

Product Description

3M™ DI-NOC™ EX Series Architectural Finishes are durable, dimensionally stable, and weather resistant surface finishes for exterior applications. These decorative surface finishes offer the warmth of wood grain, sleek feel of metal, cool essence of natural stone and pure colors. They can be applied directly on smooth, non-porous application surfaces, such as aluminum, galvanized steel, and painted metal. DI-NOC EX Series is designed to maintain consistent finish and color, despite UV exposure and other conditions.

Product Line

24 exterior designs are available:

Fine Wood/ Woodgrain	Metallic	Single Color	Abstract
FW-233EX	PA-1854EX	PS-090EX	AE-1632EX
FW-618E	PA-038EX	PS-957EX	AE-1634EX
FW-625EX	PA-039EX	PS-959EX	AE-1635EX
FW-887EX	PA-181EX	PS-976EX	ST-442EX
FW-1122EX	PA-187EX		ST-736EX
FW-1214EX	PA-389EX		
WG-657EX			
WG-960EX			
WG-1140EX			

Featured Benefits of DI-NOC EX Series Architectural Finishes

- Applications - Ideal for façades, window frames, doors, columns, walls and more.
- Application Surfaces - Recommended for metal and other smooth, non-porous exterior application surfaces.
- Aesthetics - Resemble natural materials and other types of surfaces to deliver the look you want.
- Remodel and Reuse - Goes up fast, with less likelihood of error and waste, and brings life to existing assets. The architectural finishes convert exterior spaces to reflect an entirely new design.
- Easy Application - 3M™ Comply™ Adhesive technology virtually eliminates bubbles, simplifying and speeding application.
- Expected Performance Life is 7 to 16 years for outdoor, vertical applications, depending on the climate.

Product Characteristics

The values in these tables are typical, and are based on test data deemed reliable but are not warranted.

Characteristic		Value
Material	Film	Vinyl-based
	Adhesive	Pressure-sensitive acrylic, permanent
	Release Liner	Silicone-coated poly paper
Thickness	Film + Adhesive	8 mils (200 microns) nominal, not including release liner. Some designs vary slightly in thickness due to embossing.
	Release Liner	6.2 mils (157 microns)
Roll Size		48 in. X 164 ft. (1,220 mm x 50 m)
Weight		55 lb. (25 kg) (approx.) for a 164 ft. (50 m) roll

Product Performance

The values in these tables are typical, and are based on test data deemed reliable but are not warranted.

Characteristic	Evaluation	Results
Dimensional Stability*	4 in. x 4 in. (100mm x 100mm) crosscut in film, after 48 hours at 150°F (65°C).	Largest gap: < 0.01 in. (0.3mm)
Heat Resistance*	Aged at 150°F (65°C) for 30 days.	No delamination
Thermal Cycle Resistance*	Cycled between -22°F and 176°F (-30°C and 80°C) for 12 days.	No delamination
Moisture Resistance*	Aged at 104°F (40°C), 95% humidity for 30 days.	No delamination or visible change
Cold Impact Resistance*	2 lb. (907g) weight dropped from 5 in. (12.7cm) height, at 32°F (0°C) using a Gardner Impact Tester.	No cracks in film
Ultraviolet Light Exposure	Exposed to XENON accelerated UV light for 1000 hours	No visible change
Abrasion Resistance	Taber® CS-17 Abrasion wheel: 1 Kg loading weight, 3000 cycles	No wear-through of surface finish
Fire Resistance	When used in Interior Applications as defined by NFPA 101 "Life Safety Code", Test Method ASTM E84	Class B

* Product applied to an aluminum plate

Product Performance (continued)

Stain Resistance

Contaminant was in contact with the film surface for 24 hours and then removed using water. Water with mild detergent or isopropyl alcohol may be used for more difficult stains. Results may vary.

Contaminant	Results
Coffee	●
Tea	●
Cola	●
Milk	●
Red Wine	●
Tabasco	●
Ketchup	●
Soy Sauce	●
Cooking Oil	●
Vinegar	●
Salt Water (1%)	●
Soap solution (1%)	●
Ammonia Solution (10%)	●
Oxygenated Water (3%)	●
Citrate Solution (10%)	●
Ethyl Alcohol (50%)	●

● Removed with water

Resistance to Solvents, Cleaners, and other Chemicals

Film was applied to an aluminum plate, left for 72 hours, and then immersed in the following chemicals:

Classification	Solvent	Immersion Time	Result
Water	Water	24 hours	No visible change
Acid	Chloride (10%)	24 hours	No visible change
	Hydrogen Peroxide	72 hours	No visible change
Base (Alkali)	Sodium Hydroxide (10%)	24 hours	No visible change
Alcohol	Ethanol	24 hours	No visible change
	Isopropyl Alcohol	72 hours	No visible change
Ester	Ethyl Acetate	5 minutes	Deterioration observed
Ketone	Methyl Ethyl Ketone	5 minutes	Deterioration observed
	Acetone	72 hours	Deterioration observed
Aromatic	Toluene	5 minutes	Deterioration observed

Product Use

The user is solely responsible for evaluating and determining whether these 3M Products are suitable and appropriate for any particular use or manufacturing process in which they may be used.

Consider These Factors in Determining the Suitability of the Product

Be sure you understand the unique characteristics of these Products and consider them in determining whether the Product is suitable for your use. Please refer to the 3M™ DI-NOC™ EX Series Installation Guide for additional information.

1. Substrate texture affects Product adhesion and application ease.
 - Unless the substrate is very smooth, its texture may be visible through the Product.
 - Compounds used to smooth a textured substrate permanently change that substrate.
 - Product removal may damage the substrate or its finish.
2. Application surface conditions affect Product adhesion.
 - Ensure that the existing paint, surface finish, or wall covering has excellent bond to the substrate area where the Product will be applied.
 - Repair, prime and paint the substrate, as needed.
 - An adhesion promoter may be required to increase Product adhesion.
3. Human and environmental conditions
 - Application temperature in recommended range
 - Unsealed substrates in front of water sources.
 - People or equipment that will be in contact with the Product.
4. The Product may contain a splice. The location of the splices is marked with a tab along the edge of the Product. The installer will need to determine the impact of the splice and work around it to make the best use of the material layout.

Factors That Affect Performance Life

The actual performance life of the Product is affected by:

- selection, condition and preparation of the application surface.
- application surface texture.
- application technique.
- angle and direction of sun exposure.
- environmental conditions.
- cleaning or maintenance methods.

Considerations for Design Selection by Product Series

Use the following table to ensure the selected design can be successfully applied. See the *3M™ DI-NOC™ Installation Guide* for additional information.

Product Series	Texture of Application Surface ¹	Damage to Film Surface ²	Printed/Embossed Pattern Match at Double-cut Seams ³	Reflection of Pattern at Double-cut Seams ⁴	Lighting Environment After Application ⁵	Not Recommended On Compound Curved Surfaces ⁶	Notes
FW Fine Wood			●				● Pattern is large scale and may not match at seams for FW-1122EX and FW-1214EX.
WG Wood Grain							
PA Metallic	●			●			
PS Single Color							
AE Earth/Stone			●	●			● Pattern is large scale and may not match at seams.
ST Stone							

- 1 - **Texture of Application Surface:** Application surface texture may be visible through the film. Apply film to very smooth and clean application surfaces.
- 2 - **Damage to Film Surface:** Surface of film may be damaged during application. Apply film with a squeegee wrapped in soft cloth.
- 3 - **Printed/Embossed Pattern Match at Double-cut Seams:** Printed and embossed pattern pitches may appear random or not aligned at seams. Prior to application, confirm that appearance at seams is acceptable, or avoid double-cut seam applications and consider using reveals or joint separations.
- 4 - **Reflection of Pattern at Double-cut Seams:** Reflected color differences may be visible at seams due to the directional light reflection from the embossed surface of the film. Prior to application, confirm that appearance at seams is acceptable, or avoid double-cut seam applications and consider using reveals or joint separations.
- 5 - **Lighting Environment After Application:** Small scratches and unevenness may be visible on the surface due to the light illumination of the film, such as under down lighting or spot lights.
- 6 - **Not Recommended On Compound Curved Surfaces:** Film may distort or not conform around compound curves.

Application and Removal Guidelines

The values in these tables are typical, and are based on test data deemed reliable but are not warranted. See the *3M™ DI-NOC™ Installation Guide* for additional information.

Characteristic	Value
Application Surface Type	Smooth, flat, hard, non-porous (sealed) vertical surfaces except for 3-dimensional surfaces and deep channels.
Application Location	Exterior
Application Temperature	54°F - 100°F (12°C - 38°C) air and application surface
Application Method	Dry application
Product Removal	Heat at 176°-212°F (80°-100°C)

Adhesion Compatibility with Application Surfaces

The following table contains peel adhesion information for the Product peeled from various surfaces. A number of surfaces have acceptable adhesion without the use of adhesion promoter. Examples of increased adhesion with adhesion promoters on certain surfaces is presented. Surfaces vary widely, so adhesion should be assessed for each customer substrate. Some surfaces are porous and must be sealed before application of DI-NOC to prevent outgassing of the surface over time.

Test specimens were applied to the substrate and conditioned at 68°F (20°C) for 48 hours, then peel tested at 180 degrees at a tensile speed of 12 inches (300 mm) per minute.

Substrate	Application Surface	Adhesion Promoter	
		NO ADHESION PROMOTER lb./in. (N/25mm)	3M™ Tape Primer 94 (solvent-based) lb./in. (N/25mm)
Metals	Anodized Aluminum	● 8 (36)	● 9 (40)
	Colored Aluminum	● 7 (31)	● 9 (40)
	Painted Aluminum	● 8 (36)	● 10 (44)
	Aluminum Composite Panel	● 8 (36)	● 8 (36)
	Galvanized Steel	● 9 (40)	● 8 (36)
	Painted Steel	● 8 (36)	● 8 (36)
DI-NOC™ Film		● 5 (22) ¹	● 9 (40)

● Acceptable adhesion

○ Fails in adhesion

1 - If DI-NOC™ is wrapped and overlapped around edges, use of an adhesion promoter is highly recommended due to additional stress from wrapping DI-NOC™.

Processing Options

Processing of the Product is on a user test and approve basis only. The user is responsible for results in all processing applications.

Printing

The Products are not designed for surface printing and have various surface textures. Printing is on a user test and approve basis only. No warranty is made for the quality or durability of printed Product.

Cutting

Electronic cutting, weeding and application tape with the Product must be used only on a user test and approve basis. The user should consider the following: (1) the type of liner used for the Product is not intended for electronic cutting; (2) there is currently no recommended application tape that adheres properly to the face of the Product to hold cut shapes in place.

Shelf Life and Storage

Shelf Life

Apply the Product within 2 years of the date of purchase. The storage conditions specified in this document must be maintained for full shelf life.

Storage Conditions

- 40°F - 90°F (4°C - 32°C)
- Away from direct sunlight and high humidity
- Clean, dry area
- Original container with end caps, in the plastic sleeve, stored horizontally, a maximum of 6 cartons high
- Bring the Product to room temperature before application

Cleaning and Maintenance

Regular cleaning will help maintain the appearance of the finish. Use mild detergent and water, and a soft cloth or sponge without abrasives. For difficult stains, spot clean with a diluted Isopropyl Alcohol solution and a soft cloth. Avoid using strong solvents or detergents that are either highly alkaline (pH>11) or acidic (pH<3). Do not use ammonia, chlorine, or strong organic-based cleaning products, polishing or cleaning compound, hard-bristle brushes or electric polishing equipment. Use only clean, nick-free tools and wipe gently.

Problem	Solution
Dust and grit	Wipe with a soft, damp cloth.
Soiled (but not gritty)	Use water and a soft cloth
Heavily Soiled	Clean first using a solution of mild liquid detergent and water, then use clear water. Wipe gently with a soft cloth.
Difficult Stains	Spot clean with 70/30 IPA (70% Isopropyl Alcohol/30% Water) cleaning solution

Type of Surface Damag	Appearance of Surface Damage	Method to Reduce Visibility
Mar	Dragging an item, such as a colored briefcase, across the film and leaving a deposit of color on the surface.	Rub with a soft cloth and warm soapy water to remove the mar.
Indentation	Pressing into the film surface without breaking the surface, such as pressure from a chair.	Carefully heat the indentation with a heat gun, which allows the film surface to rebound and reduce visibility.
Scratch	Breaking the surface layer of film leaving a slightly jagged whitish mark on the surface, such as by dragging a sharp rivet from a purse.	Rub with a surface restorer such as 3M™ Marine Vinyl Cleaner & Restorer to reduce the visibility of scratches.
Gouge	Breaking though the entire film, such as severe impact from sharp chairs or carts.	Repair by cutting out the damaged film and replacing that piece with the same pattern of film or remove and replace an entire panel of film.

Health and Safety

CAUTION

When handling any chemical products, read the manufacturers' container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products go to 3M.com/SDS, or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturers' instructions for safe operation.

WARNING

Do not apply the Product to exterior glass surfaces due to the risk of glass breakage caused by thermal expansion.

Technical Information

Technical information and data, recommendations, and other statements provided by 3M are based on information, tests, or experience which 3M believes to be reliable, but the accuracy or completeness of such information is not guaranteed. Such technical information and data are intended for persons with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. The typical values shown should not be used for the purpose of specification limits. If you have questions about this Product, contact the Technical Service helpline at 1-888-650-3497.

To order samples, please visit leveyindustries.com.

LEEDv4 CREDITS

This section describes some of the options for acquiring LEED credits using 3M DI-NOC EX Series Architectural Finishes.

NOTE: Each application is different. It is the sole responsibility of the end user to evaluate and determine whether LEED credits are applicable.

ID+C, BD+C MR Credit, Construction and Demolition Waste Management

- Option 2: Product can be used to refinish exterior surfaces minimizing overall construction waste.

BD+C MR Credit, Building Life-Cycle Impact Reduction

- Option 3: Building and Material Reuse - Product can be used to refinish exterior surfaces.

O+M MR Credit, Purchasing - Facility Maintenance and Renovation

- Product can be used to refinish exterior surfaces.

BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION INFORMATION

Environmental Product Declaration (EPD) or Life Cycle Analysis (LCA)

EPD and/or LCA information not available.

Raw Material Source and Extraction Reporting

Raw Material source and extraction information for this product is considered to be 3M confidential and is therefore not available.

Extended producer responsibility

Take-back or recycling program for this product is not available.

Bio-based materials

Product have not been tested to ASTM D6866.

Wood products

Product does not contain wood-based materials.

Materials reuse

Product can be used to refinish salvaged, refurbished, or reused materials.

Recycled content

Product does not contain pre- or post-consumer recycled content.

Material Ingredient Reporting

Product ingredient information for this product is considered to be 3M confidential and is therefore not available .

GreenScreen Benchmark or Cradle to Cradle Certification

Assessment or Certification not available on this product.

REACH Optimization

REACH Substance of Very High Concern certifications are on 3M.com/Regs (US) or 3M.com/SVHC (Europe).

Product Manufacture Supply Chain Optimization

Based on our analysis, 3M meets required process and safety requirements as outlined in the criteria.

Location Valuation Factor

Based on supply chain, this product would not meet location valuation factor requirements of being extracted, manufactured, and purchased within 100 miles.

General Emissions Evaluation

Product has not been tested to the General Emissions Evaluation (California Department of Public Health (CDPH) Standard Method V1.1-2010)

WARRANTY

Product

3M™ DI-NOC™ EX Series Architectural Finishes (the “Product(s)”) are decorative films for use in vertical, exterior applications on commercial buildings (“Exterior Applications”).

3M Basic Product Warranty

The Product(s) specified in this document are warranted to be free of defects in materials and manufacture (“3M Basic Product Warranty”) on the date of shipment (“Warranty Period”) by 3M or its authorized distributor.

Limited Warranty

- For Products used in Exterior Applications in the United States and Canada, 3M makes the following warranty (the “3M Limited Warranty”) for the applicable time period stated below (“Warranty Period”), which will begin on the earlier of: (a) Product installation date; or (b) six months after 3M’s Product shipment date.

The Product will have no significant discoloration, cracking, wrinkling or other similar visual defects for the applicable time period below.

Application	Geographic Location	Warranty Period
Vertical ¹ , Exterior Applications ²	US Desert Southwest ³	4 years
	US ⁴	7 years
	Canada	10 years

- Non-vertical applications are not warranted.
- Application to glass is not warranted due to risk of glass breakage caused by thermal expansion.
- Any outdoor location primarily in Arizona, New Mexico, and the desert areas of California, Nevada, Utah, and Texas. Contact 3M Technical Service for additional information.
- All US states outside of the defined range of US Desert Southwest.

- For a buyer’s convenience, 3M may provide engineering or technical information, recommendations, installation instructions or guides, and other information or materials relating to a Product (“Other Product Information”), but 3M makes only the 3M Basic Product Warranty and the 3M Limited Warranty, and does not warrant any Other Product Information.
- 3M has no obligation under the 3M Basic Product Warranty or the 3M Limited Warranty as to Product that has been: (a) modified, altered or processed in any manner; (b) stored, applied, installed, or used in a manner other than that 3M recommends in this document and in all Other Product Information; (c) dam-

aged through contact with a person or thing, misuse, accident, neglect, or other action by anyone other than 3M; (d) improperly installed, including, without limitation, installation after the expiration the Product’s shelf life or installation without proper surface preparation, (e) exposed to excessive heat, humidity, dirt or UV light, or (f) installed on a glass application surface or in a non-vertical application.

- EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, THE 3M BASIC PRODUCT WARRANTY AND THE 3M LIMITED WARRANTY ARE MADE IN LIEU OF ALL OTHER WARRANTIES, RIGHTS OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE AND THOSE ARISING FROM A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. THE BUYER IS RESPONSIBLE FOR DETERMINING IF A PRODUCT IS SUITABLE FOR ITS PARTICULAR PURPOSE AND APPLICATION METHODS.
- 3M must receive any 3M warranty claim in writing no later than 10 business days after (a) the end of the applicable Warranty Period or (b) the discovery of the 3M warranty claim, whichever is earlier.

Limited Remedy

IF ANY PRODUCT IS PROVEN NOT TO HAVE MET THE 3M BASIC PRODUCT WARRANTY OR THE 3M LIMITED WARRANTY DURING THE WARRANTY PERIOD, THEN THE BUYER’S EXCLUSIVE REMEDY, AND 3M’S SOLE OBLIGATION, WILL BE, AT 3M’S OPTION, TO REPLACE THE NONCONFORMING PRODUCT OR TO REFUND THE NONCONFORMING PRODUCT’S PURCHASE PRICE.

No Extension of Warranty

In the case of an approved warranty claim, the replacement Product will carry only the remaining term of the original warranty period.

Limitation of Liability

3M WILL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO A BUYER FOR DIRECT (other than the Limited Remedy stated above), SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS) IN ANY WAY RELATED TO THE PRODUCT, THE TECH DATA SHEET OR OTHER PRODUCT INFORMATION, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY ON WHICH SUCH DAMAGES ARE SOUGHT.