GYPSUM BOARD
LAMINATED TO SHAFTLINER PANEL
WITH SETTING COMPOUND AND
SCREWED TO STUDS WITH 1" TYPE S
SCREWS 12" O.C., TOP AND BOTTOM
EDGES OF BOARD TO OVERLAP
PATCHED AREA 12" MIN. UNLESS
TERMINATING AT J-TRACK

MAXIMUM 10" x 10" FLUSH PATCH MADE FROM 1"
FIRE-SHIELD GYPSUM BOARD
LAMINATED TO SHAFTLINER PANEL
WITH SETTING COMPOUND AND
SCREWED TO STUDS WITH 1" TYPE S
SCREWS 12" O.C., TOP AND BOTTOM
EDGES OF BOARD TO OVERLAP
PATCHED AREA 12" MIN. UNLESS
TERMINATING AT J-TRACK

LAMINATED TO SHAFTLINER PANEL
WITH SETTING COMPOUND AND
SCREWED TO STUDS WITH 1" TYPE S
SCREWS 12" O.C., TOP AND BOTTOM
EDGES OF BOARD TO OVERLAP
PATCHED AREA 12" MIN. UNLESS
TERMINATING AT J-TRACK
NEW 1" SHAFTLINER PANEL CUT IN HALF LENGTHWISE

5/8" FIRE-SHIELD GYPSUM BOARD LAMINATED TO SHAFTLINER PANEL WITH SETTING COMPOUND AND SCREWED TO STUDS WITH 1" TYPE S SCREWS 12" O.C., TOP AND BOTTOM EDGES OF BOARD TO OVERLAP PATCHED AREA 12" MIN. UNLESS TERMINATING AT J-TRACK

REPLACE BASE LAYER WITH 5/8" FIRE-SHIELD GYPSUM BOARD FASTENED TO STUDS AND TRACK WITH 1" TYPE S SCREWS 24" O.C.

REPLACE FACE LAYER WITH 5/8" FIRE-SHIELD GYPSUM BOARD FASTENED TO STUDS AND TRACK WITH 1 5/8" TYPE S SCREWS 12" O.C. JOINTS STAGGERED 24" HORIZONTALLY AND 12" VERTICALLY FROM BASE LAYER JOINTS

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: SR 102

2 HR SHAFTWALL REPAIR DETAIL

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1" x 1" STEEL ANGLE FASTENED TO STUD WITH 3/8" PAN-HEAD SCREWS 24" O.C.

REPLACE FACE LAYER WITH 5/8" FIRE-SHIELD GYPSUM BOARD FASTENED TO STUDS AND TRACK WITH 1 5/8" TYPE S SCREWS 12" O.C. JOINTS STAGGERED 24" HORIZONTALLY AND 12" VERTICALLY FROM BASE LAYER JOINTS

REPLACE BASE LAYER WITH 5/8" FIRE-SHIELD GYPSUM BOARD FASTENED TO STUDS AND TRACK WITH 1" TYPE S SCREWS 24" O.C.

MAXIMUM 10" x 10" FLUSH PATCH MADE FROM 1" FIRE-SHIELD SHAFTLINER

1" SHAFTLINER PANEL LAMINATED TO EXISTING SHAFTLINER PANEL AND PATCH WITH SETTING COMPOUND AND SCREWED TO STUD AND STEEL ANGLE WITH 1 5/8" TYPE S SCREWS 12" O.C., EDGES OF BOARD TO OVERLAP THE TOP AND BOTTOM OF PATCHED AREA 12" MIN. UNLESS TERMINATING AT J-TRACK
NEW 1" SHAFTLINER PANEL CUT IN HALF LENGTHWISE

REPLACE BASE LAYER WITH 5/8" FIRE-SHIELD GYPSUM BOARD FASTENED TO STUDS AND TRACK WITH 1" TYPE S SCREWS 24" O.C.

JOINTS STAGGERED 24" HORIZONTALLY AND 12" VERTICALLY FROM BASE LAYER JOINTS

REPLACE FACE LAYER WITH 5/8" FIRE-SHIELD GYPSUM BOARD FASTENED TO STUDS AND TRACK WITH 1 5/8" TYPE S SCREWS 12" O.C.

NEW 1" SHAFTLINER PANEL LAMINATED TO SHAFTLINER PANEL WITH SETTING COMPOUND AND SCREWED TO STUD AND STEEL ANGLE WITH 1 5/8" TYPE S SCREWS 12" O.C., EDGES OF BOARD TO OVERLAP THE TOP AND BOTTOM OF PATCHED AREA 12" MIN. UNLESS TERMINATING AT J-TRACK

1" x 1" STEEL ANGLE FASTENED TO STUD WITH 3/8" PAN-HEAD SCREWS 24" O.C.
CONCRETE OR FLUTED STEEL DECK

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

FLOOR-CEILING - 1 HR
UL DESIGN: I504

8 GA. HANGER WIRE 24" O.C.

4" STEEL STRAP 20 GA. FASTENED TO STUDS AT MIDSPAN

BACK-TO-BACK 3-5/8" STEEL C TRACKS 20 GA.

3-5/8" STEEL STUDS 20 GA. 16" O.C. MAX.

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

BACK-TO-BACK 3-5/8" C TRACK

PAN HEAD SCREW 24" O.C.

HANGER ASSEMBLY DETAIL (REQUIRED FOR SPANS GREATER THAN 8'-0")
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. 24" O.C. MAX.

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

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

2 PAN HEAD SCREWS OPPOSITE C TRACK FLANGES 24" O.C.

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

DATE: 09/01/18  2 HOUR HORIZONTAL MEMBRANE  SCALE: 3"=1'-0"
UL DESIGN: G586  DETAIL: HM 201  © National Gypsum Properties, LLC
RATED OR NON-RATED FLOOR-CEILING ASSEMBLY

BRACING AS REQUIRED

DUCT

CORRIDOR WALL PERMITTED TO TERMINATE AT UPPER MEMBRANE OF CEILING ASSEMBLY

CORRIDOR CEILING CONSTRUCTED AS REQUIRED FOR CORRIDOR WALLS - 2015 IBC 708.4

1 HR RATED PARTITION
RATED OR NON-RATED FLOOR-CEILING ASSEMBLY

BRACING AS REQUIRED

4" STEEL STRAP 20 GA. FASTENED TO STUDS AT MIDSPAN

MINERAL WOOL INSULATION

STEEL TRACK - FASTEN TO STUDS WITH 1-1/4" TYPE S SCREWS

1 HOUR GYPSUM BOARD MEMBRANE - UL DESIGN I504
3 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD ON 20 GA.
3-5/8" STEEL STUDS 16" O.C.

1 HR RATED PARTITION
DUCT

SCALE: 1/2"=1'-0" DETAIL: CR 104

1 HOUR CORRIDOR ASSEMBLY

DATE: 04/06/17
SCALE: 1/2"=1'-0"
DETAIL: CR 104

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2 HR RATED FLOOR-CEILING ASSEMBLY

1 1/2 HR FIRE-RATED DAMPER

DUCT

NON-RATED SUSPENDED CEILING

2 HR RATED PARTITION

DATE: 09/01/18
SCALE: 1/2"=1'-0"
DETAIL: CR 201
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 - 2015 IBC 708.4

2 HR RATED PARTITION

DATE: 09/01/18
SCALE: 1/2"=1'-0"
DETAIL: CR 202

© National Gypsum Properties, LLC
DUCT SCALE: 1/2"=1'-0"

2 HOUR CORRIDOR ASSEMBLY
ASSEMBLY DATE: 09/01/18

HORIZONTAL SHAFTWALL ASSEMBLY - UL DESIGN: G586

NOTE:
FOR SPANS GREATER THAN 8'-0"
REFER TO DETAIL HM 201
FOR INTERMEDIATE SUPPORTS

RATED OR NON-RATED FLOOR-CEILING ASSEMBLY

BRACING AS REQUIRED

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

MINERAL WOOL INSULATION

HORIZONTAL SHAFTWALL ASSEMBLY - UL DESIGN: G586

NOTE:
FOR SPANS GREATER THAN 8'-0"
REFER TO DETAIL HM 201
FOR INTERMEDIATE SUPPORTS

2 HR RATED PARTITION
DUCT

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

DATE: 09/01/18

2 HOUR CORRIDOR ASSEMBLY

DETAIL: CR 204

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RATED OR NON-RATED FLOOR-CEILING ASSEMBLY

BRACING AS REQUIRED

MINERAL WOOL INSULATION

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

2 HR HORIZONTAL SHAFTWALL ASSEMBLY - UL EVALUATION REPORT: ER R3501-02 (SECTION 6.3.1)

2 HR RATED PARTITION
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
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
3 HOUR RATED COLUMN

COLUMNS - 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: 09/01/18
SCALE: 3"=1'-0"
DETAIL: CL 401

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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
2 LAYERS 5/8" FIRE-SHIELD GYPSUM BOARD

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

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-1041

DATE: 09/01/18
SCALE: 3"=1'-0"
DETAIL: PN 201

© National Gypsum Properties, LLC
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
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
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: 09/01/18 CABLE PENETRATION THROUGH FLOOR SCALE: 3"=1'-0"
DETAIL: PN 302

© National Gypsum Properties, LLC
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

VOID ASSEMBLY
F RATING - 3 HR
T RATING - 1/2 HR
UL DESIGN: C-AJ-0038
SOUND RATINGS FOR 1 HOUR PARTITIONS

UL DESIGN: U465, V438

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

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

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" SOUNDBREAK XP GYPSUM BOARD
5/8" FIRE-SHIELD GYPSUM BOARD

STC 52
TEST: RAL-TL07-148

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

STC 47
TEST: NGC 2386

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

STC 54
TEST: RAL-TL07-389

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

STC 57
TEST: RAL-TL06-334
SOUND RATINGS FOR 2 HOUR PARTITIONS

UL DESIGN: U411, V438

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 50
TEST: NGC 2500

UL DESIGN: U411, V438

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 53
TEST: NGC 2007002

UL DESIGN: U411, V438

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 56
TEST: NGC 3022

UL DESIGN: U411, V438

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

STC 60
TEST: RAL-TL07-168
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
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 85 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.

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