

Product Description

3M™ DI-NOC™ Architectural Finishes EXR Series films (the “Product(s)”) are durable, dimensionally stable, and weather-resistant surface finishes for exterior applications. They can be applied directly on smooth, non-porous application surfaces, such as aluminum, galvanized steel, and painted metal. 3M™ DI-NOC™ Architectural Finishes EXR Series is designed to maintain a consistent finish and color, despite UV exposure and other conditions.

Featured Benefits of 3M™ DI-NOC™ Architectural Finishes EXR Series

- Applications - Ideal for façades, window frames, doors, columns, walls, and more.
- Application Surfaces - Recommended for metal and other smooth, non-porous exterior application surfaces. NOT recommended for complex curved (3D) surfaces.
- Aesthetics - Realistic appearance of natural materials and other types of surfaces, without the weight.
- Remodel and Reuse - Shortens refurbishment downtime and brings entirely new designs to existing exterior elements.
- Easy Application - 3M™ Comply™ Adhesive technology virtually eliminates air bubbles, simplifying and speeding up applications.
- Expected performance life of 4 to 10 years for outdoor, vertical applications, depending on the climate.

Product Characteristics

The values in this table are typical and are based on test data deemed reliable, but are NOT warranted.

Characteristic		Value
Material	Film	Vinyl-based
	Adhesive	Permanent pressure-sensitive acrylic
	Release Liner	Silicone-coated poly paper
Thickness	Film + Adhesive	203 microns (8 mils) nominal, not including release liner. Some designs vary slightly in thickness due to embossing.
	Release Liner	157 microns (6.2 mils)
Maximum Roll Size		1219 mm x 50 m (48 in. by 164 ft.)
Maximum Weight		Approximately 25 kg (55 lbs) for a 50 m (164 ft) roll

IMPORTANT NOTE

Refer to the 3M™ DI-NOC™ Installation Guide for additional information

Exposure Angle and Expected Performance Life

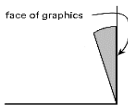
Climate Zones

Graphic durability is largely determined by the climate and the angle of exposure. Find below a table showing the durability of a product according to the angle of exposure and the geographical location of the application.

Zone 1: Northern Europe, Italy (north of Rome)

Zone 2: Mediterranean area without North Africa, South Africa

Zone 3: Gulf area, Africa

Exposure Type	Exposure Definition	Diagram	Expected Performance Life		
			Zone 1	Zone 2	Zone 3
Vertical outdoor application	The face of the film is less than 10 degrees from vertical.		10 years	7 years	4 years

Product Line 3M™ DI-NOC™ EXR Series Designs

The following exterior designs are available with a minimum order of one roll.

Fine Wood	Woodgrain	Metallic	Single Color	Stone, Abstract, Leather
FW-233EXR	WG-960EXR	ME-4039EXR	PS-090EXR	AE-1632EXR
FW-236EXR	WG-1140EXR	ME-4181EXR	PS-4007EXR	AE-1634EXR
FW-324EXR	WG-1143EXR	ME-4854EXR	PS-959EXR	_____
FW-330EXR	WG-1144EXR	ME-4389EXR		ST-442EXR
FW-609HEXR	WG-7024EXR	ME-4390EXR		_____
FW-627EXR				FA-1530EXR
FW-640EXR				_____
FW-650EXR				LE-703EXR
FW-651EXR				
FW-1023EXR				
FW-1113EXR				
FW-1122EXR				
FW-1123EXR				
FW-1124EXR				
FW-1129EXR				
FW-1214EXR				
FW-1801EXR				
FW-7006EXR				
FW-7008EXR				
FW-7011EXR				

Product Performance

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

Characteristic	Evaluation	Results
Dimensional Stability*	102 mm by 102 mm (4 in. by 4 in.) crosscut in film, after 48 hours at 66°C (150°F)	Largest gap: < 0.25 mm (0.01 in.)
Heat Resistance*	Aged at 66°C (150°F) for 30 days	No delamination
Thermal Cycle Resistance*	Cycled between -30°C and 80°C (-22°F and 176°F) for 12 days	No delamination
Moisture Resistance*	Aged at 40°C (104°F), 95% humidity for 30 days	No delamination or visible change
Cold Impact Resistance*	907 g (2 lbs) weight dropped from 12.7 cm (5 in.) height, at 0°C (32°F) using a Gardner Impact Tester	No cracks in film
Ultraviolet Light Exposure	Exposed to XENON accelerated UV light for 1,000 hours	No visible change

* Product applied to an aluminum plate.

Stain Resistance

The contaminant was in contact with the film surface for 24 hours and then removed using water. Water with mild detergent or a solution of 70% isopropyl alcohol and 30% water may be used for more difficult stains. Results may vary.

Contaminant	Results
Coffee	Removed with water
Tea	Removed with water
Cola	Removed with water
Milk	Removed with water
Red Wine	Removed with water
Tabasco	Removed with water
Ketchup	Removed with water
Soy Sauce	Removed with water
Cooking Oil	Removed with water
Vinegar	Removed with water
Salt Water Solution (1%)	Removed with water
Soap Solution (1%)	Removed with water
Ammonia Solution (10%)	Removed with water
Oxygenated Water Solution (3%)	Removed with water
Citrate Solution (10%)	Removed with water

Resistance to Solvents, Cleaners and other Chemicals

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

Classification	Solvent	Immersion Time	Immersion Result
Water	Water	24 hours	No visible change
Acid	Chloride Solution (10%)	24 hours	No visible change
Base (Alkali)	Sodium Hydroxide Solution (10%)	24 hours	No visible change
Alcohol	Ethanol	24 hours	Deterioration observed
	Isopropyl Alcohol	72 hours	Deterioration observed
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 this 3M Product is suitable and appropriate for any particular use or manufacturing process.

Consider these Factors in Determining the Suitability of the Product

Understand the unique characteristics of this Product and consider them in determining whether the Product is suitable for a given use. Refer to the 3M™ DI-NOC™ Architectural Finishes Installation Guide for additional information.

- Substrate texture affects film adhesion and ease of application
 - Unless the substrate is very smooth, its texture may be visible through the film
 - Compounds used to smooth a textured substrate permanently change that substrate
 - Product removal may damage the substrate or its finish
- Application surface conditions affect film adhesion
 - Ensure the existing paint, surface finish, or wall covering has an excellent bond to the substrate area where film will be applied
 - Repair, prime, and paint the substrate as needed
 - An adhesion promoter may be required to increase film adhesion
- Human and environmental conditions to consider
 - Application temperature in the recommended range

EXR Series for Exterior

- Unsealed substrates in front of water sources
 - People or equipment that will be in contact with the film
4. The film may contain a splice. The splice location is marked with a tab along the film edge. The installer must determine the impact of the splice and work around it to make the best use of the material layout.

Factors Affecting Performance Life

The actual performance life of the Product is affected by:

- The 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

Refer to the 3M™ DI-NOC™ Architectural Finishes Technical Data Sheet for information on the product series for the selected design. Refer to the 3M™ DI-NOC™ Architectural Finishes Installation Guide for additional installation information.

Application and Removal Guidelines

The values in this table are typical and are based on test data deemed reliable, but they are NOT warranted. See the 3M™ DI-NOC™ Architectural Finishes Installation Guide for additional information.

Characteristic	Value
Application Surface Type	Smooth, flat, hard, non-porous (sealed) vertical surfaces. NOT designed for three-dimensional surfaces or deep channels.
Application Location	Exterior
Application Temperature	12°C to 38°C (54°F to 100°F) air and application surface
Application Method	Dry application
Product Removal	Heat at 80°C to 100°C (176°F to 212°F)

Adhesion Compatibility with Application Surfaces

3M™ DI-NOC™ Architectural Finishes EXR Series for exteriors is recommended for applications on metal and other smooth, non-porous surfaces listed in the table below. Some exterior surfaces are textured or porous, and the adhesive may not have enough contact area to adhere properly.

Contact your local 3M Commercial Branding and Transportation application engineer with any questions about the suitability of a surface.

The following table contains peel adhesion information for the film peeled from various surfaces. A number of surfaces provide acceptable adhesion without the use of an adhesion promoter. Examples of increased adhesion with the use of adhesion promoters on certain surfaces are presented. Surfaces vary widely, so adhesion should be assessed for each customer's substrate.

Test specimens were applied to the substrate and conditioned at 20°C (68°F) for 48 hours, then peel tested at 180 degrees at a tensile speed of 305 mm/min (12 in./min).

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

● Acceptable adhesion

○ Adhesion failure

¹ - If 3M™ DI-NOC™ overlaps seams, use 3M™ Tape Primer 94 adhesion promoter.

Processing Options

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

Printing

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

Cutting

Electronic cutting, weeding, and application tape usage with the Product is strictly on a user test-and-approve basis. The user should consider the following: (1) the Product's liner is NOT intended for electronic cutting; (2) there is currently no recommended application tape that properly adheres to the face of the Product to hold cut shapes in place.

Shelf Life and Storage

Shelf Life

Apply the Product within two years of the date of manufacture. The storage conditions specified in this document must be maintained to preserve the full shelf life.

Storage Conditions

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

Cleaning and Maintenance

Regular cleaning helps maintain the appearance of the finish. Clean with mild detergent and water, and a soft cloth or sponge without abrasives. For difficult stains, spot-clean with a diluted isopropyl alcohol (IPA) solution and a soft cloth. Avoid using strong solvents or detergents that are either highly alkaline (pH>11) or highly acidic (pH<3). Do NOT use ammonia, chlorine, strong organic-based cleaning products, polishing or cleaning compounds, 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 a 70% IPA and 30% water cleaning solution.

Type of Surface Damage	Cause of Surface Damage	Method to Reduce Visibility
Mar	Dragging an item (such as a colored briefcase) across the film, 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 the indentation's 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 through the entire film, such as from a severe impact from sharp chairs or carts.	Repair the film by cutting out the damaged film and replacing it with the same pattern of film, or remove and replace the entire film panel.

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.

[Follow this link to obtain SDS sheets for 3M products.](#)

[Follow this link to obtain information about substances of very high concern \(SVHC\) for EU products.](#)

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

WARNING

To reduce the risks of personal injury and/or property damage associated with glass breakage:

A glass surface covered by a film with areas of high opacity or dark-colored ink will absorb more heat than other glass surfaces when exposed to sunlight. Heat absorption can create thermal expansion that could result in glass breakage or cracking. Do not use a film with areas of high opacity or dark-colored ink on glass surfaces with significant exposure to sunlight.

LEEDv4 CREDITS

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

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: The Products 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 - The Products can be used to refinish exterior surfaces.

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

The Products 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 is not available.

Raw Material Source and Extraction Reporting

Raw material source and extraction information for these Products is 3M confidential and is therefore not available.

Extended producer responsibility

Take-back or recycling programs for these Products are not available.

Bio-based materials

The Products have not been tested to ASTM D6866.

Wood products

The Products do not contain wood-based materials.

Materials reuse

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

Recycled content

The Products do not contain pre- or post-consumer recycled content.

Material Ingredient Reporting

Product ingredient information for these Products is 3M confidential and is therefore not available.

GreenScreen Benchmark or Cradle to Cradle Certification

Assessment or certification is not available on these Products.

REACH Optimization

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

Product Manufacture Supply Chain Optimization

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

Location Valuation Factor

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

General Emissions Evaluation

The Products have not been tested to the General Emissions Evaluation (California Department of Public Health (CDPH) Standard Method V1.1-2010 or V1.2-2017).

Technical Information

Technical information, guidance, and other statements provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license to any intellectual property rights is granted or implied with respect to this technical information.

Product Selection and Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment, reviewing all applicable regulations and standards, and reviewing the product label and use instructions. Failure to properly evaluate, select, and use a 3M product in accordance with instructions or to meet all applicable safety regulations may result in injury, sickness, death, and/or harm to property.

Warranty, Limited Remedy, and Disclaimer

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