NYC Department of Buildings
280 Broadway, New York, NY 10007
Patricia Lancaster, FAIA, Commissioner
(212) 566-5000, TTY: (212) 566-4769

Report of Materials and Equipment Acceptance Division

Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use subject to the terms and conditions contained herein.

MEA 389-06-M

Manufacturer:	National Gypsum Company, 2001 Rexford Road, Charlotte, NC 28211
Trade Name(s):	Gold Bond®, Fire-Shield®, Shaftliner XP™
Products:	National Gypsum Company Shaftliner®: Gold Bond® BRAND 1" Fire-Shield® Shaftliner XP™, Gold Bond® BRAND 1" Fire-Shield® Shaftliner
Pertinent Code Section(s):	27-339, 27-340, 27-341, 27-346
Prescribed Test(s):	Fire Rated Wall Test ASTM E119
Laboratory:	Underwriters Laboratories, Inc.
Test Report(s):	File R3501, Project 92NK28896, dated June 7, 1993 File R3501, Project 05NK04286, dated June 14, 2005

Description:

Gold Bond® BRAND 1" Fire-Shield® Shaftliner XP™ gypsum panels consist of a fire resistant type X gypsum core encased in a heavy moisture/ mold/mildew resistant, 100% recycled purple paper on the face and back sides.

Gold Bond® BRAND 1" Fire-Shield® Shaftliner gypsum panels consist of a fire-resistant type X gypsum core encased in a heavy moisture-resistant green, 100% recycled paper on the face and back sides.

The face paper on both 1" thick products described above is folded around the long edges to reinforce and protect the core, and the ends are square-cut and finished smooth. Long edges of panels have a double-beveled edge for ease of installation. Both Shaftliner panel products are designed to be used in construction of lightweight fire barriers for cavity shafts in high-rise construction and area separation walls in multifamily

housing. The panels are key components in the C-H, C-T, I-Stud Cavity Shaftwall Systems and the H-Stud Area Separation Wall System.

The **Gold Bond® BRAND 1" Fire-Shield® Shaftliner XP™** and the **Gold Bond® BRAND 1" Fire-Shield® Shaftliner** products qualify for use in fire resistive assemblies as outlined in the following UL design numbers with a core designation of FSW:

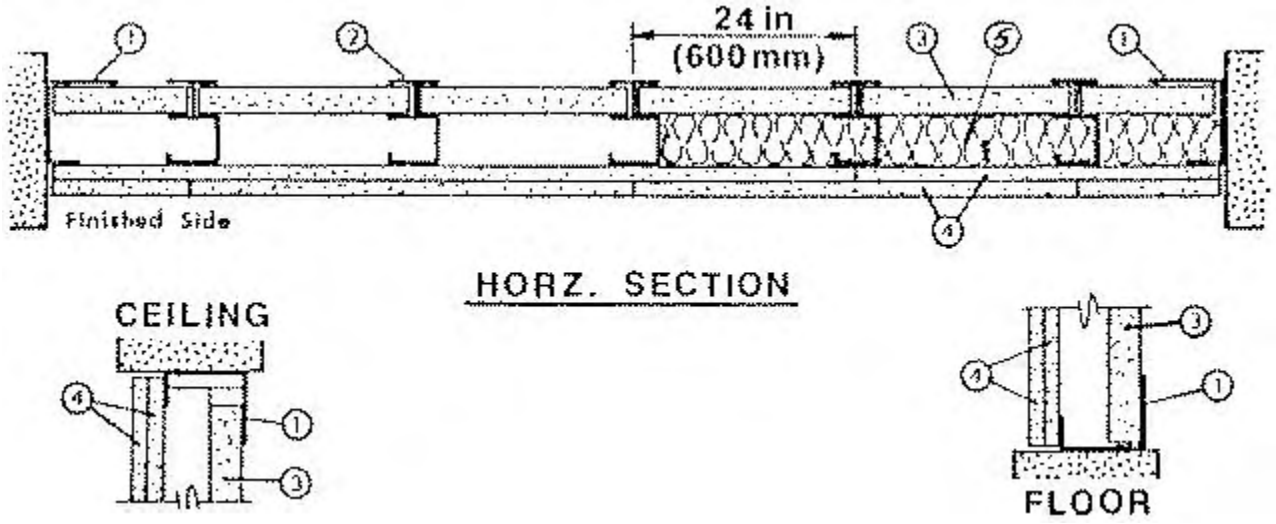
	One Hour Noncombustible Fire Resistive Assemblies	Two Hour Noncombustible Fire Resistive Assemblies	Four Hour Noncombustible Fire Resistive Assemblies
UL Design Assemblies	U499, V433	U428, U429, U497, U498, U505, U525, U529, V433,	V451

Selected Design Assemblies and Test Reports:

UL U428:

Design No. U428

Nonbearing Wall Rating — 2 Hr



1. **Floor and Ceiling Runners —** "J" -shaped runners, 2-1/2 in. wide with unequal legs of 1 in. and 2-1/4 in., fabricated from 25 MSG galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not more than 2 in. from ends and not more than 24 in. OC.

2. **Steel Studs —** "C-T" or "C-H" shaped studs 1-5/8 in. wide by 2-1/2 in. deep, fabricated from 25 MSG galv steel. Cut to lengths 3/4 in. less than floor to ceiling height and spaced 24 in. or 600 mm OC.

3. **Gypsum Board* —** 1 in. thick gypsum wallboard liner panels, supplied in nom. 24 in. or 600 mm (for metric spacing) widths. Panels cut 1 in. less in length than the floor to ceiling height. Vertical edges of the panels inserted into "T" shaped section of C-T studs or the "H" section of the C-H studs. Free edge of end panels

secured to long leg of J runner with tabs in runner or 1-5/8 in. long Type S self-tapping bugle head steel screws spaced not more than 12 in. OC.

NATIONAL GYPSUM CO — Types FSW, FSW-B

4. **Gypsum Board* —** 1/2 or 5/8 in. thick, 4 ft wide, applied in two layers. Base layer attached at right angles to studs and side "J" runners with 1 in. long Type S self-tapping steel screws starting at 2 in. from the floor and ceiling runners and spaced a maximum 24 in. OC along the vertical edges and in the field of the boards.

Face layer oriented parallel to studs and side "J" runners and attached with 1-5/8 in. long Type S self-tapping steel screws, starting at 3 in. from the floor and ceiling runners and spaced a maximum 12 in. OC along the vertical edges and in the field of the boards. Face layer joints covered with paper tape and two coats of joint compound. Exposed screw heads covered with two coats of joint compound.

NATIONAL GYPSUM CO — Types FSW-C, FSW-G

5. **Batts and Blankets* —** (optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt material bearing the UL Classification Marking as to Fire Resistance.

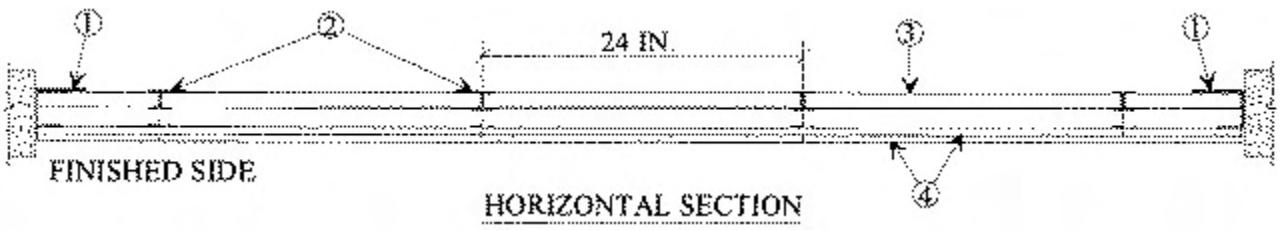
5A. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose insulation material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 3.0 lb/ft^3. Alternate application method: The fiber is applied with U.S. Greenfiber LLC Type AD100 hot melt adhesive at a nominal ratio of one part adhesive to 6.6 parts fiber to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 2.5 lb/ft^3.

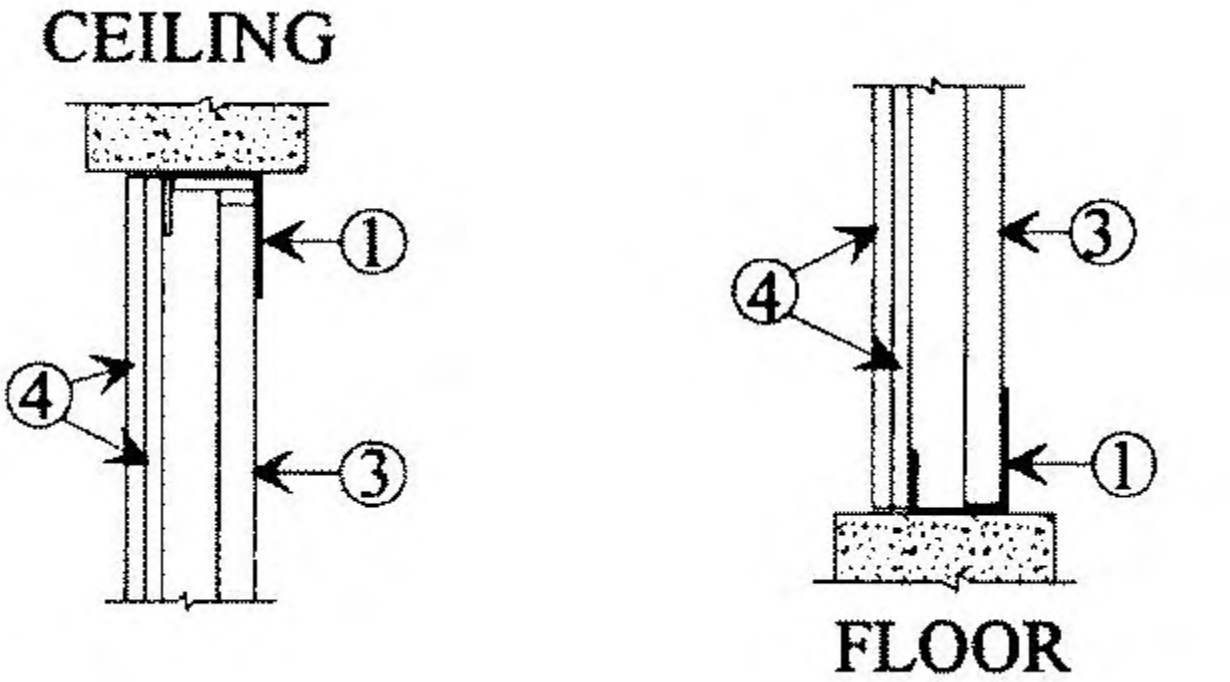
5B. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

*Bearing the UL Classification Mark

UL U497:

Design No. U497
Nonbearing Wall Rating — 2 Hr





1. **Channel Track —** "J" -shaped channel, 2-1/2 in. deep with unequal legs of 1 in. and 2 in., fabricated from No. 25 MSG galv steel. Channel positioned with short leg toward finished side of wall. Channel attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC.
2. **Steel Studs —** "I" -shaped studs, min 2-1/2 in. deep by 1-1/2 in. wide, fabricated from min 25 MSG galv steel. Cut to lengths 1/2 in. less than floor to ceiling height and spaced 24 in. OC.
2A. **Steel Studs —** (Not Shown) — "C-H" -shaped studs, min 2-1/2 in. deep by 1-1/2 in. wide, fabricated from min 25 MSG galv steel. Cut to lengths 1/2 in. less than floor to ceiling height and spaced 24 in. OC.
2B. **Steel Studs —** (Not Shown) — "C-T" - shaped studs, min 2-1/2 in. deep by 1-1/2 in. wide, fabricated from min 25 MSG galv steel. Cut to lengths 1/2 in. less than floor to ceiling height and spaced 24 in. OC.
2C. **Furring Channels —** (Optional, not shown) - Resilient furring channels fabricated from min. 25 MSG corrosion protected steel, installed horizontally, and spaced vertically a max. 24 in. OC. Flange portion of channel attached to each intersecting stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or S-12 pan-head steel screws. When furring channels are used, wallboard to be installed vertically.
3. **Gypsum Board* —** 1 in. thick gypsum wallboard liner panels, supplied in nom 24 in. widths. Panels cut 1 in. less in length than floor to ceiling heights. Vertical edges inserted in "I" studs. Free edge of end panels attached to long leg of channel track with 1-5/16 in. long Type S self-drilling, self-tapping bugle head steel screws spaced 1 in. in from both edges.

NATIONAL GYPSUM CO — Types FSW, FSW-B. .

4. **Gypsum Board* —** 1/2 in. thick, 4 ft wide wallboard applied vertically in two layers. Inner or base layer attached to studs with 1 in. long Type S self-drilling, self-tapping bugle head steel screws spaced 24 in. OC along the edges and in the field of the boards. Outer or face layer attached to studs and channel track with 1-

5/8 in. long Type S self-drilling, self-tapping bugle head steel screws spaced 12 in. along the edges and in the field of the boards, staggered from screws in inner layer. When Furring Channels (Item 2C) are used, inner or base layer attached to furring channels with 1 in. long Type S self-drilling, self-tapping bugle head steel screws. Outer or face layer attached to furring channels with 1-5/8 in. long Type S self-drilling, self-tapping bugle head steel screws spaced 12 in. OC and staggered 12 in. from base layer screws. Joints between inner and outer layers staggered. Outer layer joints covered with paper tape and joint compound. Exposed screw heads covered with joint compound.

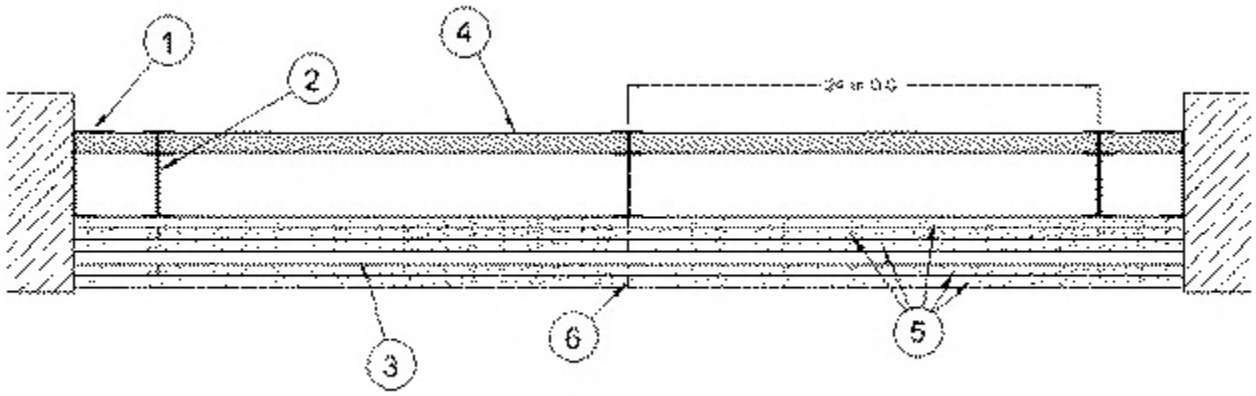
NATIONAL GYPSUM CO — Types FSK-C, FSW-G, FSW-C, FSMR-C.

5. **Batts and Blankets* —** (Optional, not shown)-Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt bearing the UL Classification Marking as to Fire Resistance. See **Batts and Blankets** (BZJZ) category for names of Classified companies.

*Bearing the UL Classification Mark

UL V451:

Design No. V451
Nonbearing Wall Rating — 4 Hr



HORIZONTAL SECTION

1. **Floor, Side and Ceiling Runners —** "J" shaped channel, min 4 in. deep, with unequal legs of 1 in. and 2 in., fabricated from min 25 MSG galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC.

2. **Steel Studs —** "I" shaped studs, min 4 in. deep by 1-1/2 in. wide, fabricated from min 25 MSG galv steel. Cut to lengths 3/4 in. less than floor-to-ceiling height and spaced 24 in OC.

2A. **Steel Studs —** (Not Shown) — "C-H" shaped studs, min 4 in. deep by 1-1/2 in. wide, fabricated from min 25 MSG galv steel. Cut to lengths 3/4 in. less than floor-to-ceiling height and spaced 24 in. OC

2B. **Steel Studs —** (Not Shown) — "C-T"- shaped studs, min 4 in. deep by 1-1/2 in. wide, fabricated from min 25 MSG galv steel. Cut to lengths 3/4 in. less than floor-to-ceiling height and spaced 24 in. OC.

3. **Furring Channels —** "Hat" shaped, min. 22 MSG galv steel furring channels attached directly over the three inner layers of wallboard to each stud with 2-1/4 in. long Type S bugle head steel screws. Screws alternate from top flange to bottom flange at each stud intersection. Furring channels spaced vertically max 16 in. OC.

4. **Gypsum Board* —** 1 in. thick gypsum wallboard liner panels, supplied in nominal 24 in. widths. Vertical edges inserted in "I" studs. Free edge of end panels attached to long leg of channel track with 1-5/8 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced not greater than 12 in. OC.

NATIONAL GYPSUM CO — Type FSW

5. **Gypsum Board* —** 5/8 in. thick, 4 ft wide wallboard applied vertically in five layers. Vertical joints centered over steel studs (Item 2) and staggered min 24 in. First layer secured to studs with 1-1/8 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC at the perimeter and in the field. Second layer secured to studs with 1-5/8 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC at the perimeter and in the field. Horizontal butt joints in second layer shall be secured to first layer of gypsum board with 1-1/2 in. long Type G screws spaced 8 in. OC on both sides of the joint and in joint corners. Third layer secured to studs with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC at the perimeter and in the field. Third layer also secured to inner layers with 1-1/2 in. long Type G screws spaced 12 in. OC vertically and centered between the Type S screws in the studs. Horizontal butt joints in third layer shall be secured to inner layers of gypsum board with 1-1/2 in. long Type G screws spaced 8 in. OC on both sides of the joint and in joint corners. Fourth layer secured to the furring channels (Item 3) with 1-1/8 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Horizontal butt joints in fourth layer shall be centered over furring channels (Item 3) and secured to furring channels with 1-1/8 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 8 in. OC on both sides of the joint. Fifth layer secured to furring channels with 1-5/8 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Fifth layer also secured to fourth layer with 1-1/2 in. long Type G screws spaced 16 in. OC along the vertical joints and centered between the Type S screws in the furring channels. Horizontal butt joints in fifth layer shall be centered over furring channels (Item 3) and secured to furring channels with 1-5/8 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 8 in. OC on both sides of the joint. Screws and horizontal butt joints staggered between layers.

NATIONAL GYPSUM CO — Type FSW-C

6. **Joint Tape and Compound —** (Not Shown) — Joints on outer layer of gypsum board (Item 5) covered with paper tape and joint compound. Exposed screw heads covered with joint compound.

***Bearing the UL Classification Mark

Terms and Conditions: The above-described fire-rated wall assembled designs be accepted as having the fire-resistance ratings as indicated when used where combustible or non-combustible construction as required in accordance with the Building code with the following conditions:

1. This acceptance does not include structural adequacy or wall design which must be checked by a professional engineer or registered architect for particular structure for compliance with Building Code.

2. Installation shall comply with New York City Building Code and UL fire-resistance rating as specified above.

3. All shipments and deliveries of such material shall be provided with a certificate or label certifying that the material shipped or delivered are equivalent to that tested and acceptable for use, as provided for in Section 27-131 of the Building Code.

NOTE: In accordance with section 27-131(d), all materials tested and accepted for use shall be subject to periodic retesting as determined by the Commissioner; and any material which upon retesting is found not to comply with Code requirements or the requirements set forth in the approval of the Commissioner shall cease to be acceptable for the use intended. During the period for such retesting, the Commissioner may require the use of such material to be restricted or discontinued if necessary to secure safety.

Final Acceptance October 17, 2006

Examined By Sius Dorkhodam