

# EASYPRO<sup>®</sup>

## PROCESSING GUIDELINES

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## 1. DESCRIPTION

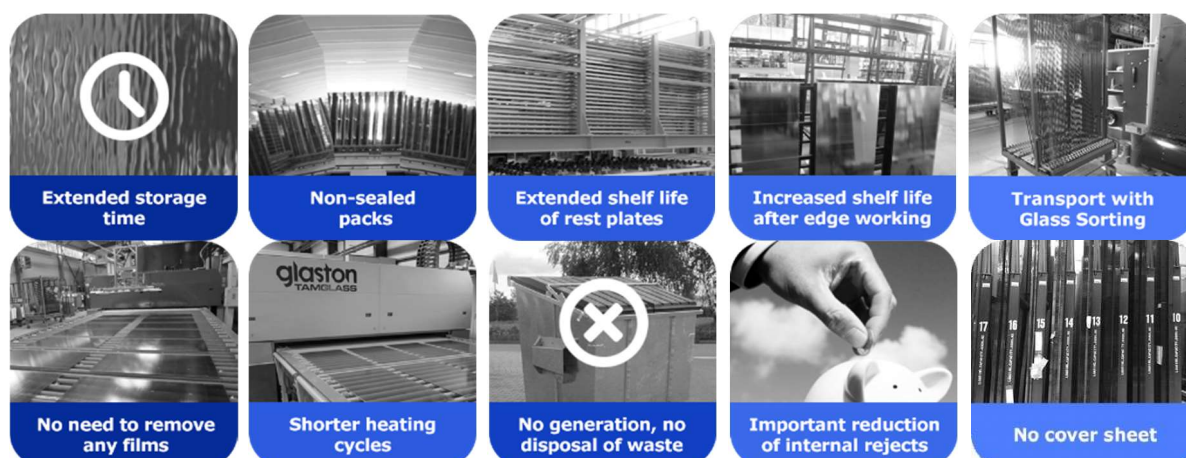
EASYPRO® is a temporary protection aimed at facilitating the processing of heat-treatable coated glasses. Coated glass of the following families can be delivered with EASYPRO®: Cool-Lite KN II, SKN II, Xtreme II and Planitherm II. Contact your sales representatives to check the availability of a particular reference with EASYPRO®.

4BirdEtch version (acid etch on face 1 associated with COOL-LITE EASYPRO® on face 2) is also available for specific application. For this product, current processing recommendations are applicable. Acid etch face will be down at all steps of the processing and special attention to cutting table, conveyors and rollers to avoid scratches or marks are the only additional recommendations.

The polymeric layer EASYPRO® has been designed to ensure a mechanical protection of the magnetron stack underneath from 'storage' until 'tempering'. It is removed by complete burning during the thermal treatment.

In order to simplify the reading of this document we refer in the following only to EASYPRO® as synonym for "to be tempered" coated glass with temporary surface protection.

## 2. KEY ADVANTAGES



## 3. PROCESSING

EASYPRO® can be processed with the same kit of equipment used for coated glass without temporary protection, **as long as the specific precautions given in this document are respected.**

### ■ Shelf life

EASYPRO® is guaranteed up to **1 year** from delivery date.

### ■ Unstacking

EASYPRO® protected glass is shipped without edge sealing and without cover sheet.

For loading and unloading, suction cups can be used on both sides of the glass.

For unstacking, general recommendations apply: each pane must be released from the next pane before being lifted from the stack. Any relative movement between the coating and the adjacent glass pane must be avoided.

Automatic unstacking of glass sheets or using a glass clamp is possible, as soon as the good condition (surface state, cleanliness) of the clamp is ensured.

#### ■ Coating detection

The protective coating is easily visible by eye (it gives an “orange peel” or blurry appearance).



**Coating Detection**  
Coating without EASYPRO®



**Coating Detection**  
Coating with EASYPRO®

EASYPRO® layer should remain free from labels, stickers or any kind of informative or masking tapes.

#### ■ Handling

Even though EASYPRO® is designed to protect from mechanical damage and handling marks during all processing steps before tempering, general recommendations for coated glass handling must be applied.

For instance, the use of coated glass compatible gloves remains mandatory throughout the processing steps.

#### ■ Cutting

Cutting is usually performed on the EASYPRO® layer side.

In case cutting is made prior to edge deletion:

- It is recommended to place EASYPRO® layer facing downward on the cutting table to facilitate the operation. In such case, make sure the table has been cleaned and is free from glass shards or dust.
- Otherwise, a special segmented cutting wheel must be used such as BO 03AP140P and BO 03AP145P wheels from Bohle. The cutting pressure must be increased by 20 to 50% with compared to the usual pressure used for clear glass. Cutting trials should be performed to find the correct parameter. Please contact the technical support to get more details.

The use of evaporating cutting oil, such as ACECUT 5250 or ACECUT 5503 from Chemetall BASF (aliphatic hydrocarbon based oil) is recommended. As for non-protected coated glass, any oil excess should be avoided; the maximum spread should be limited to 10mm.

#### ■ Restplates

EASYPRO® restplates can be stored until the end of the guaranty period (1 year from the initial delivery date) without any additional protection.

## ■ Edge deletion

In case of edge deletion before tempering, usage of specific abrasive wheels is recommended to properly remove the polymer and the magnetron coating in one single step. Contact SAINT-GOBAIN Abrasive department to get right recommendation to your cutting table model.

An efficient aspiration system must be installed in order to avoid dust propagation. Vacuum systems with attached filter bags are recommended in order to avoid fast filter cartridge saturation.

However, edge deletion wheel particles may remain on EASYPRO® at the end of the process, it is recommended to separate the glass (using cork pads, cardboards, cords, ...) in order to avoid scratching the non-coated side. Once the glass is washed (e.g. after grinding), it is not necessary to separate the glass any more until tempering.

Edge deletion with brush milling, felt milling and hand type deletion systems are not suitable.

Please contact your local Technical Support Manager (TSM) to get the up-dated list of validated edge deletion wheels and full cutting table recommended settings.

Edge deletion after tempering is done in normal condition as is done for COOL-LITE® and PLANITHERM® families.

## ■ Edge working

Standard edge working and drilling recommendations used for float glass must be applied.

## ■ Washing

EASYPRO® protected glass must be washed before tempering and must be as clean as coated glass without EASYPRO® with no gloves or finger marks.

The following installation and water quality are recommended:

- Pre-washing area
  - » Prewash ramp followed by one pair of cylindrical brushes;
  - » Tap water between 30 and 40°C, preferably close to 40°C, without any detergent.
- Washing area
  - » At least 2 pairs of cylindrical brushes
  - » Demineralized water, maximum chloride concentration 3 mg/l, pH value 6 - 8.
- Rinsing area
  - » Demineralized water at room temperature; maximum conductivity 20 µS/cm;
  - » Maximum chloride concentration 3 mg/l; pH value 6 - 8.
- Brushes:
  - » Flexible (soft) clean polyamide bristles;
  - » Maximum diameter of 0.2mm, 20-40 mm long;
  - » Take care that all brushes are perfectly clean and regularly maintained. Any hard brush must be lifted;
  - » Compatible rotation speed with soft coatings;
- Drying:
  - » Use an air-blowing installation equipped with filters;
  - » Clean and regularly maintained filters

In case the conditions differ from the above, tests should be carried out in order to assess the capability of the installation.

Please contact your local TSM.

### ■ Permanent marking

Permanent enameled marking (stamp) of the tempered safety glass can be done either on the edge or on EASYPRO<sup>®</sup> layer.

Please refer to the procedure given in appendix.

### ■ Screen Printing

Screen printing, except for the permanent enameled marking (see previous section), is forbidden on to be tempered coatings II with EASYPRO<sup>®</sup>

Use of masking tape to delimit enameled edge-deleted glazing periphery will be on glass processor full responsibility. Removal of the tape may lead to EASYPRO<sup>®</sup> and coating tearing.

### ■ Tempering / Heat Strengthening

It is recommended to undertake the heat treatment as soon as possible after washing the units. However, glass with EASYPRO<sup>®</sup> protection can be stored after washing up to 2 weeks before tempering.

It is mandatory to introduce the glass into the tempering furnace with the coating facing upwards.

EASYPRO<sup>®</sup> coating should be as clean as non-protected coating before tempering. **Any mark like fingerprints, grease, sweat ... may lead to transfer on the magnetron coating during heat treatment.** In case such marks are created on EASYPRO<sup>®</sup>, they can be washed away using isopropanol (or normal glass cleaner if not available).

Tempering conditions (temperature and heating time) for EASYPRO<sup>®</sup> depend on the type of coating as well as on the tempering furnace technology. Contact your local TSM for recipes adapted to your tempering furnace.

Do not use SO<sub>2</sub> in the furnace when tempering heat treatable coatings with EASYPRO<sup>®</sup>. SO<sub>2</sub> must be stopped in time so that no SO<sub>2</sub> remains in the furnace when starting tempering heat treatable coatings. From experience, SO<sub>2</sub> may remain for as long as 48 hours in your furnace after having shut off the SO<sub>2</sub>.

After tempering, the heat treatable coatings products recover their standard properties and the protective film is completely removed. **Removal of the film without tempering is not possible.**

In case the tempering parameters are not adapted some black residues may remain on the glass and cannot be removed. In this case please do contact your local TSM.

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## 4. PROCESSING AFTER TEMPERING

Any further processing after tempering is not different from processing of original coating (for instance: COOL-LITE II without EASYPRO®). Please refer to the appropriate guideline.

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## 5. ENVIRONMENT / WASTE GLASS / HEALTH ISSUES

EASYPRO® can be disposed of as per clear float glass in normal cullet.

Dust generated by edge deletion processing can be treated as standard waste

Edge working residues have to be continuously and completely collected during the grinding process. These residues must be further treated in compliance with national legislation about industrial wastes. In some legislation, residues from grinding process have to be treated as toxic wastes.

As for any dust coming from the grinding process, any inhalation or skin contact of these residues must be avoided.

On request, a Safety Use Instruction Sheet (SUIS) related to EASYPRO® can be supplied. EC Directive 91/155/EEC can be supplied.

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## 6. DISCLAIMER

SAINT-GOBAIN GLASS has taken every reasonable measure to ensure that the information contained in the present leaflet was exact at the time of its publication.

However, SAINT-GOBAIN GLASS keeps the right to modify or add any information without previous notice. SAINT-GOBAIN GLASS is not liable for the possible lack of information on EASYPRO® products that would not be contained in the present document.



No claim can be accepted for damages caused during and after processing due to a lack of adherence to these guidelines. Therefore, glass processor should ensure that the process is adapted for coated glass and that the quality control is relevant to detect any quality problem as soon as possible. In case of claim, samples will be required and a visit from a SGG representative may be requested.

## 7. APPENDIX A: Printing Logos on EASYPRO®

### ■ Screen management

- Make a logo screen with a mesh 77T or 90T.
- Put the screen with the frame on the top direction (Figure 1)
- Enamel has to be used with a viscosity of 15 to 20Pa.s
- Off contact is maintained between frame and glass at 2-3mm
- Enamel is put on the screen, and flood, in homogeneous thickness, with the squeegee on the full design (Figure 2)
- For printing, push on squeegee to have the screen in contact with the glass for enamel transfer (Figure 3)
- Always keep a distance of 2-3mm between glass and screen in the area of printing to have a good transfer

### ■ Remark

- Off contact can easily be made with cork pad at each corner of the screen (Figure 4)



Figure 1 : preparation of screen before printing

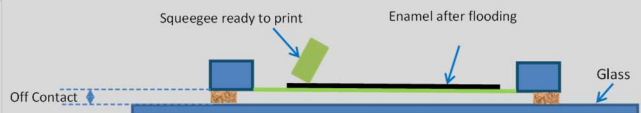


Figure 2 : Screen ready to print, after flooding

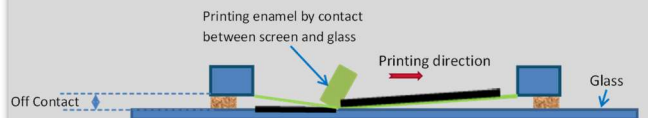


Figure 3 : printing on glass



Figure 4 : Example of off-contact made with cork pad

## 8. Appendix B : PASTE(S) PREPARATION

### ■ Enamels to be used

- 194020 in medium 801026 from VIBRANTZ supplier (System 140 range)
- DV77-357-0 in medium 243 from PEMCO supplier (Vitromail® range)

### ■ Paste conditioning

- Pastes have to be at a temperature between 15°C and 25°C.
- Pastes have to be at the same temperature than the printing room (drums must be in printing room minimum 2h before use).
- Pastes have to be mixed in the drum to guarantee homogeneity before viscosity adjustment and printing (risk of sedimentation of pigments or frit in the drum).

### ■ Paste preparation

- Pastes have to be prepared in dedicated drums, large enough for one production.
- Use of this specific drum should avoid pollution and numerous viscosity adjustments in the same drum.

### ■ Viscosity adjustment

- The viscosity has to be adjusted with medium.
- Viscosity has to be between 15 to  $20 \pm 1$  Pa.s
- Shelf life: 1 week

Enamel must be used in the week after dilution.

Soft mixing in the drum at good viscosity must be made each shift.

### ■ Tools cleaning

- All the elements used for the printing enamels can be cleaned with water.
- All drums have to be cleaned after use and before storage to reduce pollution risk for the next use.

### ■ Example of Viscometers:



Viscometer Haake



VT2Plus



Ford Cup (not suitable for viscosity of 15Pa.s)



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