HI-IMPACT® BRAND WALLBOARD

MANUFACTURER

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DESCRIPTION

Hi-Impact®* BRAND Fire-Shield® Type X Wallboard panels consist of a fire resistive type X gypsum core encased in heavy smooth white abrasion resistant finish paper on the face side and strong liner paper on the back side. Lexan®** substrate is bonded to the back side of the panel to provide additional impact/penetration resistance. Hi-Impact Wallboard features a specially formulated core to provide fire resistance ratings when used in tested systems. Long edges of the panels are tapered to allow joints to be reinforced and concealed with ProForm® BRAND Joint Tape and Joint Treatment Compounds.

Hi-Impact BRAND Wallboard panels are backed with Lexan substrate and are available in four increasingly higher levels of impact resistance:

1. Hi-Impact BRAND 1000 with a 0.010" Lexan substrate
2. Hi-Impact BRAND 2000 with a 0.020" Lexan substrate
3. Hi-Impact BRAND 3000 with a 0.030" Lexan substrate
4. Hi-Impact BRAND 8000 with a 0.080" Lexan substrate

BASIC USES

This unique wallboard is designed for use in wall assemblies in areas where surface durability and impact/penetration resistance are major concerns.

ADVANTAGES

- Provides greater resistance to surface abuse, indentation and impact/penetration than fiber-reinforced gypsum panels.
- Hi-Impact Wallboard's smooth white face paper is highly resistant to scuffing when sanding wallboard joints and fasteners providing a superior surface for decoration.
- Lightweight, cost-efficient material that readily accepts a wide range of decorative finishes.
- Hi-Impact Wallboard is easily cut for quick installation, permitting painting or other decoration and the installation of most metal or wood trim almost immediately.
- The gypsum core will not support combustion or transmit temperatures greatly in excess of 212°F (100°C) until completely calcined, a slow process.
- Expansion and contraction under normal atmospheric changes are negligible.

LIMITATIONS

- Exposure to excessive or continuous moisture and extreme temperatures should be avoided.
- Hi-Impact Wallboard is not recommended where it will be exposed to temperatures exceeding 125°F (52°C) for extended periods of time.
- Hi-Impact Wallboard should not be used as a base for tile or wall panels in tub and shower enclosures.
- Hi-Impact Wallboard is not recommended for use on the interior side of exterior walls in hot, humid climates such as the Southern Atlantic and Gulf Coast areas.
- Listed impact/penetration ratings apply to walls constructed with Hi-Impact Wallboard applied with long edges parallel to and centered over minimum 20 gauge framing members spaced a maximum of 16" o.c.
- Not recommended to be used over kraft-faced insulation or other vapor retarders.
- Hi-Impact Wallboard must be stored off the ground and under cover. Sufficient risers must be used to assure support for the entire length of the wallboard to prevent sagging.
- Cutting and scoring Hi-Impact 1000, 2000 and 3000 Wallboard should be done from the back side using a standard utility knife. Hi-Impact 8000 Wallboard should be cut from the face side with a circular-type saw, using a carbide-tipped fine-tooth blade. For cutting out minor penetrations, a carbide-tipped router is recommended.
- Special consideration should be given when ordering door frames to allow for the additional width of the wall system due to the Lexan backing.

COMPOSITION & MATERIALS

Hi-Impact Wallboard is a manufactured panel with a gypsum core encased in tough, robust paper with a Lexan substrate bonded to the back side of the panel. Various aggregates are added to the core to enhance fire resistive qualities. Hi-Impact Wallboard contains no asbestos.

ACCESSORIES

Fasteners: drywall screws
Joint tape
Joint compound
Cornerbead
Trims
Casing beads
Furring channels
E-Z Strip control joints
.093 zinc control joint

(Continued next page)

Job Name _____

Contractor _____ Date _____

Submittal Approvals: (Stamps or Signatures)

* Hi-Impact® is a registered trademark of National Gypsum Properties, LLC.
** Lexan is a registered trademark of General Electric Company.

SIZES & TYPES

Width: 4' (1219 mm)
Lengths: 8' through 12' (2438 mm-3658 mm)
Thickness: 5/8" (15.9 mm)
Edges: Tapered

APPLICABLE STANDARDS

ASTM C 36/C 1396
Federal specification SS-L-30D Type III Grade X (Fire-Shield)

Hi-Impact Wallboard has been approved by the State of New York Office of Mental Health, Office of General Services and Department of Corrections for use in new construction and renovation.

TECHNICAL DATA

SURFACE BURNING CHARACTERISTICS

ASTM E 84
Flame spread (Face): 15
Flame spread (Back): 50 or less

NONCOMBUSTIBLE

Hi-Impact Fire-Shield Wallboard meets the definition of "noncombustible" as stated in section 215 of the 1997 Uniform Building Code, section 202 of the 1999 Standard Building Code, and is accepted as non-combustible in accordance with section 704.4.1.2 of the 1999 BOCA National Building Code and Section 703.4.2 of the 2000 ICC International Building Code.

In addition, Hi-Impact Fire-Shield Wallboard meets the definition of "Limited-Combustible" as stated in section 3-2 of NFPA 101 Life Safety Code, 2000 edition, and chapter 2 of NFPA220 Types of Building Construction, 1999 edition.

POTENTIAL HEAT VALUE

Potential Heat Values per NFPA 259 are as follows:
Hi-Impact 1000 - 488 BTU/lb.
Hi-Impact 2000 - 771 BTU/lb.
Hi-Impact 3000 - 1086 BTU/lb.
Hi-Impact 8000 - 1980 BTU/lb.

WATER VAPOR PERMEABILITY

In tests conducted according to ASTM test method E 96 (desiccant method), Hi-Impact Fire-Shield Type X Wallboard showed a performance of less than 0.3 perm.

FIRE ENDURANCE

1 Hour Rating: Hi-Impact Wallboard screw attached vertically to both sides of 20 gauge 3-5/8" studs spaced 16" o.c. with 1 1/4" long, type S screws spaced 8" o.c. along edges and 12" o.c. in the field of the board. Wallboard joints staggered.

WHI Test No: 651-0489.01
UL U495, UL V416

2 Hour Rating: Constructed with a base layer of Hi-Impact Wallboard with an additional layer of 5/8" Fire-Shield wallboard Type X screw attached vertically to both sides of 20 gauge 3-5/8" studs spaced 16" o.c. with joints staggered between face and base layer. Base layer attached with 1-1/4" long type S screws spaced 8" o.c. along edges and 12" o.c. in the field of the board. Outer layer attached with 2-1/2" long type S screws spaced 8" o.c. in the field and along vertical edges and to the floor and ceiling runners.

UL U495

Due to the added thickness, Compass International 2" Bugle Pilot screws are recommended for fastening Hi-Impact 8000 to framing members.

INDENTATION RESISTANCE
(HARDNESS)
MODIFIED ASTMD 1037

	5/8" NGC Hi-Impact Wallboard	5/8" Fiber-Reinforced Gypsum Panel
LOAD, lbs. @ 0.100"	232	177
LOAD, lbs. @ 0.200"	469	266

Procedure Summary – To measure surface indentation, a load was applied to a steel ball (Diam. 0.438"), at a rate of 0.25"/minute to an indentation depth of 0.100" and 0.200".

3M SURFACE ABRASION RESISTANCE
ABRASER – WIRE BRUSH
MODIFIED ASTMD 4977

	5/8" NGC Hi-Impact Wallboard	5/8" Fiber-Reinforced Gypsum Panel
Number of cycles	250	250
Number of cycles performed without abrasion depth exceeding .001"		

Procedure Summary – A 3M Granule Embedding Test Machine with wire brush was activated, and after every 50 cycles (50 forward and 50 back strokes), the surface erosion was measured.

TABER SURFACE ABRASION RESISTANCE
ABRASER – SANDPAPER
MODIFIED ASTMD 4060

	5/8" NGC Hi-Impact Wallboard	5/8" Fiber-Reinforced Gypsum Panel
Number of cycles	125	125
Number of cycles performed without abrasion depth exceeding .01"		

Procedure Summary – A Taber Abraser with two rubber wheels fitted with S-42 sandpaper was activated, and after every 25 cycles, surface erosion was measured.

SMALL PROJECTILE IMPACT TEST

	5/8" NGC Hi-Impact 1000 Wallboard	5/8" Fiber-Reinforced Gypsum Panel with Embedded Fiberglass Scrim
Impact force in ft.-lbs.	180	165

Procedure Summary – A 2'x2' test wall is securely clamped to a rigid test frame and impacted with a ram mounted on a pendulum which is faced with a nominal 2-1/2" pipe cap. The maximum impact force that the sample can withstand without penetration through the face of the sample is reported in foot-pounds.

MOISTURE ABSORPTION
MODIFIED ASTMD 3285

	5/8" NGC Hi-Impact Wallboard	5/8" Fiber-Reinforced Gypsum Panel
Absorption in grams	1.37	45.04

Procedure Summary – To measure water absorption, a Cobb Ring was clamped to the panel surface, filled with a 1" head of 70˚F water for 1 hour and the moisture absorption calculated by weight difference.

IMPACT/PENETRATION RESISTANCE RATING

Per ASTM D 2394 Modified*

Product	Impact/Penetration Resistance (ft-lbs)
5/8" Hi-Impact 1000 (.010" Lexan®)	**264**
5/8" Hi-Impact 2000 (.020" Lexan®)	**846**
5/8" Hi-Impact 3000 (0.030" Lexan®)	**1,450**
5/8" Hi-Impact 8000 (.080" Lexan®)	**>2,188**
1/2" Fiber-Reinforced Gypsum Panel (single layer)	24
5/8" Fiber-Reinforced Gypsum Panel (single layer)	24
5/8" Fiber-Reinforced Gypsum Panel (double layer)	168
5/8" Fiber-Reinforced Gypsum Panel with fiberglass scrim	144
1/2" Regular Wallboard (single layer)	36
5/8" Type X Wallboard (single layer)	60
5/8" Type X Wallboard (double layer)	72
1/2" Exterior Grade Plywood	216
7/16" OSB with 1/2" regular wallboard	144
8" CMU Unreinforced—Single Block (at hollow)	12
8" Unreinforced Single Block (at rib)	72

**Testing certified by ITS/Warnock Hersey Laboratories*

Footnotes:

1) Impact rating indicates the maximum force in foot-pounds resisted in a single drop without penetration into the wall.

2) When impacted by a 5-1/2" diameter, hemispherical projectile, Hi-Impact Wallboard applied vertically to 20 gauge 3-5/8" studs spaced 16" o.c. with 1 1/4" long, type S screws spaced 8" o.c. along edges and 12" o.c. in the field of the board will resist an impact force of 264 foot-pounds (Hi-Impact 1000), 846 foot pounds (Hi-Impact 2000), 1,450 foot-pounds (Hi-Impact 3000) without penetration, and >2,188 foot-pounds (Hi-Impact 8000) without penetration.

3) With the exception of the concrete block, all products were tested on metal framing consisting of 3-5/8", 20 gauge studs and track. Products were attached with 1-1/14" type S screws 8" o.c. along the perimeter and 12" o.c. in the field.

4) Hi-Impact 8000 withstood a single blow impact of 2,188 foot-pounds, with no penetration of the Lexan. Cumulative testing (one hundred, 100-foot-pound impacts) for a total of 10,000 foot-pounds of impact/penetration force, caused only minor distortion of the Lexan backing with no penetration.

INSTALLATION

APPLICABLE STANDARDS

ASTM C 36/C 1396
ASTM C 840
Gypsum Association GA-216
Gypsum Association GA-214
National Gypsum Co. *Gypsum Construction Guide*

RECOMMENDATIONS

Installation of 5/8" Hi-Impact Fire-Shield Type X Wallboard should be consistent with methods described in Applicable Standards with one exception—for best results, cutting and scoring of Hi-Impact 1000, 2000 and 3000 should be from the back side of the board. (Hi-Impact 8000 should be cut with a circular saw (face up) using a carbide-tipped fine-toothed blade. For cutting out minor penetrations, use a carbide-tipped router.)

DECORATION

For best painting results, all surfaces, including joint compound, should be clean, dust-free and not glossy. To improve fastener and joint concealment, a coat of high quality latex primer is recommended to equalize the absorption between surface paper and joint compound. Drywall primer is a product specially formulated for this purpose.

The selection of a paint to give the specified or desired finished characteristics is the responsibility of the architect or contractor.

Hi-Impact Wallboard that is to have a wall covering applied to it should be prepared and primed as described for painting.

Gypsum Association GA-214, Recommended Specification for Levels of Gypsum Board Finish, should be referred to in order to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

National Gypsum COMPANY

Excellence Across The Board®

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