



# 3M™ Di-Noc™ Film

## Description




3M™ DI-NOC™ Films are durable, cleanable, flexible PVC films with 3M's Comply™ Adhesive air release channels for fast, easy and virtually bubble-free application. Use DI-NOC film in place of or to enhance natural materials. These films have excellent adhesion and flexibility, allowing them to be used indoors or outdoors on flat or complex curved substrates, walls, furniture, fixtures, etc. Some of the films can also be applied to 3-dimensional surfaces and/or thermoformed. These films are ideal for both new construction and remodeling.

3M offers a Basic Product Warranty for these films. Please see page 3 for additional details.

## Product Line

The current product line includes 513 unique designs and patterns categorized in 21 major pattern types.

The following symbols indicate special restrictions or considerations for some DI-NOC films. Please refer to the DI-NOC film catalog to determine which symbols are associated with the film you are applying.

-  Suitable for outdoor use as well as PVC (poly vinyl chloride) coated steel.
-  Suitable for outdoor use. Cannot be applied on PVC coated substrates. Film color will change over time as it is exposed to UV light.
- W** Film will shrink over time. Apply a substrate primer at all film overlaps. Do not use butt joints.
-  ! Do not use on 3-dimensional surfaces or for thermoforming.

Design Category	Product Series	General Product Description
Fine Wood	FW	Wood grain appearance and texture closely resembles authentic wood. Available in 75 different designs from 21 timber species.
Wood Grain	WG	Wood grain appearance that creates a warm and elegant atmosphere. 120 different designs of 33 timber species, in light to dark colorations.
Metallic Wood	MW	Wood grain look with a metallic finish. Use where a high quality, special look is needed. Available in 2 designs.
Metallic	VM / ME	Colorful films with variations that include anodized and embossed appearance. Available in 30 designs.
Hyper Metallic	HM	A high impact metallic finish. Available in 4 designs.
Single Color	PS	Solid colors that have built-in bacteria resistance, making them suitable for hospital, clean rooms and food processing environments. Available in 92 soft and vivid color groups.
Floor	DF	Select marble and wood designs have built-in bacteria resistance, making them suitable for the floors, counters and tables of hospital, clean rooms and food processing environments. Its top surface has excellent resistance to scratch, wear and dirt. Available in 9 standard designs.
Carbon	CA	Woven carbon fiber patterns produced with 3M's micro-replication technology. Choose from 7 designs.
Chic	PA	A soft textured metallic appearance. Available in 21 designs, most of which can be used outdoors.
Sand	PC	An authentic sandstone appearance in modern colors and realistic pattern. Available in 13 designs.
Stone	ST	Simulates the appearance of real stone. For indoor use. Available in 11 designs.
Terracotta	FA	Simulating the appearance of kiln-fired ceramic tile, this product is suitable for 3-dimensional indoor applications. Available in 3 designs.

Design Category	Product Series	General Product Description
Stucco	SE	Simulates the appearance of Italian plaster. Available in 13 designs and 2 product variations: muted and vibrant shades.
Leather	LE	The look and feel of real leather. Suitable for 3-dimensional applications. Some can be used outdoors. Available in 25 designs.
Weave	FE	A woven-look design with an embossed pattern that is soft to the touch yet resists dirt and abrasion. Suitable for indoor applications on both flat and curved surfaces. Some can also be used in 3-dimensional applications. Available in 12 patterns.
Suede	NX / VS	Special textured pattern looks like suede. The VS version is stain resistant. For indoor use. Available in 4 designs.
21	D 21	Geometric designs with a metallic base film. Available in 26 designs.
Abstract Hard	PG / LZ	A semi-reflective quartz-like appearance. For indoor use. Available in 15 designs.
Abstract Soft	PT / PX / TX / FA / SE	A variety of soft tint designs in 5 different series, some of which can be used outdoors as well as indoors. Available in 26 designs.
G-Emboss	GE	Unique, contemporary geometric patterns in plain and metallic colors, which create an interesting effect when lit by indirect ambient lighting. Some can be used outdoors. Available in 8 designs.
Protect Film	DPF-100	A glossy transparent overlaminate that provides additional scratch and damage protection to the DI-NOC base films.

### Physical Characteristics

Characteristic	Description
Material	Vinyl
Color	See the Web site at <a href="http://www.3M.com/graphics">www.3M.com/graphics</a> or contact your 3M Sales Representative
Thickness with adhesive	212 micron ( $\mu\text{M}$ ) <i>typical</i>
Adhesive type	Pressure sensitive with air release channels; good hiding power on many of the films
Liner	Polyethylene coated paper
Chemical resistance	Resists mild alkalis, mild acids and salt Resists many stains for up to 18 hours Excellent resistance to water ( <i>this does not include immersion</i> )

### Application Characteristics

Characteristic	Description
Application temperature	15°-38°C
Application method	Dry only
Graphic removal	May be removed with heat; substrate damage is possible

## Adhesion

24 hours after application

\* Indicates material damage was observed during testing.

Material	Adhesion Level	
	No primer	Primer DP900N
	N/25 mm	N/25 mm
Luaun veneer	4.9	34.3
China veneer	4.9	30.4
Plaster board	n/a	4.9*
Asbestos slate board	4.9	34.3
Melamine-baked steel sheet	30.4	52
Phosphate-coated steel sheet	24.5	54
PCV-coated steel sheet	44.1	44.1
Aluminum	27.1	39
Stainless steel sheet	37.2	42
Acrylic board	38.2	54.9
Mortar	3.9	21.6

## Recommended Substrates for DI-NOC Film

KEY	Film Series	
	D21 Series GE-923 GE-924 GE-443 GE-444VM ME PA WG-GN MW HM CA	All Other DI-NOC Film
● = Good adhesion ○ = Good adhesion but poor appearance		
<b>Wood Substrate</b>		
Veneer wood	○	●
Particle board	○	●
MDF	○	●
<b>Board Substrate</b>		
Plaster board	○	●
Volcanic silicate material composite board	○	●
Silicate calcium board	○	●
UV-coated silicate calcium	●	●
<b>Mortar Substrate</b>		
Mortar	○	●
<b>Stone Substrate</b>		
Artificial marble	●	●
<b>Metal Substrate</b>		
Baked enamel painted steel plate	●	●
Galvanized steel plate	●	●
PVC-coated steel plate	○	●
Aluminum	●	●
Stainless	●	●
<b>Overlay Substrate</b>		
Overlay on DI-NOC film	○	●
<b>Decorated Board Substrate</b>		
HPL	●	●
LPL	●	●
<b>Glass Substrate</b>		
Glass	●	●
<b>Plastic Substrate</b>		
Acrylic board	●	●
ABS	●	●
Rigid PVC	●	●

## Substrates Not Recommended for DI-NOC Film

DI-NOC film does not have acceptable adhesion to the following substrates:

- Wood: unseasoned
- Plastic: soft PVC, polycarbonate, polyethylene, polypropylene, nylon, fluoroplastic, rubber sealing
- Metal: copper, brass, lead, tin

## Graphic Performance Life

This product is covered by the 3M Basic Product Warranty, which warrants that if this product has any physical product or manufacturing defects that 3M's sole liability under the terms of the Warranty is replacement or credit for the returned, unused material. There is no finished or applied graphic warranty nor warranted durability.

However, thorough testing and use of this product throughout the world for many years indicates that it is highly durable when used in vertical installations as described in the applicable 3M Product and Instruction Bulletins.

### Exposure Definition



#### Vertical Exposure

The face of the graphic is  $\pm 10^\circ$  from vertical.

### Expected Durability for Vertically Applied Film

DI-Noc	Zone 1	Zone 2	Zone 3
Outdoors for films having the sun symbol	5	4	3
Indoors, no direct UV light exposure, with or without the sun symbol	12	12	12
<i>If exposed to direct UV light, expect a shorter durability</i>			

Zone 1 = Northern /Central Europe

Zone 2 = Mediterranean Europe

Zone 3 = Middle East/North Africa

### Exceptions and Limitations

- Horizontal indoor wall decoration with no direct UV light exposure is a satisfactory application but no expected durability has been determined.

- Horizontal indoor counters and ledges that are exposed to abrasion results in premature wear or damage. Applying 3M™ DI-NOC™ Protection Film DPF 100 provides reasonable resistance to abrasion and soil, but also changes the gloss and may change the appearance of the DI-NOC film over which it is applied.
- Horizontal outdoor decoration is not recommended. Exposure to maximum sunlight and environmental conditions can cause color change, loss of gloss, chalking and premature failure.

## Screen Printing and Clear Coating

This film can be screen printed with 3M™ Screen Printing Ink Series 1900 and clear coated with 3M™ Screen Print Gloss Clear 1920 but the results may not meet your needs or expectations. We recommend testing and approving each type of film before specifying it in a job.

## Substrate Preparation

Refer to Instruction Bulletin 5.41.

## Substrate Primer

Primer is required at any overlap, at the end/edge of the film--such as under a butt joint--and wherever the material is stretched--such as a sharp radius. It is also recommended if the surface energy of the substrate is low. Additional details are provided in Instruction Bulletin 5.41.

Primer	Substrate
<b>DP-900N</b> Solvent based	Gypsum board Calcium silicate (with sealer coating) Plywood MDF board Painted or coated metals Films (including DI-NOC films) PVC laminated steel Mortar (with sealer coating) Painted or coated metals
<b>WP-2000</b> Water based	Gypsum board Calcium Silicate (with sealer coating) Plywood
<b>EC-1368NT</b> Solvent-Based Adhesive	Gypsum board Calcium silicate (with sealer coating) Plywood MDF board Aluminum Stainless steel Painted or coated metals
<b>WP-3000</b> For small areas Water based	Plywood MDF board Painted or coated metals

A primer is usually not needed on flat surfaces or high energy substrates such as metal or paint.

## Cleaning Applied Film

Use a clean, soft cloth with detergent and water. Hot water may be required for heavier soil.

## Removal

DI-NOC films may be removed by using a heat gun to soften the adhesive to allow the film to be pulled off. A wallpaper steam remover may also be used for the same purpose.

## Shelf Life, Storage, Shipping

Activity	Recommendation
Shelf life	<b>Total shelf life: 2 years</b> Up to 2 years unprocessed, <b>OR</b> process within 1 year <b>and</b> apply within 1 year of processing
Storage conditions	<ul style="list-style-type: none"><li>• 35°C maximum</li><li>• Out of sunlight</li><li>• Clean dry area</li><li>• Original container</li><li>• Do not stack boxes over six (6) units high. Excessive weight can damage the film.</li></ul>

## 3M Related Literature

Listed below is the related 3M technical literature that may be of interest

Subject	Bulletin No.
Design of markings	2.1
Premasking and prespacing	4.3
Application of 3M™ DI-NOC™ Films; A Guide for Indoor and Outdoor Dry Applications	5.4.7
Storage, maintenance and removal	6.5

## Glossary of Terms

### Permanent Adhesive

Films with a permanent adhesive can be difficult to remove and will often require heat and/or chemicals for effective removal.

## Health & Safety

Refer to the package label and the Material Safety Data Sheet for health, safety, and handling information on the products referenced in this bulletin. For 3M products, if necessary, you may contact our Toxicology/Product Responsibility Department on 01344 858000.

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## Important Notice to Purchaser

The 3M products described in this publication are covered by a 3M warranty and limitation of liability.

3M's warranty provides that if 3M finds that goods are defective in material or workmanship they will be replaced or the price refunded at 3M's option but note that 3M does not accept liability for other direct losses (except for personal injury or death) or consequential losses relating to defective products or from information supplied by 3M.

Purchasers and users of 3M products, and not 3M supplying companies, are always solely responsible for deciding on the suitability of the 3M product for their required or intended use.

## Technical Assistance

For help on specific questions relating to 3M Commercial Graphics Division Products, contact your local Technical Service Representative.

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[www.3m.com/uk/graphicsolutions](http://www.3m.com/uk/graphicsolutions)

## Sales Assistance

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*The use of trademark signs and brand names in this bulletin is based upon US standards. These standards may vary from country to country outside the USA*

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