# Urbanscape Landscaping Solutions

BERA®

enhanced by urbanscape

# Why Urbanscape Landscaping Solutions?

The landscaping industry is constantly evolving to ensure:

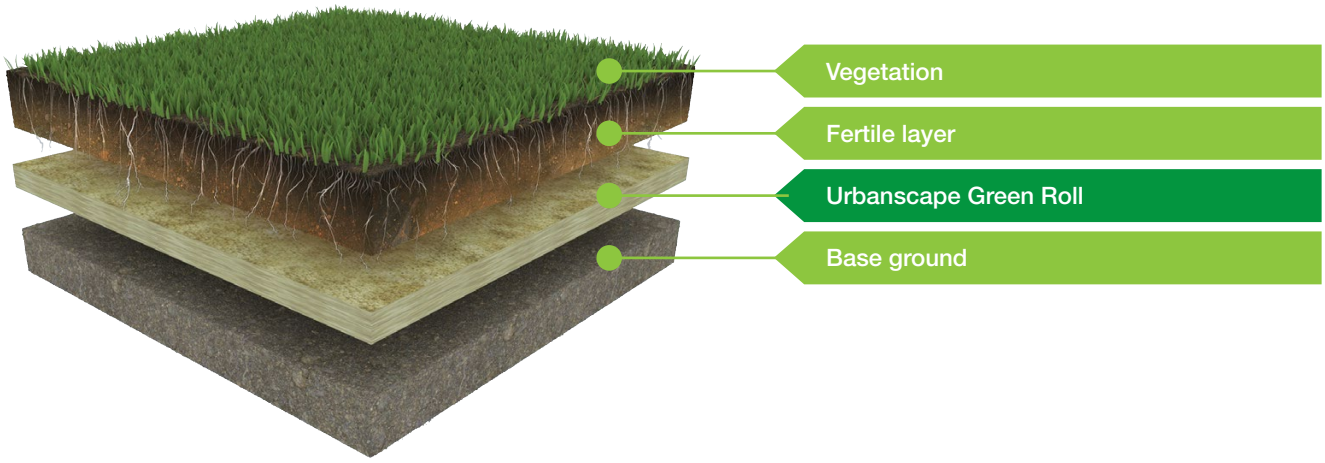
1. Good water conservation* practices and reduced evaporation
2. More vigorous plant growth and better resistance to environmental stress
3. Control over soil erosion
4. Storm water management and less storm water runoff, reducing local flooding

*Significantly reduced water consumption is just one of the primary advantages of the innovative Urbanscape Landscaping System from Knauf Insulation, which is designed to meet the many challenges associated with water management.

# Urbanscape Landscaping System BERA®

Urbanscape is an innovative and easy to install system that boasts high water retention capacity designed specifically for landscaping applications such as residential gardens, sports fields, commercial spaces, cemeteries, public parks and various complex green architectural solutions.

Urbanscape Green Rolls are made of natural rock mineral wool fibres with superior water absorption and water retention properties. Virgin mineral fibres provide additional water storage, releasing water when required and protecting the water from percolation and reducing evaporation at higher temperatures. The system also works to promote better root distribution, which in turn encourages good plant growth and development. All this and more make Urbanscape Green Rolls the best, most versatile solution for growing plants in the most demanding of environments.




Private/residential gardens

Public and commercial gardens and parks

Planting of trees and shrubs

# What are the main benefits?

## Significant water conservation

Urbanscape Green Rolls deliver fast and long-term stable water re-absorption and water retention performance. A mere 1m$^2$ of Urbanscape Green Roll just 2 cm thick absorbs a whole 17 litres of rainwater. Depending on the local climate and the weather/season, water savings of up to 75 % can be achieved.

## Storm water management

One major advantage of Urbanscape Green Rolls are their ability to reduce storm water runoff, which translates into lower burdens on sewer systems. It can lower costs by eliminating the need for rain caching cisterns and similar equipment commonly used to manage storm water. And high rainwater retention capability helps reduce the number of accidents caused by heavy rainfall.

## Less frequent irrigation

Urbanscape Green Rolls ensure that the right amount of water is made available to plant roots over extended periods of time. As a result, the need for additional irrigation systems is substantially reduced.

## Lower fertilizer consumption

Urbanscape Green Rolls bind fertilizers with water to form small water reservoirs that are able to supply more nutrients essential for healthy plant growth.

## Improved root growth

The water made available in the reservoirs created by Urbanscape Green Rolls ensures proper plant root growth and well dispersed root distribution.

## Stronger plants

Thanks to the high water and fertilizer storage capacity of Urbanscape Green Rolls, early- and long-flowering periods can be established, and plants are able to recover faster after extended dry periods.

## Fast and easy installation

Urbanscape Green Roll is extremely lightweight and easy to install.

## Sustainability

Urbanscape Green Roll is made from various common rock mixtures that are widely available in nature. The lightweight open structure of the product promotes extensive root distribution and vigorous plant growth.

# Urbanscape Green Roll

Urbanscape Green Roll (HTC GR) is a lightweight landscaping product made of long rock mineral wool fibres specially needled to form a compact and dimensionally stable felt. The product is made solely of virgin rock mineral fibres. Urbanscape Green Rolls ensure excellent water retention and conservation in an array of landscaping applications and is a good addition to existing growing mediums.

Urbanscape Green Roll

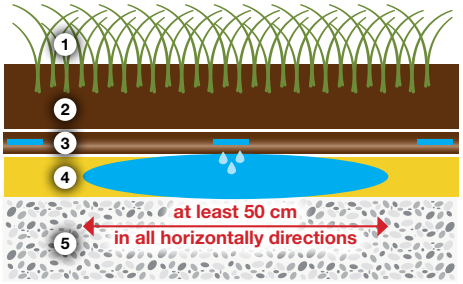
## Properties

| Produkt | Thickness (mm) | Water retention (l/m²) | Weight (kg/m²) |
|---|---|---|---|
| Green Roll | 20 | 17 | 2.20 |
| Green Roll | 40 | 29 | 4.40 |

Other thicknesses on request

| Property | Unit | Value | Standard |
|---|---|---|---|
| Nominal density* | kg/m3 | 100-110 (130)*** | EN 1602 |
| Initial water absorption** | times | 8.3 | |
| Initial water absorption under 700 N/m² pressure** | times | 7.0 | |
| Water absorption characteristics | % | 72 | WOK analysis |
| Reaction to fire | | Euroclass A1 | EN 13501-1 |
| pH value | 7.5 | | |

*Valid for dry state **The ratio of the weight of water absorbed by a material, to the weight of the dry material.
***Valid for Green Roll Standard HD Certificates : CE, EUCEB, RAL, ISO 9001, ISO 14001, EN 16001, OHSAS 18001

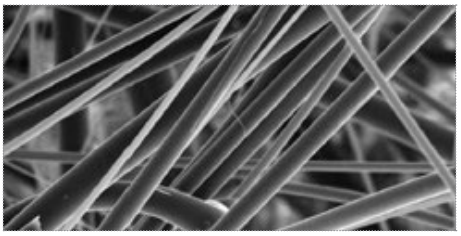



Ideal for sub-irrigation

1. *Vegetation*
2. *Fertile layer*
3. *Irrigation system*
4. *Urbanscape Green Roll*
5. *Base ground*

## Benefits

- 100% pure mineral growing media made of rock mixture; pure rock, with no additives
- Excellent water retention capacity (can hold up to 85% volume of water)
- Significant water savings
- Long-term stability and durability
- Unique horizontal water distribution (up to 50 cm dispersion from the water source in all directions) makes it ideal for sub-irrigation
- 100% controlled production process to provide consistent properties (acquired certificates: CE, EUCEB, RAL, ISO 9001, ISO 14001, OHSAS 18001)
- A proven growing medium in the horticulture business



Long-term fibre stability

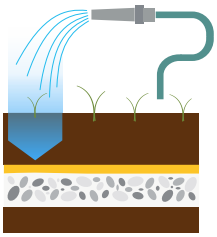
## Usage / Installation

### 1. Simple to use

Place the Green Roll on the top of properly prepared base ground and spread a layer of fertile soil (10-20 cm) over it.

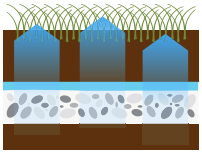
### 2. Usual care

Place a pre-vegetated blanket over the soil or sow seeds to the soil. Water thoroughly.



### 3. Less watering

The green plot should be watered regularly (using less water than usual) until the grass takes root in the Green roll. The Green Roll retains additional water so that plants have access to it as required.



# Urbanscape Green Cubes

Urbanscape Green Cubes are a water absorbent growing medium made of virgin rock mineral wool. Urbanscape green cubes are used primarily as a soil enhancement product, which helps build better soil structure and provides higher water retention capacity and better aeration of the growing medium. Water contained in Urbanscape Green Cubes is always easily available for plant uptake.

Urbanscape Green Cubes are used for different home gardening applications:

- Use alone as a growing medium in pots
- Mix with other pot media (soil, coconut fibres, peat etc.) to improve water retention capacity and aeration
- Mix into sandy or loamy garden soil to improve water absorption and water storage capacity.

Urbanscape Green Cubes

| Characteristics | Value | Unit | Standard |
|---|---|---|---|
| Moisture content | max. 0.05 | %wt | |
| Fibre diameter | approx. 4.5 | µm | SK_109 |
| Cube size | 20 | mm | |
| Colour | Grey/Green | | |

## Recommendations

- Especially recommended for patios, terraces and home gardening.
- Mixing regular soil with Urbanscape Green Cubes means you can reduce watering frequency by up to 50% and achieve higher yields. Results may vary according to the type of soil, vegetation and climate.
- We recommend mixing at least 20% of Green Cubes into the base growing medium.

## Benefits

- Improved growing medium characteristics
- Less environmental stress on plants
- Better plant growth and development
- Increased green mass of plants
- Better plant resistance

## Usage / Installation

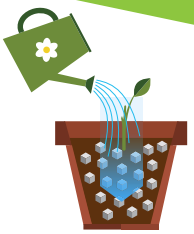
- Mix with any potting growing media to improve water retention capacity and aeration. Water in the container is evenly distributed and a water buffer between watering is established.
- Mix into sandy or loamy garden soil to improve soil aeration, water distribution and water available for plant uptake.
- We recommend mixing at least 20% of Green Cubes into the base growing medium.

### 1. Simple to use

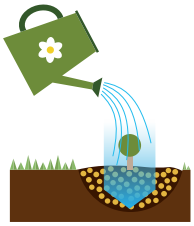
Mix Green Cubes with the substrate at a ratio of 1:5 (1/5 cubes with 4/5 substrate). The proportion of cubes can be increased when planting plants with more demanding water requirements.

Prepare the planting hole. Mix Green Cubes with the prepared soil at a ratio of 1:5 (1/5 cubes mixed with 4/5 substrate).

### 2. Usual care



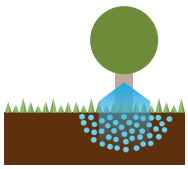
Place the mixture in a pot. Place the plant in the ready-made mixture and water thoroughly. The cubes should be covered with soil.



Plant the tree or bush, cover all exposed roots with the mixture and water. Cubes should be covered with soil.

### 3. Less watering

Green Cubes retain additional water so that the plant may access it as required.



Green Cubes retain additional water so that the tree or bush may access it as required.

# Urbanscape Green Flocks

Urbanscape Green Flocks are made of virgin rock mineral wool. Urbanscape Green Flocks are used as a growing medium for home and professional use, or to augment high quality soil for both indoor and outdoor plant production. Green flocks have superior water storage and release capabilities, making water and nutrients easily accessible to plants. Green flocks improve soil structure and help protect plants from environmental stress.

Urbanscape Green Flocks

Urbanscape Green Flocks are used as a high quality soil enrichment product in professional landscaping applications.

- Mix with other container media (soil, coconut fibres, peat etc.) to improve water retention capacity and aeration
- Mix into sandy or loamy soil to improve water absorption water storage capacity and water-air ratio.

| Characteristics | Value | Unit | Standard |
|---|---|---|---|
| Packaging density | 200 | kg/m³ | |
| Moisture content | max. 0.05 | %wt | |
| Fibre diameter | approx. 4.5 | µm | SK_109 |
| Flock size | 3-20 | mm | |
| Colour | Grey/Green | | |

## Recommendations

- Especially recommended for outdoor professional applications
- Mixing regular soil with Urbanscape Green Flocks means you can reduce watering frequency by up to 50% and achieve higher yields. Results may vary according to the type of soil, vegetation and climate
- We recommend mixing at least 20% of Green Flocks into the base growing medium.

## Benefits

Adding Urbanscape green flocks to the soil yields:

- Better growing medium characteristics
- Less environmental stress on the plants
- Better plant growth and development
- Increased green mass of plants
- Improved plant resistance

## Usage / Installation

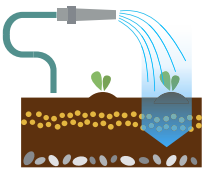
- Mix into garden soil to improve soil aeration, water and distribution and water available for plant uptake.
- We recommend mixing at least 20% of Green Flocks into the base growing medium.

### 1. Simple to use

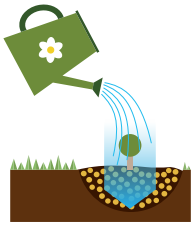
Insert Green Flocks by hand or with tools into the garden or field soil at a ratio of 1:5 (1/5 flocks mixed with 4/5 substrate).

Prepare the planting hole. Mix Green Flocks with the prepared soil at a ratio of 1:5 (1/5 flocks mixed with 4/5 substrate).

### 2. Usual care



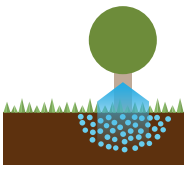
Plant or sow plants and water them. Flocks should be covered with soil.



Plant the shrubs and trees, cover all exposed roots with the mixture and water. Flocks should be covered with soil.

### 3. Less watering

Green Flocks retain additional water, so that the plant may access it as required.



Green Flocks retain additional water so that the shrubs and trees may access it as required.

# Kuwait - Improving natural resources management

Urbanscape Green Roll

Climate in Kuwait:
Kuwait is a small, desert country, located in the north-east corner of the Arabian Peninsula, famous for its very dry and hot climate. The flat, sandy Arabian Desert covers most of Kuwait. The summer months (April – October) are extremely hot and dry (it never rains during summer months) and while the normal day temperature is 33°C, it rises up to 51°C, i.e. 124°F, during the months of June, July and August. Winters (November to March) are cool with limited rain. Due to this weather condition in Kuwait, you will find very little vegetation in the country where only drought tolerant plants can survive without additional irrigation.

- Vegetation used: Passpalum grass
- Type/area: 3 test plots
  - Plot 1: 10 cm regular soil on top of 2 cm Urbanscape Green Roll
  - Plot 2: 10 cm regular soil on top of 4 cm Urbanscape Green Roll
  - Control plot: 50 cm regular soil

## Visible Difference after 4 weeks


Plot 1


Plot 2


Control plot

Water saving up to 40% has been achieved.

# Ornamental plant growth and development

Urbanscape Green Cubes

## 1. Plant growth

### Procedure

- Ornamental plant tested: Trailing, cascading pelargoniums (Pelargonium peltatum
- Substrate used: professional substrate with NPK ratio of 14:10:15 , pH value of 5.5. - 6.5.
- Differrent scenarios, mixing fibres into substrate used:

| Ratio (Urbanscape products : commercial substrate) |
|---|
| 100% professional substrate (control) |
| 40 % Urbanscape Green Cubes : 60 % professional substrate |

- Measurements for the following parameters were taken:
  **A** number of inflorescences
  **B** number of shoots
  **C** above-ground mass
  **D** dry above-ground mass (72 hours at 80 °C)
  **E** fresh root mass
  **F** dry root mass

## Recorded effects for Ville de Paris Red pellargonium

1. **Number of shoots:** 11.3% average increase
2. **Number of inflorescences:** 38% average increase
3. **Average mass of non-dried stems:** 9.6 % increase
4. **Average mass of non-dried roots:** 25.5% increase
5. **Average mass of dried stems:** 6% increase
6. **Average mass of dried roots:** 22% increase

## 2. Water retention characteristics of different substrate mixtures (soil vs. soil with Urbanscape products added):

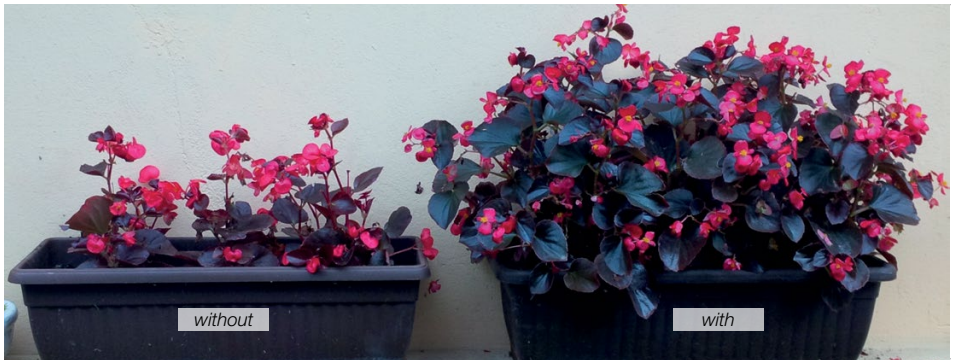
| Substrate mixtures | | | |
|---|---|---|---|
| Measurement | 100 % professional substrate (control) | 60 % Urbanscape Green Cubes 40 % professional substrate | 40% Urbanscape Green Cubes 60 % professional substrate |
| Water retention (ml) | 399,5 | 652,5 | 574,5 |

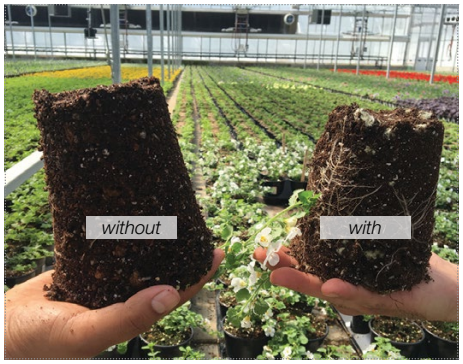
**+63,3%**
(vs. 100 % pofessional substrate)

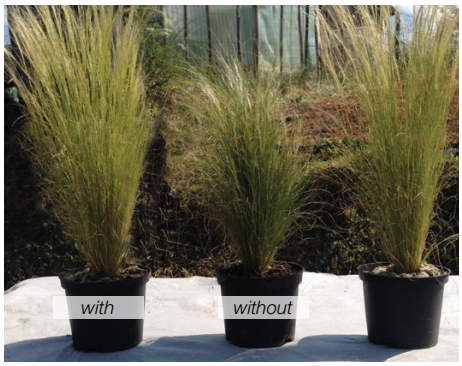
**63.3% increase in water retention capacity in case of 60% Green Cubes added.**

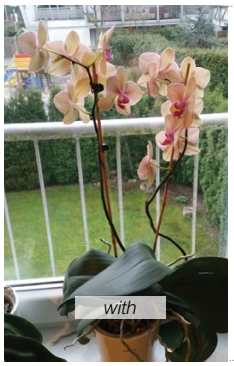
Highest water retention was recorded in the case where 60% of Green Cubes was added to the substrate. In this case, we observed a 63.3% increase in water retention capacity (results obtained for substrates only, without plants).

## See the difference...
## 100 % commercial substrate vs. mixing Green Cubes into commercial substrate



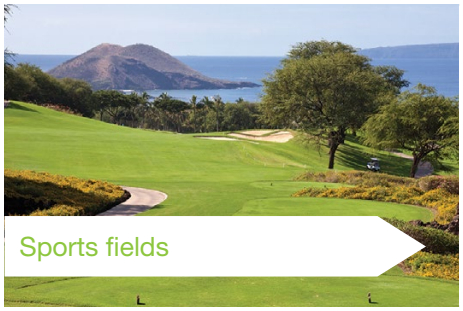





# Urbanscape Applications

## Landscaping Applications


Gardens


Sports fields


Slope greening/Erosion control


Railway greening


Public green leisure areas


Cemeteries


Agriculture in dry areas


Desertification

## Urbanscape Systems

Urbanscape Systems have been developed for various applications in order to meet an array of water management requirements.


Urbanscape Green Roof System


Urbanscape Landscape Solution


Urbanscape Horticulture


Urbanscape Home & Gardening

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BERA® is the trademark of BERA B.V. of The Netherlands, a company which develops stabilization systems, eco systems and prestigious outdoor living concepts.
With the company's historical roots & wealth of know-how in landscaping and architectural fields, they create innovative and environmentally sustainable solutions, supplied throughout Europe, the Middle-East, South Africa and S-E Asia regions.

Knauf Insulation is committed to providing building materials that deliver real performance to improve sustainable construction. With the introduction of its new Urbanscape Landscaping System it continues to deliver on this commitment. Knauf Insulation is active in more than 35 countries, with 40 manufacturing plants and over 5,500 employees across the globe.

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