

# Heat Reflective Paint System



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## Benefits of Cool Buildings:

- 1 Reduce the energy required for interior cooling.
- 2 Reduce thermal stresses on the roof potentially improving system lifetimes.
- 3 Improve indoor thermal comfort.
- 4 Reduce running and maintenance costs.
- 5 Help to mitigate the urban heat island effect.
- 6 Have a positive impact on the global environment by reducing the energy required for interior cooling and related greenhouse gas emissions.



COOLPAINT  
EFFECT



More information  
of the product.

## MonoStop Thermo

Excellent quality, 100% acrylic, solar reflective paint with thermo isolating properties. Due to its special composition, it forms an elastic film which has excellent adhesion to vertical exterior surfaces.

This film isolates perfectly the wall from moisture and frost and has very good thermo isolating properties, contributing to energy saving all year long (winter - summer). It retains its elasticity and covers small cracks and hairlines, and offers exceptional waterproofing against humidity. It has also fungicidal additives which protect the surface of the dry paint film from mould and green spots.

Monostop thermo is a certified cool paint characterized by high solar reflectance value (SR), high infrared emittance (e) and high reflectance index value (SRI).

\* Certified from the National and Kapodestrian University of Athens, Department of Physics.

### Product Characteristics

- > High reflectance of solar radiation (SR) (Solar Reflectance) = 0,87 (ASTM E 903-96, ASTM G 159-98).
- > High emission coefficient for infra red radiation (e) = 0,83 [ASTM E 408-71 (2002)].
- > Great opacity, elasticity, adhesion and resistance to weather condition changes.
- > Resistance to alkali (ASTM D 1308-02, ASTM D 714-02).
- > Great resistance to freeze and moisture.
- > High coverage and whiteness.
- > Anti mold properties.
- > Easy to apply.
- > Resistance to chalking (ASTM D4214-98).
- > According to directive 2004/42/EC.

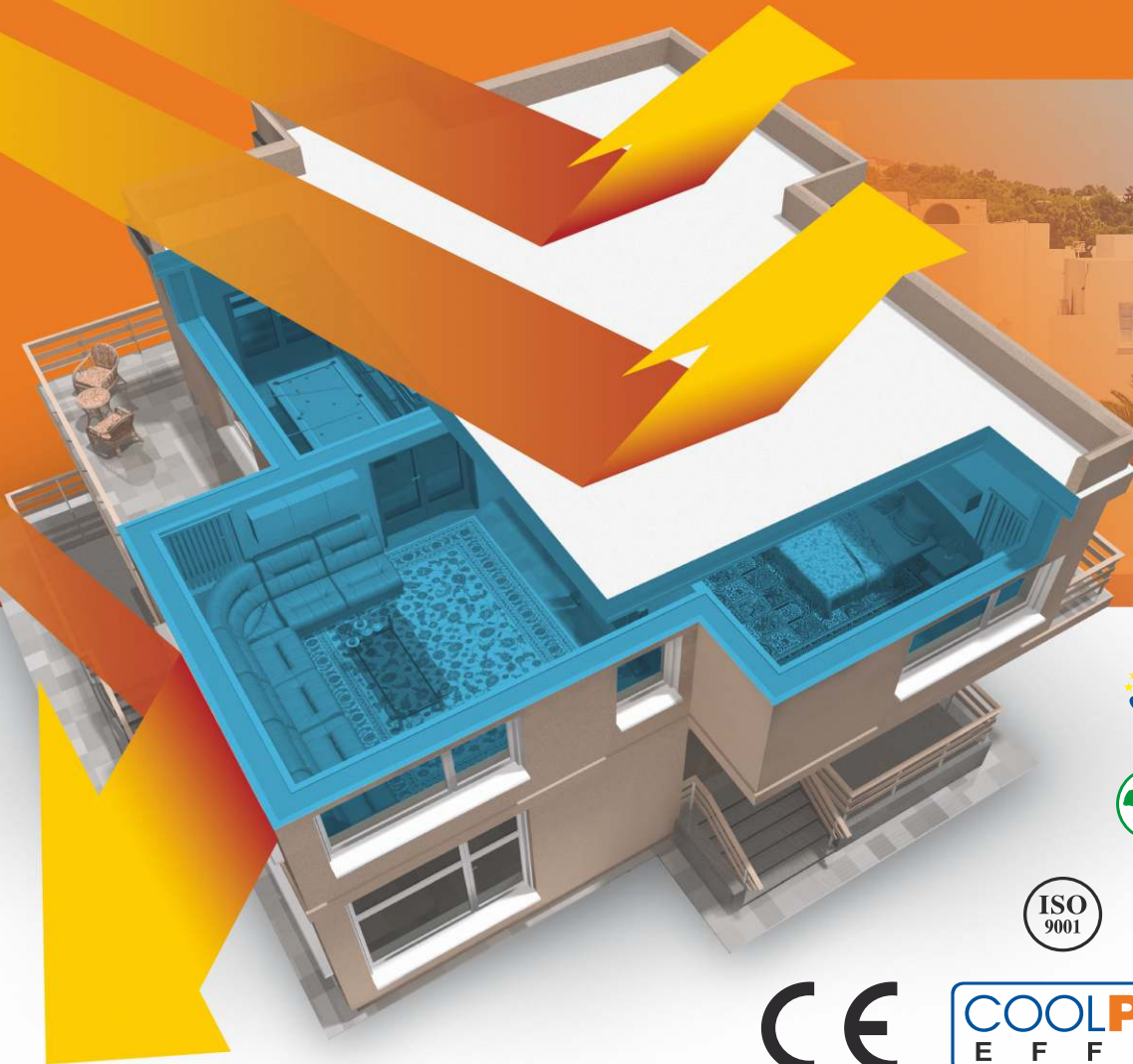
### Classification according to EN 1062-1

- > Water vapour transmission rate: Class V2, medium, sd 0,25m
- > Liquid water permeability: Class W3, low,  $\leq 0.01 \text{ kg}/(\text{m}^2 \cdot \text{h}^{0.5})$
- > Crack bridging: Class A1,  $\geq 100 \mu\text{m}$
- > Carbon dioxide permeability: Class C0
- > Gloss: Class G3
- > Dry Film Thickness: Class E2
- > Grain Size: Class S1

With safety film



Paints  
for  
Cool  
Buildings



**MONOSTOP**  
**ThermoRoof**

**MONOSTOP**  
**Thermo**



**87%**  
high solar  
reflectance





COOLPAINT  
E F F E C T



More information  
of the product.

# MonoStop Thermo Roof

Energy - elastomeric, solar reflective hybrid membrane for roof sealing based on new technology acrylic and polyurethane resins. It forms an elastic membrane which is resistant to moisture and stagnant water, bridges small cracks and joints and thus providing superior protection to the roof all time long. It gets rapidly a surface hardness which gives accessibility to pedestrian traffic without sticking. It has excellent adhesion on well prepared surfaces and follows their contractions and expansions. Monostop Thermo Roof is a certified cool paint\*. It has high heat reflectivity and contributes to the thermal comfort and saves energy resources.

Contains special additives that prevent the growth of microorganisms on the film and reduces significantly the roof temperature in summer and holds it waterproof in winter, minimizing the need for air condition and contributing to energy saving by reducing the internal temperatures of the buildings.

\* Certified from the National and Kapodestrian University of Athens, Department of Physics.



## Product Characteristics

- > High reflectance of solar radiation (SR) (Solar Reflectance) = 0,87 (ASTM E 903-96, ASTM G 159-98).
- > High emission coefficient for infrared radiation ( $\epsilon$ ) = 0,83 [ASTM E 408-71 (2002)].
- > High resistance to external weather conditions.
- > According to the E.U. Regulation 2004/42/EU for VOC.
- > High resistance to stagnant waters.
- > Single sealing film without joints.
- > Protection of the building blocks.
- > Easy local maintenance - repair.
- > Long life time.
- > Excellent elasticity.
- > Water Repellent.
- > Isolating.
- > Anti-moulding.
- > Easy to apply.

## Classification according to EN 1062-1

- |   |  |                                |
|---|--|--------------------------------|
| > Water vapour transmission rate:<br>Class V2, medium, sd 0,25m   | > Crack bridging:<br>Class A1, $\geq 100\mu\text{m}$ | > Gloss: Class G3              |
| > Liquid water permeability:<br>Class W3, low, $\leq 0.01 \text{ kg}/(\text{m}^2 \cdot \text{h}^{0.5})$ | > Carbon dioxide permeability:<br>Class C0           | > Dry Film Thickness: Class E2 |
|   |  | > Grain Size: Class S1         |



## EN 1504-02 Elastomeric waterproofing membrane

Permeability to water vapour: Class I  
Capillary absorption and water permeability:  $0,01 \text{ Kg}/\text{m}^2 \cdot \text{h}^{0.5}$   
Thunder-shower cycling (thermal shock):  $> 0,8 \text{ N}/\text{mm}^2$   
Thermal cycling without de-icing salt impact:  $> 0,8 \text{ N}/\text{mm}^2$

Adhesion (bond strength):  $> 0,8 \text{ N}/\text{mm}^2$   
Crack bridging ability: A1 ( $> 100\mu\text{m}$ )  
Reaction to fire: Class E  
Dangerous Substances: NPD



# Study for Dubai region

A study conducted for the Dubai region, by the National and Kapodestrian University of Athens, Department of Physics, presents the results of the assessment of optical and thermal properties of **MONOSTOP THERMO ROOF** and **MONOSTOP THERMO** and the benefits of the use of these materials in a reference building. The study aims to investigate the benefits of the use of these materials in building's needs for cooling, as well as indoor thermal comfort.

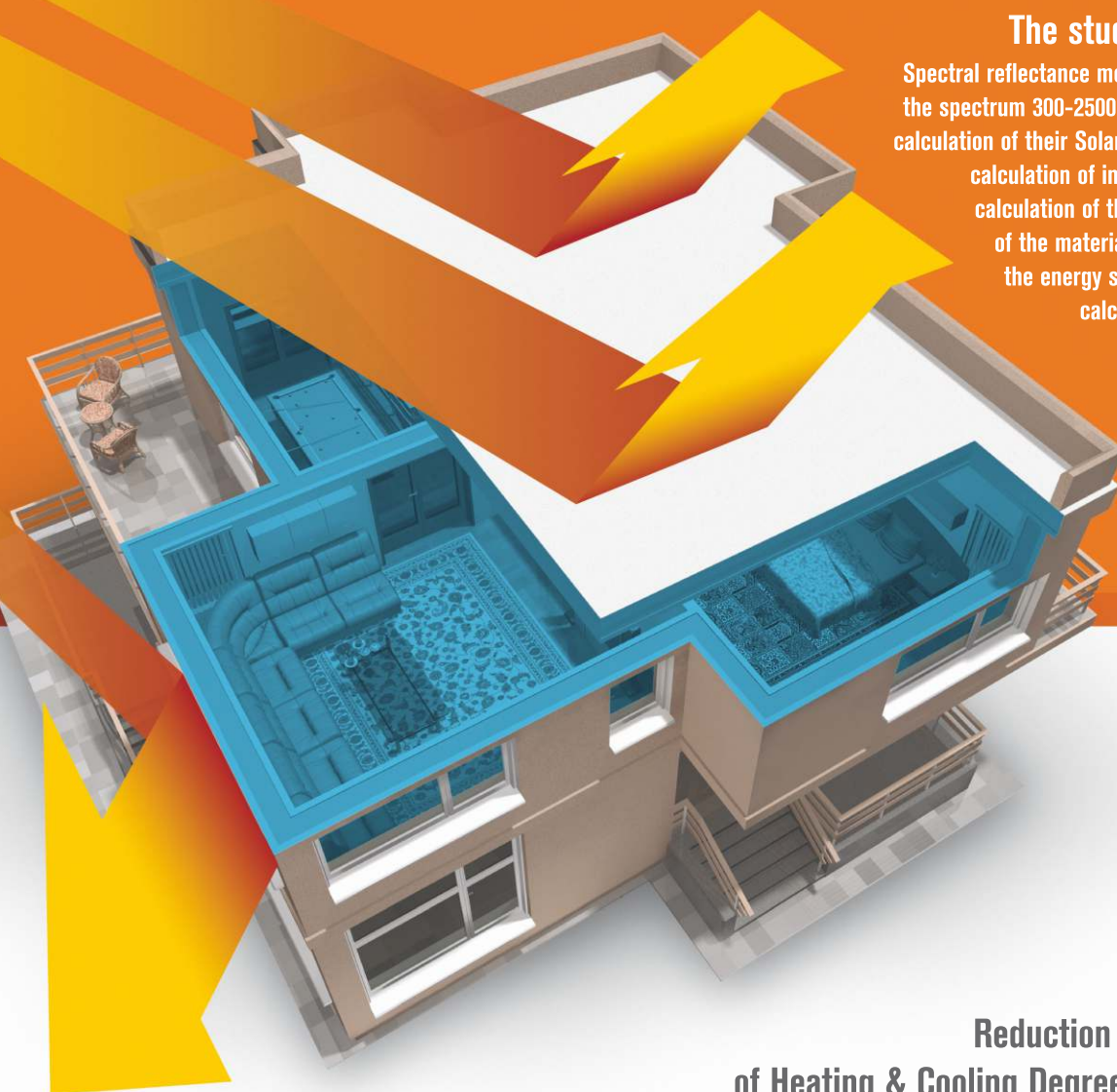
The study has been carried out by the Group Buildings and Environmental Studies of the Physics Department, Section of Applied Physics of the National and Kapodistrian University of Athens (UOA), which is accredited by the National Accreditation System (ESYD) and ELOT EN ISO/IEC 17025:2005.

## The study includes:

Spectral reflectance measurements over the spectrum 300-2500nm (UV-VIS-NIR), calculation of their Solar Reflectance(%), calculation of infrared emittance, calculation of thermal properties of the materials, calculation of the energy saving for cooling, calculation of cooling degree hours.



Scan the QR Code to Download the full report (PDF)



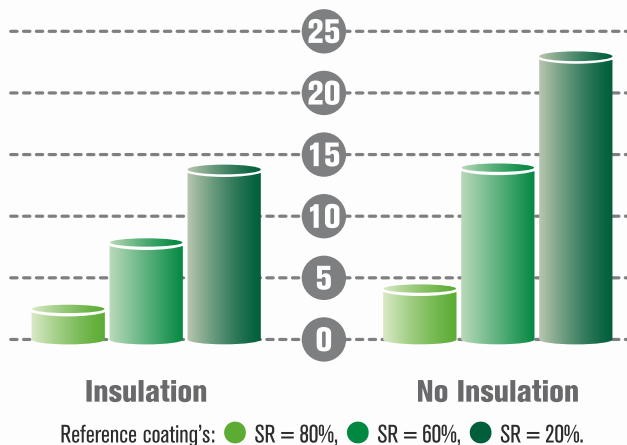
## Conclusion

The application of Monostop Thermo and Monostop Thermorooft showed a reduction of the cooling loads, which varies with the coatings' thickness, reference coating's SR and building's insulation. For Dubai climatic conditions is reaching 20% for an insulated building and 39% for a non-insulated one.

Regarding cooling degree hours, similar behavior is observed (14% and 23% respectively). There is high energy saving in the cooling load and high reduction of cooling degree hours.

This is due to the high coatings' SR value, which is comparable to the reflectivity of a cool material.

## Reduction Percentage of Heating & Cooling Degree Hours (%)





Color has a Name!



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