HARDSTOP™ DECORATIVE PROTECTION PANELS BY FORMICA GROUP

TECHNICAL GUIDE, USE & CARE, WARRANTY, AND INSTALLATION GUIDE

INTRODUCTION

HardStop™ Decorative Protection Panels by Formica Group offer an excellent solution for high-performance wall panels by blending ease of installation and impact resistance with a full range of design selections that coordinate perfectly with other Formica® laminates.

Unlike traditional laminate that contains a paper core, HardStop™ Panels feature a treated fiberglass core for added durability, strength, and fire resistance. HardStop™ Panels are Class A fire-rated.

HardStop™ Decorative Protection Panels are intended for commercial applications. They can be used in the following applications, provided installation instructions are strictly followed:

- Walls/Partitions/Wainscoting

- Backsplash

- Doors, cabinet fronts, transactional counter fronts

- Counters or table tops, etc.

SAFETY

Refer to HardStop™ Decorative Protection Panels SDS for additional safety information.

HardStop™ Panels must be installed by a qualified professional. Professionals should follow all building codes and safety, personal protection equipment, and fire guidelines for installation.

Product contains fiberglass which could cause temporary mechanical irritation (itching) of skin, eyes and respiratory tract upon exposure to dust/particles during cutting, drilling or machining.

- Always wear a dust mask, protective clothing, and eye protection when cutting, drilling or machining HardStop™ Panels. Use hearing protection as needed for power tools.

- Clear area of occupants and ensure only properly outfitted installers are present during installation.

- Area should be well ventilated.

- Clean up all dust.

During fabrication, assure good ventilation conditions are in place. Ventilation rates should be matched to conditions. If applicable, use engineering controls such as local exhaust to maintain airborne dust levels below recommended OSHA exposure limits for nuisance dust. Avoid dust accumulation.

If you are unsure about how to comply with OSHA fiberglass dust regulations, consult a qualified industrial hygienist or safety professional. Formica Group makes no representation or warranty that adopting a particular cutting practice will assure your compliance with OSHA guidelines or other applicable laws and safety requirements.

If using any materials for this installation that are not made by Formica Group, such as adhesives, you must follow the manufacturer's instructions for safety.

INSPECTION

Inspect all materials at the time they are received to ensure all panels and trim are free from damage and/or visible defects. HardStop™ Panels are two-sided. If one side has visible defects the other side may be used. Do not install materials with known defects on both sides. It is the responsibility of the customer/fabricator/installer to inspect materials before installation.
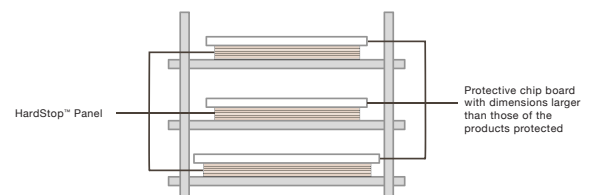
STORAGE CONDITIONS

Place all panels on a flat, dry surface (never directly on the floor or directly on concrete). The optimal conditions for acclimation and storage are 50 – 90°F (10-32°C) and 30% – 65% humidity.
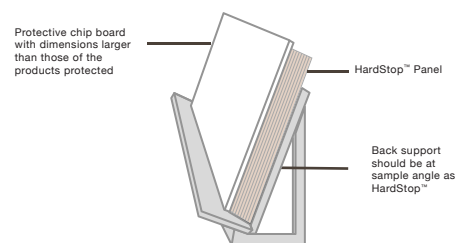
ACCLIMATION CONDITIONS

All HardStop™ Panels need to acclimate a minimum of 24 hours prior to installation. To do this, store the panels indoors in the area where the installation will occur. Place all panels on a flat, dry surface (never directly on the floor or directly on concrete), and remove all packing materials. The optimal conditions for acclimation and storage are 50 – 90°F (10-32°C) and 30% – 65% humidity.

Two recommended methods for storage or acclimation:

HardStop™ Panel

Protective chip board with dimensions larger than those of the products protected

Or

Protective chip board with dimensions larger than those of the products protected

HardStop™ Panel

Back support should be at sample angle as HardStop™

INSTALLATION CONDITIONS

HardStop™ Panels and all substrate surfaces must be dry/cured, clean and free of all grease, dust, and foreign matter. All surfaces must be kept indoors, and the area should be environmentally controlled. It is desirable that the product is installed when the HVAC system is operating in the building or room, with temperatures between 50 – 90°F (10-32°C). The humidity should be between 30 - 65%.

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HARDSTOP™ PANELS MAY BE APPLIED TO:

1. Level 3 finished or painted drywall

2. Non-painted drywall and gypsum board

3. Plywood

4. Above grade brick and concrete block

5. Above grade poured concrete

6. MDF or particleboard

7. Inorganic reinforced cement board, also referred to as IRCB or HardieBacker®

8. Non-porous material such as tile, metal.

Only approved if recommended application methods in this document are followed.

SURFACES PREPARATION AND INSTALLATION REQUIREMENTS:

All surfaces must be flat and free of any loose debris that may keep the adhesive from bonding properly. Surfaces must be dry, fully cured and free of any contaminates. Any glossy, epoxy coated painted surface must be roughed up with course 100 grit sandpaper (or wallpaper surface perforating tool) and then completely cleaned. Always ensure that the drywall has been installed and finished to industry standards. Refer to the "Approved Adhesives Chart" (page 8) for adhesive requirements by surface type.

PAINTED DRYWALL AND GYPSUM BOARD:

The surface must be flat. All glossy, epoxy coated painted surfaces must be roughed up with coarse 100 grit sandpaper to ensure the exposure of clean drywall. You may also use a wallpaper surface perforating tool. Be sure to clean the surface after abrading to remove all loose particulates and dirt and use the recommended adhesive. Be careful not to abrade through the drywall's face paper; only rough up the painted or primed surface to expose the drywall surface paper.

NON-PAINTED DRYWALL AND GYPSUM BOARD:

The surface must be flat. Finish only the tapered joints and corners so they are flat. Do not finish, prime or paint the entire surface of new drywall or gypsum. If the area needs to be evened out, you may use joint compound. Any high or low spots will create a poorly finished wall and yield a poor bond. Make sure all dust and particulates are removed when finished. All drywall seams and corners must be primed. We recommend the use of Titebond® Original Wood Glue, thinned with 50% water, to be used as a primer.

PLYWOOD SURFACES:

Standard plywood may be used, provided it is flat, dry and free of any loose debris and contaminates. Glossy, epoxy coated painted plywood needs to be roughed up before application and then completely cleaned. Treated and fire-rated plywood may be used, however proper adhesives must be used. See "Approved Adhesives Chart" below (page 8).

ABOVE GRADE BRICK OR CONCRETE BLOCK:

You may opt for one of the following installation techniques:

1. For the best and smoothest covering to a brick or block wall, the brick or block wall should be furred out with furring strips or studs and covered with drywall, gypsum board or cement board. Smooth the joints with the appropriate material, then install HardStop™ Panels per the instructions in this document.

2. If you are working with a flat, unpainted (or roughed-up painted), clean, and above-grade brick or concrete block, adhesive may be used. Acceptable adhesives outlined in the "Approved Adhesives Chart" (page 8) must be used. Formica Group requires that all brick or concrete block have all moisture dissipated prior to installing. The space must remain dry and free of moisture penetration for the life of the installation.

ABOVE GRADE POURED CONCRETE:

For the best and smoothest covering to poured concrete, wall should be furred out with furring strips or studs and covered with drywall, gypsum board or cement board. Smooth the joints with the appropriate material, then install HardStop™ Panels per the instructions in this document. Formica Group requires that all brick or concrete block have all moisture dissipated prior to installing. The space must remain dry and free of moisture penetration for the life of the installation.

NON-POROUS SURFACES:

In general, metal, ceramic tile, stainless steel or other non-porous material may be used. Reference "Approved Adhesives Chart" below (page 8).

MDF OR PARTICLEBOARD:

Reference "Approved Adhesives Chart" below (page 8).

INORGANIC REINFORCED CEMENT BOARD, ALSO REFERRED TO AS IRCB OR HARDIEBACKER®:

Reference "Approved Adhesives Chart" below (page 8).

HIGH-HUMIDITY AND HIGH/LOW TEMPERATURE CONDITIONS:

- Follow all parameters for expansion gaps.

- Use the adhesive and trowel recommended for the conditions (humidity and temperature). Formica Group recommends that installers follow the manufacturer's instructions for adhesive application and clean-up.

- Make sure all moisture entry points are sealed with silicone sealant to avoid the potential for product or substrate deterioration.

- HardStop™ Panels are not recommended for applications where it will be exposed to lower than 50°F or higher than 90°F. It is also not recommended for application areas below 30% or above 65% humidity.

- NOTE: Commercial kitchens and bathrooms are not considered high humidity.

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TOOLS & MATERIALS NEEDED:

- HardStop™ Decorative Protection Panels by Formica Group

- Adhesive appropriate for application type

- One or more of the below cutting tools. Blades/bits should be carbide or diamond tip. Reference chart below.

- Circular saw with a carbide blade that has 7" diameter blade and 58 teeth (Amana # 575601) or equivalent tool

- Jigsaw with a fine tooth blade

- Router for outlets

- Drill

- ¼" (6.35mm) and ½" (12.7mm) twist drill bit

- Screw gun

- Trowel that is specified by the adhesive manufacturer being used

- Extendable hand roller

- Measuring tape

- Straight edge

- Level

- Suction cups (if needed to position the panels on the wall)

- Drywall screws

- Blue painter's tape (if needed for protection or positioning)

- Chalk line (if needed for making measurements)

- 100 grit sand paper (if needed for painted or primed substrate)

- A table or work surface

- Cleaning cloths

- Cleaner such as acetone, mineral spirits, or solvent recommended by adhesive manufacturer to remove any dried adhesive

- Personal Protective Equipment (PPE), consult SDS for full list, examples:

- Dust mask

- Eye protection

- Protective clothing

- Hearing protection as needed

- Ventilation and/or dust collection equipment as needed

IF TRIM IS BEING INSTALLED, THE FOLLOWING IS ALSO NEEDED:

- HardStop™ Trim or trim by another manufacturer designed to fit a max material thickness of 0.0827" (or 2.1mm material)*
  * Depending on design selected, HardStop™ Panels can range from 0.0669" – 0.0827" (or 1.70mm – 2.10mm)

- Pneumatic nail gun

- 16-18 gauge nails, 1" long (25.4mm)

- 100% clear silicone caulk and a caulk gun

- Miter box

- Appropriate cutting tool for aluminum, such as circular or miter saw with an appropriate aluminum cutting blade. Metal snips may also be used, though the edge may not be as clean.

- If Trim is not being used, 100% silicone caulk will be needed.

- Silicone caulk with a good color selection can be purchased through Color Rite™, Inc.

- Formica Group still recommends covering outside corners with molding.

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CNC/ROUTER BIT REFERENCE CHARTS

AMANA TOOLS® (OR EQUIVALENT MAY BE USED) — SEE AMANA TOOL SPECIFIC FEED AND ROTATION SPEEDS FOR EACH BIT:

Amana bit number	Direction	Cutter diameter	Cutter height	Shank diameter	Overall length	Flutes	Bit Material
51458	up cut	$1/4$	$7/8$	$1/4$	$2 1/2$	1	solid carbide
51480	up cut	$1/4$	$3/4$	$1/4$	$2 1/2$	1	solid carbide
51481	up cut	$1/4$	$1 1/4$	$1/4$	3	1	solid carbide
51484	up cut	$3/8$	$3/4$	$3/8$	3	1	solid carbide
51485	up cut	$3/8$	$1 1/8$	$3/8$	3	1	solid carbide
51487	up cut	$1/2$	$1 1/8$	$1/2$	$3 1/2$	1	solid carbide
51775	down cut	$1/4$	$3/4$	$1/4$	$2 1/2$	1	solid carbide
51776	down cut	$1/4$	$1 1/4$	$1/4$	3	1	solid carbide

BLADE REFERENCE CHARTS

AMANA TOOLS® (OR EQUIVALENT MAY BE USED)

(D) Diameter	Teeth	Tooth Grind	Hook Angle	Kerf (B)	Plate (C)	(d) Bore	Pinholes	Tool Number
7 (180mm)	58	TCG	-6°	.110 (2.8mm)	.087 (2.2mm)	$5/8$ inch	—	575601
8 (200mm)	64	TCG	-6°	.110 (2.8mm)	.087 (2.2mm)	$5/8$ inch	—	586401
9 (230mm)	60	TCG	-6°	.110 (2.8mm)	.087 (2.2mm)	$5/8$ inch	—	596001
10 (250mm)	100	TCG	-6°	.126 (3.2mm)	.102 (2.6mm)	1 inch	—	510101
10 (250mm)	80	TCG	-6°	.126 (3.2mm)	.102 (2.6mm)	1 inch	—	510801
12	96	TCG	-6°	.126 (3.2mm)	.102 (2.6mm)	1 inch	—	512961
10 (250mm)	80	TCG	-6°	.126 (3.2mm)	.102 (2.6mm)	30 mm	2/7/42, 2/9/46 & 2/10/60	510801-30
12 (300mm)	96	TCG	-6°	.126 (3.2mm)	.102 (2.6mm)	30 mm	2/7/42, 2/9/46 & 2/10/60	512961-30
14 (350mm)	108	TCG	-6°	.126 (3.2mm)	.102 (2.6mm)	1 inch	—	514108
14 (350mm)	108	TCG	-6°	.126 (3.2mm)	.102 (2.6mm)	30 mm	2/7/42, 2/9/46 & 2/10/60	514108-30
16 (400mm)	120	TCG	-6°	.150 (3.8mm)	.126 (3.2mm)	1 inch	—	516121
18 (450mm)	120	TCG	-6°	.150 (3.8mm)	.126 (3.2mm)	1 inch	—	518121
20 (500mm)	120	TCG	-6°	.174 (4.4mm)	.134 (3.4mm)	1 inch	—	520121
160mm	56	TCG	-5	2.5mm	1.8mm	20mm		MD160-565
210mm	72	TCG	-5	2.4mm	1.8mm	30mm		MD210-725
260mm	68	TCG	-5	2.4mm	1.8mm	30mm		MD260-685

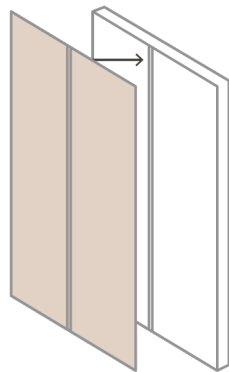# HARDSTOP™ DECORATIVE PROTECTION PANELS BY FORMICA GROUP

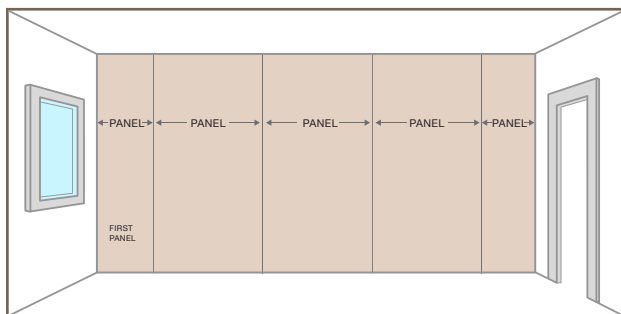## TECHNICAL GUIDE, USE & CARE, WARRANTY, AND INSTALLATION GUIDE

IMPORTANT INSTALLATION TIPS & REMINDERS:

- You will need a work area with a large surface to support one full HardStop™ Panel flat while you cut the material and apply the adhesive.

- Use PPE whenever cutting or drilling panels.

- Have clean water, cleaner and rags on hand for cleanup. (Follow the adhesive manufacturer's recommendations for cleanup.)

- If the wall is painted, sand to rough up the surface and then completely clean the surface.

- All areas with drywall seams and corners must be sealed or primed prior to applying panels.

- Do not position HardStop™ Panel joints directly over substrate joints.

DO NOT position HardStop™ Panel joints directly over substrate joints.

- Do not install HardStop™ Panels directly to wall studs.

- A balanced look is important and should be a goal of installation. Always start with a center line measurement to ensure a balanced installation.

- Do not nail through the HardStop™ Panels.

- There should be no raw edge exposed. All edges of every panel should have trim, silicone caulk, or Color Rite, Inc. silicone caulk covering them.

- Remember to leave a $1/_{16}$" (or 1.588mm) gap between the trim/obstructions and the HardStop™ Panels.

- If using caulk, you must also leave $1/_{16}$" (or 1.588mm) gap between panels and panels/obstructions.

- Remember that all inside corners need to cut on to $1/_8$" (or 3.175mm) minimum radius.

- Always check adhesion by applying your chosen adhesive to a test area.

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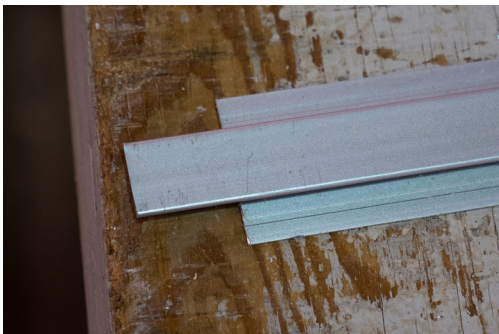
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BASIC INSTALLATION STEPS FOR WAINSCOT DRYWALL INSTALLATION

1. While planning your install, consider the panel seams must be offset from the substrate joints. Plan for symmetry of your panels along your wall line.

2. Put on personal protective equipment (PPE).

3. Establish wall level line.

4. Cut trim to size. Miter corners and notch backs as needed.

Cut trim & miter corners

Division Bar with a notched back

5. Install top edge trim to wall using silicone.

Use 100% clear silicone to adhere trim

6. Use the nailer to put nails into bottom flange of trim.

16-18 gauge 1" nails used to hold trim

7. You may place painters tape on any trim edge joints while drying.

8. Cut the panel to fit.

Cut panel

9. Dry fit panel to confirm it is plumb and level.

10. Mark any areas on panel where there will be cutouts (i.e. outlets).

11. Clean wall.

12. Apply adhesive with adhesive manufacturer's recommended trowel to backside of panel. HardStop™ Panels require 100% adhesive coverage on back of the panel only.

Apply adhesive. 100% adhesive coverage required.

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13. Install the panel by positioning it into the trim. Remember leave $\frac{1}{16}$" (or 1.588mm) gaps.

Insert panel into trim

14. Confirm panel and trim are plumb. Adjust if needed. Suction cups can help with positioning.

15. Install drywall screws through bottom of panel (in a location where baseboard will eventually hide) to support the panel until the adhesive dries. Oversize holes are recommended whenever screwing into the panel.

16. Use extendable hand roller (with 3 roller heads) across the entire panel to ensure a good bond. Roll from the center out to remove any air bubbles. Do not over press.

Use extendable hand roller

17. Clean excess adhesive per adhesive manufacturer's instructions.

18. Install the next trim piece.

Install next trim

19. Install all panels and trim pieces as you move in one direction around the perimeter of the room. Use roller after each panel is installed. Make sure to clean adhesive as you go. Continue to support panels with drywall screws.

20. Once all panels are installed, cut out all other openings for outlets, etc.

    • Drill a single hole ($\frac{1}{2}$" or 12.7mm diameter) into the center of the outlet area and then route the entire opening with a $\frac{1}{4}$" (6.35mm) flush trim router bit.

    • Make sure all electrical devices are not energized when cutting openings for them.

    • Opening must have $\frac{1}{8}$" (or 3.175mm) minimum inside radius.

21. After adhesive is dry, remove the temporary drywall screws and apply baseboard following the baseboard manufacturer's instructions.

CUTTING TIPS:

• To reduce the potential for chipping, always cut the HardStop™ Panels with the backside up when using a circular saw.

• All inside corners (i.e. for outlets) must be cut with a minimum radius of $\frac{1}{8}$" (or 3.175mm).

• Whenever drilling into HardStop™ Panels, use oversized holes.

• A twist drill bit will work, allow for some type of low profile washer head screws or an escutcheon to cover the drilled hole.

TRIM TIPS:

• 100% clear silicone caulk should be applied to back flange of all trim.

• For best bonding, use nails to secure back flange of trim to wall.

• At joints, miter cuts should be used.

• Whenever joining vertical and horizontal trim pieces, notch the back of the vertical trim so they sit flush.

• You may put 100% clear silicone caulk in inside of trim piece to further seal (i.e. in locations that require sanitary conditions).

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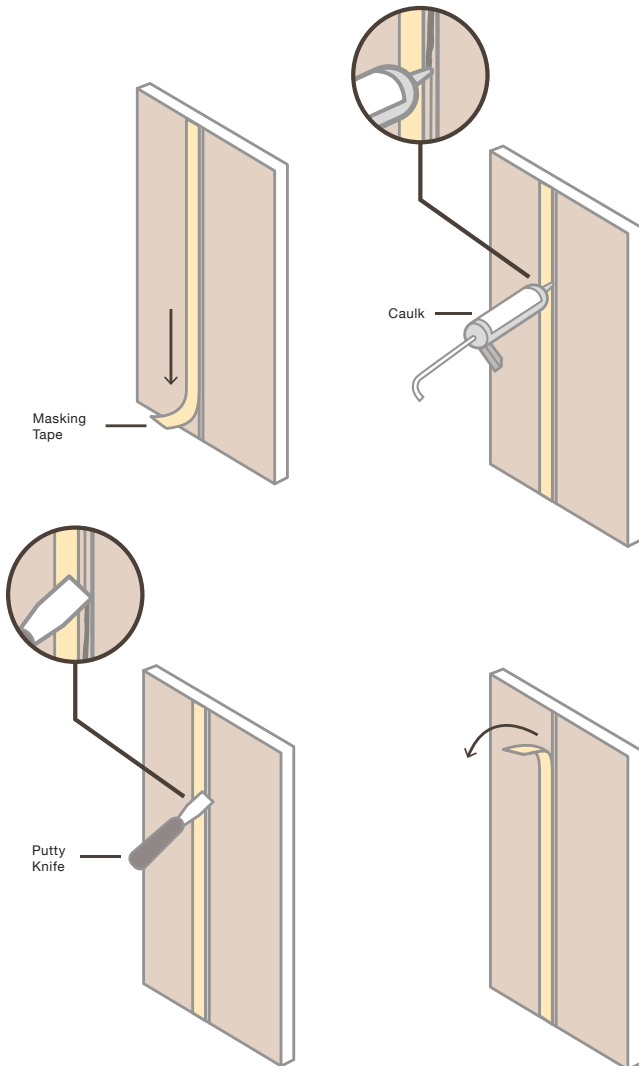
CAULK TIPS:

Caulk may be used in place of trim, however, Formica Group does recommend the use of molding for any outside corner.

When using caulk, leave a $\frac{1}{16}$" (or 1.588mm) gap for expansion at the joints at the top, bottom, and edges of the sheet.

Select a silicone caulk that matches the panels (Color Rite™, Inc. offers many color options.

- Apply painters tape along the edges of the gap in between the panels.

- Apply a $\frac{1}{16}$" (or 1.588mm) bead of caulk in the gap. Be sure the joint is completely filled.

- Remove any excess caulk immediately. The caulk should be flush to the panel.

- Remove the painters tape.

- Clean any caulk that is on the face of the panel immediately.

Caulk

Masking Tape

Putty Knife

USE OF EDGE BANDING FOR HORIZONTAL APPLICATION:

HardStop™ Panels can be edge banded.

USE OF BUMPERS OR HANDRAILS:

Bumpers, crash rails, or handrails may be installed into HardStop™ Panels.

- Follow the bumper, crash rail, and handrail manufacturer instructions to ensure a safe installation. Formica Group makes no representation or warranty that adopting a particular installation practice will assure your compliance to applicable laws and safety requirements.

- Be sure all attachments allow for panel movement.

APPROVED ADHESIVES FOR INSTALLING HARDSTOP™ PANELS TO VARIOUS SUBSTRATES:

All adhesives should be tested by installer on-site to ensure desired adhesion is achieved.

Please refer to hot/cold panel section of guide for approved adhesive for this install method.

Glued To	Titebond® GREENChoice™ Advanced Polymer Panel Adhesive	HardStop™ Spray Adhesive
standard unpainted drywall	YES	YES
standard painted drywall (sanded)	YES	YES
mold & moisture resistant drywall	YES	YES
standard unpainted plywood	YES	NO
standard painted plywood (sanded)	YES	NO
treated plywood	YES	NO
fire-rated plywood	YES	NO
uncoated MDF	YES	NO
uncoated particleboard	YES	NO
cement board	YES	NO
firecode core drywall	YES	NO
DensGlass and fiberglass faced wallboard	YES	NO
ceramic tile	YES	NO
stainless steel	YES	NO
metal	YES	NO
aluminum	YES	NO
galvanized metal	YES	NO
brick or cememnt block (above grade, or inside wall)**	YES	NO
brick or cement block (above grade, or outside wall)**	YES	NO

**Refer to page 2 for specifics on install techniques

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USE OF HOT OR COLD PRESS FOR PANEL MANUFACTURING:

Before hot or cold pressing, always do a test panel to confirm results.

Franklin Adhesives Advantage EP-950A (with Hardener 200) is recommended for use with MDF, plywood, particle board, fire rated particle board and fire rated MDF (i.e. Medite® FR) substrates in both hot and cold panel press operations.

- Cold Press Conditions – 50-75 psi for 60 minutes at 70°F or 21°C (8 wet mil adhesive spread)

- Hot Press Conditions – 50-75 psi for 2 minutes at 200°F or 93°C (8 wet mil adhesive spread)

Caution: panels will come out hot and remain hot for a few minutes after pressing because of the core.

PHYSICAL PROPERTIES OF HARDSTOP™ DECORATIVE PROTECTION PANELS:

PHYSICAL PROPERTIES	TEST	HARDSTOP™ PANELS
	NEMA LD3 2005	
Light Resistance	3.3	No effect
Cleanability	3.4	14
Stain Resistance	3.4	
Reagents 1-10		No effect
Reagents 11-15		No effect
Boiling Water Resistance	3.5	No effect
High Temperature Resistance	3.6	No effect
Ball Impact Resistance	3.8	
-in		53
-mm		1350
Radiant Heat Resistance Coil Method Coil Method	3.1	>600 sec.
Room Temp. Dimensional Change	3.12	
Machine Direction - %		0.05%
Cross Direction - %		0.05%
Wear Resistance - cycles	3.13	700

PHYSICAL PROPERTIES	TEST	HARDSTOP™ PANELS
Water Absorption	ASTM D570	1.78%
Thermal Expansion	ASTM D696	2.0 x 10 -5/°C
Barcol Hardness	ASTM D2583	72
Anti-bacterial	ASTM G22	Pass
Chemical Resistance	SEFA 8.1	Pass

FIRE RESISTANT PROPERTIES	TEST	HARDSTOP™ PANELS			
Steiner Tunnel Test		Class	Flame	Smoke	
	ASTM E84	A	0	40	
	UL723		0	70-95	
	ULC 102		0	40	
Surface Flammability	ASTM E162	1			
Smoke Density	ASTM E662	Flamming Ds(1.5)		9	
		Flamming Ds(4.0)		31	
		Non-Flamming Ds(1.5)		0	
		Non-Flamming Ds(4.0)		9	
Federal Motor Vehicle Safety	FMVSS 302	Pass			
Cone Calorimeter	ISO 5660	Peak HRR 20 kW/m2			
		Total Smoke 112 m2/m2			
		Average THR 11.5 MJ/m2			
		THR 5 min 0.8 MJ/m2			
		THR 10 min 5.0 MJ/m2			
		THR 20 min 11.5 MJ/m2			

MECHANICAL PROPERTIES	ASTM TEST	HARDSTOP™ PANELS
Flexural Strength	D790	
Ultimate	Machine Direction	112 MPa
	Cross Direction	99 MPa
Modulus	Machine Direction	18,000 MPa
	Cross Direction	17,000 MPa

Codes & Certifications	
Greenguard Gold	Approved
IMO Certified	Approved

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LIMITATIONS

Product should be installed in environments that are regulated between 50 – 90°F (10-32°C) and 30-65% humidity.

SIZES, THICKNESS & WEIGHT

SIZES:
Sheet width 48" (1,219mm)
Sheet length 96" (2,438mm) or 120" (3,048mm)

THICKNESS:
Grade H1: Can range from 0.0669"—0.0827" (or 1.70mm—2.10mm)

WEIGHT:
Approximately 0.739 lbs. per square foot
Weight can vary slightly based on decor pattern selected.

TO ORDER SAMPLES:

Please call U.S. 1-800-FORMICA™ (option 1)
or Canada: 1-800-363-1405 for ZIP-CHIP™ service.

HardStop™ Panels can be purchased in any of the Formica® Brand colors. HardStop™ panels coordinate perfectly with Formica® Brand Laminate products. To select colors for HardStop™ panels, Formica® high pressure laminate samples should be used.

HOW TO SPECIFY

COLOR NUMBER

COLOR NAME

GRADE H1

FINISH 58 Matte (-43 Artisan™ -NG Natural Grain available on select colors)

SIZE 408 or 410 (-NG 4x8 only)

HardStop™ Decorative Protection Panel 3 Part Spec document can be found on www.formica.com.

PROTECTING THE SURFACE

Before selecting the design, consider the type of use it will receive, as well as its color and reflective values. Dark colors tend to enhance scratches, marring and fingerprints.

SCRATCH AND IMPACT PROTECTION:
HardStop™ Panels are resistant to scratches and impacts under normal use and cleaning conditions.

- Do not hammer on any HardStop™ surface. Heavy blows from a hammer may crack or gouge the surface.

- Sharp or abrasive objects and unglazed ceramics materials may slice, scratch or cause premature wear on the surface.

- Abrasive pads, scouring powders or cleaners may permanently dull and scratch the decorative surface.

HOT OBJECTS:

- Hot objects, such as irons, hot appliances, cigarettes, etc. should not be placed directly on panel surfaces.

- If being used in a horizontal application, be aware that prolonged exposure to temperatures of 140°F (60°C) or higher may cause damage to the surface. Always use a protective device beneath all hot cookware, heat generating appliances, or other heated objects. The surface material can withstand heat up to 275°F (135°C) for short periods of time.

ORDINARY CLEANING:
HardStop™ Panels are very easy to clean.

- In most cases, you only need to use a clean, damp, nonabrasive cotton cloth and a mild liquid detergent or household cleaner.

- Rinse with clean water, using a clean, non-abrasive cotton cloth.

- Dry the surface with a soft, clean, non-abrasive cotton cloth.

- HardStop™ Aluminum Trim may not be cleaned with high pH cleaners, such as Formula 409®, Simple Green®, or Fantastik®, as this could dull the coloration.

Hard-to-clean areas may require special attention. Use a soft nylon bristled hand or vegetable brush, along with a mild liquid detergent-and-water solution or household cleaner. Clean the soiled area using a rotating motion. Rinse and dry the surface as indicated above.

To remove any leftover/dried adhesive from installation, cleaner such as acetone, mineral spirits, or solvent recommended by adhesive manufacturer may be used.

HardStop™ Panels may not be sanitized using the UV sanitization method. UV exposure can damage or fade the surface.

HARDSTOP™ DECORATIVE PROTECTION PANELS BY FORMICA GROUP

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CHEMICAL DAMAGE:

Never use cleaners containing acid or alkali. These cleaners will mar, etch, corrode, and may permanently discolor the decorative surface. Also, make sure that bottles, rags, and other materials contaminated with these cleaners never contact the surface. Accidental spills or splatters from these compounds should be wiped off immediately, and the area rinsed thoroughly with water.

Examples of cleaners containing acid or alkali include, but are not limited to:

- ceramic cooktop cleaners
- oven cleaners
- rust removers
- coffeepot cleaners
- drain cleaners
- lime scale removers
- toilet bowl cleaners
- metal cleaners
- tub and tile cleaners

SPECIAL CLEANING RECOMMENDATIONS FOR RESIDUAL GLUE:

Sometimes new panels may have a streaky appearance caused by adhesive used during fabrication. Clean with a non-abrasive cotton cloth and an adhesive solvent such as acetone. Use solvent sparingly, as excessive amounts may deteriorate the adhesive at the edges. Read and follow all warnings and instructions on the labels of all solvent products.

SPECIAL CLEANING RECOMMENDATIONS FOR PAINT AND VARNISH:

Remove most oil-based paints, varnishes and lacquers from the decorative surface with a suitable solvent. Read and follow all warnings and instructions on the labels of all solvent products, and remember that most solvents are extremely flammable and could deteriorate adhesive at the edges. Remove most water-based paints with an ammoniated household cleaner. For stubborn paint spots, gently use a plastic, non-metallic, non-abrasive pad. Never use steel wool or other abrasive scouring pads.

SPECIAL CLEANING RECOMMENDATIONS FOR STAINS:

To remove or minimize stains, use full strength Fantastik® All Purpose Cleaner, Formula 409®, Pine-Sol® (original formulation) or other mild household cleaner on the affected area, and allow it to draw out the stain. If using a cleaner with high pH to remove tough stains, be sure not to let it touch HardStop™ aluminum trim (this includes Fantastik®, Formula 409® or Simple Green® as they will dull the color). Blot with a clean, damp, non-abrasive cotton cloth, and then rinse with clean water. When a recommended cleaner changes its formulation, the change may be harmful to the decorative surface. Formica Group cannot be held responsible for these changes. Solvents such as denatured alcohol can also be used. Follow all directions and warnings on the solvent label because many are extremely flammable.

Stubborn or "fugitive" stains that may disappear on their own, after

a short time or after repeated cleanings include:

- coffee and tea stains
- food stains
- fingerprints
- glass rings
- food dyes
- water marks

Stains which are stubborn or even permanent, and may not disappear include:

- cash register inks
- lemon juice
- food pricing ink
- marking pen inks
- indelible inks
- newsprint
- label inks
- wood stains

Some materials and liquids, such as dyes and pharmaceutical products, will permanently stain the HardStop™ Panels. Examples include:

- dermatological ointment/cream
- povidone-iodine
- hair dyes and rinses
- Red-2B dye
- laundry bluing
- silver nitrate
- Mercurochrome®
- tannic acid
- tar compounds

These stains may be reduced by applying a paste of baking soda and water on the area to pull out the stain. The paste will be slightly abrasive, so do not rub. Wipe up the paste with a clean, damp, non-abrasive cotton cloth, and then rinse clean with water.

Abrasive pads, scouring powders or cleaners may permanently dull and scratch the decorative surface making it susceptible to staining.

Periodic application of a self-cleaning wax can help minimize future staining.

HARDSTOP™ DECORATIVE PROTECTION PANELS BY FORMICA GROUP

TECHNICAL GUIDE, USE & CARE, WARRANTY, AND INSTALLATION GUIDE

DISINFECTING RECOMMENDATIONS

The following branded cleaners and disinfectants are approved for Formica HardStop™ when used according to recommended guidelines. The products are grouped by active ingredient type. All products on these lists meet the EPA's criteria for use against SARS-CoV-2, the virus that causes COVID-19. To avoid surface damage or discoloration, wipe the surface clean to avoid leaving disinfecting liquid open on the surface. It is also recommended to follow disinfecting with a warm water wash using a soft cloth and then dry the surface. Always follow the manufacturers' guidelines and safety precautions for these products.

For EPA updates on the current List N and Frequently Asked Questions about disinfectants related to coronavirus visit:

https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2

QUATERNARY AMMONIUM

- Clorox® Disinfecting Wipes

- Clorox Healthcare® VersaSure® Wipes

- Lysol® Brand All Purpose Cleaner

- Lysol® Kitchen Pro Antibacterial Cleaner

- Virex™ II

- Fantastik® Multi-Surface Disinfectant Degreaser

- Maquats®

QUATERNARY AMMONIUM: ISOPROPANOL

- Super Sani-Cloth® Germicidal Disposable Wipe

- Cavicide™ Wipes

- Sani-Prime® Germicidal Spray

- Opti-Cide3® Wipes

ISOPROPANOL, IPA, RUBBING ALCOHOL

SODIUM HYPOCHLORITE (BLEACH)

- Clorox Healthcare® Bleach Germicidal Wipes

- Clorox® Brand Regular Bleach

- Sani-Cloth® Bleach Germicidal Wipe

- Caviwipes™ Bleach

- Dispatch®

- Lysol® Brand Bleach Mold/Mildew Remover

- All related brands containing bleach

HYDROGEN PEROXIDE

- Clorox® Commercial Solutions® Hydrogen Peroxide Disinfectant and wipes

- Oxivir™ Tb and wipes

- Accel® TB and wipes

- Peroxide Multi Surface Cleaner and Disinfectant

- Suretouch®

- Oxy-Team™ Disinfectant Cleaner

HARDSTOP™ DECORATIVE PROTECTION PANELS BY FORMICA GROUP

HARDSTOP™ SPRAY ADHESIVE INSTALLATION GUIDE

HARDSTOP™ SPRAY ADHESIVE

HardStop™ Spray Adhesive is for application on raw drywall or painted drywall with the prep outlined below.

Refer to the Safety Data sheet for HardStop™ Spray Adhesive and HardStop™ Spray Adhesive Reactivator for safety requirements and storage requirements.

PAINTED DRYWALL AND GYPSUM BOARD:
The surface must be flat. All glossy, epoxy coated painted surfaces must be roughed up with coarse 100 grit sandpaper to ensure the exposure of clean drywall. You may also use a wallpaper surface perforating tool. **Be sure to clean the surface after abrading to remove all loose particulates and dirt and use the recommended adhesive.** Be careful not to abrade through the drywall's face paper; only rough up the painted or primed surface to expose the drywall surface paper.

NON-PAINTED DRYWALL AND GYPSUM BOARD:
The surface must be flat. Finish only the tapered joints and corners so they are flat. Do not finish, prime or paint the entire surface of new drywall or gypsum. If the area needs to be evened out, you may use joint compound. Any high or low spots will create a poorly finished wall and yield a poor bond. **Make sure all dust and particulates are removed when finished prior to applying the spray adhesive to the drywall.**

It may be advisable to mask off the area to get the adhesive applied until you are good at application of the spray adhesive.

There are hand held paint paddles that control over spray. These may be used to help with application of the spray adhesive.

TOOLS AND MATERIAL NEEDED:
- HardStop™ Spray Adhesive
- HardStop™ Spray Adhesive Reactivator to remove adhesive from the HardStop™ Panels when installed. **NOTE:** for other surfaces check in an inconspicuous location to ensure the reactivator does not harm the surface or molding
- HardStop™ Decorative Protection Panels by Formica Group
- Canister of adhesive with hand gun for application
- Adjustable wrench for connecting the hose and gun to the canister
- Paint paddle
- Use PPE whenever cutting or drilling panels

INSTALLATION INSTRUCTIONS:
1. Dry fit the panel to confirm it is plumb and level.
2. Use painters tape or an overspray paddle to protect any areas outside of the gluing area from overspray.
3. Use a wrench to attach the gun and hose to the canister.

4. Open the valve on the top of the canister completely. You will leave this valve open until the canister is empty.

5. Check for any leaks, and tighten the connection if needed.

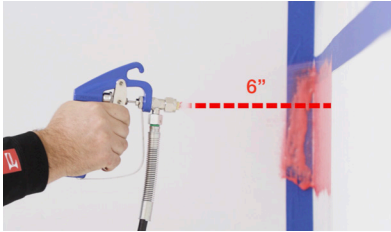Adjust the gun trigger control to your desired spray pattern.

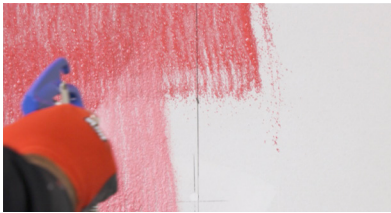## HARDSTOP™ DECORATIVE PROTECTION PANELS BY FORMICA GROUP
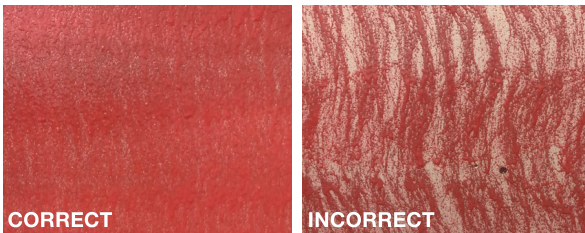
HARDSTOP™ SPRAY ADHESIVE INSTALLATION GUIDE

6. Apply HardStop™ Spray Adhesive using the included hand gun sprayer to the face of the drywall only. **Do not apply spray adhesive to the HardStop™ Panels.**

7. Using a 'painter's technique' hold the spray gun at a right angle from the substrate to avoid variations in the spray weight, approximately 6" from the wall.
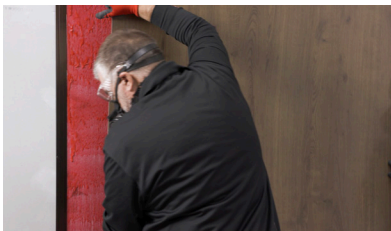

8. Spray the adhesive approximately 3" past the plumb line, releasing the spray trigger at the end of every spray pass to avoid adhesive build up.

9. It is important to recognize that this adhesive coverage is different than what you might be used to. Generous adhesive coverage is required so that it is wet enough to adjust the panel when applying.

10. Apply the adhesive as per the color pictures below showing the correct amount of adhesive applied to the drywall. Always check adhesion by applying HardStop™ Spray Adhesive to a test area.

CORRECT   INCORRECT

11. Install the HardStop™ Panel to the wall, remembering to leave a gap between the HardStop™ Panel and the floor.
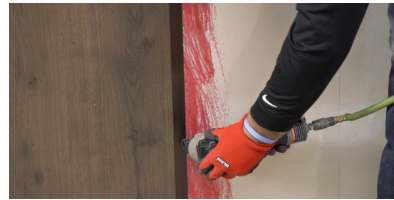

12. **You will have only one minute to position the HardStop™ Panel before the adhesive holds the HardStop™ down. If too little adhesive is applied, the sheet will not move, or will be difficult to move when trying to position the sheet.**

13. Once the HardStop™ Panel is in place, install the next trim piece immediately, while the adhesive is still wet. Slide the trim underneath the edge of the HardStop™ Panel.

Check to make sure it's plumb, then use a pneumatic nailer to put 16-18 gauge, 1" nails into the flange of the trim.

Roll the entire area with firm pressure using a 3" J-Roller.

14. Clean any extra adhesive off the face of the HardStop™ Panel with HardStop™ Spray Adhesive Reactivator, before the adhesive dries. Clean all adhesive off the face of the HardStop™ Panel and moldings as needed. Come back and re-roll the entire area in one hour.

15. If installing wainscoting, install the top cap and start on one side of the room. Move from left to right to install the rest of the room. Install the division bars and corner moldings as you install each panel. Remember to clean each panel and molding as installed.

HARDSTOP™ DECORATIVE PROTECTION PANELS BY FORMICA GROUP

HARDSTOP™ SPRAY ADHESIVE INSTALLATION GUIDE

16. Install drywall screws through the bottom of the panel in a location that will be covered by the baseboard. This will support the panel until the adhesive dries.

17. Formica Group recommends oversized holes whenever drilling into HardStop™ Panels. A twist drill bit and low profile washer head screws work well.

18. To install the next panel, start by using painters tape to protect the HardStop™ trim from adhesive and adhesive reactivator overspray.

19. Measure over from the trim to establish the plumb line for the next panel.
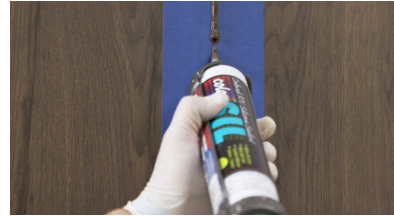

20. Starting at the glue line from the first panel, continue the adhesive spray 3" past the next plumb line. Be careful not to spray on top of the adhesive from the first panel. Adhesive build up can cause panels to be uneven at the final installation.

21. Then using the HardStop™ Spray Adhesive Reactivator, generously spray over the previous panel glue to reactivate it.

Remove the painters tape from the trim and install the next HardStop™ Panel by sliding it into the trim.

22. **Remember, you will have only one minute to position the HardStop™ panel before the adhesive holds the HardStop™ down.**

23. Continue to follow all appropriate steps to install HardStop™ Panels down the length of the wall.

24. Allow the adhesive to dry for one hour, then return and firmly reroll the entire area with a 3" j-roller.

25. If you aren't using division bars in between panels, refer to page 8 for use of color-matched 100 percent silicone caulk from ColorRite.

26. Remove the painters tape, and again, clean any excess caulk off the face of the HardStop™ Panel.

27. Remove the drywall screws and install the baseboard following the baseboard manufacturer's instructions.

28. If there are any outlets, or other openings in the wall – cut them out at this time.

29. For all other installations, please refer to the HardStop™ Installation guidelines at the front of this guide

ADHESIVE CANISTER DISPOSAL GUIDELINES:

• When canister is completely empty remove hose from canister, open valve and allow residue in canister to dry.

• Punch hole in canister with brass punch.

• Discard, recycle or return (177# and 355# are returnable) canister (contact your distributor for return details)

HARDSTOP™ DECORATIVE PROTECTION PANELS BY FORMICA GROUP

TECHNICAL GUIDE, USE & CARE, WARRANTY, AND INSTALLATION GUIDE

LIMITED WARRANTY

Formica Corporation expressly warrants that, for a period of (1) one year from the date of first sale, this product will be reasonably free of defects in materials and workmanship, and that when properly stored, handled, fabricated and installed, will conform, within accepted tolerance, to applicable manufacturing specifications. Colors are subject to dye lot variations. DUE TO THE VARIETY OF USES AND APPLICATIONS TO WHICH HARDSTOP™ PANELS MAY BE PUT, FORMICA CORPORATION MAKES NO WARRANTY THAT THIS PRODUCT IS SUITABLE FOR ANY PARTICULAR PURPOSE AND MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, OTHER THAN THOSE SET FORTH ABOVE.

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TECHNICAL SERVICES

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