Stopray - Stopray^{T}
ipasol
iplus

iplus Top 1.1, iplus Top 1.1^{T}, iplus Advanced 1.0, iplus Advanced 1.0^{T}, iplus LS, iplus LST, iplus Energy^{N}, iplus Energy^{NT}, iplus I-Top, iplus Light, iplus Top 1.0, Planibel Top^{N+}, Planibel Top^{N+T}

PROCESSING GUIDE

VERSION 1.0 - SEPTEMBER 2014

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

AGC GLASS UNLIMITED

W A R N I N G

Carefully read this manual before processing Stopray, ipasol & iplus products.

Preliminary Important Instructions

- At each stage of the processing procedure, the personnel responsible for handling the glass must have the appropriate equipment: safety shoes, safety gloves[2], safety glasses, etc.
- Stock sheet shelf life without any protection: the glass must be consumed within 3 months from the delivery.
- Stock sheet shelf life with protection (closed packaging): the glass must be consumed within 6 months from the delivery.
- Cut-sizes shelf life: two weeks after delivery. Once the pack is opened, the glass must be consumed within one day.
- We advise processing and handling this coated glass with care in order to avoid damaging the coating. Personnel responsible for handling must wear clean gloves[2] to ensure that no fingerprints are left on the glass.
- Storage conditions: see below.
- If the glass is handled on the coated side, please use suction cups for protection[1].
- We strongly recommend that everything coming into contact with the coating of the glass during preliminary processing be pre-validated.
- Cutting on the coated side. Volatile oil[3].
- Edge-processing and washing on appropriate machines.
- Heat-treatment: within 48 hours after cutting. A furnace with at least top convection is compulsory. No SO2 inside the furnace.
- Lamination, silkscreen printing, bending: see below.
- IGU assembly: within 5 days after toughening.
- Packaging of cut-sizes: see below.

Further recommendations regarding the product description and processing are available below.

CONTENTS

0. PRODUCTS

This Processing Guide concerns the following products:

Stopray* -Stopray^{T}
ipasol
iplus Top 1.1
iplus Top 1.1^{T}
iplus Advanced 1.0
iplus Advanced 1.0^{T}
iplus LS
iplus LST
iplus Energy^{N}
iplus Energy^{NT}
iplus I-Top
iplus Light
iplus Top 1.0
Planibel Top^{N+}
Planibel Top^{N+T}

Stopray^{T}, iplus Top 1.1^{T},iplus Advanced 1.0^{T},iplus LST and iplus Energy^{NT} (hereinafter referred to as T coatings) are toughenable products and designed to undergo thermal toughening or heat-strengthening.

Stopray, ipasol, iplus Top 1.1, iplus Advanced 1.0, iplus LS, iplus Energy^{N}, iplus I-Top, iplus Light and iplus Top 1.0 (hereinafter referred to as non-T coatings) may not undergo any thermal treatment.

** Stopray Smart and Stopray LamiSmart have their own dedicated Processing Guide.*

I. RECEPTION and STORAGE

1. Unloading

The packs of glass must be inspected upon arrival. AGC will accept no liability for faults arising after delivery or during handling, processing or installation of the finished product in the building if this procedure is not followed:

- The rack must be positioned on perfectly level ground.
- Use the appropriate handling equipment.
- The grab must be perfectly centred.
- Avoid damaging the protective packaging whilst handling.
- The glass must be stored on appropriate racks.
- All recommendations given in this Processing Guide must be followed strictly.

General comments:

- Clamps, slings, lifting beams and other handling equipment must comply with prevailing regulations and be approved by the relevant authorities.
- Ensure the safety of personnel at all times. Keep all unnecessary personnel out of the handling area. Wear appropriate personal protective equipment.
- Personnel must have received the required training.

2. Storage of the packs

Storing packs correctly reduces the risk of chemical or mechanical damage to the glass.

As a general rule, care should be taken to avoid major fluctuations in temperature and humidity that may cause condensation on the glass. Such fluctuations generally occur near loading and unloading areas. No water must be allowed to come into contact with the sheets of glass.

Care should be taken to ensure that the ambient air is not polluted by any corrosive elements such as chlorine or sulphur. Sources of such elements include machinery fitted with heat engines, battery-charging points, road salt on the ground and so forth.

Factory racks are used for packaging during transport and are not designed to be used for storage. Consequently, the PLFs must be stored on racks with spacers between packs ensuring that all packs of the same size are stored together.

General comments
If, despite the precautions taken, marks do appear on the coating (fingerprints, etc.) they should be removed at once using a clean, soft cloth.

3. Packaging and shelf life

3.1. Packaging

The packaging of the glass blocks depends on the type of product and on the final destination.
For some coatings and markets, the glass block is packed with a tape on the perimeter. Desiccant bags are placed between the glass block and the tape.
When unloading the truck, the packaging must be inspected carefully. Any damage must be reported to AGC.

3.2.Shelf life

For non-taped packs, the storage time in the customer facility is three months.
For cut-sizes: two weeks.

II. PROCESSING

0. Safety

At each stage in the processing procedure, the personnel responsible for handling the glass must have the appropriate equipment: safety shoes, safety gloves[2], safety glasses, etc.

1. Cutting

The following specific precautions must be taken when cutting:

- When cutting, the coated side must be face-up to avoid any contact between the coated side and the surface of the table.
- The cutting oil used should be compatible with the coating, sufficiently volatile and water soluble[3].
- The table and any breaking equipment liable to come into contact with the coating on the glass must be pre-validated.
- Cutting personnel must wear clean gloves to avoid leaving finger marks on the coating[2].
- If the glass is to be cut using a template, the template must be positioned very carefully and care must be taken to ensure it does not scratch the coating. We recommend placing a protective sheet of PH-neutral paper between the template and the glass.
- The cut sheets of glass must be stored on racks. Care must be taken when handling them to ensure that the coating on the first sheet does not rest against the back of the rack. All subsequent sheets should be turned the other way.
- No particular spacer is needed if the original interlayer powder is still present. However, if for any reason there is not enough interlayer powder left on the glass, we recommend that you place cork spacers between the sheets[4]. They will be placed on the perimeter of the glass, never in the centre.
- pH-neutral paper or corrugated cardboard can be used, assuming that they are clean and dry.
- The coating around the edge of the glass may be removed during the cutting process, provided that dust from grinding is properly removed.

In the case of the T coatings, we recommend toughening the glass within 48 hours of cutting. The glass should also be shaped and cleaned during this period.

2. Edge deletion

The coatings must be edge-deleted all around the edge of the glass so that the sealing compound makes contact with the glass and not the coating. AGC recommends the grinding wheels described on the last page[8].

The edges must be stripped to the same depth as the sealing compound. The edge of the stripped zone must meet the butyl line. Edge-stripping may be carried out either during the double glazing assembly process or during cutting. In both cases, care must be taken to ensure that dust from grinding is completely removed. The quality of the edge deletion process can be inspected in one of two ways:

- using an ohmmeter (if the ohmmeter does not react, the coating has been correctly removed);
- visual inspection of reflection.

3. Edge processing

3.1 Handling the glass

The personnel responsible for handling and shaping the edges of the glass must wear safety gloves[2].

3.2 Shaping the edges

Several types of edging machine are available on the market:

3.2.1 Crossed belt system
We recommend that personnel work with diamond belts and adhere strictly to the supplier's instructions, specifically in terms of speed and cooling. For thicknesses in excess of 6 mm, we recommend 'smooth edge' shaping.

3.2.2. Vertical single-edging system
Since the glass is held by chain tracks, there is a risk of scratching the coating.

3.2.3. Horizontal double-edging system
It is possible to use this type of machine, provided that the glass is held by smooth, non-textured belts. The speeds of the various belts must be synchronised. Water jets are positioned in such a way that any impurities (e.g. Lucite or glass dust) are rinsed off the coating just before they come into contact with the upper roller belts.

3.2.4. Numerical Control Systems (CNC)
Shaping using a numerically controlled machine is permitted, provided that the glass is placed with the coated side face-up.

General recommendations for edge-processing:

- The glass must remain moist throughout the shaping process in order to prevent 'natural drying'.
- The glass must be washed as soon as it has been shaped.
- The glass may be drilled, provided that the press is covered with a soft protective material.
- The glass may be processed using dry crossed belts, provided that the extraction system is sufficiently effective to remove the dust from grinding.

4. Washing

This stage involves washing, rinsing and drying the glass.

A water spray station should be installed just before the point where the glass enters the washer. This will remove any abrasive elements on the coating (treatment residues) that could cause scratches when the brushes make contact with the coating.

The glass must be washed in clean, deionised water with a pH of 7 (±1) and a conductivity of <30 µS/cm. No hard particles (such as calcium) or acidic/detergent agents should be present in the water used for washing and rinsing as these may damage the coating.

We recommend using 'soft' brushes (bristle diameter <0.15 mm), 1-2 mm of which comes into contact with the glass. There must be enough water to guarantee that the water is distributed evenly and efficiently across the coating before it comes into contact with the brushes.

It is also important not to stop the cycle whilst the glass is in the washer. After washing, micro-suction pads[1] should be used on the perimeter of the glass in the area that is going to be edge-stripped in order to avoid any contact between glass and coating. For large sheets of glass, a sheet of paper should be placed on the centre of the glass.

The glass must be completely dry. We recommend checking that the air filters of the ventilation units are clean.

The glass must be completely dry. We recommend ensuring that the air filters of the ventilation units are clean.

Two or three halogen projectors will be available at the exit of the washer to light the glass correctly (vertically from top to bottom) and even detect and quickly correct any deviations from the requirements listed above.

Summary of the quality of water used for shaping and washing the glass:

	SHAPING	WASHING	
		Washing	Rinsing
Coolant	No	---------	---------
Detergent	---------	No	No
Temperature	---------	< 40°C	< 40°C
pH	7±1	7±1	7±1
Conductivity	---------	< 50 µS/cm	< 30 µS/cm

Unloading the glass from the washer:

- Due to the fact that the interlayer powder is removed during the washing process, we recommend placing micro-suction pads[1] around the edge of each sheet of glass in order to prevent contact between the glass side and the coated side.
- pH-neutral paper or corrugated cardboard can be used, assuming that it is clean and dry.

The personnel responsible for handling the glass must wear clean gloves[2] suitable for handling coated glass.

5. Silkscreen printing

T coatings can generally be used for silkscreen printing as long as the instructions given below are followed:

If the silkscreen printing is to go as far as the edge of the glass, the coating should be trimmed first and the sealing compound should be checked for compatibility with the enamel.
If it is not possible to trim the coating before applying the enamel, the silkscreen printing must be trimmed so that the subsequent coating can be stripped.

Any impurities on the upper surface (coated side) can be removed using a compressed dry-air jet.

AGC recommends using clear-coloured enamels that have a sufficiently high energy reflection level. A dark-coloured enamel will have a relatively high energy absorption level and the coating may be damaged under the enamel during the heating process.

Similarly, when the coverage percentage is very high and confined to a very small area, the printed section of the glass may behave differently to the uncovered section in the quench.
In any case, the final result will depend on the type of furnace used, its parameters, the colour and type of enamel used and the desired pattern. The processor will have to carry out preliminary tests on a case-by-case basis in order to avoid these problems. AGC is not liable under any circumstances for the outcome of the operation.

The presence of enamel on the coating changes the optical properties of the final glass product. These performance properties can be obtained from our Technical Advisory Service (tas@eu.agc.com).

6. Thermal Toughening/Heat-strengthening of T coatings

6.1 Introduction

This section only pertains to T coatings.
T coatings are designed to be assembled in double glazing once they have been toughened or heat-strengthened. We would advise you to process and handle this coated glass with care in order to avoid damaging the coating.

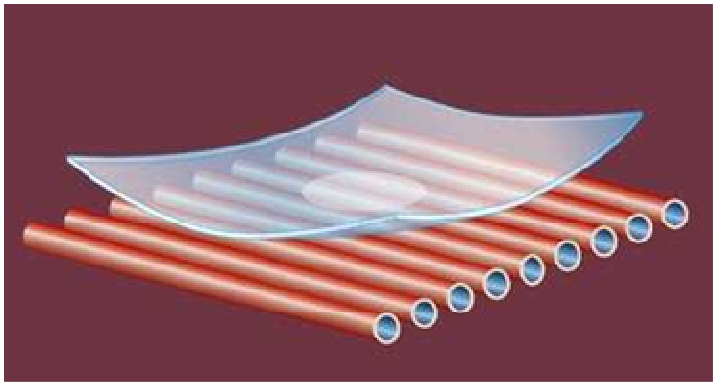
Pre-process defects will generally only be revealed by the toughening process itself and this can cause severe aesthetic defects. **Therefore we strongly recommend that everything coming into contact with the coating of the glass during preliminary processes be pre-validated**.

Please note that T coatings **must** be toughened or heat-strengthened in order to achieve their final specifications and aesthetic properties.

6.2 General

When clear glass is placed in a toughening furnace it deforms considerably (concave shape) during the first heating cycle. The deformation is even more pronounced with low-emissivity glasses such as T coatings.

This is due to the different heating speeds of the surfaces.
In a purely radiation furnace, the lower surface is heated by conduction (contact with the rollers) and radiation (lower heating resistance). Since the upper surface is covered with a low-emissivity coating, which, by definition reflects the radiation emitted by the upper heating elements in the furnace, it does not heat up as quickly. The two surfaces do not, therefore, heat up symmetrically, leading to concave deformation of the glass due to differential expansion (see image below). This phenomenon causes a marking, or even an optical deformation of the glass in the centre of the pane.



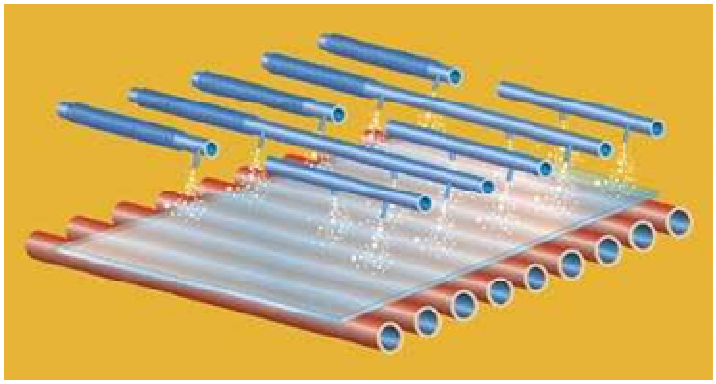
The only way to neutralise these defects is to balance the heating process by projecting additional heat onto the upper surface. Significantly increasing the temperature of the roof does not resolve the problem because the low-emissivity coating will still reflect this increase in radiated energy. Moreover, this will cause the rollers to overheat which could aggravate the problem.

The only solution is to create additional energy via **convection over the upper surface**.

This can be done by creating an air flow over the upper surface that is hotter than the glass itself. The air is provided by an external compressor and is pre-heated in the furnace before it is pumped over the upper surface of the glass via rollers fitted with jets (see figure below). Another technique involves drawing hot air out of the furnace and pumping it back in again (re-circulation).

The latest generation of convection furnaces no longer have internal radiation elements. They only heat the glass using pre-heated air.

This additional air supply to the upper surface of the glass helps:
- Keep the glass flat during the heating process and avoid the aforementioned defects.
- Significantly reduce the heating time and therefore boost the productivity of the plant.



6.3 Recommendations

- We recommend toughening or strengthening the T coatings within 48 hours of cutting.
- The glass must be placed with the coated side face-up.
- The personnel handling the glass must wear clean gloves[2]. Larger and heavier sheets should be handled with suction pads covered with a protective material[1].
- Prior to toughening, markings may be made on the upper side of the glass coated with a T coating.
- We recommend stopping the SO2 supply in the toughening furnace at least 24 hours before toughening this kind of glass. The combination of SO2 and a preliminary process that is not completely correct may change the appearance of the product.
- Regarding the furnaces heated by gas, some coating deterioration could occur. This will give some hazy appearance on the top layer of the coating. The level of haze depends on the gas composition and can be totally or partially washed.

6.4 Settings

Each furnace has its own settings for heating and toughening. As a result, the following recommendations should be taken as general guidelines.

The furnace settings depend on:

1. The product to be toughened

a. dissymmetrical absorption (emissivity of the coating/absorption of the substrate)

b. glass thickness

c. glass/furnace dimensions

2. Type of furnace

a. power density

b. convection rates
- radiation with compressed air (type A)
- radiation with re-circulation (type B)
- convection (type C)

c. heating geometry (relative position of the heating/thermocouple/glass elements).

In practice, it is advisable to start with volumes of 1,500 x 1,500 mm

1. *Temperature* 700°C at the top and bottom

2. Cycle time

a. Furnace type A: 60-75 sec/mm
b. Furnace type B: 50-55 sec/mm
c. Furnace type C: 40-45 sec/mm

3. *Convection*

The convection profile will be modified to obtain a flat sheet of glass as quickly as possible and to maintain this flatness until the end of the heating process. If, despite a maximum convection rate, the glass retains a concave profile for too long, the temperature on the lower side will need to be reduced by 20-30°C.

The cycle time will be adjusted to prevent breakage in the quench and obtain an acceptable optical quality.

The quench parameters will be set to ensure that the glass comes out flat (top/bottom air balance) and that the desired break pattern is achieved.

Note: For very low-emissivity products, a much higher air pressure needs to be applied to the upper surface of the glass during the actual toughening process. This is due to the fact that the coated surface does not cool down through radiation whilst the lower surface does. This phenomenon is all the more noticeable when the air pressure is low (very thick toughened glasses > 8 mm and heat-strengthened glass > 6 mm). A quench capable of producing highly dissymmetrical air pressure flows is therefore required.

For further information, please contact the AGC Technical Advisory Service (tas@eu.agc.com).

6.5 Unloading

- If the glass is unloaded manually, the personnel must wear clean gloves[2].
- Larger and heavier sheets should be handled with a suction-pad lifting beam. The suction pads must be covered with a protective material[1]. The toughened sheets are then stored on racks.
- Care must be taken when handling them to ensure that the coating on the first sheet does not rest against the back of the rack. All subsequent sheets should be turned the other way.
- Given that toughened glass sheets are never perfectly flat, micro suction pads[1] should be placed around the edge of each sheet of glass in order to prevent contact between the glass and the coatings. For large volumes, pH-neutral paper can be placed in the centre to avoid all contact with the glass/coating during handling and transport.

6.6 Heat soak test

The risk of spontaneous breakage due to nickel-sulphide inclusions is inherent to thermally toughened glass. The presence of such inclusions can in no way be considered a fault in the glass. In order to eliminate the risk of spontaneous breakage, an additional heat soak test can be carried out in accordance with standard EN 14179-1 (or equivalent standards for countries outside the EU).

AGC highly recommends using electrical equipment for T coatings. Gas-fired furnaces must not be used for heat soak tests due to the risk that the coating could react with the smoke.

Interlayers should only be placed on the perimeter of the glass.

6.7 Quality control

The declared properties of toughenable coatings correspond to the performance after toughening. The coating will have achieved the performance indicated once its temperature reaches 500°C.

The electrical resistance of the coating is an indicator of this change in properties during the toughening process. Resistance (measured with a four-point probe) must be maintained below 3 ohm/square for the T coatings.

Heat-strengthened products offer the same optical and energy performance as the toughened version.

For further information, please contact the Technical Advisory Service (tas@eu.agc.com).

After the toughening process, the T coatings should be inspected as follows:

- The coating is inspected in accordance with EN 1096-1*.
- Toughened glass must comply with EN 12150-1*.
- Heat-strengthened glass must comply with EN 1863-1*.
- Any Heat Soak Tests (HST) must be carried out in accordance with EN 14179-1*.

*Or equivalent local standards for countries outside the EU.

Note: For the EU, the T coatings must be CE marked in accordance with EN 1863-2, 12150-2 or EN14179-2. In accordance with EU regulations, all the requirements set out by these standards (ITT, FPC, etc.) must be met by the processor.

6.8 Packaging

If T coatings are not assembled in double glazing in the same factory, the following recommendations for packaging must be followed:

- A 1-mm polyethylene foam spacer[6] should be placed between each sheet.
- The pack of glass should be packaged in watertight plastic. Sachets filled with desiccant should be place inside the packaging[7].
- Care must be taken to ensure that the pack is properly attached to the rack so that the sheets do not rub together.
- The glass will be assembled into insulating glass within one week after it has been toughened.

7. Bending

This section only pertains to T coatings.

Bending tests have been carried out in different types of bending furnaces.

The following general recommendations refer to 6 mm Stopray-Vision 50^{T}. Other thicknesses and T coatings have not been evaluated as such and require preliminary validation tests by the glass processor. This is particularly important for glass sheets thicker than 6 mm that will be subject to higher temperatures for a longer period of time.

The technical values stated (cycle times, temperatures and so forth) were noted during tests on certain types of bending equipment and obviously depend on the individual characteristics (shape, strength, convection rate and so on) of the equipment. The recommendations set out here are therefore intended as general guidelines and preliminary tests must be carried out for each bending furnace.

7.1 Curved annealed glass (on a concave mould)

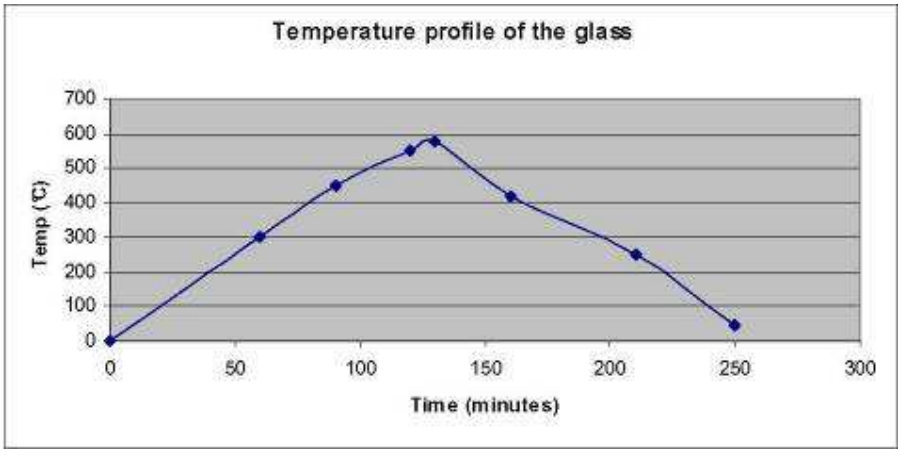
Only bending ovens with upper and lower heating elements and with an upper convection system are suitable for bending T coatings. The coating must always be in position 2.

All instructions regarding pre-processing (unloading, storage, cutting, shaping, washing and handling) must **be strictly followed**.

The glasses should be shaped to a smooth ground edge.
- Place the T coatings on the concave mould (coated surface facing upwards).
- Apply the appropriate packing powder (generally crystalline silica).
- Place a sheet of float glass on top.

Heating/cooling parameters

- The temperature **must not exceed 580 °C.**
- The temperature must be adjusted so that the **upper surface of the glass** describes the following curve as closely as possible.



Note: The final heating phase must be adjusted according to the position of the glass in the bending mould.

7.2 Curved toughened glass (on a concave mould)

7.2.1. Static furnace

- The glass is placed on a **concave mould** with **the coated surface facing upwards**.
- The furnace has heating elements on each of the six surfaces within the furnace and has an upper convection system composed of compressed air pipes (P = 2 bar).
- The temperature of the **furnace** must gradually reach its final value (640 ℃) (line ar progression).
- The glass must be transferred to the toughening section one to two minutes after it has completely bonded to the support.
- The cycle time is 15 to 20 minutes and depends largely on the size of the glass and the radius of curvature.
- The lower blow pressure is identical to that used for clear float glass of equal thickness.
- The upper blow pressure must be increased by 10 to 15%.

7.2.2. Conveyor furnace

- The glass is placed in the furnace with the coated surface facing upwards.
- The furnace is equipped with one of the latest upper convection systems.
- The temperatures should be 700 ℃ and 680 ℃ in the upper and lower sections respectively.
- The cycle time is 400 seconds (this should be adjusted according to the size of the glass and the radius of curvature).
- Convection pressure: 70% of the maximum value for 220 seconds.
- This is followed by a linear decrease to 0% at the end of the heating cycle.
- The glass is then transferred to the bending/toughening section.
- The lower blow pressure is identical to that used for clear float glass of equal thickness.
- The upper blow pressure must be increased by 10 to 15%.

For further information, please contact the Technical Advisory Service (tas@eu.agc.com).

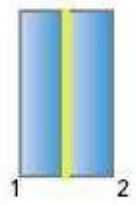
8. Use in single glazing

Use in single glazing is not allowed.

9. Lamination

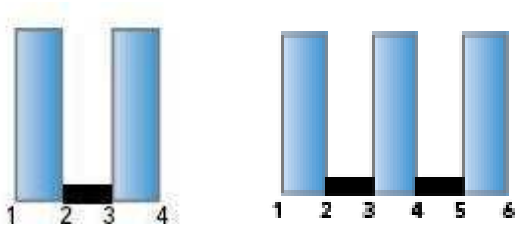
The coatings can be laminated. However, we recommend that the coating not come into contact with the PVB.

Given the low emissivity of the coatings, the parameters of the laminating process should be adjusted.



10. Assembly in insulating glass units

The coatings are designed to be assembled in insulating glass units with the following restrictions for the coating position.



	Coating position in the DGU*			
	1	2	3	4
Stopray, ipasol, iplus Energy^{N}, iplus Light	x	V	x	x
Stopray T, iplus Energy^{NT}	x	V	x	x
iplus Top 1.1, iplus Advanced 1.0, iplus I-Top	x	o	V	x
iplus Top 1.1^{T}, iplus Advanced 1.0^{T}	x	o	V	x
iplus LS, iplus LST	x	o	o	x

V Recommended
O Possible, but not recommended
X Prohibited

	Coating position in the TGU*					
	1	2	3	4	5	6
Stopray, ipasol, iplus Energy^{N}, iplus Light	x	V	x	x	x	x
Stopray T, iplus Energy^{NT}	x	V	x	x	x	x
iplus Top 1.1, iplus Advanced 1.0, iplus I-Top	x	V	x	x	V	x
iplus Top 1.1^{T}, iplus Advanced 1.0^{T}	x	V	o	o	V	x
iplus LS, iplus LST	x	V	o	o	V	x

*AGC recommends performing a thermal shock assessment.

The glass should be assembled in insulating glazing within one week after being toughened.

The individual responsible for assembly must check that the coating is compatible with the sealing products.

Since all the T coatings and non-T coatings are highly neutral in appearance, AGC recommends indicating the external surface after assembly to ensure that the units are installed correctly.

Note: For the European Union, IGUs must be CE marked in accordance with EN 1279-5. In accordance with EU regulations, all the requirements set out by these standards (ITT, FPC, etc.) must be met by the processor.

Quality control

It is essential to check that the coating is in the correct position before assembly. Any mistakes could lead to changes in performance and/or appearance.

Quality control for the final product (insulating glass) involves not only strict compliance with the instructions set out in this processing guide, but also meticulous checks at each stage in the manufacturing process.

Two or three halogen projectors must be placed at the exit of each processing machine to light the glass correctly (vertically from the top to the bottom) to immediately detect any deviation from the regulatory parameters that could affect the appearance of the coating (e.g. scratches or other contamination).

11. Use in structural glazing

When installation or assembly is by mechanical methods, structural glazing or other techniques, tests for compatibility and adherence of the coating or the glue must be performed in each case with the manufacturer of the glue.

12. Identifying the coated surface

Before the shaping process, the coated side can easily be identified by the cut, which is visible on the edge of the glass.

After shaping, and until the glass is assembled in double glazing, the coating may be identified using an electric tester, available on request from any AGC representative. Nonetheless, we recommend carrying out this test somewhere around the edge of the glass in an area that will later be stripped before the glass is assembled into double glazing.

13. Storage of cut-sizes/IGUs

13.1 During processing in the same factory

After each processing step, when the glass is stored on racks, no particular spacer is needed if the original interlayer powder is still present. If for any reason there is not enough interlayer powder left on the glass, and particularly after washing, we recommend that you place cork spacers between the sheets[4]. The same recommendations apply for packs containing sheets with multiple dimensions.

Storage must comply with the recommendations set out in section I.2

13.2 On site

When the glazing is delivered on site for installation in the facade, it must be stored in a dry, sheltered and ventilated space. It must never be laid flat, nor stored in the sun or near a heat source.

III. CONFORMITY and WARRANTY

1. Conformity

T coatings and non-T coatings comply with standard EN 1096-1, category C.

Information regarding inspection conditions and quality criteria are available in that standard.

2. Warranty

The warranty is available on www.yourglass.com.

3. CE Marking

All information and declarations related to the CE Marking of T coatings and non-T coatings are available on www.yourglass.com/CE.

Where customers process these coatings (heat-strengthening, toughening, lamination, assembly in IGUs), they are responsible for CE marking processed products and fulfilling the associated requirements (performing initial type tests (ITTs), marking the glass, factory production control, etc.).

4. Disclaimer

It is the responsibility of the processor to inspect the processed coated glass adequately before and after each step of fabrication and prior to installation. Failure to apply all professional standards, customary instructions and processing instructions set out in this processing guide and related links will automatically void any warranty pertaining to AGC coated glass. We advise the processor to undertake preliminary trials with the typical glass compositions for the project prior to any further commitment with its customer. The processor is solely responsible for the quality of the final product.

IV. GLAZING INSTRUCTIONS

AGC's glazing instructions are available at www.yourglass.com.

V. CLEANING ON THE FACADE

Cleaning instructions for glazing installed in facades can be found at www.yourglass.com.

VI. NOTES

[1] Recommended protective material for suction pads
Product description: suction cup housing
Note: max. diameter: 300 mm.
Supplier: IMPEXACOM
Rue des Tourterelles 14-16
B-5651 Thy le Château - Belgium
Tel.: +32 71 612145
Fax: +32 71 612164

[2] Recommended gloves
Product description: HYD TUF 52-547 (glove size 8-10 for handling coated glass)
Supplier: IMPEXACOM
Rue des Tourterelles 14-16
B - 5651 Thy le Château - Belgium
Tel.: +32 71 612145
Fax: +32 71 612164

Product description: Profas contact gloves
Supplier: UVEX SAFETY Gloves
GmbH & Co. KG
Elso-Klöver-Str. 6
21337 Lüneburg - Germany
Tel.: +49 4131 9502-0
Fax: +49 4131 84 33 8
gloves@uvex.de

Product description: Monsoon, yellow
Supplier: Kächele Coma Latex GmbH
Industriepark Rhön
Am Kreuzacker 9
36124 Eichenzell - Germany

[3] Recommended cutting oil
Product description: ACPE 5503 cutting oil
Supplier: Aachener Chemische Werke
Rostocker Str. 40
41199 Mönchengladbach - Germany
www.acw-info.de/en/Application

[4] Recommended spacer
Product description: Cork disks with micro suction pads (3x20x20 mm)
Supplier: VITO Irmen GmbH & Co.KG
Postfach 1720,
53407 Remagen - Germany
Mittelstraße 74-80,
53424 Remagen - Germany
Tel.: +49 (0) 2642 4007-0
Fax: +49 (0) 2642 42913
info@vito-irmen.de
www.vito-irmen.de

[6] Recommended packing foam
Product description: 1 mm packing foam
Supplier: Storopack
Hans Reichenecker GmbH
Untere Rietstrasse 30
72555 Metzingen - Germany
Tel.: +49 (0)7123 164 0
Fax: +49 (0)7123 164 119
info@storopack.com

[7] Recommended sachets of desiccants
Product description: desiccating agent in 125 g sachets
Supplier: STOKVIS
Vilvoorde - Belgium
Tel.:+32 2 255 06 11

[8] Recommended supplier for edge-deletion wheels
Product description: Tyrolit "blue" A 80-BE 1556 / Tyrolit "gray" A 1507-BE 15 TF
Supplier: ROTTLER RÜDIGER PARTNER GmbH
Mühlsteig 57
90579 Langenzenn - Germany
www.rur-online.com/

Product description: Elka 10A 150 A7 E 100/379
Supplier: Elka Schleif- und Poliermittel GmbH
Gewerbestraße 11
86879 Wiedergeltingen - Germany
www.elka-elastic.com/