

The logo for ISE Energy features the letters 'ISE' in a large, bold, italicized font. The 'I' and 'E' are black with a white outline, while the 'S' is solid green with a white outline. Below 'ISE', the word 'ENERGY' is written in a smaller, black, bold, sans-serif font, with wide letter spacing.

ISE
E N E R G Y

The logo for ISE Industries consists of a blue circular icon with three curved lines inside, suggesting a globe or a stylized 'I'.

member of
ISE Industries

Liquid Insulation Coating

- High-performance: 1mm LIC = 5 cm mineral wool insulation
- Advantages:
 - ✓ Moisture impermeability - additional waterproofing
 - ✓ Vapor tightness - resistance to frost, staining, destruction
 - ✓ Resistance to ultraviolet radiation - over 10 years guarantee of color and integrity
 - ✓ High degree of reflection of infrared rays - prevents excessive heating of building structures
 - ✓ Absolutely dense surface, without any micropores - protection against fungus, mold and moisture
 - ✓ Self-cleaning - photocatalytic natural cleaning, thanks to the added Titanium Dioxide (TiO₂)
 - ✓ Protection against corrosion and destruction of coated surfaces - low operating costs
- Wide application
 - ✓ In construction - as internal and external heat and waterproofing
 - ✓ In the industry - waterproof and resistant to chemicals and solvents thermal insulation
 - ✓ In transport - resistant to adverse effects, strong and elastic thermal insulation and corrosion protection



Liquid Insulation Coating

The main innovative element in LIC is the mixture of spheres of different sizes: from 10 to 80 μm for the nano-spheres and from 80 to 150 μm for the micro-spheres.

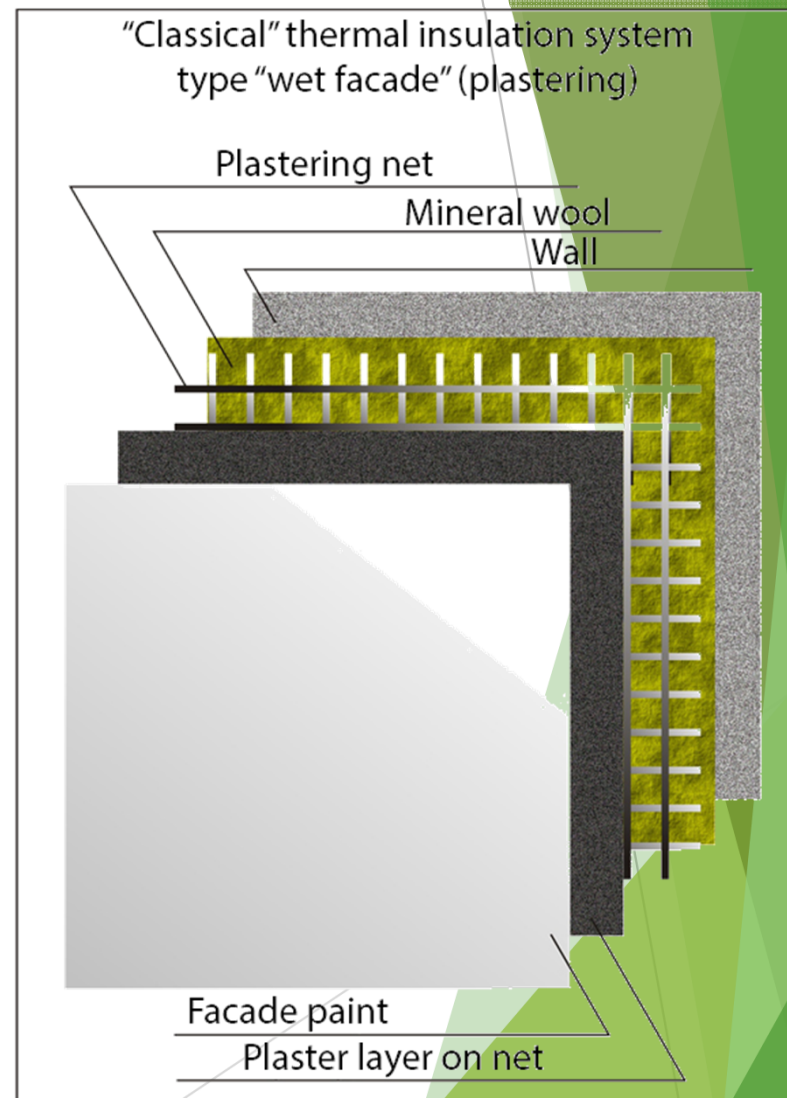
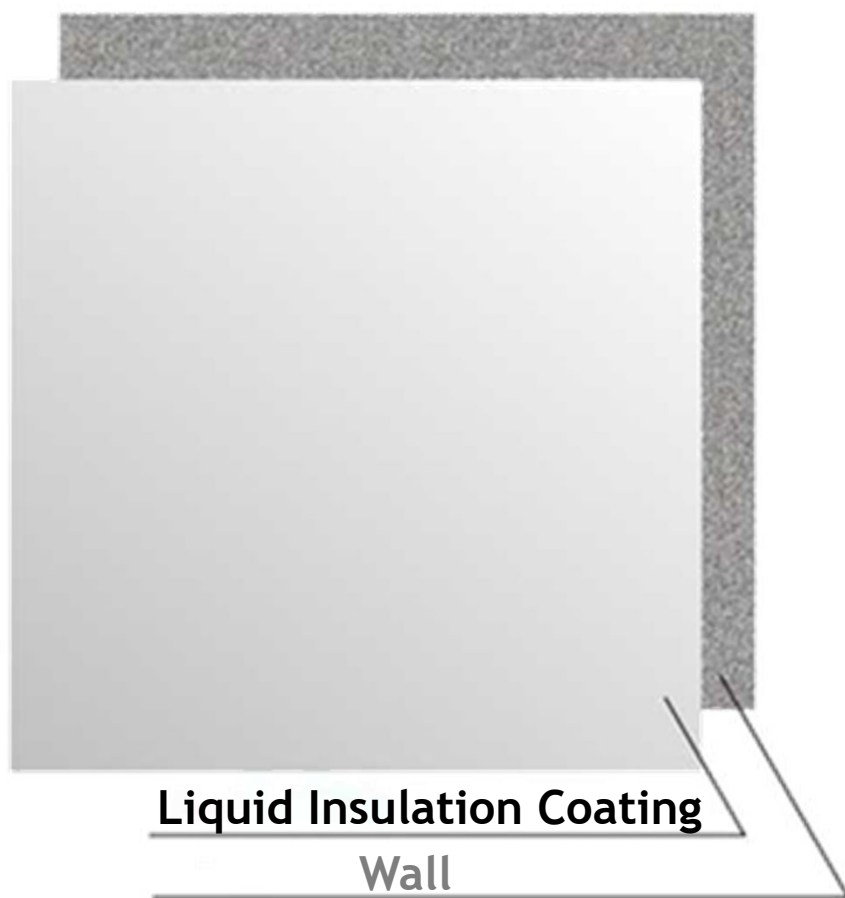
Spheres, depending on the purpose, can be made of different materials, such as silicon dioxide, ceramics, glass, etc., as well as vacuuming, filled with air or various inert gases.

The coating's spheres are manufactured by leading global companies such as 3M and AkzoNobel.

The dimensions of the k-value of the coating depend to a large extent on which gases the spheres are filled with or how deep the vacuum is in them.

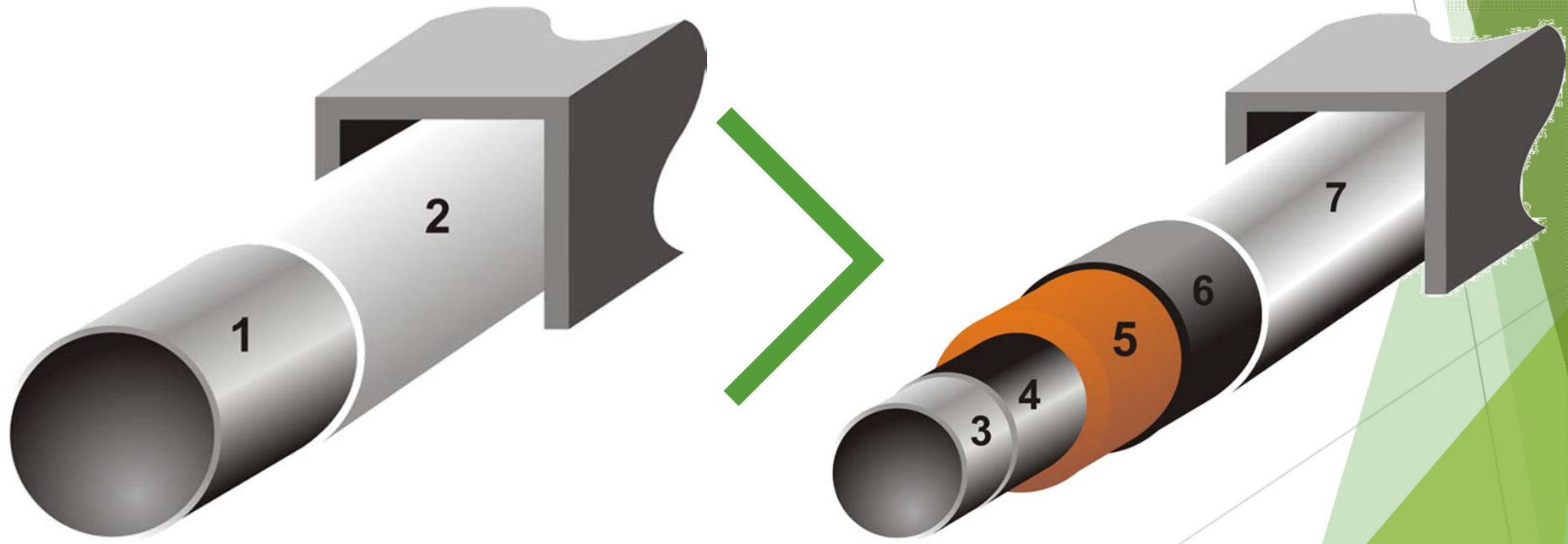
One of the advantages of combining different nano-spheres is that when properly selected and mixed, negatively charged with positively charged, they - floating in the liquid base, form a strong but elastic structure.

- Durable: 15 year guarantee*



* Durability of concrete and metal surfaces in a moderately cold climatic regions

- Operating temperature: - 60 °C to + 500 (peak to 650) °C
- Applicable to hard-to-reach places



Technical Specifications

- At layer thickness from 1,0 to 1,2 mm
 - ✓ Elongation: → above 600%
 - ✓ Hardness: → shore A
 - ✓ Density: → 249 kg/m³
 - ✓ Elasticity : → 46.48 MPa
 - ✓ Solar reflective index
(medium wind condition) : → 104.85%
 - ✓ UV Reflection: → 100%
 - ✓ Water absorption: → 0.001%
 - ✓ Vapour permeability: → 0.003%
 - ✓ Common thermal conductivity λ : → 0.0012-0.004 W/m*K

Technical Specifications

➤ Resistance to temperature extremes

- ✓ From -60°C to $+500^{\circ}\text{C}$: → Unchanged
- ✓ Combustibility: → Incombustible
- ✓ Resistance of a coating to impact of temperature differences -40°C up to $+500^{\circ}\text{C}$: → No changes

➤ Resistant to seismic activity

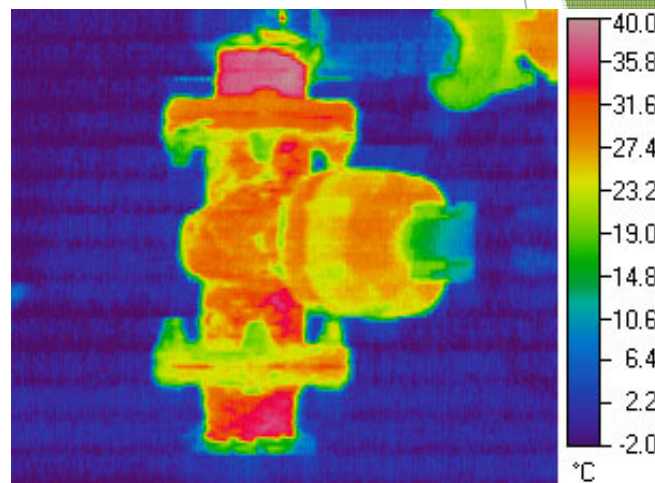
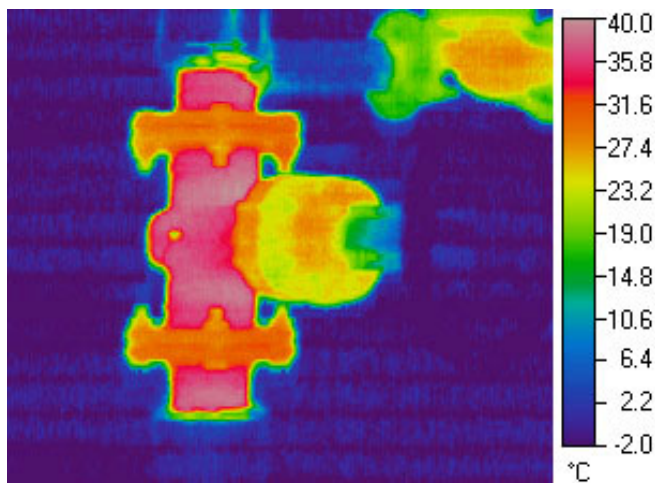
- ✓ Pull of strength (adhesion) concrete: → 1.09 N/mm
- ✓ Pull of strength (adhesion) steel: → 0.81 N/mm
- ✓ Pull of strength (adhesion) brick: → 1.33 N/mm

Technical Specifications

- Safe, easy to apply and applicable to hard to reach places
 - ✓ Liquid form
 - ✓ Light-weight: → 0.5 kg / 1 mm / 1 m²

- Ecologically-friendly
 - ✓ Water-based acrylic
 - ✓ Chlorides: → none
 - ✓ Reducing and damping noise level: → up to 20 dB
 - ✓ Stable does not react to:
 - Cement, gypsum, soap, acid, salt, bitumen, alcohol, organic solvents, petrol, oil, diesel

Reducing of heat losses in heat transfer systems



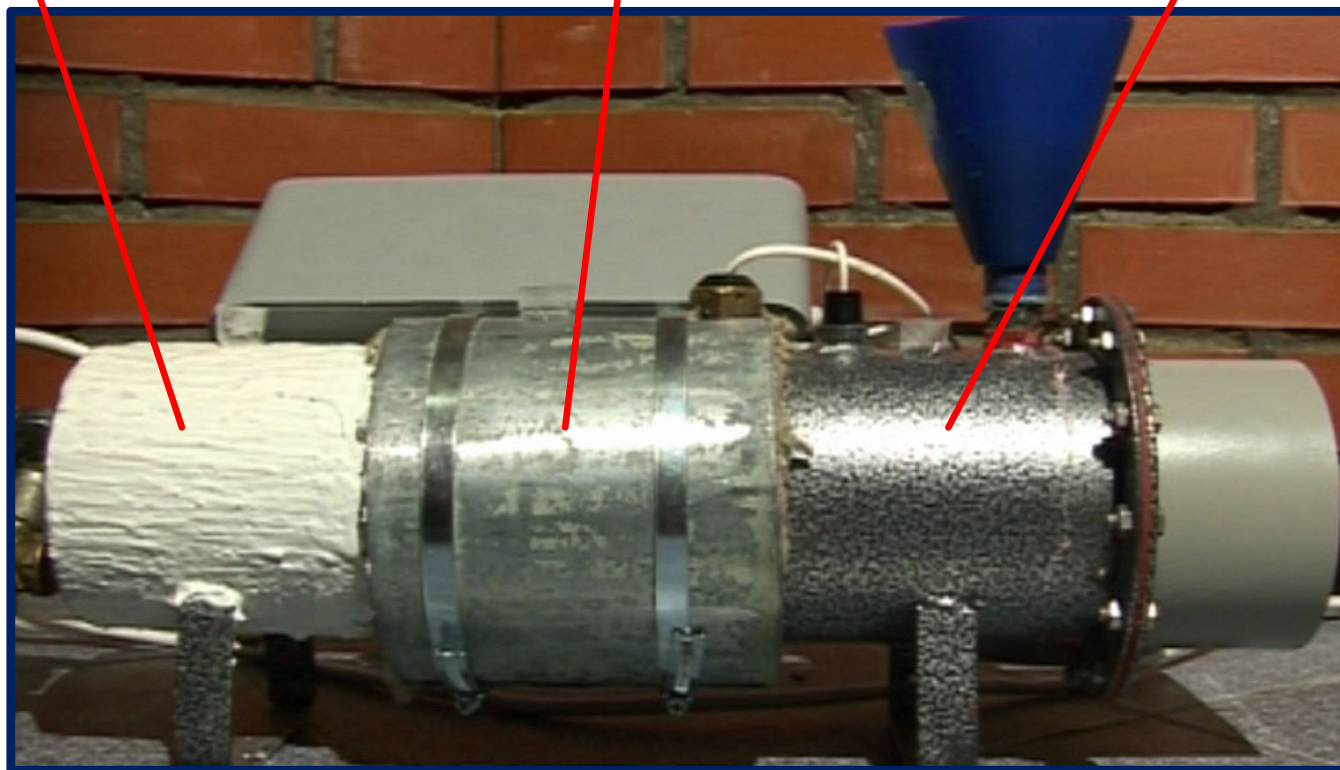
Measuring of the heat flow

- Temperature of the water in the tube - 80 °C

LIC 1-1,2mm

Mineral Wool – 30mm

Not insulated area



Measuring of the heat flow

- Heat Flux Meter



Measuring of the heat flow

- Measured heat flow



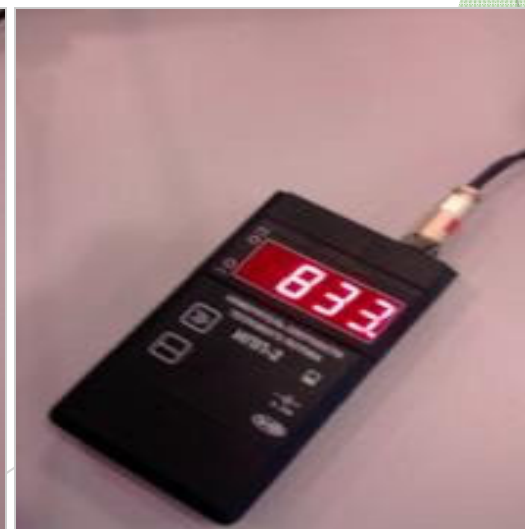
2686 W/m²



1168 W/m²



833 W/m²

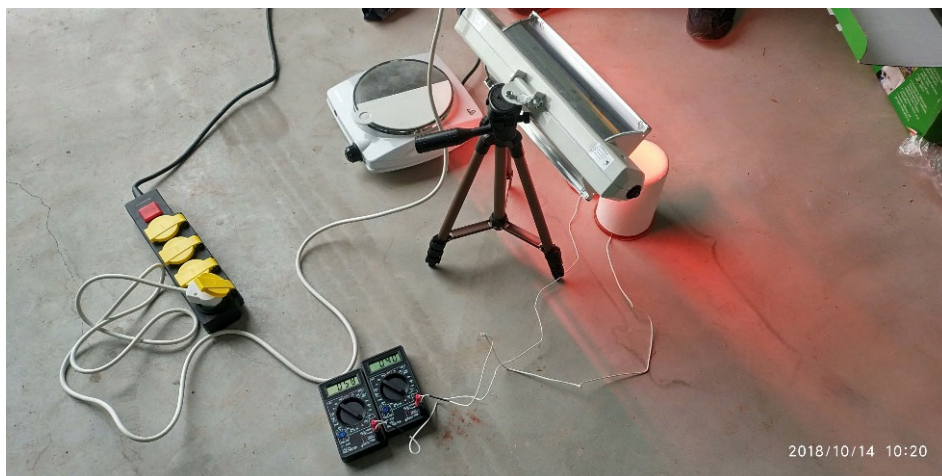


Demonstration of the IR reflection capability

- Demonstration of the temperature difference in insulated and non-insulated glass containers, heated by an infrared emitter



Temperatures after 10 min

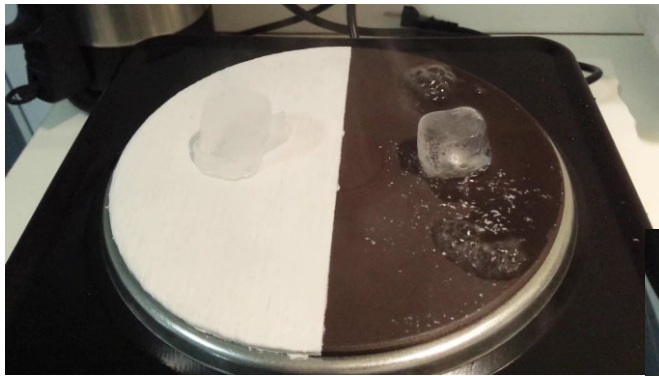


Test rig

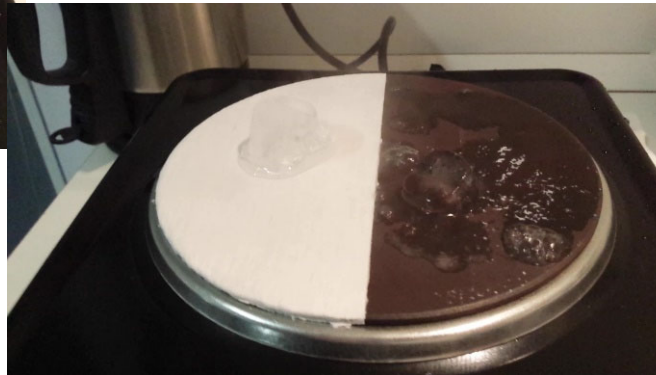
Coating – less than 1 mm

Demonstration of heat flow barrier capability

- Demonstration of the magnitude of heat flow through insulated and non-insulated hot metal surfaces



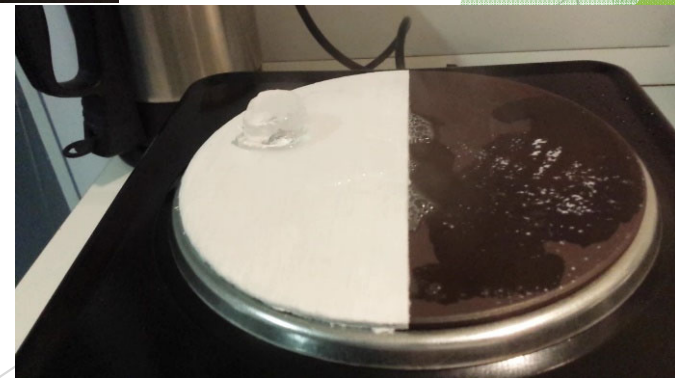
Pre-covered half of the hotplate on an electric hob with 1 mm Liquid Thermal Insulation Coating



Surface temperature - 140 °C

Simultaneous placement of two identical ice cubes on a plate heated to 140 °C

After about a minute, the ice cube on the non-insulated part evaporates completely



Method of application

- Ordinary painting tools
- Spray guns
- Spraying with compressed air and gun



- Applicable to:
Industrial systems



- Applicable to:
Industrial systems



➤ Applicable to:
Industrial systems



➤ Applicable to:
Transport Vehicles



- Applicable to:
Buildings – on the facades or inside



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Buildings – on the facades or inside

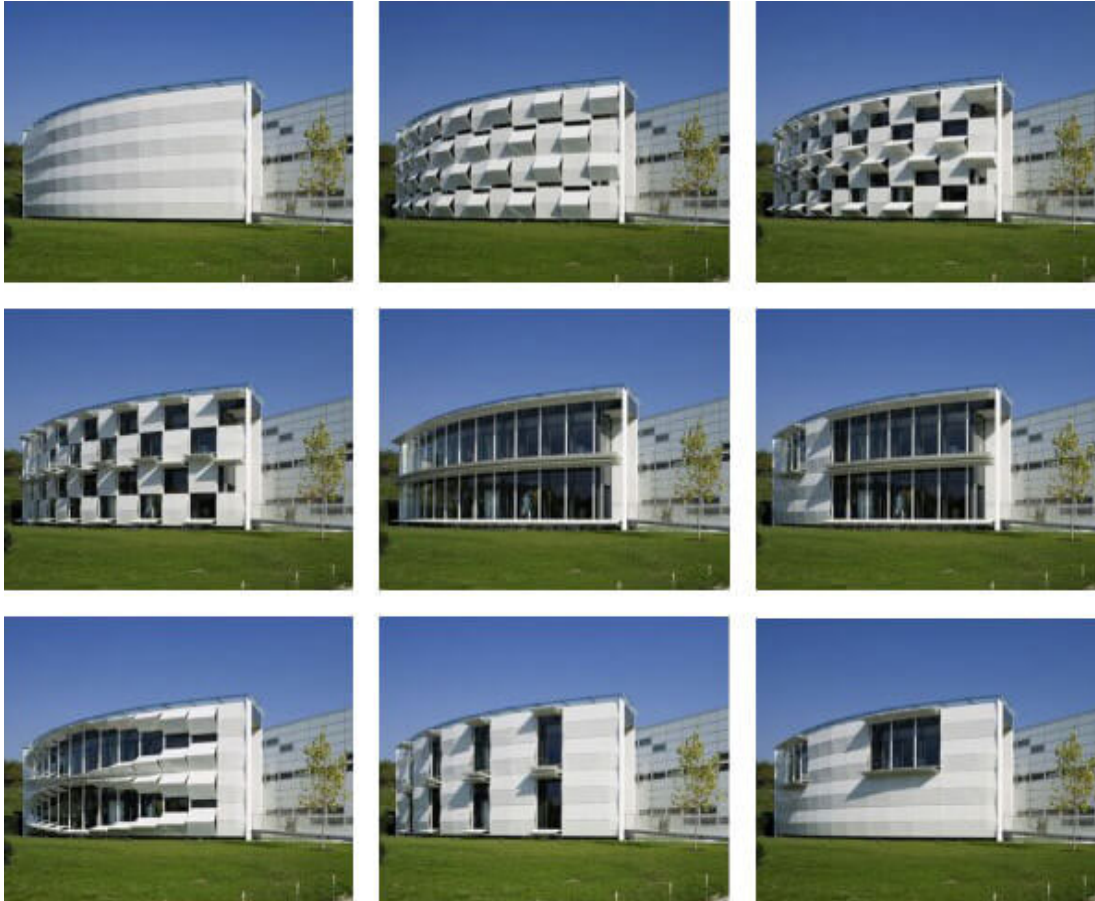


Directly on glass windows or facades



On different types of blinds or awnings

- Applicable to:
Buildings – on the facades or inside



On the elements of kinetic facades



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