



## GR42, creating healthy green spaces with low water consumption

## Environmental importance of green space

### Urban Green Spaces (UGS),

are considered an appropriate way to reduce urban heat island (UHI) effects and provide comfort to nearby occupants. This phenomenon is called the urban green space cooling effect. The intensity and density of the cooling effects of urban green spaces can play a major role for urban designers and planners in combatting the urban heat island effect.

The majority of investigations into the effect of features and dimensions of UGSs on UHI have been conducted over the past ten years. According to a review study published (2010 Bowler et al.), green infrastructure (trees, parks, forests, and green roofs) have a higher level of thermal comfort than other urban spaces. This is especially true for larger parks and urban forests, which can have up to 1°C lower daytime temperatures.

According to the study, the cooling effect of an UGS is directly correlated with its vegetation cover and tree shade area, also as it balances the water level in the soil possible erosion is stabilised.

## What are the benefits of creating lawns?

- Similar to pioneer plants, a lawn stabilises the ground and in time, creates fertile soil
- Minimises vaporising water
- Combined with urban green space, creates a micro climate
- Creates a place for insects and animals to inhabit which are important for bio diversity
- Offers space for relaxation
- Provides stress relief, increases social interaction, encourages physical exercise and even helps soothe mental illness.



## The effects of GR42 for lawns:



- A non-organic material that degrades organically
- Converts into nontoxic fertilising elements after 8 years
- Offers micro fertilising (up to 8 years) and water saving (up to 6 years)
- Creates a healthy green lawn with the minimum amount of water (max 20%)
- Turns five times more urban space green
- Builds a more sustainable living environment
- Stabilises the ground by creating a strong root base

## Park Salmaniya - Bahrain

### Easy to apply and handle



The only difference from creating normal green is, that you need an extra thin layer of a soil mixed with GR42 which uses approximately 1m<sup>3</sup> GR42 for approx. 20m<sup>2</sup> lawn. The grass turf is then laid directly on this layer.

Once the turf has been laid it should be watered normally for the first 2 weeks, before gradually reducing until water consumption is reduced by up to 80/90%.



- Grass Turf
- Soil GR42 mixture
- Sandy soil



After 4 years with GR42 in the lawn, the water usage is still minimal (only 2 litre/day per m<sup>2</sup>) and the grass will remain healthy and strong. With reduced maintenance and lower water consumption using GR42 on a project in Bahrain, where water is produced by expensive environmentally unfriendly desalination plants paid off within a few months.

### Calculation example German Embassy in Bahrain:

3,000 m<sup>2</sup> lawn (GRc/soil layer thickness 5cm)

water consumption per m<sup>2</sup> lawn = 16 Litre/day without GR (48.000L water per day)

water consumption per m<sup>2</sup> lawn = 2 Litre/day with GR (after 30 days, 6.000L per day)

## The beauty of GR42

### is that it is:

- Water consumption is reduced by up to 80/90%
- Easy and straight forward to handle
- Good for the soil
- Reduces fertiliser usage by 70%

### GR42 can solve many problems in one go, as it has been proven to:

- Reduce water shortage
- Protect the ground water and reduce salt levels in the soil through using less fertiliser
- Ensure the cultivation of new green fields which were unusable before.
- Reduce levels of exported virtual water

