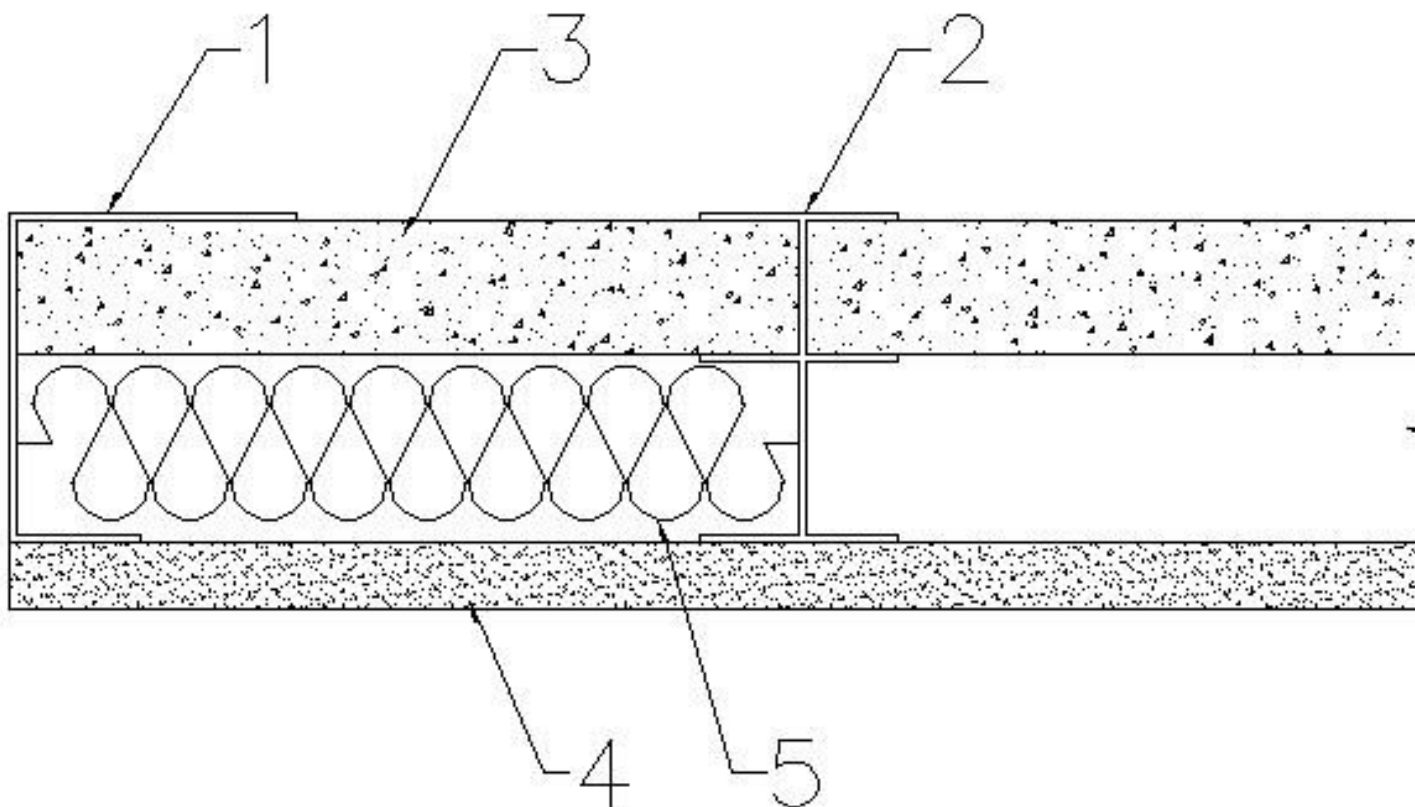


WALL ASSEMBLIES

PHILLIPS MANUFACTURING CO. - Omaha, NE USA

▼ **DESIGN NO. PMC/WA 60-01**

DESIGN NO. PMC/WA 60-01



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| 1. | <p>Steel Framing Members (Floor, Sides, and Ceiling Runners)*: 'J'-shaped runner, minimum 2-1/2" deep web with unequal legs of 1" and 2-3/16". Channels fabricated from 25 MSG galvanized steel. Runner to be positioned with the short leg towards the finished side of wall assembly. Runners attached to structural supports with steel fasteners located a maximum of 2" from the ends and a maximum of 24" oc.</p> |
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2.	Steel Framing Members (Steel Studs)*: 'I'-shaped 25 MSG (minimum) steel studs with a minimum 2-1/2" deep web with 1-1/2" flanges. Studs have 3/4" wide by 2-1/4" long holding tabs located 2-3/4" oc (nominal). The studs are to be cut to lengths 5/8" less than the floor-to-ceiling height. Studs spaced 24" oc.
3.	Shaftliner, Gypsum: Canadian Gypsum Company (Type SLX); James Hardie Gypsum Inc. (Type Hardirock® Brand Shaftliner); United States Gypsum Company (Type SLX); Yeso Panamericano SA de CV (Type SLX); Westroc Industries Limited (3/4" Shaftliner); National Gypsum Company (Gold Bond® FIRE-SHIELD® Shaftliner); G-P Gypsum (GyProc® Fireguard® Shaftliner). Gypsum liner panels nominally 1" thick and 24" wide. Panels cut to be a maximum of 1" less in length than floor to ceiling height. Vertical edges inserted in holding tabs of 'I' shaped studs. The free edge of end panels attached to long leg of 'J' runners with 1-5/8" long Type S self drilling, self tapping, bugle head steel screws spaced not greater than 12" oc. Allowable suppliers of liner panels.
4.	Wallboard, Gypsum: James Hardie Gypsum Inc. (1/2" thick Type Max "C", 5/8" thick Type Max "C" or Hardirock Brand Fire X™); Canadian Gypsum Company (1/2" Types C, IP-X2, WRC; 5/8" Types AR, C, FRX-G, IP-X1, IP-X2, SCX, SHX, WRC, WRX); National Gypsum Company (5/8" Gold Bond® FIRE-SHIELD® Gypsum Wallboard); United States Gypsum Company (1/2" Types C, IP-X2, WRC; 5/8" Types AR, C, IP-X1 IP-X2, SCX, SHX, WRC, WRX); Yeso Panamericano SA de CV (1/2" Types C, IP-X2, WRC; 5/8" Types AR, C, IP-X1 IP-X2, SCX, SHX, WRC, WRX); Westroc Industries Limited (5/8" Westroc Fireboard™); G-P Gypsum (5/8" GyProc® Fireguard®). Nominal 1/2" or 5/8" thick 48" wide gypsum panels applied vertically to studs with 1" long Type S self-drilling, self-tapping bugle head screws spaced 12" oc.
5.	Batts and Blankets (Optional): Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt shall be listed for fire resistance.
6.	Joint tape and Compound (Not shown): Exposed joints shall be covered with joint compound and paper or mesh tape. Screw heads shall be covered with joint compound.

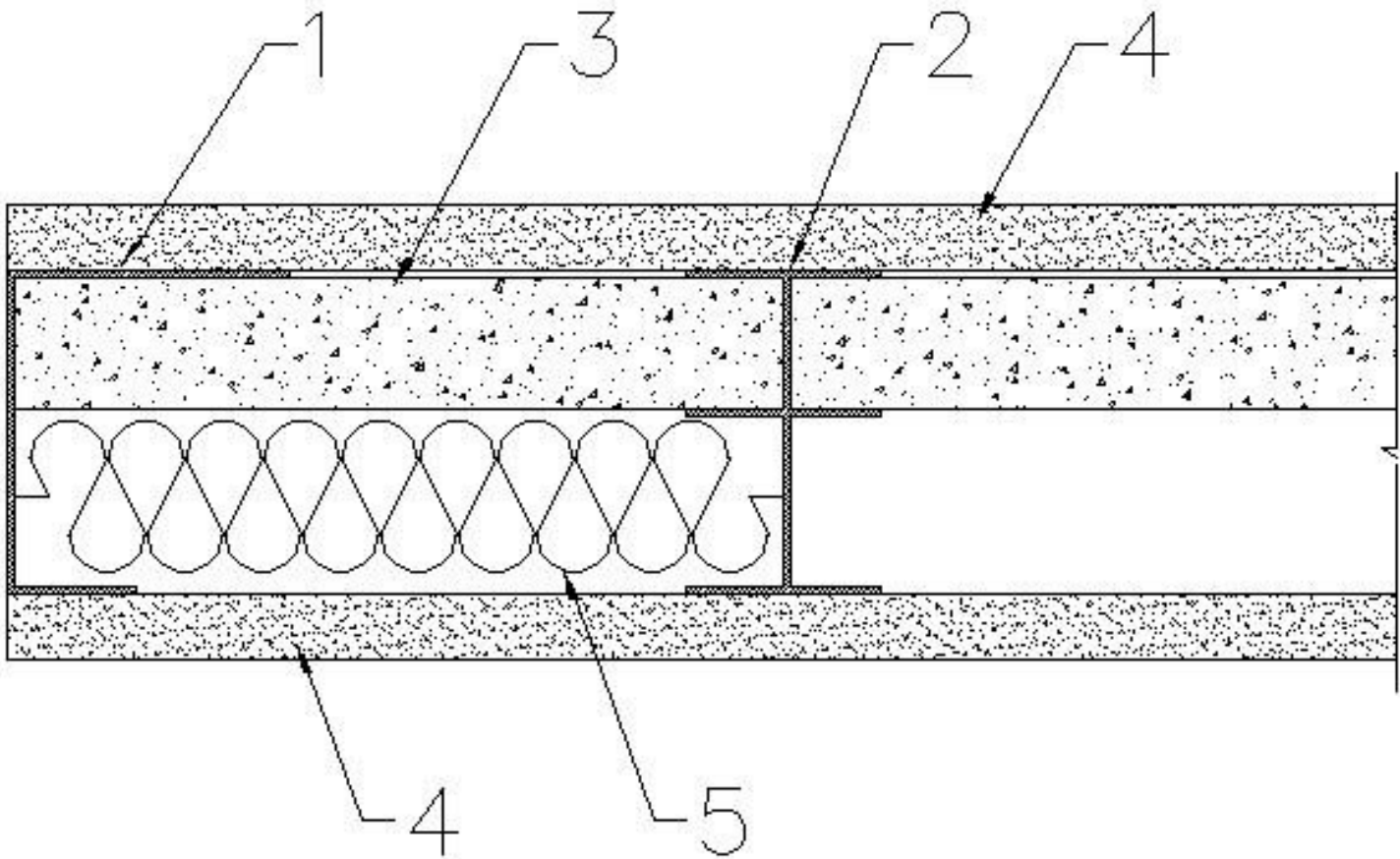
Limitations: Gypsum Shaftliner and Gypsum Wallboard must be by same manufacturer.

References: 1) Gypsum Association Fire Resistance Design Manual - GA File Numbers: WP 6900, WP 6905, WP 7020. 2) UL Design UL 433

* Type 2-1/2" I-Stud-25, 2-1/2" I-Stud -20, 4" I-Stud -25, 4" I-Stud -20, 6" I-Stud -25, or 6" I-Stud -20

▼ **DESIGN NO. PMC/WA 120-01**

DESIGN NO. PMC/WA 120-01



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| 1. | <p>Steel Framing Members (Floor, Sides, and Ceiling Runners)*: 'J'-shaped runner, minimum 2-1/2" deep web with unequal legs of 1" and 2-3/16". Channels fabricated from 25 MSG galvanized steel. Runner to be positioned with the short leg towards the finished side of wall assembly. Runners attached to structural supports with steel fasteners located a maximum of 2" from the ends and a maximum of 24" oc.</p> |
| 2. | <p>Steel Framing Members (Steel Studs)*: 'I'-shaped 25 MSG (minimum) steel studs with a minimum 2-1/2" deep web with 1-1/2" flanges. Studs have 3/4" wide by 2-1/4" long holding tabs located 2-3/4" oc (nominal). The studs are to be cut to lengths 5/8" less than the floor-to-ceiling height. Studs spaced 24" oc.</p> |

3.	<p>Shaftliner, Gypsum: Canadian Gypsum Company (Type SLX); James Hardie Gypsum Inc. (Type Hardirock® Brand Shaftliner); United States Gypsum Company (Type SLX); Yeso Panamerico SA de CV (Type SLX); Westroc Industries Limited (1" Shaftliner); National Gypsum Company (Gold Bond® FIRE-SHIELD® Shaftliner); G-P Gypsum (GyProc® Fireguard® Shaftliner). Gypsum liner panels nominally 1" thick and 24" wide. Panels cut to be a maximum of 1" less in length than floor to ceiling height. Vertical edges inserted in holding tabs of 'T' shaped studs. The free edge of end panels attached to long leg of 'J' runners with 1-5/8" long Type S self drilling, self tapping, bugle head steel screws spaced not greater than 12" oc.</p>
4.	<p>Wallboard, Gypsum: James Hardie Gypsum Inc. (1/2" thick Type Max "C", 5/8" thick Type Max "C", Hardirock Brand Fire X™); Canadian Gypsum Company (1/2" Types C, IP-X2, WRC; 5/8" Types AR, C, FRX-G, IP-X1, IP-X2, SCX, SHX, WRC, WRX); National Gypsum Company (5/8" Gold Bond® FIRE-SHIELD® Gypsum Wallboard); United States Gypsum Company (1/2" Types C, IP-X2, WRC; 5/8" Types AR, C, IP-X1 IP-X2, SCX, SHX, WRC, WRX); Yeso Panamerico SA de CV (1/2" Types C, IP-X2, WRC; 5/8" Types AR, C, IP-X1 IP-X2, SCX, SHX, WRC, WRX); Westroc Industries Limited (5/8" Westroc Fireboard™); G-P Gypsum (5/8" GyProc® Fireguard®). One nominal 1/2", 5/8" thick 48" wide gypsum panels applied parallel or at right angles to each side to studs with 1" long Type S self-drilling, self-tapping bugle head screws spaced 12" oc.</p>
5.	<p>Batts and Blankets (Optional for Sound): Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt shall be listed for fire resistance.</p>
6.	<p>Joint tape and Compound (Not shown): Exposed joints shall be covered with joint compound and paper or mesh tape. Screw heads shall be covered with joint compound.</p>
7.	<p>Resilient Channels (Optional for Sound): Resilient channels located 24" oc at right angles to studs with 2-1/4" Type S drywall screws.</p>

Limitations: Gypsum Shaftliner and Gypsum Wallboard must be by same manufacturer or per references.

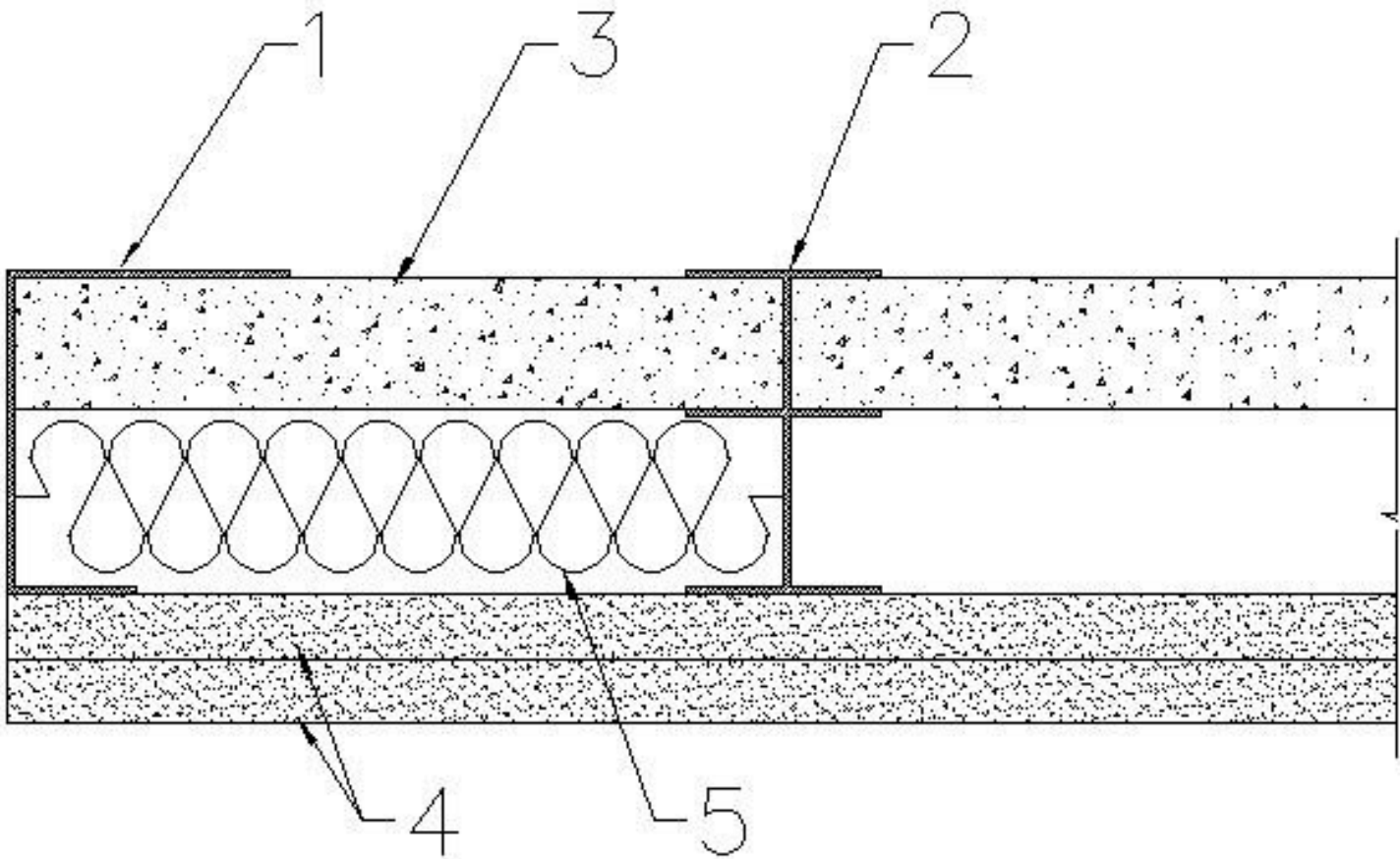
References: 1) Gypsum Association Fire Resistance Design Manual - GA File Numbers: WP 7057, WP 7061, WP 7062, WP 7077, WP 7079, WP 7083, WP 7088, WP 7099. 2) UL Design UL 433

* Components bearing the Warnock Hersey Certification Mark: Steel Framing Members (Floor, Sides, and Ceiling Runners) and Steel Framing Members (Steel Studs).

Type 2-1/2" J-Track-25, 2-1/2" J-Track-20, 4" J-Track-25, 4" J-Track-20, 6" J-Track-25, or 6" J-Track-20

▼ **DESIGN NO. PMC/WA 120-02**

DESIGN NO. PMC/WA 120-02



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|----|--|
| 1. | <p>Steel Framing Members (Floor, Sides, and Ceiling Runners)*: 'J'-shaped runner, minimum 2-1/2" deep web with unequal legs of 1" and 2-3/16". Channels fabricated from 25 MSG galvanized steel. Runner to be positioned with the short leg towards the finished side of wall assembly. Runners attached to structural supports with steel fasteners located a maximum of 2" from the ends and a maximum of 24" oc.</p> |
| 2. | <p>Steel Framing Members (Steel Studs)*: 'I'-shaped 25 MSG (minimum) steel studs with a minimum 2-1/2" deep web with 1-1/2" flanges. Studs have 3/4" wide by 2-1/4" long holding tabs located 2-3/4" oc (nominal). The studs are to be cut to lengths 5/8" less than the floor-to-ceiling height. Studs spaced 24" oc.</p> |

3.	<p>Shaftliner, Gypsum: Canadian Gypsum Company (Type SLX); James Hardie Gypsum Inc. (Type Hardirock® Brand Shaftliner); United States Gypsum Company (Type SLX); Yeso Panamerico SA de CV (Type SLX); Westroc Industries Limited (1" Shaftliner); National Gypsum Company (Gold Bond® FIRE-SHIELD® Shaftliner); G-P Gypsum (GyProc® Fireguard® Shaftliner). Gypsum liner panels nominally 1" thick and 24" wide. Panels cut to be a maximum of 1" less in length than floor to ceiling height. Vertical edges inserted in holding tabs of 'T' shaped studs. The free edge of end panels attached to long leg of 'J' runners with 1-5/8" long Type S self drilling, self tapping, bugle head steel screws spaced not greater than 12" oc.</p>
4.	<p>Wallboard, Gypsum: James Hardie Gypsum Inc. (1/2" thick Type Max "C", 5/8" thick Type Max "C", Hardirock Brand Fire X™); Canadian Gypsum Company (1/2" Types C, IP-X2, WRC; 5/8" Types AR, C, FRX-G, IP-X1, IP-X2, SCX, SHX, WRC, WRX); National Gypsum Company (5/8" Gold Bond® FIRE-SHIELD® Gypsum Wallboard); United States Gypsum Company (1/2" Types C, IP-X2, WRC; 5/8" Types AR, C, IP-X1 IP-X2, SCX, SHX, WRC, WRX); Yeso Panamerico SA de CV (1/2" Types C, IP-X2, WRC; 5/8" Types AR, C, IP-X1 IP-X2, SCX, SHX, WRC, WRX); Westroc Industries Limited (5/8" Westroc Fireboard™); G-P Gypsum (5/8" GyProc® Fireguard®).</p> <p>Base Layer: Nominal 1/2", 5/8" thick 48" wide gypsum panels applied parallel or at right angles to each side to studs with 1" long Type S self-drilling, self-tapping bugle head screws spaced 12" oc.</p> <p>Face Layer: Nominal 1/2", 5/8" thick 48" wide gypsum panels applied parallel or at right angles to each side to studs with 1-5/8" long Type S self-drilling, self-tapping bugle head screws spaced 8" to 12" oc (per listing of wallboard).</p>
5.	<p>Batts and Blankets (Optional for Sound): Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt shall be listed for fire resistance.</p>
6.	<p>Joint tape and Compound (Not shown): Exposed joints shall be covered with joint compound and paper or mesh tape. Screw heads shall be covered with joint compound.</p>
7.	<p>Resilient Channels (Optional for Sound): Resilient channels located 24" oc at right angles to studs with 2-1/4" Type S drywall screws.</p>

Limitations: Gypsum Shaftliner and Gypsum Wallboard must be by same manufacturer or per references.

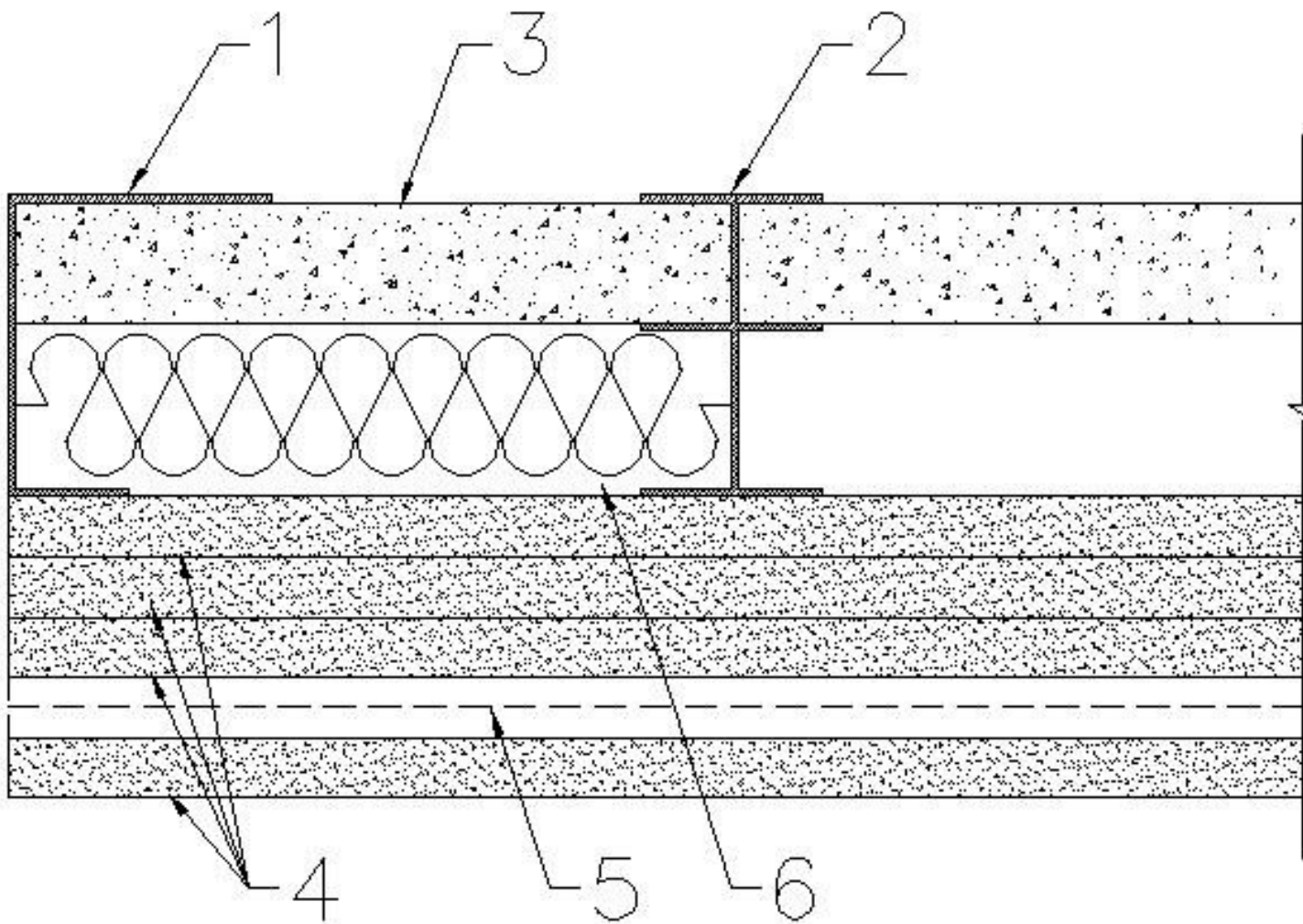
References: 1) Gypsum Association Fire Resistance Design Manual - GA File Numbers: WP 7051, WP 7056, WP 7060, WP 7064, WP 7076, WP 7078, WP 7080, WP 7081, WP 7082, WP 7089, WP 7094, WP 7098.

* Components bearing the Warnock Hersey Certification Mark: Steel Framing Members (Floor, Sides, and Ceiling Runners) and Steel Framing Members (Steel Studs)

Type 2-1/2" J-Track-25, 2-1/2" J-Track-20, 4" J-Track-25, 4" J-Track-20, 6" J-Track-25, or 6" J-Track-20

▼ DESIGN NO. PMC/WA 180-01

DESIGN NO. PMC/WA 180-01



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|----|--|
| 1. | <p>Steel Framing Members (Floor, Sides, and Ceiling Runners)*: 'J'-shaped runner, minimum 2-1/2" deep web with unequal legs of 1" and 2-3/16". Channels fabricated from 25 MSG galvanized steel. Runner to be positioned with the short leg towards the finished side of wall assembly. Runners attached to structural supports with steel fasteners located a maximum of 2" from the ends and a maximum of 24" oc.</p> |
| 2. | <p>Steel Framing Members (Steel Studs)*: 'T'-shaped 25 MSG (minimum) steel studs with a minimum 2-1/2" deep web with 1-1/2" flanges. Studs have 3/4" wide by 2-1/4" long holding tabs located 2-3/4" oc (nominal). The studs are to be cut to lengths 5/8" less than the floor-to-ceiling height. Studs spaced 24" oc.</p> |
| 3. | <p>Shaftliner, Gypsum: Westroc Industries Limited (3/4" Shaftliner). Gypsum liner panels nominally 1" thick and 24" wide. Panels cut to be a maximum of 1" less in length than floor to ceiling height. Vertical edges inserted in holding tabs of 'T' shaped studs. The free edge of end panels attached to long leg of 'J' runners with 1-5/8" long Type S self drilling, self tapping, bugle head steel screws spaced not greater than 12" oc.</p> |

4.	<p>Wallboard, Gypsum: Westroc Industries Limited (5/8" Westroc Fireboard™).</p> <p>Base Layer: Nominal 1/2", 5/8" thick 48" wide gypsum panels applied parallel or at right angles to each side to studs with 1" long Type S self-drilling, self-tapping bugle head screws spaced 12" oc.</p> <p>Second Layer: Nominal 1/2", 5/8" thick 48" wide gypsum panels applied parallel or at right angles to each side to studs with 1-5/8" long Type S self-drilling, self-tapping bugle head screws spaced 12" oc.</p> <p>Third Layer: Nominal 1/2", 5/8" thick 48" wide gypsum panels applied parallel or at right angles to each side to studs with 2-1/4" long Type S self-drilling, self-tapping bugle head screws spaced 12" oc.</p> <p>Face Layer: Nominal 1/2", 5/8" thick 48" wide gypsum panels applied at right angles to resilient channels with 1" long Type S self-drilling, self-tapping bugle head screws spaced 12" oc (per listing of wallboard).</p>
5.	<p>Resilient Channels: Resilient channels located 24" oc at right angles to studs with 2-1/4" Type S drywall screws between the third and face layer of gypsum wallboard.</p>
6.	<p>Batts and Blankets (Optional for Sound): Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt shall be listed for fire resistance.</p>
7.	<p>Joint tape and Compound (Not shown): Exposed joints shall be covered with joint compound and paper or mesh tape. Screw heads shall be covered with joint compound.</p>

Limitations: Gypsum Shaftliner and Gypsum Wallboard must be by same manufacturer or per references.

References: 1) Gypsum Association Fire Resistance Design Manual - GA File Numbers: WP 7421, WP 7450

* Components bearing the Warnock Hersey Certification Mark: Steel Framing Members (Floor, Sides, and Ceiling Runners) and Steel Framing Members (Steel Studs)

Type 2-1/2" J-Track-25, 2-1/2" J-Track-20, 4" J-Track-25, 4" J-Track-20, 6" J-Track-25, or 6" J-Track-20

Manufacturing Location:

504 Walnut Street
Niles, OH 44446

▼ **Evaluated to the following...**

Design listings are based on, and supported by, proprietary test reports. The test reports further define proprietary design details which make these listings applicable only to the specified products manufactured by the listed manufacturer.

Unless otherwise noted, the assemblies in this section have been evaluated for conformance to the following standards:

ASTM-E119, Standard Methods of Fire Tests of Building Construction and Materials.

CAN/ULC-S101, Standard Methods of Fire Endurance Tests of Building Construction and Materials.

NFPA-251, Fire Tests of Building Construction and Materials.

UBC-7-1-94, Uniform Building Code Standard.

UL-263, Fire Tests of Building Construction and Materials.

Designs listed are minimum construction requirements to achieve fire rating.

Unless otherwise noted, fire ratings apply to tests conducted on both sides.

NOTE: Design No. 408 is not used in this edition.