

**P R K r a j n é , s . r . o .****Krajné 874 , 916 16 Krajné****Climatic, energetically active surfaces STERED®
based on circular economy**

Conventional, purpose-built areas, such as roofs of residential and office buildings, production and storage halls, walkways, parking areas, are transformed into **Climatic, energy-active areas** by application with STERED®. These are characterized by the repeated ability to retain water and allow it to evaporate back into the environment. (**water retention and water vapor function**).

They become **energetically active** in that the energy from the environment is consumed to evaporate the water.

1 m³ of water for its evaporation consumes up to 650 kWh of energy from the surrounding space. At the same time, this service can advantageously be fulfilled not only withholding rainwater but also with gray water (purified water from WWTP, wells on plots with high groundwater status, process water running off).

Such surfaces then act as **active energy consumers, cool the ambient air, increase air humidity and reduce its dustiness, reduce heat transfer through the roof and cladding, thereby reducing the need for cooling in buildings, respectively. reduce the cost of producing cold from cooler air.**

The ability of repetitive water retention and water vapor resistance is determined by the STERED® material.

STERED is the final product of recycling and subsequent recovery into the final product of mixed wastes from synthetic technical textiles. These are textiles from which the individual parts are made into the construction of the car, but also synthetic technical carpets, especially from the office and residential areas.

Climatic, energetically active vegetation roof STERED® - 4 in 1

<http://zelene-hospodarstvo.enviroportal.sk/detail-en/566>

- uses active evaporation of water (2-8l / m² / day, cooling capacity 1.3 - 5.2 kW / m² / day)
- Evaporated water ensures a reduction of heat transfer through the roof cladding, reducing the need for production cold for indoor areas by up to 43%. Saving unused energy reduces the carbon footprint up to **18 kg CO₂ / m² / year** (135g Co₂ at 1 kWh)
- Evaporated water above the surface reduces the thermal stress compared to a conventional roof Surface a difference of up to 20 ° C, which results in lower energy costs for cooling production air intake systems
- vegetation (SEDUM, mosses, lichens) is a harvesting and exploitation technology carbon capture and utilization ('CCU'); - photosynthesis consumes - up to **5 kg CO₂ / m² / year**
- retention of the surface by retention of rainfall and slowing down of runoff from the surface also constitutes protection against

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- Damage from torrential rains, changes the runoff coefficient to 0.05
- up to 80% of the area is made up of recycled products, which are end-of-life products recyclable- Up to 8,000 kg of “autotextile” waste will be recovered per 1,000 m2 of area - 2,600 new production waste cars, or separated waste from the processing of 260 end-of-life vehicles (ELVs), about 2,600 m2 of discarded technical contract carpets
- replacement of greenery for built-up area, restoration, preservation of biodiversity of the area

Climatic, energetically active hard surface STERED® 4in1

<http://zelene-hospodarstvo.enviroportal.sk/detail-en/901>

- normal pavement, parking lot with drainage surface (seepage pavement) is changed by insertion retention boards for climatic, water retention and water vapor surfaces,
- Evaporated water above the surface (2-8l / m2 / day, cooling capacity 1.3 - 5.2 kW / m2 / day) reduces thermal stress compared to hard surface, difference up to 20 ° C, vaporized water prevents heat accumulation in the surface component of the surface, e.g. drainage interlocking paving
- retention of the surface by retention of rainfall and slowing down of runoff from the surface also constitutes protection against damage from torrential rains
- min. 50% of the area is made of recycled products, these products are at the end of their service life recyclable
- Up to 10,000 kg of “autotextile” waste will be recovered per 1,000 m2 of area - 3,250 new production waste cars, or separated waste from the processing of 325 end-of-life vehicles (ELVs), approximately discarded 3,250 m2 of technical contract carpets.

Cross-rail noise absorber with water retention function - controlled retention and water vapority in urban rail BRENS® - STERED®

<http://zelene-hospodarstvo.enviroportal.sk/detail-en/565>

- performs the function of a noise absorber
- controlled water retention and evaporation contributes to cooling the body surroundings lines (2-8l / m2 / day, cooling capacity 1.3 - 5.2 kW / m2 / day)
- surface with vegetation stand becomes active element of CCU (1 km of double track is approx. 6 600 m2 (photosynthesis up to 20 - 33 t CO2 / year)
- retention of the surface by retention of rainfall and slowing down of runoff from the surface also constitutes protection against damage from torrential rains
- up to 80% of the area is made up of recycled products, which are end-of-life products recyclable
- up to 165,000 kg of “autotextile” waste is recovered on 1000 m of double-track tramway surface waste from the production of 55 500 new cars or separated waste from processing 5 300 end - of - life vehicles (ELVs), discarded 55 500 m2 of technical contract carpets, and 274 500 kg recycled rubber from old tires 39200 discarded tires.

In Krajné, December 4, 2019, Juraj Plesník

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