


# MIROX MNGE & 4GREEN
## INSTALLATION GUIDE

VERSION 7.0 – SEPTEMBER 2026

Your Dreams, Our Challenge

This version of the guide replaces and cancels all previous versions.
Please check www.agc-yourglass.com regularly for any updates.

# WARNING

**Carefully read this manual before cutting and installing Mirox MNGE & 4Green+ products!**



## Important Preliminary Instructions

- Mirox MNGE and Mirox 4Green+ are coated glass products for use in interior applications only. They cannot be used in double glazing units or laminated (with PVB), not even on the inner side of the glazing unit. The plastifiers in the PVB would have a negative effect on the paint coating.

- For safety applications, Mirox MNGE and Mirox 4Green+ products are available with a safety backing film applied to the painted side of the glass (SAFE+).

- All Mirox MNGE and Mirox 4Green+ products can be used in damp environments (kitchens, bathrooms, etc.) but should never be immersed in water. In damp environments AGC recommends applying a SAFE+ safety backing film.

- The thickness of Mirox MNGE and Mirox 4Green+ products must be defined in accordance with the size and shape of each panel. AGC recommends 6 mm thickness for wall cladding (panels > 1 m²). For very large panels, thicker glass may be required.

- Do not install Mirox on walls that are not entirely clean, dry and pre-treated with a primer in case of porous surfaces. The glass must also be clean. It must not be wet or immersed in water during handling or setting.

- Ensure that the paint coating on the rear of the mirror has not been scratched during the cutting and assembly process.

- Always use adhesives/tapes recommended by AGC and follow exactly the instructions provided by the adhesive manufacturer (particularly regarding the quantities of adhesive to be used per m²). The user/customer shall take sole responsibility for using any other adhesive not validated by AGC. When bonding Mirox MNGE or Mirox 4Green+ SAFE+ glass with an adhesive, it is mandatory to pre-treat the safety backing film with a primer. For gluing without primer, please contact your silicone supplier.

- Care should be taken when using adhesives on Matelac Silver glass, as stains made on the matt surface cannot be properly removed afterwards.

- The use of safety gloves and appropriate personal protection is highly recommended during all operations involving the handling and setting of the glass.

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# 1. INTRODUCTION

This guide has been produced for glaziers. It describes AGC Glass Europe's recommended methods for fitting Mirox MNGE and Mirox 4Green+ mirrors and provides cleaning tips.

Fitting a mirror is a delicate procedure. Correct installation is critical to ensuring:

- the safety of end users by preventing breakage;
  It should be noted that Mirox MNGE and Mirox 4Green+ SAFE+ provide optimal safety protection.
- the quality of the mirror, by protecting the paint;
- an undistorted reflected image.

*The contents of this guide reflect our knowledge and experience at the time of publication. Customers and glass fitters can contact AGC Glass Europe's Technical Advisory Services (TAS) at any time for further assistance, if required. Naturally, the glass fitter is entirely responsible for the installation of the glass and compatibility between the different materials used. AGC Glass Europe accepts liability for the product it supplies in accordance with its general terms and conditions of sale. Additional national rules may apply for to installation of mirrors.*

# 2. SAFE+ SAFETY BACKING FILM FOR MIROX

Mirox MNGE and Mirox 4Green+ mirrors are also available in safety versions, with a SAFE+ plastic film applied to the painted side of the mirror. The film has three functions:

1) If the glass breaks, the splinters and shards stick to the film, thereby preventing injury and damage.
2) It protects the paint from scratching.
3) It protects the paint in damp environments.

SAFE+ safety backing films comply with European safety standard EN12600 – Class 2B2.
SAFE+ is a PET (polyethylene terephthalate) material.

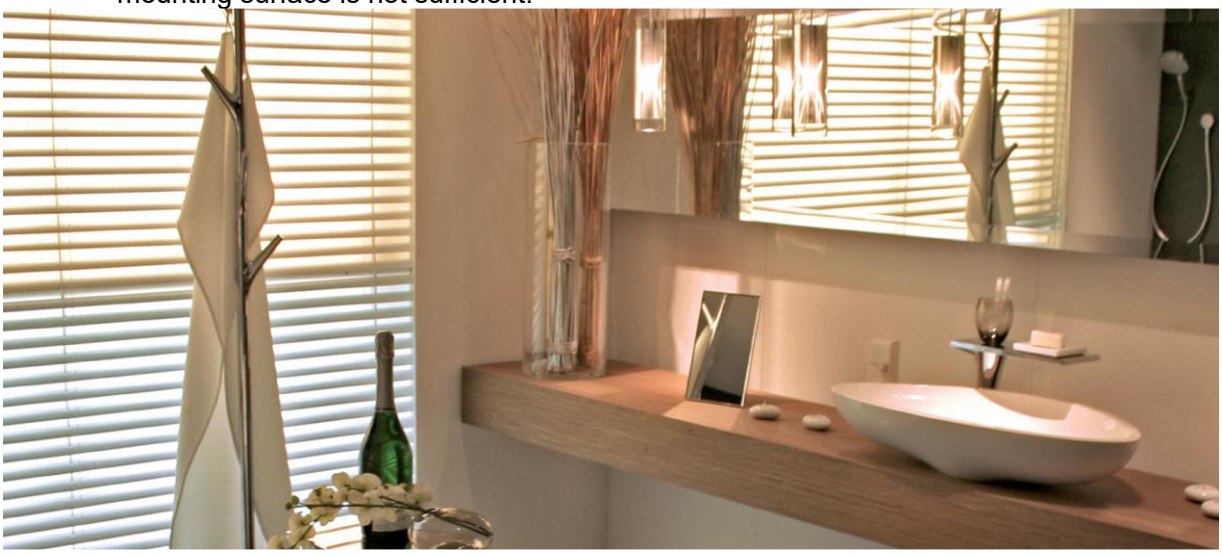
When bonding SAFE+ mirrors in wall covering applications, adhesives or double-sided adhesive tapes must be used. A table of recommended brands can be found on pages 9 and 10.

# 3. INSTALLATION GUIDE

## 3.1. Tips

To prevent a loss of quality owing to deterioration of the metal layers, the protective varnish or image distortion, the following instructions should be followed:

- When mounting mirrors, always apply the double-sided tape and glue or silicone in **vertical strips or dots** taking care to ensure that air can circulate between the back of the mirror and the substrate. Always comply with the recommended quantity of adhesive to be used per $m^2$ stipulated by the adhesive manufacturer. Never use horizontal strips.
- The mirror should be mounted on a **clean, dry surface** and any contact with walls that could be affected by humidity should be avoided.
- Pre-treat **porous surfaces** with a **primer**.
- **Non-metal spacers should be used at the bottom edge of the mirror and at the back of the mirror to ensure that air can circulate vertically** between the back of the mirror and the substrate. Ideally, there should be at least a 2 mm air flow between the back side of the mirror and the substrate. This is especially recommended when the mirrors are mounted in very moist areas such as bathrooms, gyms, etc.
- The supporting **surface** must be perfectly **flat in order to avoid deformation** of the mirror and the image.
- Surfaces which are not flat should be evened out or non-metal spacers should be used to compensate for uneven surfaces.
- Care must be taken **not to scratch the back of the mirror** because this could cause oxidation (black or brown traces seen on the reflective side).
- Please note that moisture pockets may occur if the space between the mirror cover and the mounting surface is not sufficient.



## 3.2. Cutting Mirox

### 3.2.1 General recommendations

Special cuts are sometimes required to avoid ‘obstacles’ on walls such as electrical sockets and water/air outlet pipes.

Large glass panels: Ask your glazier to do the necessary cutting in the workshop.

Small tile formats: The cutting can be done by your tiler or by your glazier.

**At each stage of the production process the personnel involved must wear the personal safety equipment required for the work, e.g. safety gloves, safety footwear and safety glasses.**

#### Measuring

Regardless of the format of the glass, whether large panels or tile-size, precise measurements must be taken. Near pipes and sockets, the diameter of the cut glass should be 1cm larger than the original measurement.

#### Recommended thickness

The thickness of the Mirox product must be defined on the basis of the size and shape of each panel. AGC recommends 6mm thickness for wall cladding (panels larger than 1 m²). For very large panels, thicker glass may be required.

#### Tools

Before starting, read the manufacturer’s instructions on how to use the different cutting tools.
Work on a stable cutting table with a felt cutting mat.
Ensure that the cutting table will not scratch the glass.
To prevent injury, lightly sand the edges of the cut glass.
To prevent the glass from breaking, do not press too heavily on it when fitting around holes.

### 3.2.2 Cutting advice

AGC advises using the following cutting wheels to properly cut glass with a SAFE+ film through the film side: www.agc-store.com

| Cutting wheel | Angle (°) | Thickness (mm) | |
|---|---|---|---|
| B0 03A100M | 100 | 3-4 |  |
| B0 03A110M | 110 | 4-5 | |
| B0 03A115M | 115 | 5-6 | |
| **Cutting wheel including plastic holder** | | |  |
| B0 416A100M | 100 | 3-4 | |
| B0 416A110M | 110 | 4-5 | |
| B0 416A115M | 115 | 5-6 | |

When starting, cut slowly and build up pressure until you achieve a good cut.

Use ACECUT 5503 cutting oil or equivalent.

Correct cutting settings can differ from one cutting installation to another and can be tested by cutting test strips 100mm wide and at least 1m long. It should be possible to break the cut strips by hand.
**The cutting wheels listed above can also be used to cut non-painted glass without a SAFE+ film.**

**AGC provides this information for advisory purposes. The user/customer is solely responsible for using this advice.**

## 3.3. Fitting mirrors

There are three main ways of fitting Mirox MNGE and Mirox 4Green+ mirrors:

- A bonding method, using:
    - silicone
    - adhesive tape
- A mechanical fixing method, using screws, metal clips or fixing the glass directly into a frame.
- A combination of both methods



### 3.3.1. Bonding method

#### a) General recommendations

If you opt for the bonding method, you should use the adhesive best suited to your type of mirror (with or without SAFE+ safety backing film) and the level of safety required due to the size of the glass. You should use (non-metal) blocks to support the mirror until the glue has completely set.

Under the trade name FIX-IN, AGC has developed its own range of high-performance, easy-to-use adhesive products for the professional installation of Mirox products, including SAFE+ versions.

Based on a formula developed exclusively for AGC, the perfect compatibility between FIX-IN components prevents corrosive damage to both the reflective silver layer and the paint on the back of AGC Mirox.

FIX-IN is more than a standard set of adhesive components. It is a system ensuring a professional finish and it is supported by a 5-year warranty*.

AGC has identified other adhesives compatible with AGC glass products.** Please refer to the instructions and warranties supplied by the adhesive manufacturers.

(*) Against silver layer corrosion, paint peeling or cracking.
(**) See list below.

#### b) Glue and silicone

Silicone can be used with Mirox MNGE and Mirox 4Green+, including the SAFE+ version. Always refer to the adhesive manufacturer's instructions about compatibility with the substrate. When using silicone, AGC recommends also using double-sided adhesive tape to hold the glass in place while the silicone dries.

**Apply the glue or silicone in vertical strips or dots** of minimum 2mm thickness taking care to ensure that air can circulate between the back of the mirror and the surface. **Apply regular pressure** over the entire surface of the mirror, **ensuring that the reflected image is not distorted**. Never apply horizontal strips of adhesive.

The amount of glue or silicone to be applied depends mainly on the type of glue or silicone used and the weight of the mirror. The table below shows the weight per m² for different mirror thicknesses.

| Thickness of mirror | Weight of mirror / m² |
|---|---|
| 3 mm | 7.5 kg |
| 4 mm | 10 kg |
| 5 mm | 12.5 kg |
| 6 mm | 15 kg |
| 8 mm | 20 kg |

The glue or silicone manufacturer will provide information on the drying time for the type of silicone used (this varies from one brand to another) and on the quantity required depending on the weight of the mirror.

**Compatibility of different families of glues and adhesives***

| Type of glue/silicone | Mirox MNGE & 4Green+ | Mirox MNGE & 4Green+ SAFE+ |
|---|---|---|
| Alcoxy silicones | YES | YES |
| Oxime silicones | YES | YES |
| MS polymers | YES | YES |
| Rubber silicones | NO | NO |
| Acetic acid silicones | NO | NO |
| Polyurethane-based | NO | NO |
| Hot melt | YES | NO |

(*) This table only provides general recommendations for each group of glues or adhesives. This does not necessarily mean that all adhesives belonging to each group are suitable. For specific use, refer to the tables below listing *Recommended brands of adhesives* and *Compatible brands of adhesives*.

When bonding Mirox MNGE SAFE+ and Mirox 4Green+ SAFE+ mirrors, the safety backing film must be pre-treated with a surface activator or primer. See the list of recommended and compatible brands in the summary table on pages 9 and 10.

Care should be taken when using silicone on Matelac Silver glass as stains made on the matt surface cannot be properly removed afterwards.

### c) Adhesive tape

Mirox MNGE and Mirox 4Green+ can also be bonded using adhesive tape (see recommended and compatible brands on pages 9 and 10).

**RECOMMENDATIONS FOR USE**

Always use plenty of adhesive and follow the manufacturer's instructions. The amount of adhesive tape required will depend on the type of tape being used and the weight of the Mirox mirror.




AGC Glass Europe recommends using ten 10 mm x 100 mm strips per kg of mirror and to apply several smaller pieces rather than one single length (as indicated above).

**Compatibility of different families of adhesive tape***

| Type of adhesive tape | Mirox MNGE & 4Green+ | Mirox MNGE & 4Green+ SAFE+ |
|---|---|---|
| Acrylic | YES | NO |
| Modified acrylic | YES | NO |
| Rubber | YES | YES |

(*) This table only provides general recommendations for each group of glues or adhesives. This does not necessarily mean that all adhesives belonging to each group are suitable. For specific use, refer to the tables below listing *Recommended brands of adhesive*s and *Compatible brands of adhesives*.

## d) Recommended brands of adhesives

| | Type | Brand & manufacturer | Mirox MNGE & 4Green+ | Mirox MNGE & 4Green+ SAFE+ |
|---|---|---|---|---|
| Glue / silicone | Alcoxy | FIX-IN SL (AGC) | YES | YES<br>+ surface activator<br>FIX-IN SA (AGC) |
| Tape | Rubber | FIX-IN AT (AGC) | YES | YES<br>+ surface activator<br>FIX-IN SA (AGC) |

### e) Compatible brands of adhesives

| | Type | Brand & manufacturer | Mirox MNGE/4Green+ | Mirox MNGE/4Green+ SAFE+ |
|---|---|---|---|---|
| Glue/ Silicone | Alcoxy | DOWSIL™ 799 Silicone Glass and Metal Building Sealant (Dow) | YES | NO |
| | | DOWSIL™ 817 Mirror Adhesive (Dow) | YES | YES<br>+ R40 cleaner + primer 1200 OS or primer C (Dow) |
| | | FA940 Mirror Adhesive (Illbruck) | YES | YES<br>+ AT120 or AT150 primer (Illbruck) |
| | | Silikon Klej do Luster (Lakma) | YES | NO |
| | | Tecnosil N-80 (QS Adhesives) | YES | NO |
| | Oxime | Parasilico AM 85-1 (DL Chemicals) | YES | NO |
| | MS Polymer | Fix All Flexi (Soudal) | YES | NO |
| | | Mirror Fix (Soudal) | YES | NO |
| | | Mir-o-bond | YES | NO |
| | | Mirrorfix MS (Den Braven) | YES | NO |
| | | Paracol Miroseal MS (DL Chemicals) | YES | NO |
| | | Parabond 600 (DL Chemicals) | YES | NO |
| | **Type** | **Brand & manufacturer** | **Mirox MNGE & 4Green+** | **Mirox MNGE & 4Green +SAFE+** |
| Tape | Acrylic | 4632 (3M) | YES | NO |
| | | 4032 (3M) | YES | NO |
| | | VITOMOUNT 125 SS-100 (VITO Irmen) | YES | NO |
| | Modified acrylic | 4952 (3M) | YES | NO |
| | Rubber | MACmount M1702 (MACtac) | YES | YES |
| | | FM 7600 (Avery Dennison) | YES | YES |

AGC strongly advises against using Illbruck FS 141 adhesives to fix Mirox 4Green+ mirrors because they are incompatible with the silvering layer..

### 3.3.2. Mechanical fitting

#### a) Framing, rails, etc.

If using a frame to fit your mirror, you should:

- use blocks and spacers to prevent contact with the frame;
- avoid contact between the Mirox mirror and hard or brittle substances such as metals and porcelains.

#### b) Using metal clips, screws or magnetic fixing systems (plates)

If using metal clips and/or screws to fit your mirror, you should:

- insert a foam spacer between the clip and the glass;
- avoid contact between the Mirox mirror and hard or brittle substances such as metals and porcelains.
- Use suitable fixing kits which includes all necessary materials

# 4. CLEANING GUIDE

## 4.1 Cleaning recommendations

Glass can get dirty, especially during the construction of a building.

Corrosive contamination must be avoided at all times, especially from plaster, mortar, concrete and cement slurry, all of which are alkaline and therefore capable of corroding the glass surface. Any such impurities must be washed off the glass immediately. Rinse with plenty of clean water to avoid scratching the surface. Use a soft clean sponge, cloth or chamois. Do not try to remove impurities while the glass is dry. Never use sharp objects, such as scrapers, to clean the glass.

Please protect the glass at all times during installation process with suitable materials.

The other teams working on the project should also be informed about handling the glass properly.

## 4.2 Cleaning Mirox MNGE and Mirox 4Green+

When cleaning the mirror, the edges must always be dried quickly and thoroughly.

Mirox MNGE and Mirox 4Green+ mirrors can be cleaned with clean water.

**IMPORTANT: Never use ammonia-based products or abrasive products (such as anti-limescale products) to clean Mirox MNGE and Mirox4Green+.**

Detergents with pH < 2 or pH > 12 must never be used.

Consult AGC's Cleaning Guide for more information.

## 4.3 Cleaning Matelac Silver

The acid-etched surface of Matelac Silver is rougher than the untreated surface of Mirox mirrors.

Dirt and other substances adhere better to the rough surface. Nevertheless it can be cleaned with clean water and neutral commercial detergents for normal day-to-day maintenance. However, special care must be taken when installing Matelac Silver since dirt and other substances adhere to it.

**Note:** Silicone, cement slurry and similar materials cannot be removed from the surface of Matelac Silver without leaving some residue.