



**TECHNONICOL**

KNOWLEDGE. EXPERIENCE. CRAFTSMANSHIP.



**ECO-FRIENDLY ROOFING**  
BUILDING SOLUTIONS FOR THE FUTURE

# SOCIAL AND ENVIRONMENTAL RESPONSIBILITY

TECHNONICOL creates, produces and promotes such materials and systems that can minimize energy losses in the manufacturing industry and utility sector.



TECHNONICOL materials enable to cut down energy losses **THREE-FOLD**

We implement construction systems that can create an energy-efficient envelope in the building – a comprehensive structure protection from its foundation to its roof.

All developed and manufactured products meet sanitary and environmental standards and are safe for humans and environment.



**1** more than **million euro per year** are invested in environmental protection

We invest in waste-free production, advanced equipment and environmental protection technologies.



# **GREEN ROOF**

# GREEN ROOFS

## HISTORY

Green roofs in Scandinavia have been functioning for centuries. Since the 1970s, green roofs have been designed with built-in protection from root penetration and installed irrigation system. Modern green roof technology leader in the world is Germany, where more than 10% of the buildings are with green roofs.



# GREEN ROOFS

## ADVANTAGES

### Environmental benefits:

- Increases biodiversity in urban areas
- Regulates the temperature and humidity in the building
- Purifies the air and rainwater
- Serves as sound insulation

### Social benefits:

- Creates aesthetically attractive landscape
- Creates recreational spaces, place for communication or education

### Economic benefits:

- The average expected life of the roof is more than 40 years
- Real estate value increases
- Reduces energy costs
- May be supported by the state by grants or reduced taxes

Bitumen membrane resistant to root penetration in the roof system comprises a small share of the cost, but it is an essential element to ensure a long service life of the building.



# GREEN ROOFS



## INSTALLATION AND MAINTENANCE

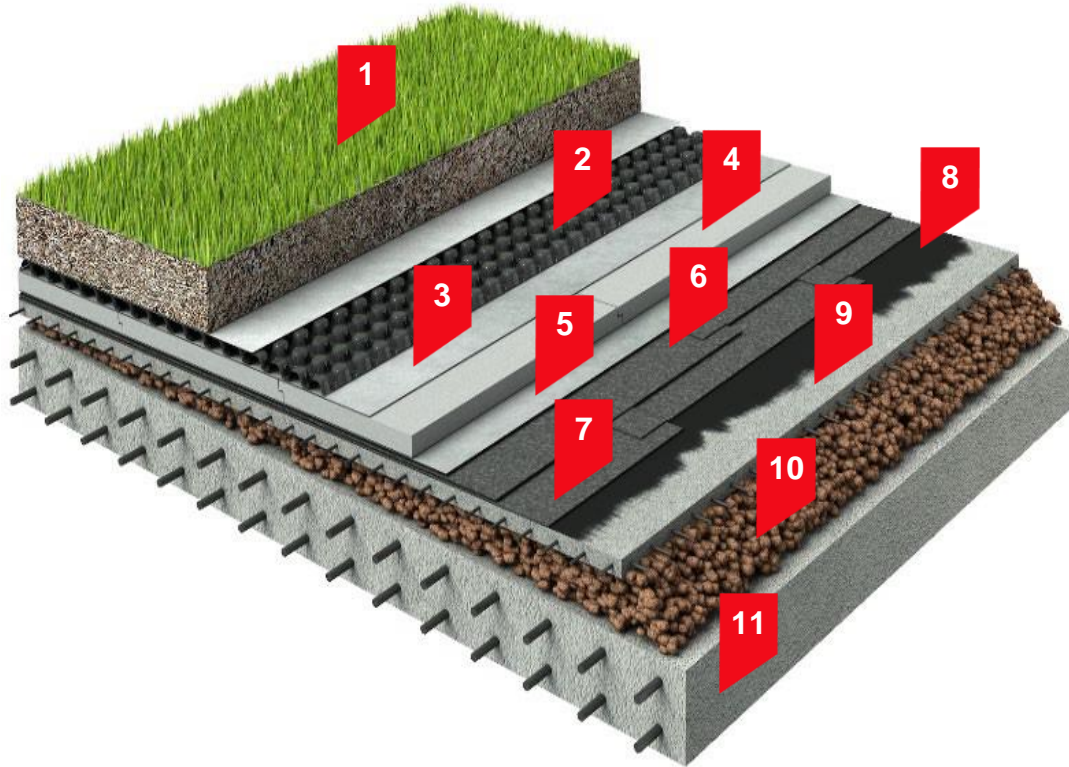
Green roof can be Installed on any roof that has a sufficient resistance to construction load and slope  $> 2\%$ .

### ROOF MAINTENANCE:

- Care of green areas
- Waste removal
- Weed control
- Watering
- Fertilization

Extensive green roof maintenance costs could be lower than maintenance costs of the traditional roof.

# GREEN ROOFS



## System solution for green roof:

1. Soil with plants
2. Drainage membrane with geotextile PLANTER geo
3. Needle-punched geotextile
4. XPS TECHNONICOL CARBON PROF 300
5. Needle-punched geotextile
6. Cap sheet bitumen membrane ULTRAFLEX GREEN
7. Underlay bitumen membrane ULTRAFLEX A
8. BITUMEN PRIME COATING
9. Reinforced sand cement screed
10. Sloping layer
11. Reinforced concrete base

# GREEN ROOFS



## ULTRAFLEX GREEN

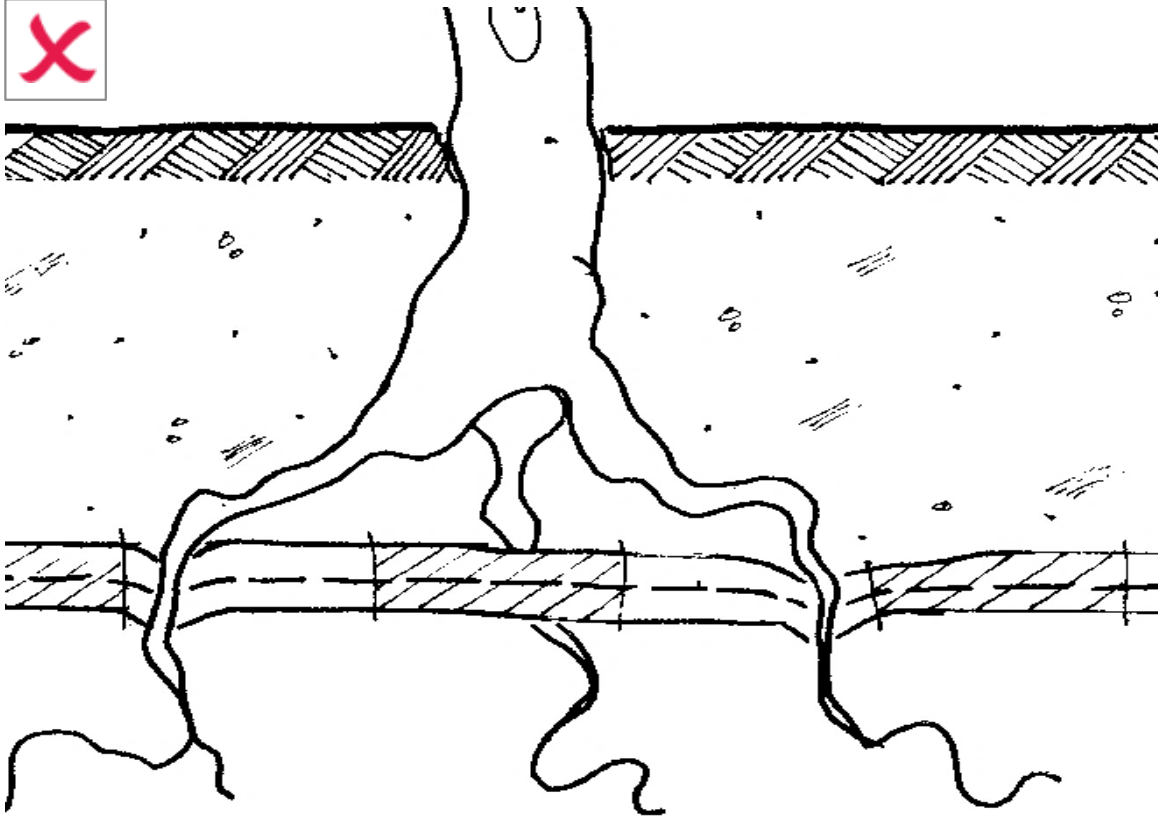
It has an additional mechanical protection on top, which makes it resistant to damage caused by roots of plants and ensure reliable waterproofing. Special chemical compound prevents roots penetration, but at the same time does not have a negative effect on plants or environment.

ULTRAFLEX GREEN can be used both for construction of green roofs and for foundation waterproofing with additional protection from roots of plants located nearby.

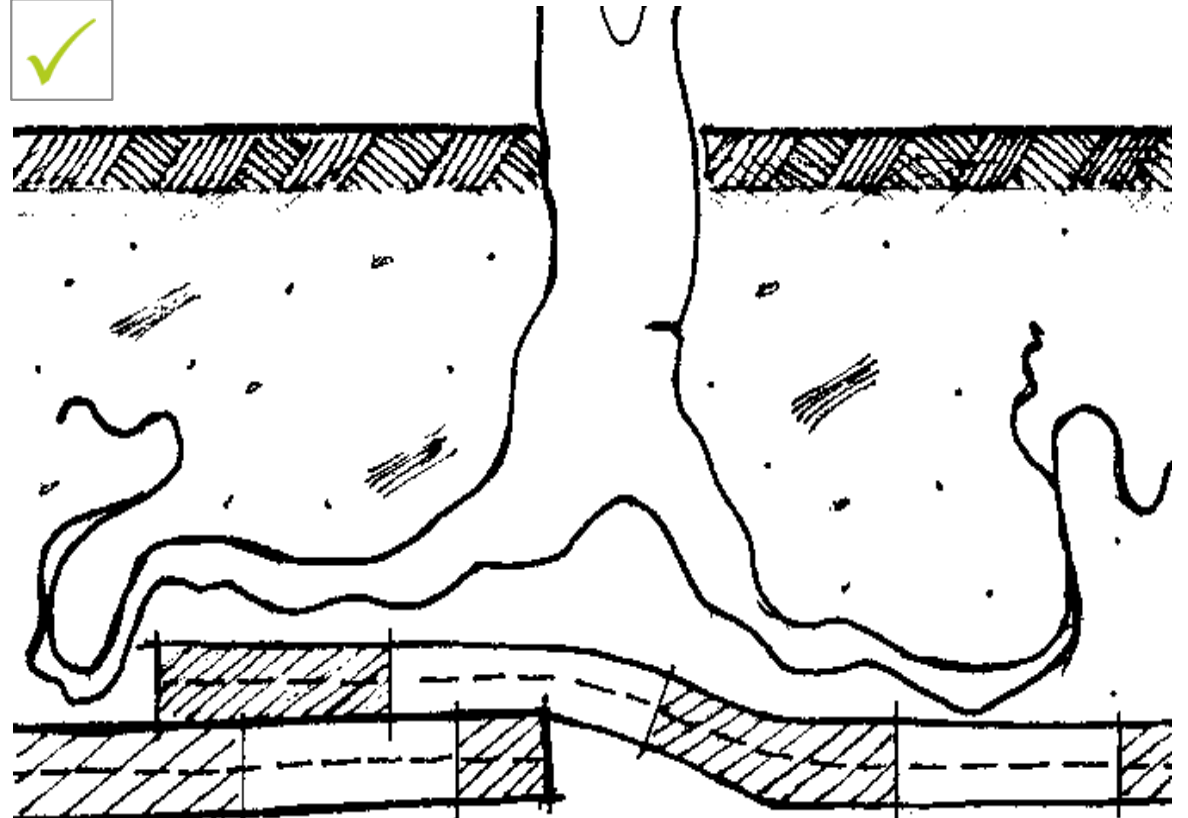


# GREEN ROOFS

## HOW BITUMEN MEMBRANE WORKS FOR GREEN ROOFS



Traditional bitumen membranes are organic, so roots can grow in them, and, over the time, penetrate throughout the bitumen layer and damage the roof and waterproofing system.



Bitumen membranes for green roofs contain chemical compound that does not allow roots to penetrate, at the same time it does not have a negative impact on the plant and the environment.

# GREEN ROOFS

## CERTIFIED SYSTEM

TECHNONICOL bitumen waterproofing membrane for green roofs have passed the tests in accordance with EN 13948 „Resistance to root penetration“ and is certified for the green roofs' systems.





# **MOSS RESISTANT ROOF**

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## MOSS ON THE ROOFS

Moss is a small flowerless plants, which starts to grow in places where is humid and fewer sun. Usually, roofs operational maintenance requires regular removal of moss, because untrimmed moss layer significantly shortens the service life of the roof.



# MOSS RESISTANT ROOF

## TECHNICOL ENVIRO FOREST

It is a waterproofing cap sheet membrane with special additives against the overgrowing of the flat roof with moss and vegetation. It has the following advantages:

- Inhibits the growth of mosses and lichens on the flat roof
- Decreases the operating costs of the facility for roof maintenance
- Has a unique copper color
- Maintains the aesthetic appearance of the roof





# **AIR PURIFYING ROOF**

# AIR PURIFYING ROOF

## TECHNONICOL ENVIRO AIR

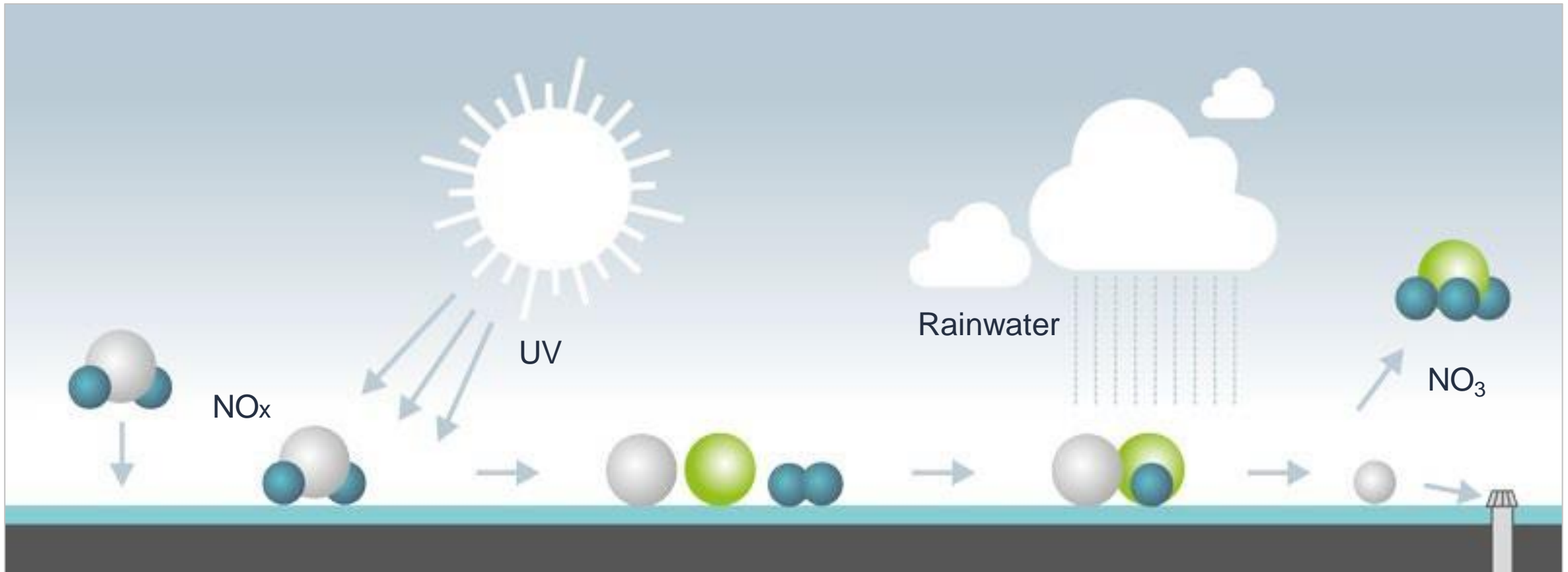
It is a waterproofing cap sheet membrane for air purification from harmful nitrogen oxides (e.g. NO<sub>x</sub>). It has the following advantages:

- Actively influences the reduction of toxic NO<sub>x</sub> gas in the air
- The coating protects the material against the penetration of UV radiation and destruction of bitumen compound
- Contributes to the destruction of organic contaminants on the surface (bird droppings, fungus spores, bacteria)



# AIR PURIFYING ROOF

Air pollution is harmful to human health and ecosystems. A large part of the population lives in unhealthy environment, which does not comply with standards. This is one way to contribute to the health of our planet – use eco-friendly building products.



- Pollution is kept on the roof surface

- Pollutants and NO<sub>x</sub> are decomposed under UV rays

- Harmless particles are washed away by the rainwater



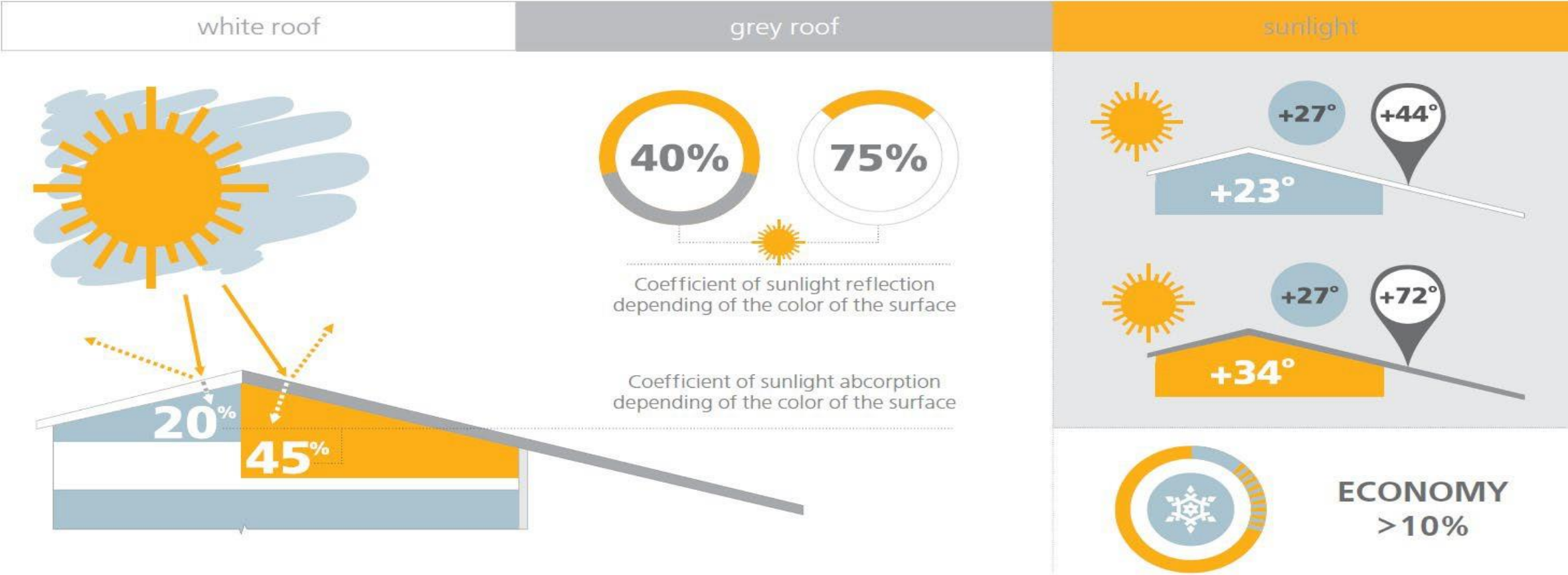


## **COOL ROOF**

# COOL ROOF

## TECHNONICOL ENVIRO WHITE

It is a waterproofing material that allows obtaining the effect of “cool roof” thanks to the white slate with high solar reflection used as the top protective layer. Using of the material allows reducing the costs of conditioning the premises under the roof (on sunny days) by up to 30%.



# COOL ROOF

THE GREENEST ROOF IS ... WHITE





**TECHNONICOL**

**THANK YOU FOR  
YOUR ATTENTION!**