



What substrate should I use on my green roof?

When planning your green roof, your choice of growing media is critical to its success. You must use a substrate specifically designed for Green Roofs.

UK Green Roof Substrate Test Methods BS8616 is the British Standard code green roof substrates.

Characteristics of a good green roof substrate include:

1. Lightweight to reduce weight loading on the roof.
2. Good aeration and water holding properties. It should hold sufficient water for plant growth but enable sufficient water to infiltrate to prevent water pooling on the roof.
3. Controlled fertility levels. It should be low enough in nutrition to prevent excessive vegetation growth but hold enough nutrition for healthy long-term vegetation.
4. Having appropriate chemical properties to aid good vegetation growth in a green roof project.

We tend to find that Green Roofs fall into two main categories – Extensive and Intensive.

Extensive are mainly roofs that are not easily accessible. They generally require little maintenance, a lower nutrient level, and little or no irrigation once they are established. The most common form of vegetation is sedum, which offers variety throughout the growing season. Sedum is drought tolerant so can cope with the fast-draining soil; it can also handle extremes in climate and a shallow substrate of around 100mm deep.

With the correct design, extensive roofs have been known to encourage ground nesting birds such as lapwings and skylarks, while helping to create 'green corridors' through our urban environment, helping with the movement of wildlife. Extensive roofs that are planted with wildflowers are becoming increasingly popular but these do require more maintenance.

An Intensive Green roof is much more involved, and these are more like roof gardens, with more complex planting and paving schemes. These green spaces are intended to be used, and add another dimension to buildings, where people can relax and have access to fresh air. The vegetation can range from plants and shrubs to woodland tree species.

If you have a smaller area, pre-grown sedum cassettes are a quick and easy way to get instant impact. They're ideal for areas up to 40 or 50 m²

Depending what type of green roof, you are planning will determine the substrate you need.

Roof Garden Extensive Substrate is rich in nutrients which ensures quick plant establishment of thin lightweight green roof project It is lightweight in texture.

Intensive roof garden substrate is a blend of lightweight aggregate and topsoil. It is ideal for green roof construction projects, particularly containerised planting. It is lightweight with good water holding capacity. Intensive substrate is usually significantly deeper than extensive, 200mm plus, and as it has more organic content there tends to be more moisture held in it.



Here is a rough guide to the recommended substrate depths for the various types of green roof planting schemes:

Extensive - sedum = 60-100mm (reduce to min 20mm on pre-grown sedum mats)

Extensive - wildflower = not less than 100-150mm depending on plant species

Intensive - shrubs = ≥ 150 mm

Intensive - large bushes/small trees = ≥ 350 mm

Intensive - medium trees = up to 1000mm

If comparing the two main types of green roofs, an extensive green roof doesn't really have any downsides. It is lightweight, minimal maintenance, and can even be installed on pitched roofs, providing it is correctly stabilised.

The benefits of intensive roof gardens are that they give provide more usable space and look fantastic, breaking up a dull looking building. However, they are heavier, more costly and require more ongoing maintenance.