



ELASTAR REFLECTA

REFLECTIVE ROOFS
FOR HIGH ENERGY EFFICIENCY

EUROSTAR REFLECTA

It is NOVAGLASS' innovative reflective waterproofing membrane featuring special bright white granular surface protection.

EUROSTAR REFLECTA is the ideal solution for photovoltaic systems within the "Cool Roof" concept. Indeed, this brand-new membrane can reflect the incident solar radiation, so that most of absorbed heat is returned back to atmosphere, keeping cool and comfortable the rooms underneath. Its white colour enables a temperature reduction worth more than 40°C in comparison with regular black roofs, hence delivering a remarkable saving of air conditioning costs. Thanks to the temperature reduction combined with its high reflectivity EUROSTAR REFLECTA roofs perform better efficiency of photovoltaic system: increase of diffused and direct light plus cooled air around the PV panels (overheating worsen the energy efficiency).

EUROSTAR REFLECTA is hi-tech polymer modified bitumen waterproofing sheet membrane, shrink free and with granular surface (self-protected type). It is industrially manufactured by impregnation of a composite structure reinforcement - made of non-woven spunbond polyester carrier and fibreglass mat delivering excellent mechanical properties along with lifetime stability - into waterproofing compound consisting of selected bitumen blend modified with new generation polyolefin polymers.



Application guideline

EUROSTAR REFLECTA can be applied as easy as regular polymer-bitumen membranes:

- Installation shall be carried out by professional roofers only; the sheets can be applied by heat welding with propane gas burners or otherwise with hot air devices as of provisions of NOVAGLASS Technical Literature.
- The installation shall be carried out only in favourable weather conditions and provided the substrates are accurately prepared.
- The substrate must be clean, even, free from ponding water and having slope minimum 3% to grant adequate drain to rainwater.
- Head and side joints shall be carried out to carefully avoid overheating. Excessive heat may damage the special bright white granular surface. If necessary, joints and details can be finished with EXTRA WHITE paint to a smooth and uniform effect.
- During the installation of photovoltaic system a protective trafficable film shall be laid onto EUROSTAR REFLECTA roof to prevent damages to the surface. It will be removed once panels installation has been completed.



REFLECTA EXTRA WHITE SYSTEM

Maintenance program: the ENERGY BOOK

EUROSTAR REFLECTA is long lasting roofing solution: its water tightness is guaranteed 10 years. Its reflectivity factor may slightly decrease due to settlement of dust and pollution on the bright white surface. For this reason NOVAGLASS suggest to subscribe a specific maintenance programme ENERGY BOOK. It has been developed by NOVAGLASS, to keep the reflectivity of EUROSTAR REFLECTA roofs high. Particularly when it is fitted with photovoltaic systems, it boosts the energy efficiency over the top.

ENERGY BOOK programme comprises:

- yearly inspection of EUROSTAR REFLECTA roofs;
- specific maintenance service by application of high reflectivity EXTRA WHITE paint, in case it is necessary to restore the brightness of mineral surface.

Maintenance will be carried out by authorised personnel. After every inspection they will fill in the ENERGY BOOK, specifically meant to monitor the performance records of NOVAGLASS REFLECTA EXTRA WHITE SYSTEM.



Extra White paint



1st coating application



2nd coating application

EXTRA WHITE, the high reflectivity paint

Modern buildings are nowadays designed to star an active role in energy saving. NOVAGLASS has developed technologically advanced specialty products, improving and accomplishing that target. REFLECTA EXTRA WHITE SYSTEM arises from that philosophy: the combination of EUROSTAR REFLECTA waterproofing membrane and EXTRA WHITE paint can achieve a reflectivity rate worth 73%. As a consequence, roof temperature decreases hence reducing air conditioning energy consumption, carbon dioxide emissions and therefore the so-called "Urban Heat Island Effect". At the same time it enables full photovoltaic system energy efficiency. Not to mention the long life expectancy of the treated roofs and their ease of maintenance.

Installation:

- Before treatment EUROSTAR REFLECTA roof must be cleaned up and dried.
- EXTRA WHITE paint shall be thinned with 20% of clean water, then stirred by means of helical mixer drill to obtain a homogeneous and fluid preparation.
- EXTRA WHITE paint shall be applied in two coats by roller brush. Second coat shall be laid once the first one has thoroughly dried. Carry out details, corners and areas close to PV panels carefully avoiding to blot them, possibly with appropriate sized paint brush.
- In sunny days at mild temperatures the paint dries as fast as 30 minutes.
- At cooler temperatures drying time might be longer.
- Average total consumption: $250 \div 400 \text{ g/m}^2$.



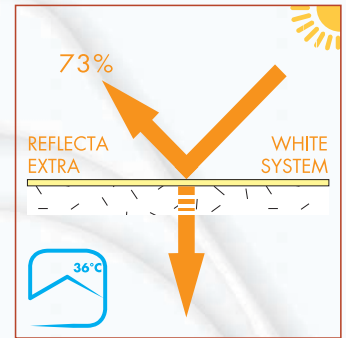
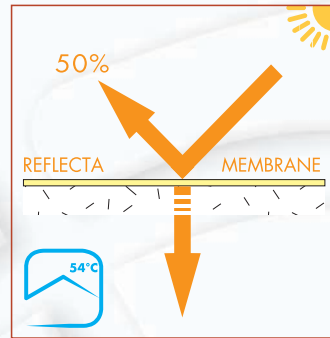
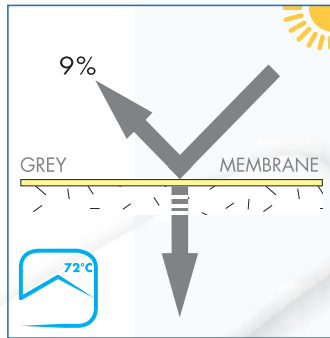
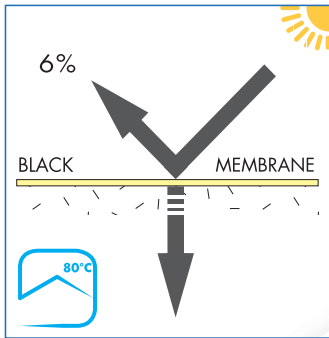
Completing application



Finished Reflecta waterproofing system

SOLAR REFLECTION

Comparison between membranes with different finishing



- Solar Reflection Ratio

50% (73% Reflecta Extra White System)

- Reaction to Fire (UNI ENV 1187/UNI EN 13501-5:2005)

Class: BROOF (t1) (t2)

- Roll Dimensions

1,10m x 7,50m

Test method	Norm	Unit	Tolerance	Value	
Thickness	EN 1849-1 (1999)	mm	>	4 mm	
Flexibility at low temperature (pliability)	EN 1109 (1999)	°C	≤	-30	
Heat flow resistance	EN 1110 (1999)	°C	≥	140	
				Long.	Transv.
Maximum tensile strength	EN 12311-1 (1999)	N/50 mm	-20%	750	750
Elongation	EN 12311-1 (1999)	%	-15 absolute	40	40
Resistance to tearing (nail shank)	EN 12310-1 (1999)	N	-30%	200	200
Dimensional Stability	EN 1107-1 (1999)	%	≤ to what declared	+/- 0,20	+/- 0,20
Resistance to static loading	EN 12730 met. A (2001)	kg	≥	20	
Resistance to impact	EN 12691 met. A (2001)	mm	≥	1.250	

EUROSTAR REFLECTA



- **HIGHER PHOTOVOLTAIC SYSTEMS PERFORMANCE**
- **HIGHER ENERGY EFFICIENCY**
- **REDUCED CO₂ EMISSIONS**
- **REDUCED URBAN HEAT ISLAND EFFECT**

- **HIGHER INTERNAL ROOMS COMFORT**
- **INCREASED LIFE-SPAN OF WATERPROOFING SYSTEM**
- **REDUCED ENVIRONMENTAL IMPACT**
- **REDUCED ENERGY CONSUMPTION AND EXPENSES**
- **EXTERNAL INSTITUTE APPROVED NOVAGLASS FIRE RESISTANT TECHNOLOGY**

- **GO FOR EFFECTIVE, RELIABLE AND SAFE. GO FOR NOVAGLASS**





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