

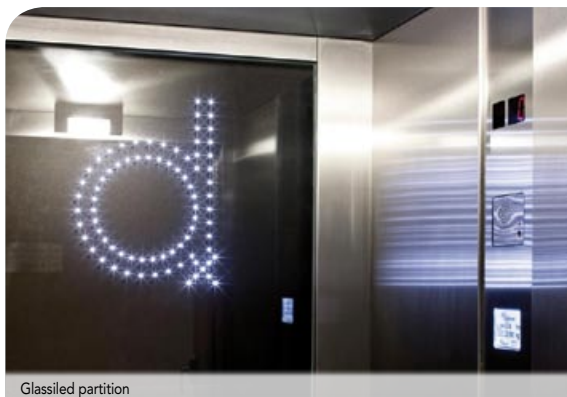
# IV. BRANDS AND PRODUCTS

## 4. GLASS + LEDS

- 4.0 Introduction
- 4.1 Glassiled

[www.yourglass.com](http://www.yourglass.com) – [www.glassiled.com](http://www.glassiled.com)

# INTRODUCTION



Glassiled partition

Light is a vital part of our everyday lives. It is a major source of inspiration when planning working spaces, homes and commercial buildings. It drives architects and designers to find materials which can be used for specific applications to create a certain atmosphere or express creativity. Keenly aware of this trend, AGC Glass Europe has designed a product which combines the durability of laminated safety glass with LED technology. Natural light, artificial light and transparency are now available in a single product: Glassiled.

## ▼ THE LATEST TECHNOLOGY

Glassiled is the culmination of research into the relationship between glass and communication, and its production represents a real technological achievement and a first for the industry. The principal behind this innovative product is simple: the LED (i.e. the light source) is sandwiched between two sheets of glass with no visible wires. The colour and number of LEDs and the base glass used can all be varied, allowing the product to be customized. Glassiled capitalises on all the advantages of LED technology: long life, intense light and the possibility of varying the colours (RGB).

For further information: [www.glassiled.com](http://www.glassiled.com)

[www.yourglass.com](http://www.yourglass.com)

# GLASSILED



Glassiled showcase

## ▼ DESCRIPTION

Glassiled is a new range of laminated glass with embedded **Light Emitting Diodes\*** (RGB or Monocolour). The LEDs are powered through a high performance invisible conductive coating.

The range includes:

- > Glassiled-Shelves/ Showcases
- > Glassiled-Mirrors
- > Glassiled-Partitions
- > Glassiled-Façades
- > Glassiled-Balustra
- > Glassiled-Wall cladding
- > Glassiled-Industrial Products.

Award winning product: Design Trophy-Gold - Batimat 2007; Renover Paris 2008.

\* Light Emitting Diodes, LED.

## ▼ BENEFITS

- > Unique combination of transparency and light: light sources float on the glass without any visible wiring on the glass sur-

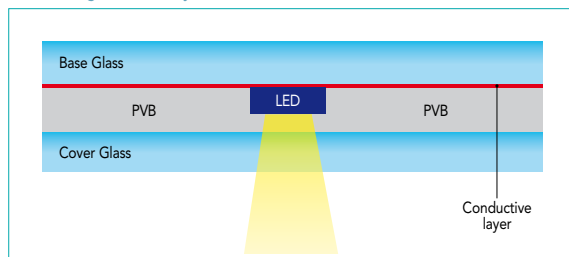
face. Enjoy the full transparency and elegance of the glass. Glassiled can be used for signalling, decoration, illumination and even for lighting in monocolour applications

- > Each project is exclusive: light can be dispersed into the glass in many possible ways - the range of effects is unlimited from the very subtle to the most impressive. Architects and designers have a completely new palette of creativity at their disposal
- > Plug and Play: Glassiled is an easy to install product leading to significant time and cost savings. Specific light -installations and replacement of light sources are no longer required
- > Most advanced glass technology: Glassiled delivers enhanced solar control, thermal insulation, light transmittance, safety, security and acoustic protection thanks to possible combinations with the most advanced AGC products
- > Production excellence: a fully automated line houses all phases of the production under one roof. Glassiled meets the strict AGC Glass Europe quality standards making it the most reliable product on the market
- > Glassiled-Shelves & Showcases:
  - Light without obstruction
  - Space-saving
  - Creativity
  - Capitalising on the pulling power of Glassiled
  - Instant atmosphere
  - No thermal dissipation or radiation
  - Protection from break-ins and ultra-violet radiation
  - Quick and easy to install
  - Production excellence.
- > Glassiled-Mirrors:
  - Floating light
  - Create a luminous balustrade
  - Instant atmosphere
  - Integration in the ground
  - Safe
  - Low thermal dissipation
  - Quick and easy to install
  - Production excellence.

- > Glassiled-Partitions:
  - Everything is flat and simple
  - Create your light effect on partitions
  - A range of designs created by AGC
  - Instant atmosphere
  - Low thermal dissipation
  - Quick and easy to install
  - Production excellence.
- > Glassiled-Facades:
  - Transparent during the day, colours at night
  - Creative freedom
  - Visibility
  - Wide range of features
  - Aesthetically pleasing
  - Façade lighting control
  - Production excellence.
- > Glassiled-Balustra:
  - Floating light
  - Create a luminous balustrade
  - Instant atmosphere
  - Integration in the ground
  - Safe
  - Low thermal dissipation
  - Quick and easy to install
  - Production excellence.
- > Glassiled-Wall cladding:
  - Light without obstruction
  - Decorate and liven up your walls
  - Choice of colour
  - Shock-resistant and safe
  - Easy to install
  - Production excellence.
- > Glassiled-Industrial products:
  - Elegant and simple
  - Create a product that stands out from the crowd
  - Decoration and functional lighting
  - Vibration resistant

- Low thermal dissipation
- Technical assistance
- Production excellence
- High capacity and competitiveness.

Laminated glass assembly with embedded LED



Thicknesses (mm)	3	4	5	6	8	10
<b>Base Glass</b>						
Planibel Clear	○	○		○		
Matelux Clear	○	○		○		
Planibel Clearvision		○		○		
<b>Cover Glass</b>						
Planibel clear & coloured	○	○	○	○	○	○
Matelux clear & coloured	○	○	○	○	○	○
Planibel Clearvision		○	○	○	○	○
Imagin Screen		○		○		
Imagin Satinbel, Crepi		○		○		
Stratobel				○	○	○

- > Above glasses might not fit with every Glassiled product. More info on individual data sheets
- > On request: Cover Glass in Planibel Coloured, Sunergy, Stopsol and other AGC glasses
- > On request: tempered glass
- > Glassiled can be integrated in a double glazing unit.

## ▼ HOW TO DESIGN GLASSILED?

LED type	Decorative / Signalling		Lighting
	Standard	Extra high power	Extra high power
Shelves - Showcases	○		○
Mirrors	○	○	○
Partitions	○/○○		
Balustra	○		
Wall cladding	○/○○		
Industrial Products	○	○/○○	○

○ Monocolour LED - ○○ RGB LED

Glass					
Dimensions	Min = 200 x 600 mm		Max = 1500 x 2700 mm		
Max. PVB thickness <sup>(1)</sup>	1.5 mm (exception: 3 mm for high power RGB)				
Edge finishing	- Standard: lamination of grinded glass with PVB (length tolerance between Cover and Base Glass is ± 1 mm) - On request: - Option 1: Lamination of grinded/polished edge glass with PVB (tolerance ± 1 mm) - Option 2: Anodised aluminium rail (U profil 30 mm wide) - Option 3: Flat grinded/polished edge glass after lamination				
Glass finishing	On request: special mono or bi-component silkscreen printing				
LED					
Colour	RGB or Monocolour (cool white 6200K, warm white 3000K, red 640nm, green 640nm, blue 464nm)				
Type	Standard (Decoration - signalling)		Extra high power		Harsh environments
	Monocolour	RGB	Monocolour	RGB	Monocolour or RGB
Min. distance between LEDs	15 mm	50 mm	30 mm	50 mm	50 mm
Min. distance between LEDs and glass edge	30 mm	50 mm	30 mm	50 mm	50 mm
Max. number of LEDs /m <sup>2</sup>	200	100	200	100	150
Intensity <sup>(2)(3)</sup>	10 to 600 mcd /LED		100 to 1700 mcd /LED		100 to 1700 mcd /LED
Light Flux <sup>(2)(3)</sup>			4 to 6 lm/LED		
Max. number of non-overlapping circuits	- Monocolour: 3 - RGB: 1				

Electrical parts	
Controls	- Standard: On/Off - On request: dimming, remote control, synchronization, special effects, animation
Power supply	Properties depend on product size, number of LEDs, LED type and arrangement
Electrical contact	1 or 2 connecting cable(s) with plug out of the glass
Use	
Restrictions	- All conditions applicable to AGC laminated glass (Stratobel) are valid - Internal use only, except for Façades - MAX operating temperature (with LEDs on): 35 °C - MAX storage temperature (with LEDs off): same as Stratobel
Certification	- Laminated glass standards: compliance to EN 14449 - Electrical Safety standards: compliance to EN 60598-2-1 - Protection: Class II/IPx4 - Electromagnetic compatibility standards: compliance to EN 55015, EN 61000-3-2, EN 61000-3-3, EN 61547

- (1) As all laminated glass products Glassiled can have small air bubbles close to the edge of the glass or near electrical connectors. In specified thermal conditions for Glassiled, these bubbles are stable and can not cause delamination.
- (2) The LED light intensity and flux decrease slowly over time. This is inherent to the LED technology. The life time of the current LED technology guarantees 50.000 hours at more than 50% of the initial light flux. This value is typical statistical value and large variations can exist especially but not only in function of conditions of use. The light intensity and flux generated by LEDs in one Glassiled can vary from LED to LED. A small colour variation from LED to LED is also possible and acceptable. As all laminated glass products Glassiled can have small air bubbles close to the edge of the glass or near electrical connectors. In specified thermal conditions for Glassiled, these bubbles are stable and can not cause delamination.
- (3) For 4 mm clear glass and function of LED colour.

In all cases, the AGC technical team will review the LEDs arrangement and validate the feasibility. Other glasses or coating types, specific glass shapes, different electrical connections can also be evaluated by the technical team.

## ▼ APPLICATIONS

- In all illuminated displays and pieces of furniture for:
  - Shops, showrooms
  - Kitchens, bathrooms
  - Bookcases, wardrobes
  - Clean environments.
- Work and lifestyle spaces:
  - Hotels, restaurants, cafés, bars
  - Leisure complexes
  - Events or commercial centres
  - Offices
  - Transport: boats, trains, etc.
- For façades, atriums and conservatories:
  - Offices, public or private buildings.
- And many other applications...



Brussels Airport Satelliet, Zaventem, Belgium - Architects: Storme & Van Ranst