

Glass for decoration



AGC

GLASS UNLIMITED

FOCUS ON
ECOLOGICAL MIRROR
FOR INTERIOR

MIROX MNGE

AGC Glass introduces...



A functional mirror

MIROX MNGE

Mirox New Generation Ecological (MNGE) is a high quality and high resistant mirror that prevails traditional mirror and easily exceeds the most stringent standards.

Ecological manufacturing process

AGC's patented manufacturing process ensures that MNGE mirrors offer superior performance in terms of quality, resistance and ecology. MNGE mirrors reflect our Research Centre's ongoing quest for innovation and significant improvement.

MNGE mirrors, available exclusively from AGC, stand out for its:

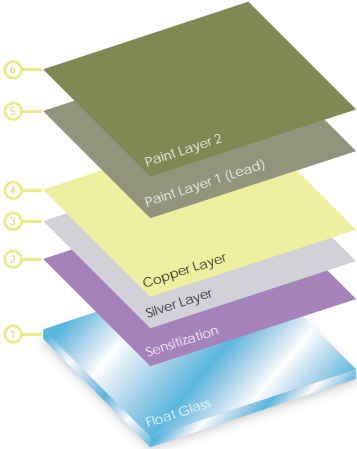
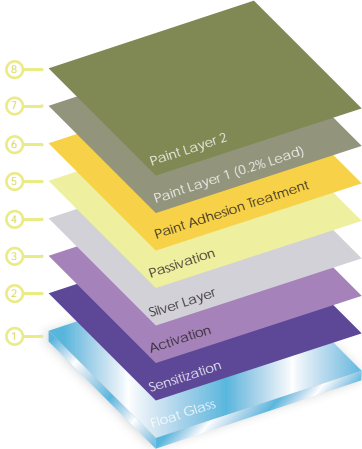
- copper-free metal coatings
- lead-free* protective paints
- ability to resist chemical damage
- resistance to corrosion
- close to zero indoor emissions of volatile organic compounds (VOCs), including formaldehyde

* 0.2% lead present

MNGE mirrors are recognized for its environmental and sustainability performance and are certified by Singapore Green Building Council (SGBC) and Cradle to Cradle® Products Innovation Institute.



Comparison of Conventional Mirror and Mirox MNGE

	Conventional Mirror	Mirox MNGE
<p>Mirror Manufacturing Process</p>		 <p>* Activation treatment to affix the silver coating to the glass * Passivation protects the silver from oxidation</p>
Contents	Copper + lead present	Copper removed Lead content reduced significantly
Resistance to corrosion	Average	Excellent (green-coloured protective paint on the rear of the mirror)
Resistance to Scratches	Average	Average
Adhesion	Adhesive tapes	Glues, silicones and adhesive tapes

Technical specifications

MIROX MNGE

Durability of MNGE Mirror is determined by several accelerated ageing tests in compliance to EN 1036 (European standard).

		EN 1036 standard	Conventional Mirror	Mirox MNGE
Behaviour	CASS Test ¹ ISO 9227	Maximum edge corrosion (mm) Number of Spots (number/dm ²)	2.5 2 < 3mm 3 < 0.3 mm	0.5 ≤ 1 ≤ 1
	Neutral salt spray test ² ISO 9227	Maximum edge corrosion (mm) Number of Spots (number/dm ²)	1.5 2 < 3mm 3 < 0.3 mm	0.2 ≤ 1 ≤ 1
	Condensation water test	Maximum edge corrosion (mm) Number of Spots (number/dm ²)	0.2 2 < 3 mm 1 < 0.3 mm	0 ≤ 1 ≤ 1
Resistance to Adhesives	Oxime		YES	YES
	Alcoxy		NO	YES
	Rubber (tapes)		NO	NO
	MS polymer		NO	NO
	Acetic Acid		NO	NO
Ecology	Copper protection layer		YES	NO
	Lead content in the paint		> 8%	< 0.2%
Cleaning Products	Resistance to ammonia		1 day	> 7 days
Shaping	Edge grinding		YES	YES
	Brilliant cut		YES	YES
	Grinding		YES	YES
	Drilling		YES	YES
	Inserts and notches		YES	YES
Safety	Safe film		YES	YES
	PVB laminated		NO	NO
	Toughened		NO	NO
Adhesives for mounting	Compatibility with alcoxy-based silicones and tapes		NO	YES
	Compatibility with oxime-based silicones and tape		YES	YES
	Compatibility with acetic silicones		NO	NO

¹ CASS test is conducted for 120 hrs (5 days). Edge corrosion is measured on 2 vertical edges of mirror samples.

² Neutral salt spray test and condensation water test are conducted for 480 hrs (20 days). Edge corrosion is measured on all 4 edges of mirror samples.

Protecting the environment

MIROX MNGE

What's so special about it? | What does this mean for you?

Copper-free layer and lead-free* paints
* 0.2% lead present

- Unparalleled resistance to corrosion and ageing
- Enhanced resistance to harsh cleaning products
- No pitting or clouding damage with age

Environmentally friendly manufacturing process

- Contributes to environmental protection by elimination of toxic products (ie. Copper, ammonia and lead) during production
- Preserves indoor air quality by emitting very low levels of Volatile Organic Compounds (VOCs) and formaldehyde

Elimination in the amount of toxic products produced based on an estimated output of 20,000,000 m²/year



COPPER
7 tonnes / year



AMMONIA
84 tonnes / year



LEAD
248 tonnes / year



Be inspired by MNGE products

MIROX MNGE

Range	4mm	5mm	6mm	MNGE available in SAFE*	STANDARD SIZE (cm)
Clear	X	X	X	X	321 X 225 321 x 255 321 x 450 321 x 510
Clearvision (extra clear)	X	X	X	X	
Bronze	X	X	X	X	
Grey	X	X	X	X	
Black	X		X	X	
Mirold Morena	X		X	X	

* For SAFE enhanced versions, a polypropylene film is applied to the back of the mirror as a safety measure. In case of glass breakage, the fragments adhere to the plastic film and do not break up, preventing injury. When impacted on the glass side, the Safe coating complies with the requirements of BSI 6206, EN 12600 and ANSI z 97.1 standards.

MNGE mirrors are available in Antibacterial version.

What can you use it for? | Be inspired...

Furniture - Tables, shelves, display cases, glass boxes, etc

Partition - Interior

Doors - Interior
- Fixed and sliding doors for cupboards and wardrobes

Wall Cladding - Bathrooms, restaurants, offices, hotels, shops, fitness centre, spa etc

Mirrors do not last a lifetime due to their delicate and sensitive properties. Proper design (i.e. framing etc) installation and handling methods can reduce deterioration and prolong lifespan of mirrors. For proper installation and processing of mirrors, please refer to AGC Mirror Installation and Processing Guide, which are available on www.agc-flatglass.sg.

SINGAPORE

AGC Asia Pacific Pte Ltd
460 Alexandra Road
PSA Building #32-01
Singapore 119963
Tel: +65 6273 5656
Email: aap.glass@agc.com
www.agc-asiapacific.com
www.agc-flatglass.sg

MALAYSIA

AGC Flat Glass (Malaysia) Sdn Bhd
D2-08, Block D, Oasis Square,
2A, Jalan PJU 1A/7A, Ara Damansara,
47301 Petaling Jaya, Selangor D.E., Malaysia
Tel: +603 7859 9800
Email: aap.glass@agc.com
www.agc-asiapacific.com
www.agc-flatglass.sg

HONG KONG

AGC Flat Glass (Hong Kong) Co., Ltd.
Unit 07, 7th Floor, Laws Commercial Plaza,
788 Cheung Sha Wan Road, Kowloon
Hong Kong
Tel: +852 2541 0789
Email: aap.glass@agc.com
www.agc-asiapacific.com
www.agc-flatglass.sg

TAIWAN

AGC Asia Pacific (Taiwan Rep. Office)
2F-5, No. 40., Jihe Road
Taipei, 111, R.O.C.
Taiwan
Tel: +886 2 2886 7200
Email: aap.glass@agc.com
www.agc-asiapacific.com
www.agc-flatglass.sg

INDONESIA

PT Asahimas Flat Glass Tbk
Jalan, Ancol IX/5,
Ancol Barat, Jakarta 14430,
Indonesia
Tel: +62 21 690 4041
Email: amfg.marketing@agc.com
www.amfg.co.id

CHINA

AGC Flat Glass (Dalian) Co., Ltd.
5 Tieshan Xi Rd,
Dalian Development Zone 116600
P.R. China
Tel: +86 411 87614190
E-mail: inquirydalian@agc.com
www.agc-flaglass.cn

THE PHILIPPINES

AGC Flat Glass Philippines Inc.
730 MH Del Pilar Street,
Barrio Pinagbuhatan Pasig City
NCR 1602 Philippines
Tel: +63 2 642 0261
Email: agph.inquiries@agc.com
www.agc-flatglass.ph

THAILAND

AGC Flat Glass (Thailand) Public Co., Ltd .
200 Moo 1, Suksawad Road,
Phra Samut Chedi, Samut Prakan,
10290, Thailand
Tel: +66 2 815 5000
Email: aft.glass@agc.com
www.agc-flatglass.co.th

EUROPE

AGC Glass Europe
Avenue Jean Monnet 4
1348 Louvain-la-Neuve
Belgium
Tel: +32 2 409 30 00
Fax: +32 672 44 62
Email: sales.headquarters@eu.agc.com
www.yourglass.com

The logo for AGC, consisting of the letters 'AGC' in a bold, blue, sans-serif font. The letter 'A' is slightly larger than the 'G' and 'C'. There is a small red square element on the right side of the 'C'.

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