

Recommendations for conversion, application and use of Avery Dennison® Floor Marking™

issued: 7-2020

The Avery Dennison floor marking portfolio consists of solutions that require a structured overlamine to achieve the desired anti-slip properties and durability of up to 9 months (further covered under section 5.7.1) and promotional solutions without overlamine for up to 4 weeks of application (further covered under section 5.7.2).

5.7.1 DOL 5800, DOL 5900 & DOL 6000 Floor Marking Films

Introduction

This section of the document addresses the Avery Dennison Floor Marking portfolio consisting of a self-adhesive printable base film and a textured, slip resistant self adhesive laminate. The base film can be printed on a variety of (super-)wide format inkjet printers using solvent, eco-/mild solvent, latex or UV-curable ink. After printing, the base film is overlaminated with a transparent overlamine (Avery Dennison DOL 5800, DOL 5900 or DOL 6000).

The Avery Dennison products mentioned below

- are suitable and can be used safely on floors mentioned in this document,
- will stick on recommended floors,
- are suitable for indoor applications
- can be removed easily after use, only within their functional life (see below)

We recommend a test be conducted by the installer prior to installation to determine suitability, as Avery Dennison can not be held liable for any damage resulting from the use and application of Avery Dennison Floor Marking.

Products

Avery Dennison DOL 6000: 210 micron transparent, matt textured vinyl with an anti-slip rating of R10¹

Recommended in combination with print film:

Avery Dennison MPI 2001 Opaque:	80 micron gloss white polymeric calendered face film with removable adhesive.
Avery Dennison MPI 2002 Opaque:	80 micron gloss white polymeric calendered face film with grey removable adhesive.
Avery Dennison MPI 2001 HOP:	80 micron gloss white high opacity polymeric calendered face film with removable adhesive.

Avery Dennison DOL 5900: 100 micron transparent, matt textured vinyl with an anti-slip rating of R9¹

Recommended in combination with print film:	95 micron gloss white monomeric calendered face film with removable adhesive.
Avery Dennison MPI 3001:	95 micron gloss white high opacity monomeric calendered face with removable adhesive.
Avery Dennison MPI 3001 HOP:	95 micron gloss white high opacity monomeric calendered face with removable adhesive.

Avery Dennison DOL 5800: 115 micron transparent, matt textured vinyl with an anti-slip rating of PTV 98²

Recommended in combination with print film:	95 micron gloss white monomeric calendered face film with removable adhesive.
Avery Dennison MPI 3001:	95 micron gloss white high opacity monomeric calendered face with removable adhesive.
Avery Dennison MPI 3001 HOP:	95 micron gloss white high opacity monomeric calendered face with removable adhesive.

The choice of one of the Avery Dennison Floor Marking products (lamine in combination with the printable base film) depends on the requirements for actual use.

Use

These Avery Dennison Floor Marking solutions have been developed for full colour graphics on a variety of indoor floor surfaces, such as in shopping malls, train and metro stations, supermarkets etc.

Durability

The functional service life of Avery Dennison Floor Marking is:

- up to 9 months: Avery Dennison DOL 6000 (with MPI 2001, MPI 2002 or MPI 2001 HOP)
- up to 6 months: Avery Dennison DOL 5900 (with MPI 3001 or MPI 3001 HOP)
- up to 3 months: Avery Dennison DOL 5800 (with MPI 3001 or MPI 3001 HOP)

¹ DIN51130:2014

² DIN EN 13036-4; 2011-12

TECHNICAL BULLETIN 5.7

Above mentioned data is based upon experience, do not present a warranty and are applicable when manufactured under proper processing and application, as mentioned further in this bulletin. The functional life will be influenced by maintenance of the decal and exposure to e.g. (sun)light, temperature and type/amount of (foot) traffic. Avery Dennison Floor Marking is likely to be damaged by vehicles, such as forklifts, trolleys shopping carts etc. or industrial cleaning machines. Damage caused by such vehicles is excluded from any guarantee.

Conversion

It is recommended to round off the corners of Floor Marking decals by **a radius of at least 5 mm**: sharp corners make graphics more vulnerable to damage or delamination.

Allow the printed Floor Marking to dry for the required amount of time (recommendations depending your ink type) prior to overlamination.

Avery Dennison DOL 5800, DOL 5900 and DOL 6000 can be laminated onto the printed film with a laminator at 25 - 30° C. Laminating can be done with moderate pressure (3.5 – 7kg/cm²) and speed (< 2.5 m/min.) and low web tension. Laminating by hand or roller is not recommended.

Floor Markings can be cut on flatbed plotters, using a sharp, 45° angled knife. We recommend to strip the waste quickly after cutting. Designs for cutting that include sharp angled or fine details should be avoided. To avoid delamination Avery Dennison Floor Marking should ideally be laying flat for at least 1 hour prior to further processing. For transportation it is recommended to prepare rolls with a diameter of 15 cm or more: the DOL film shall be wound outside.

Application

These Avery Dennison Floor Marking solutions can be used on most floors. It is strongly recommended to always perform a test to assess suitability of floors for sufficient adhesion performance prior to application.

Application on the following floors is not recommended and are excluded from any guarantee or warranty;

- Waxy, rough or porous ceramic tiles or wooden floors
- Textile mats and carpets
- Rubber matting
- Soft PVC matting
- Marble - (slight dis-)colouration of the marble might occur as a result of its porous composition.
- Very irregular floor surfaces (including cement or concrete floors).

Application temperature: +10°C to +30 °C

Floor cleaning:

- All floors have to be cleaned and degreased prior to application of Avery Dennison Floor Marking. First clean the floor in a conventional way as prescribed by the floor detergent manufacturer. Do not use chemically aggressive detergents. **Dry the floor properly** with a lint free cloth.
- Then degrease the floor area that has to be covered, using degreasing agents (Avery Dennison Surface Cleaner or IPA) and again a lint free cloth. Check again prior to application that there are no dust or dirt particles on the area to be covered.

Application Procedure:

Determine the exact position where the graphic will be applied. Make sure that the edges of decals **never** start at a tile edge or joint or on a parquet floor joint. Put the laminated graphic upside down and remove the liner.

Note: For larger decals the hinge method can be applied.

TECHNICAL BULLETIN 5.7

The standard procedures for decal application can be followed:

- Peel the backing paper away from the film + overlamine construction and not the film from the backing paper.
- Apply the decal with a hard plastic squeegee or roller or similar tool with firm, overlapping strokes. After completion of the application, check and re-squeegee the edges of the decal. **When the final graphic is made out of more than one sheet of Avery Dennison Floor Marking, it is recommended to apply these side by side (no overlap) without a gap.** Allow at least 30 minutes for the adhesion to build up sufficiently prior to use the decal as a walkway: essential here is the thorough re-squeegeeing of the decal edges
- **Treat the newly applied film with care. It takes about 24 hours for the adhesion to fully build up.**

Removal after use

These Avery Dennison Floor Marking solutions can easily be removed, by starting the removal at a corner and then continue the removal at 90° angle. The use of a heat gun to heat the film to a temperature of 50-60°C (subject to the heat resistance of the specific substrate the film is applied on) will improve the removable performance. Dirty contour edges on the floor may appear after decal removal: these can be removed through the normal cleaning procedures for the floor to which the decal was applied.

If new decals have to be applied, the above procedure has to be repeated from the very beginning.

In some cases colour differences between the floor covered by Avery Dennison Floor Marking films and the surrounding area could occur as a result of further discoloration of the surrounding floor area.

5.7.2 MPI 6021 Anti-Slip Floor Marking Film

Introduction

With the Avery Dennison MPI 6021 Anti-Slip Floor Marking Film and its structured surface there is no need for an additional structured overlamine. Even when printed, it exceeds the required minimum of PTV 36 or higher*. Printable with all common ink platforms, such as eco-solvent, latex or UV-curing inks this is a great solution of do it yourself applications for promotional purposes of up to 4 weeks.

We recommend a test be conducted by the installer prior to installation to determine suitability, as Avery Dennison can not be held liable for any damage resulting from the use and application of Avery Dennison Floor Marking.

Product

Avery Dennison MPI 6021: 200 micron white, textured vinyl on a transparent, removable acrylic adhesive.

Use

Avery Dennison MPI 6021 Anti-Slip Floor Marking film has been developed for full colour graphics on a variety of indoor floor surfaces, such as in shopping malls, train and metro stations, supermarkets etc.

Durability

The functional service life of Avery Dennison Floor Marking is up to 4 weeks when applied indoors.

Above mentioned data is based upon experience, do not present a warranty and are applicable when manufactured under proper processing and application, as mentioned further in this bulletin. The functional life will be influenced by maintenance of the decal and exposure to e.g. (sun)light, temperature and type/amount of (foot)traffic. Avery Dennison Floor Marking is likely to be damaged by vehicles, such as forklifts, trolleys shopping carts etc. or industrial cleaning machines. Damage caused by such vehicles is excluded from any guarantee.

TECHNICAL BULLETIN 5.7

Determination of Friction – DIN EN 13036-4¹

MPI 6021 Anti-Slip Floor Marking Film	Friction in dry conditions (PTV-value)	
	Longitudinal direction	Transverse direction
Unprinted	91	90
Printed with Eco-Solvent inks ²	105	103
Printed with UV-curing inks ³	95	96
Printed with Latex inks ⁴	95	94

More information on DIN EN 13036-4 (Pendulum Test Value Method) can be found on our Technical Bulletin 5.5.

Surface preparation

These Avery Dennison Floor Marking solutions can be used on most floors. It is strongly recommended to always perform a test to assess suitability of floors for sufficient adhesion performance prior to application.

Application on the following floors is not recommended and are excluded from any guarantee or warranty;

- Waxy, rough or porous ceramic tiles or wooden floors
- Textile mats and carpets
- Rubber matting
- Soft PVC matting
- Marble - (slight dis-)colouration of the marble might occur as a result of its porous composition.
- Very irregular floor surfaces (including cement or concrete floors).

Application temperature: +10°C to +30 °C

Floor cleaning:

- All floors have to be cleaned and degreased prior to application of Avery Dennison MPI 6021 Anti-Slip Floor Marking film. First clean the floor in a conventional way as prescribed by the floor detergent manufacturer. Do not use chemically aggressive detergents. **Dry the floor properly** with a lint free cloth.
- Then degrease the floor area that has to be covered, using degreasing agents (Avery Dennison Surface Cleaner or IPA) and again a lint free cloth. Check again prior to application that there are no dust or dirt particles on the area to be covered.
- Ensure that the cleaned surface **is completely dry** before proceeding with the application of the film.

Application Procedure:

Allow the printed film to dry for the required amount of time (recommendations depending your ink type) prior to application. Determine the exact position where the graphic will be applied. Make sure that the edges of decals **never** start at a tile edge or joint or on a parquet floor joint.

The standard procedures for application are as followed:

- Put the graphic upside down and partially remove the liner for about 3 cm.
- Fold the liner backwards, so about 3 cm of the film with adhesive coated side is exposed.
- Position the film correctly and apply pressure with your hand to fixate the film at the edges.
- Apply the decal with a hard plastic squeegee with firm, overlapping strokes from the centre towards the edges.
- Slowly remove the rest of the liner with one hand while continuing to apply strokes on the newly exposed adhesive-coated film onto the substrate.
- After completion of the application, check and re-squeegee the edges of the decal.

Note: For larger decals the hinge method can be applied.

- **Treat the newly applied film with care. It takes about 24 hours for the adhesion to fully build up.**

¹Individual test reports from MPA available

²Roland's MAX2 inks

³Mimaki's LUS 170 inks

⁴HP's Latex 831/881 inks

TECHNICAL BULLETIN 5.7

Maintenance of the Graphic

The MPI 6021 Anti-Slip Floor Marking Film application can be cleaned using water and mild detergents. Avoid the excessive use of water. Ensure to wipe off and remove any detergent residue as it may prematurely age the graphic. Also refrain from use of industrial cleaning devices, aggressive cleaning chemicals or mechanical cleaners. After cleaning the graphic, ensure to completely dry the surface with a lint-free cloth or a paper towel. Take special care of drying the edges of the graphic to prevent edge lifting.

Note: In order to ensure an optimal anti-slip performance of the film it is essential to keep the surface of the graphics clean and dry after the cleaning process.

Removal after use

The film can be easily removed, by starting the removal at a corner and then continue the removal at 90° angle. The use of a heat gun to heat the film to a temperature of 50-60°C (subject to the heat resistance of the specific substrate the film is applied on) will improve the removable performance. Dirty contour edges on the floor may appear after decal removal: these can be removed through the normal cleaning procedures for the floor to which the decal was applied. In the event of adhesive residue on the substrate, use the Avery Dennison adhesive remover and paper towels to clean the substrate.

If new decals have to be applied, the above procedure has to be repeated from the very beginning.

In some cases colour differences between the floor covered by Avery Dennison Floor Marking and the surrounding area could occur as a result of further discoloration of the surrounding floor area.

Note

Avery Dennison warranties are only applicable when Avery Dennison Floor Markings have been used and processed and applied according to above instructions.

All statements, technical information, technical data and recommendations concerning the goods sold or samples provided by Avery Dennison are believed to be reliable, but do not constitute a guarantee or warranty. All goods are sold and samples of all products provided with the understanding that the purchaser has independently determined, prior to use, that the goods are suitable for the purpose the purchaser intends to use the goods for.

Composition of Avery Dennison Floor Marking combinations Films/DOL and the content of all Avery Dennison Technical Bulletins are subject to change without prior notice.