

MIRALITE REVOLUTION

PURE REFLECTION



GLASS INTERNATIONAL



SAINT-GOBAIN

MIRALITE REVOLUTION

AN INNOVATIVE MIRROR WITH EXCEPTIONAL PURITY



The ecological footprint of MIRALITE REVOLUTION has been reduced by working on every step of its life cycle.

A product which favours well-being and health, with no toxic substances.

Quality and durability remain unchanged, a performance which is the outcome of a major Research and Development programme.

Attractive appearance to create light and convivial living spaces.



Cascade Hi-Tech, Paris

LIGHT, SPACE AND DESIGN

APPLICATION

The properties of MIRALITE REVOLUTION help enhance internal spaces (increased light levels, conviviality, ambience complemented by original designs).

It is ideal for use in the home (bathrooms, hallways...) and in professional settings such as offices,

businesses, hotels, restaurants, sports halls...

Available in different shape to create new dimensions: framed or unframed mirror, wall cladding, item of furniture (table, cupboard door, shelf), signage...



RANGE

	Thicknesses (mm)															
	3			4			5			6						
Dimensions (mm)	3210 x 2000	3210 x 2140	3210 x 2250	3210 x 2440	3210 x 2000	3210 x 2140	3210 x 2250	3210 x 2440	3660 x 2440	3210 x 2250	3660 x 2440	3210 x 2000	3210 x 2140	3210 x 2550	3210 x 2440	3660 x 2440
Bronze	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Clear	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Diamant									•	•				•		•
Grey	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Please contact your Saint-Gobain sales representative to check the availability.



A LASTING REFLECTION, WITH A MIRROR THAT IS SAFER FOR HEALTH AND THE ENVIRONMENT



Energy and raw materials

Management of natural resources
 In 3 years, 10% energy reduction for glass production
 30% recycled glass in the composition of the mirror

1 ton recycled glass



255 to 300 kg less CO² emissions!



Manufacture

Reduce, Re-use, Recycle (the 3R principle): an objective which is progressing all the time

- Reduction of CO₂ and dust emissions (electro-filters)
- Re-treatment and Re-use of water used by 30%
- Recycling of metal residues (palladium, silver), rare earth (cerium oxide) and cullet (glass debris)

No hazardous substances, as specified in the REACH¹ regulation

The factories have equipment for the recovery and treatment of solvents emitted during manufacture

Certified factories:
 ISO 14000 (environment),
 ISO 9001 (quality) and
 OHSAS 18001 (safety)



Logistics

Minimise the kilometres covered and CO₂ emissions

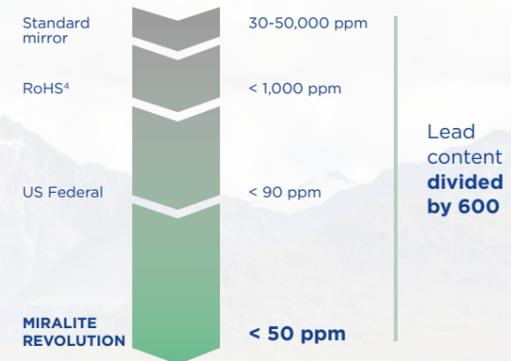
- The mirrors are produced on the same site as the glass



Environment and health

No lead* added

A minuscule concentration of natural lead (less than 50 ppm²). Well below the levels specified by all current regulations



Lead content in dry paint following ISO 11 885, taken by TÜV³

Maintain the quality of the air inside

MIRALITE REVOLUTION is a design material which is remarkable due to its very low emissions of Volatile Organic Compounds (VOC)** and formaldehyde**

	Measurements after 28 days	
	Total VOC (as Toluene equivalent)	formaldehyde (with DNPj method)
MIRALITE REVOLUTION	≤ 6 µg/m ³	≤ 5 µg/m ³
AFSSET ⁵ /AgBB ⁶	< 1,000 µg/m ³	10 µg/m ³

Measurements following ISO 16000 taken by EUROFINS

Produced **without copper** and contains **no phthalate** (substances in some plasticisers)



Durability and quality

Exceptional quality and longevity

MIRALITE REVOLUTION offers an environmentally-friendly alternative, while retaining the technical performance of Saint-Gobain Glass mirrors:

- Excellent durability characteristics
- Exceeds the requirements of standard EN 10367

Type of test	Standard EN 1036	MIRALITE REVOLUTION
Neutral Salt Spray (NSS) ISO 9227 after 480H		
Maximum corrosion of the edges (µm)	≤ 1,000	50
Cupro-Acetic Salt Spray (CASS) ISO 9227 after 120H		
Maximum corrosion of the edges (µm)	≤ 1,500	250
Water Condensation - Appendix A EN1036 after 480H		
Maximum corrosion of the edges (µm)	≤ 200	50

- MIRALITE REVOLUTION carries the CE mark and its performance is constantly monitored

(*) Lead is a powerful anti-corrosive agent traditionally used in paint applied to the back of mirrors. It is potentially dangerous to health and the environment.

(**) Volatile organic compounds (VOC) and formaldehyde are organic chemical substances that can be easily spread at room temperature. With a high concentration indoors, this can cause health problems (eye irritation, breathing problems, etc.).

¹REACH (Registration, Evaluation and Authorisation of Chemicals): European regulation concerning the safe use of chemical substances.

²ppm (parts per million): Unit used to measure low concentrations of materials. One ppm corresponds to a ratio of 10⁻⁶, i.e. one gram per ton.

³TÜV (Technischer Überwachungs-Verein): inspection and standardisation German agency certifying the safety and quality of products.

⁴RoHS: European Directive 2002/95/CE on Restriction of the use of certain Hazardous Substances in electrical and electronic equipment.

⁵AFSSET: French Agency for Environmental and Occupational Health Safety (France).

⁶AgBB: Committee for health-related evaluation of building products (Germany).

⁷EN 1036: European standard concerning the quality of interior mirrors (glass in building).



PROCESSING

Numerous edgeworking options

MIRALITE REVOLUTION is suitable for cutting into all types geometric or non-geometric shapes. It can be drilled and edgeworked (bevel, chamfer, etc.).

MIRALITE REVOLUTION can be customised with a logo, a sandblasted design, or engraved on the face opposite the coating.

MANUFACTURING PRINCIPLES

Paint 2: protection against abrasion and scratches: miniscule emissions of Volatile Organic Compounds

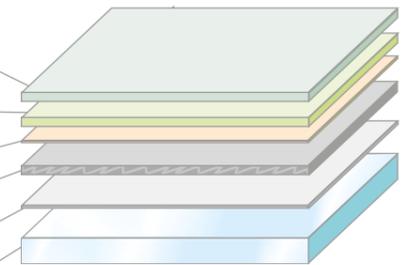
Paint 1: protection against corrosion: no added lead (<50ppm)

Post-treatment: adhesion / durability

Silver: reflection

Pre-coat: chemical activation

Glass



**OPTICAL PERFORMANCE
MIRALITE REVOLUTION**

Thicknesses	% LRe minimum
3 mm	93
4 mm	92
5 mm	91
6 mm	89

Measurement of reflectance shall be undertaken in accordance with the principle of EN 410, but with the angle of incidence of the light within 8° of normal.

INSTALLATION AND MAINTENANCE - PRACTICAL GUIDELINES

Fixing

■ **Channel glazing in a frame**

Ensure that the frame is clean and dry. Position the mirror on a counter on blocks at least 3 mm thick, to raise the mirror and avoid any contact with condensation water that might collect in the frame.

■ **Fixing pads**

Provide suitable fixings. Avoid contact between the glass and metal by using plastic spacers and washers. Attach the mirror without applying excessive pressure.

■ **Adhesive fixing**

Secure MIRALITE REVOLUTION using a mirror adhesive or alcohol-based or oxime-based neutral silicone only, together with double-sided adhesive pads. Follow the instructions of the adhesive manufacturer.

* If there is any doubt whether the products used are neutral, it is essential to carry out a test on the paint.

Exterior installation

Please contact with SAINT GOBAIN for details.

Maintenance

Do not use harsh products (acid solutions, highly alkaline or very abrasive materials). Ensure that no residue from cleaning products is left around the edges.

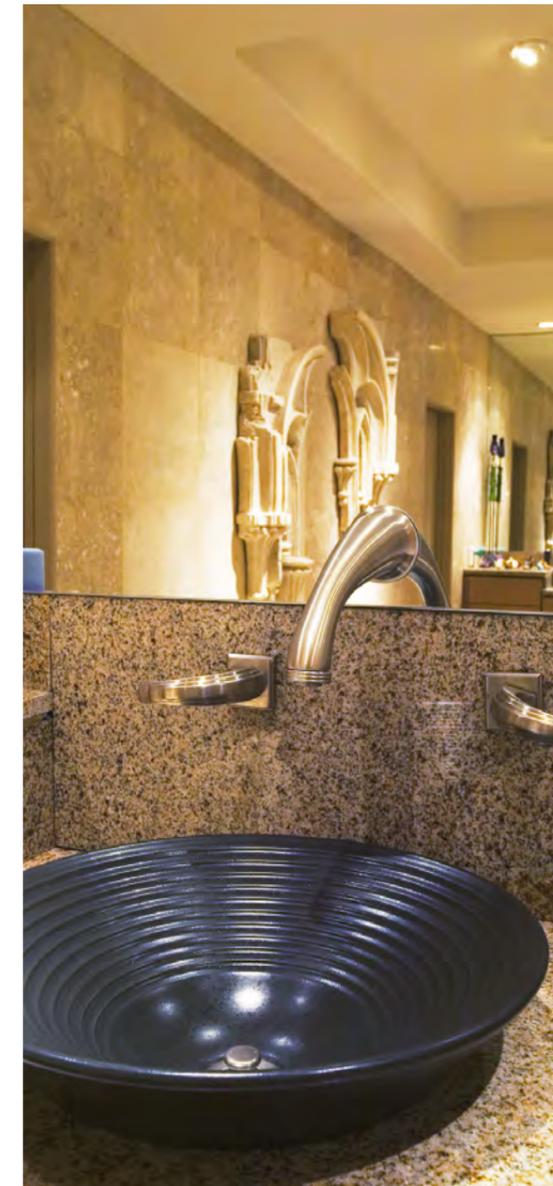
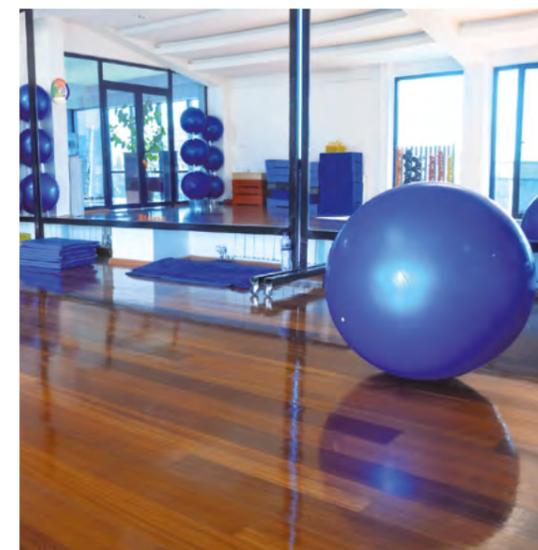
Safety

MIRALITE REVOLUTION must be installed in accordance with the current regulations. It is often necessary to use a mirror with a safety film.

In all cases:

Irrespective of how the mirror is attached, ensure the following:

- Install the mirror on a supporting wall that is stable, clean and dry, free from harsh substances and absolutely flat.
- Provide sufficient space between the supporting wall and the mirror to ensure good ventilation (5 mm for mirrors less than 1 m tall; 10 mm for a larger mirror).
- Leave space of 1 to 2 mm between mirrors when they are installed side by side.
- Avoid placing the mirror near a source of heat (light, heating etc.)





OUR SUSTAINABILITY JOURNEY

OUR MISSION IS TO CREATE GREAT LIVING PLACES AND IMPROVE DAILY LIFE, WHILE PRESERVING THE FUTURE OF ALL

This commitment is driven by our Glass Forever program, with the help of all our stakeholders: employees, customers, partners, suppliers...

From small streams to big rivers, our vision is to stand out as a growing business and to differentiate, while improving our environmental footprint and increasing our contribution to people's well-being.



GLASS INTERNATIONAL

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