

AXTER EXTENSIVE and BIODIVERSE (BROWN) GREEN ROOF MAINTENANCE



Maintenance, conducted by qualified personnel, will ensure the initial establishment and continued health of the green roof system. It is strongly recommended that the installing contractor remains responsible for the maintenance of the green roof during this establishment stage (between 12 - 15 months) and prior to the assignation of maintenance duties to the building owner's representative. Maintenance contractors with specialist training in green roof care should be used where possible.

All maintenance actions carried out at roof level must be in full compliance with the appropriate health and safety regulations, and particularly those specifically dealing with working at height. BS 4428:1989 – Code of practice for general landscape operations (excluding hard surfaces) and BS7370-4:1993 Grounds maintenance - Part 4: Recommendations for maintenance of soft landscape (other than amenity turf) provide guidelines for maintenance actions.

Irrigation

Irrigation will be required for the initial establishment of the green roof. Take care not to over water. Once the plants are established irrigation on extensive and bio-diverse roofs can be reduced or eliminated altogether.

Fertiliser

On extensive roofs with low nutrient growing medium regular fertilising will be required to provide additional nutrients to enhance germination, flowering and resistance to extremes of weather.

Planting regime

Unless the object of the green roof is to replicate the ecology of the site prior to the development, as could be the case with a bio-diverse green roof, undesirable plants species can be avoided by ensuring full coverage of the desired plant species at the outset. Alien plants should be removed before they have an opportunity to take root.

Plant management

Dead plant material should be removed to allow greater coverage. This improves the appearance of the roof as well as reducing the spread of fungal diseases. On bio-diverse roofs this material could be left to create habitat for wildlife.

Maintenance programme

After installation of vegetation on an Axter extensive or bio-diverse green roof two visits should be made:

- the first a month later to ensure that the vegetation is in a good condition and to observe any anomalies,
- the second three to six months later to verify the root growth and to effect any reinstatement that may be necessary.

After this initial maintenance, it is recommended that at least two maintenance visits are made to the roof each year, the first in early spring and the second in late autumn to ensure that leaf fall is not adversely affecting drainage performance.

The table below gives an indicative work plan during installation and for each subsequent visit.

General maintenance for all green roofs	During installation	Standard maintenance
Remove all vegetation and debris from rainwater outlets, walkways and on sterile areas. Additional pebbles or gravel should be added to the vegetation barrier if movement or settlement has occurred.	✓	✓
Manually remove any herbaceous material that may be detrimental to waterproofing.	✓	✓
Remove leaves that may stifle vegetation and block rainwater outlets, although some leaf litter may be beneficial to a biodiverse environment.	✓	✓
Manually remove any aesthetically unpleasing vegetation which may affect waterproofing membranes (e.g. grass).		Optional
Minimum number of maintenance visits per year		2

In addition the following procedures should be followed for specific Axter green roof systems:

<p>Axter Hydropack pre-planted modular tray extensive green roof (sedum):</p> <ul style="list-style-type: none"> • Dead head the sedum. • Re-plant any missing sedum fragments. • Use of fertiliser: It is recommended that a slow release fertiliser is applied to the Hydropack at the start of spring (25gm/m²). A product such as Osmocote Exact (produced by Scotts) with a formula NPK 15-9-9 should be applied by a hand spreader to ensure even coverage. • Water after installation and during prolonged dry periods or periods of high temperatures. Take care not to over water. 	<p>Optional As required</p>	<p>Optional As required As required</p>
<p>Axter Sedum Vegetation Blanket:</p> <ul style="list-style-type: none"> • Light hand weeding once or twice a year to keep out wind blown seeds. • Dead head the sedum. • Re-plant any missing sedum fragments. • Use of fertiliser: Use of fertiliser: It is recommended that a slow release fertiliser is applied to the sedum mat twice a year in March and September (25gm/m²). A product such as Osmocote Exact (produced by Scotts) with a formula NPK 15-9-9 should be applied by a hand spreader to ensure even coverage. • Water after installation and during prolonged dry periods or periods of high temperatures. Take care not to over water. 	<p>As required Optional</p>	<p>As required Optional As required</p>

Green roof maintenance, cont'd	During installation	Standard maintenance
<p>Axter Wildflower Blanket:</p> <ul style="list-style-type: none"> • One main cut in late autumn, removing all cuttings. • A spring cut may be advisable if the grasses become too dominant. • Water after installation and during prolonged dry periods or periods of high temperatures. Take care not to over water. 	✓	✓ ✓ ✓
<p>Axter Biodiverse Green Roofs:</p> <ul style="list-style-type: none"> • One light cut in late autumn removing all cuttings. • Biodiverse roofs usually require minimal maintenance with no fertilisation or artificial watering. However this may be needed if vegetation other than naturally colonising plants is introduced into the roof. Consult Axter for further advice. 		✓ ✓
<p>Axter Hydroseed:</p> <ul style="list-style-type: none"> • The Axter seed mix for green roofs should be applied evenly onto the prepared Axter brown roof substrate by hand-broadcasting, seed fiddle, or seed/fertilizer distributor. Rake after sowing, particularly in dry weather and with freshly worked loose soil; this will press the seed into contact with the soil and bring moisture to the surface by capillary action. In wet weather a good rain after sowing will wash the seed in and settle the soil surface. • Regular light watering is important once seeds are sown, particularly in prolonged dry periods, to provide optimum conditions for seed establishment with sufficient water at the critical time. Weeds should be removed as soon as possible. • It is important to remember that some seeds are slower to germinate than others and some may not germinate until the following year. In addition, some seeds will not flower in the first year. <p>The seed mix may take two growing seasons to become fully established and produce a full floral display. During this time other wind-blown seeds may also establish themselves and should be removed.</p>	✓	✓

Separate information sheets are available from Axter for the different types of green roof mentioned above. Contact Axter Ltd for further details.

Roof maintenance procedures

- Ensure safe access can be gained to the roof and that when working at roof level safety harness attachment points and man safe systems are used where provided and that Health and Safety Procedures are respected.
- Rainwater outlets, chutes, gutters and inspection chambers to be kept free from debris and leaves. All downpipes should be kept unblocked so that water can flow freely.
- Check mastic sealant and mortar pointing for degradation and repair or renew as required.
- Check that protective metal flashing or termination bars remain securely fixed in place.
- Paving slab walkways and promenade tiles should remain securely fixed and in good condition.
- Plant or equipment on the roof should be positioned on suitable supports and fixings not allowed to penetrate the waterproofing. In addition, maintenance to adjoining areas should be carried out without causing damage to the roof waterproofing.
- Any signs of damage or deterioration to the roof waterproofing should be reported to Axter Ltd immediately.
- Contact Axter Ltd for advice on works or alterations that may affect the integrity of the waterproofing and the validity of the Axter Guarantee.

Further information on Axter green roofs is available from Axter, tel: 01473 724056, email: info@axterltd.co.uk. For more general advice go to www.greenroofcode.co.uk.



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