

TECHNICAL SYSTEM SUMMARY

WILDFLOWER BLANKET SYSTEM

EXTENSIVE GREEN ROOF SOLUTION

This lightweight biodiverse green roof vegetation blanket provides instant greening of a roof with a mixture of 24 species of wildflowers. A comprehensive range of guarantees are available for this system.

Wildflower Blanket XF118 includes 24 species of wildflower and herbs incorporated into the blanket. Selected species can be chosen to suit the project and location.

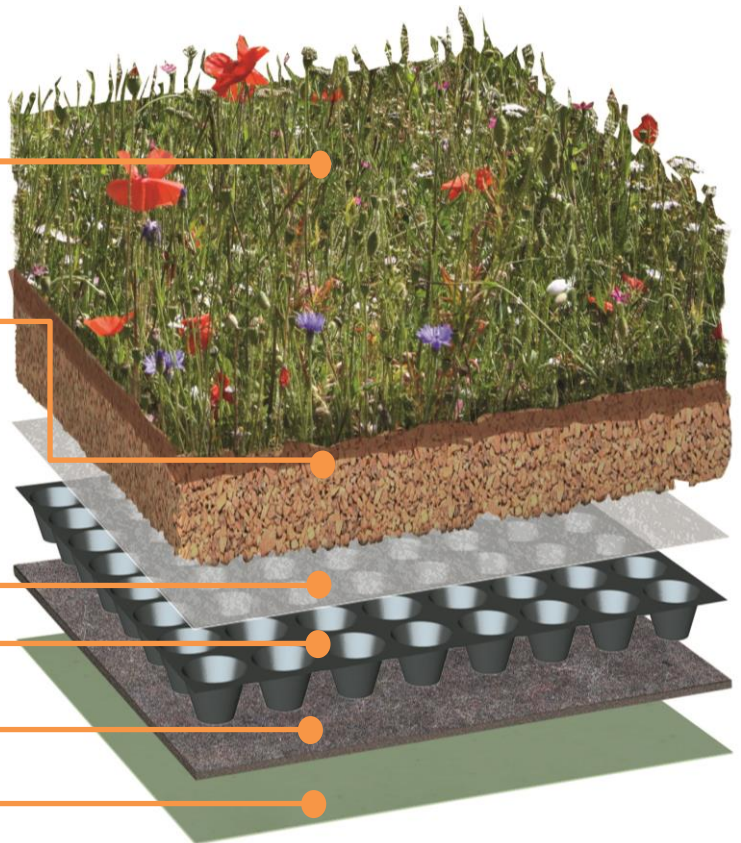
Bauder Biodiverse Substrate is a lightweight growing material that is manufactured to meet FLL guidelines.

Bauder Filter Fleece is a filtration layer that prevents substrate fines from washing into the drainage and water storage layer.

DSE 20 is a lightweight 20mm thick multi-functional water storage and drainage layer

Bauder FSM600 Protection Mat is a polyester and polypropylene fibre mix protection layer.

Bauder PE Foil Separation Layer is a polyethylene foil separation and slip layer manufactured from recycled granules.



When to Specify

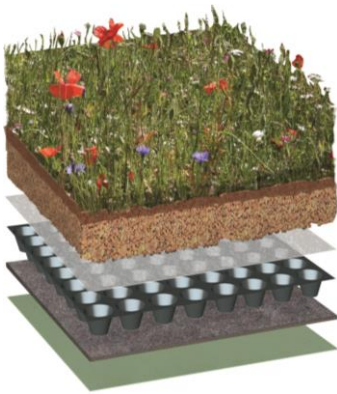
The blanket meets the growing demand for native species vegetation to satisfy the requirements of both BREEAM and Sustainable Homes codes. The vegetation will also be present on most of the biodiversity action plan lists that project specific ecology reports now demand.

Waterproofing Options

There are different waterproofing systems available to suit the individual project criteria for the green roof, its landscaping options, weight loading limits, performance and durability requirements. Please contact us so that a technical advisor can take you through the system best suited to your project.

Weight Loading

Based on 80mm substrate depth and 0-5° pitch



Product	Thickness (mm)	Saturated Weight (Kg/m ²)
Wildflower Blanket XF118	25.0	42.0
Bauder Biodiverse Substrate	80.0	120.0
Bauder Filter Fleece	1.0	0.125
DSE20 Drainage Layer	20.0	8.6*
Bauder FSM600 Protection Mat	4.0	0.6
Bauder PE Foil Separation Layer	0.2	0.190
Totals	130.20	171.515

* Saturated weight when filled with water only

WILDFLOWER BLANKET XF118

Xero Flor XF118 wildflower blanket has been developed to meet the growing demand for a native species vegetation blanket to satisfy the requirements of both BREEAM and Sustainable Homes codes. The product utilises the technology and much of the experience that we have gained over the last 15 years in growing and installing sedum-vegetated blankets, and as a result shares many of the benefits of these proven products.

The 24 species of wildflowers and herbs incorporated into the blanket have been selected to provide a viable and vibrant plant community whilst also delivering a range of native species that will be present on most of the biodiversity action plan lists that project-specific ecology reports now demand.

The unique blanket carrier incorporates a polypropylene mesh stitched to a permeable geotextile membrane, which ensures minimum compaction of the blanket substrate whilst allowing the vigorous root growth of the wildflowers to quickly establish into the substrate installed underneath.

Whilst the XF118 wildflower blanket is always installed as part of an extensive, substrate-based green roof system, the weight of the build-up and its establishment and ongoing maintenance requirements are amongst the lowest for this type of system.

KEY FEATURES

- Lightweight green roof system, making it ideal for retrofitting on a building or on new build construction.
- Effective solution where BREEAM and Sustainable Homes codes require a biodiversity strategy
- Delivers instant greening of a roof with native species wildflower plants
- Cost effective
- Cradle-to-Cradle certification
- Vegetation blankets are cultivated by Bauder and delivered to site within 24 hours of harvesting

Key to the success of the Bauder XF118 Wildflower Blanket is whether it is being specified to support the ecology or if its visual appearance will be the primary requirement. If the former is required then a basic level of irrigation and maintenance after installation will be sufficient, and if the latter then a greater level of maintenance and irrigation will be of much assistance in achieving the desired effect.

For further information on the Bauder XF118 Wildflower Blanket please see the Bauder Green Roof Vegetation Installation Guide and the Bauder Extensive Green Roof Maintenance Guide, both of which can be found at www.bauder.co.uk.





XFI 18 WILDFLOWER INDICATIVE SPECIES LIST

Botanical Name	Height	Blossom	Flowering Season
<i>Achillea millefolium</i>	8-40 cm	White	June-August
<i>Armeria maritima</i>	5-20 cm	Pink	April-October
<i>Bellis perennis</i>	3-12c m	White / Yellow	March-October
<i>Campanula glomerata</i>	3-30 cm	Blue	June-October
<i>Campanula rotundifolia</i>	15 cm	Blue	July-September
<i>Centaurea cyanus</i>	20-50 cm	Blue	June-August
<i>Centaureum erythraea</i>	10-40 cm	Pink	June-August
<i>Dianthus deltoides</i>	15-30 cm	Pink	April-October
<i>Echium vulgare</i>	30-60 cm	Blue	June-September
<i>Galium verum</i>	15-60 cm	Yellow	July-August
<i>Geum rivale</i>	20-40 cm	Pink	April-August
<i>Linaria vulgaris</i>	20-40 cm	Yellow	July-September
<i>Lotus corniculatus</i>	10-20 cm	Yellow	June-September
<i>Lychnis flos-cu-culi</i>	50-60 cm	Pink	May-August
<i>Papaver rhoeas</i>	20-60 cm	Red	June-August
<i>Pilosella aurantiaca</i>	20-60 cm	Orange	July-October
<i>Prunella vulgaris</i>	5-20 cm	Purple	June-October
<i>Rhianthos minor</i>	30-50 cm	Yellow	May-August
<i>Saponaria officianalis</i>	20-40 cm	Light Pink	July-September
<i>Scabiosa columbaria</i>	15-50 cm	Blue	July-October
<i>Sedum acre</i>	5-10 cm	White / Yellow	July-August
<i>Silene uniflora</i>	8-25cm	White	June-August
<i>Silene vulgaris</i>	25-50 cm	White	June-August
<i>Thymus polytricus</i>	4-10 cm	Mauve	May-August



PRODUCT DATASHEET

Bauder XF118 Wildflower Blanket

A UK native species wildflower blanket. Suitable for use on green roofs.

Intended Use

Bauder XF118 Wildflower Blanket is a broad mix of British Wildflowers grown in substrate on a nylon mesh which prevents substrate compaction. The product is installed over Bauder (FLL Compliant) Biodiverse Substrate. The vegetation is a mix of hardy Wildflowers, annuals and herbs. The Vegetation is cut back in the summer prior to delivery to reduce plant stress.

**PRODUCT INFORMATION AND TECHNICAL PERFORMANCE**

Characteristic	Unit	XF118 Wildflower Blanket
Maximum Saturated Weight	Kg/m ²	≤42
Thickness	mm	30-40
Species	Nos	24 species
pH Value		6.5 - 7
Typical Supply Size	m	1 x 2
Long Rolls (for use with crane attachment)	m	5 to 10m
Material		Substrate and wildflower plants, embedded in a nylon mesh, with a moisture retention fleece

UNITED KINGDOM

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70 Landseer Road, Ipswich, Suffolk IP3 0DH
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CERTIFICATION AND ENVIRONMENTAL INFORMATION

International Standards Organisation (ISO)	ISO 9001:2015 Quality Management Certificates EN1271 (UK) and 70499/03-15_e (Germany). ISO 14001:2015 Environmental Management Certificates A10552 (UK) and 70499/03-15_d (Germany). ISO 50001: 2011 Energy Management Certificate 70499/03-15_c
Recycled content	≥ 85% recycled material

INSTALLATION GUIDANCE

Normally installed directly onto leveled Biodiverse Substrate. Care should be taken not to traffic the Blanket. XF118 should be laid by skilled operative. See Bauder's Green Roof Installation Guide for full details.
The correct watering and aftercare is required for this product.

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PRODUCT DATA SHEET

Bauder (FLL Compliant) Extensive/Biodiverse/Intensive Substrate

Lightweight, free draining substrates, designed as a growing medium for a range of different plant species.

Intended Use

This FLL/GRO compliant substrate provides a free draining, growing medium for green roof systems. It is a lightweight substrate designed for most vegetation (Sedum, Wildflower or Grass blankets, Specimen shrubs and trees, plug-plants or seed). Additionally, it provides aeration qualities with some inherent water retention.



PRODUCT INFORMATION AND TECHNICAL PERFORMANCE				
Characteristic	Unit	Extensive Value	Biodiverse Value	Intensive Value
Maximum saturated weight	kg/m ³	≤1,200	≤1,200	≤1,250
Typical supply weight	kg/m ³	c. 900	c. 950	c. 1,000
Water storage	By vol	35%	35%	35%
pH value	-	6 - 8.5	6 - 8.5	6 - 8.5
Bulk bag size	m ³	1.25	1.25	1.25
Small bag size	Litre	25	25	25
Material	Recycled crushed brick, expanded clay, shale, composted pine bark			

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Recycled content	≥ 95% recycled material

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PRODUCT DATA SHEET

INSTALLATION GUIDANCE

Normally installed above a filter fleece and drainage board product. Substrates are raked out to give an even coverage of the required depth after settlement. See Bauder's Green Roof Installation Guide for full details.

Bauder reserves the right to amend information and product specifications without prior notice. All reasonable care has been taken to ensure that all data is current at the time of print, however because Bauder pursues a policy of constant development we recommend ensuring that your copy of this information is current by contacting our Technical Department at technical@bauder.co.uk.

Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications, installation techniques and any applicable laws and regulations.

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BAUDER



GREEN ROOFS

GENERAL MAINTENANCE INFORMATION

BAUDER BIODIVERSE SYSTEMS
XF118, KS Plus seed mix and wildflower
planted substrate-based systems

BAUDER BIODIVERSITY GREEN ROOF SYSTEMS

XF118 Wildflower Blanket, KS Plus seed mix and wildflower plug plants

The following is a guide to the maintenance necessary to keep a biodiverse green roof in a condition broadly similar to that in which it was first installed. The information relates to installations that have been completed for one full growing season and where establishment maintenance has been effective. For clarity, establishment maintenance relates to tasks continuing on after installation, where a defined period of regular watering and minor maintenance is required until the planting has rooted into the growing medium, adapted to its location and can be considered established.

What to Expect from a Bauder Biodiverse Green Roof System

There is a common misconception that extensive green roofs, and sedum plants in particular, are always green and that from ground level they resemble grass. This is misleading, as they consist mainly of low growing, drought tolerant sedum plants and may also include other species such as Saxifrage, wild flowers, grasses, moss and herbs.

General Maintenance

The level of maintenance of the horticultural element of this type of green roof will vary significantly, dependent upon the various species of vegetation incorporated and the purpose for which it was initially installed. Whilst the original intent may have been to allow the green roof to grow wild, the problems that this can create with the build-up of dead or unwanted vegetation and the impact that this has to the appearance and type of vegetation on the roof will often dictate the need for basic maintenance to be carried out.

The Bauder biodiversity green roofs which are currently being installed to meet either BREEAM or Sustainable Homes codes will include a species mix selected to provide a balanced plant community on the roof and will require basic maintenance if this is to be sustained in the long term.

Maintenance is best carried out annually, during springtime and additionally in late autumn should the particular roof location be affected by local trees that produce surface leaf litter. Some deposited leaf litter may be considered as contributory to the bio-diverse environment, which is acceptable so long as provision is made to ensure that this has no negative effect on other plants and the roof drainage performance.

The following procedures should be carried out in order to ensure the roof is maintained in good condition and to protect the validity of the waterproofing system guarantee.

Note - Specifically designated biodiversity areas should be disturbed as little as possible during maintenance so as not to upset any micro-habitats that may have colonised.

Preliminary Maintenance Procedures

- Ensure safe access can be gained to the roof and that relevant Health and Safety procedures are followed when working at roof level. It is advised that the contractor should always seek proof of current maintenance for any man-safe roof access systems prior to proceeding with the work on site.
- In order to avoid a build-up of bio-mass on the roof it is recommended that all dead vegetation is removed with a strimmer and provision made for the debris to be safely lowered to the ground and disposed of.
- We recommend removing unwanted leaf litter that has fallen onto the roof surface from overhanging trees both in the spring and autumn, to ensure that this does not smother the vegetation beneath.
- Open the lids of all Inspection chambers, to inspect and ensure that all rainwater outlets and downpipes are free from any blockages and that water can flow away freely.
- Ensure that any protective metal flashings and termination bars remain securely fixed in place. Advise the client of the need to repair or renew as necessary.
- Examine all mastic sealant and mortar pointing for signs of degradation. Advise the client of the need to repair or renew as necessary.
- Check that all promenade tiles and paving slabs are securely fixed to the roof surface and in good condition.
- Ensure that any new items of plant/equipment on the roof are mounted on suitable isolated slabs and that any fixings used to secure the plant/equipment in place do not penetrate the waterproofing. If in doubt, please contact Bauder for further advice.
- The Building owner should keep a record of all inspections and maintenance carried out on the roof. Any signs of damage or degradation to the waterproofing should be reported to Bauder immediately, in order that arrangements can be made for remedial work to be carried out if necessary.
- Damage to the landscaping should be reported to the building owner. If this damage includes Bauder components, then Bauder may be contacted for remedial advice.
- Works to adjoining areas - When carrying out any maintenance to adjoining roof areas, care must be taken not to damage either the green roof landscaping or the waterproofing system. If it is considered that either element has been affected, then Bauder should be contacted for advice. Any waterproofing damage caused after completion of the original installation may invalidate the guarantee.
- Alterations - Any unauthorised alterations to the waterproofing system will invalidate the guarantee. If such a situation should arise, then Bauder should be contacted so that we may advise on the alteration and how it should be incorporated without affecting the guarantee.

Plant Related Maintenance Tasks

1. **Plant encroachment.**

Any vegetation which has encroached into drainage outlets, Inspection chambers, walkways and the vegetation barriers (pebbles) should be removed. If movement/settlement of the pebble vegetation barrier has occurred, additional washed stone pebbles similar to the existing are to be added.

2. **Plant maintenance**

In the absence of specific instructions from the building owner or their designated consultant, advice should be sought from both the project landscape designer and the plant supplier and any maintenance carried out according to their specific recommendations.

3. **Maintenance of the Bauder XF118 Wildflower Blanket.**

If the Bauder XF118 Wildflower Blanket has been installed the minimum recommended maintenance of the vegetation is as follows:

In the late autumn the vegetation is to be strimmed back to a 50-70mm height and the unwanted waste matter removed and lowered to ground level for composting/disposal.

In late March/April apply an 80g/m² dressing of Bauder slow release organic fertiliser to the vegetated surface.

Note - Should it be decided that the XF118 Wildflower Blanket is to be left unmaintained to naturalise, we would advise that this will lead to a substantial build-up of dead vegetation on the roof that will over time significantly reduce the number of vegetation species within the blanket.

4. **Weeding**

With the exception of saplings, which should always be removed, weeds in a biodiverse green roof should be considered as a problem only of aesthetics, unless they are particularly invasive. If considered undesirable, they can be removed.

5. **Fertiliser**

Where the vegetation has been provided by Bauder, our organic slow release fertilizer should be applied at a rate of 80g/m² in the early spring. For all other vegetation it is recommended that advice be sought from the landscape designer and plant supplier and that any fertiliser required is to be applied according to their specific recommendations.

6. **Irrigation**

The need for irrigation in a biodiverse green roof system is dependent upon the client requirement for the visual appearance of the vegetation. If it is intended that the roof should have colour and interest for the longest period through the growing season, then irrigation will significantly aid in achieving this. Should the requirement be only to deliver biodiversity, then the provision of sufficient watering points at roof level to allow for only occasional watering in periods of prolonged drought can be considered sufficient.



Support

Modern biodiversity green roof installations will normally require only minimal maintenance. Bauder is happy to offer advice on any issues concerning your green roof and enquiries should be forwarded to our Technical Department at the address below. We believe our products and systems are of the highest standard and are always prepared to discuss any queries or concerns that may arise. Providing photographs or drawings to accompany your queries will help speed our response.

Please note: In the event of any query arising which it is thought may affect the condition of the system, then Bauder should be contacted at the address below. We cannot accept responsibility for any problem or failure due to use outside those parameters for which the system was designed or 'acts of god' beyond our control e.g. extreme weather conditions or damage through pests.

BAUDER GREEN ROOF MAINTENANCE SERVICE

With over 30 years' experience in the design and supply of green roofs throughout the UK and Ireland Bauder can offer unparalleled experience and expertise in green roof maintenance including sedum, biodiverse and wildflower.

Having established the largest UK facility cultivating green roof vegetation blanket we have unique knowledge and horticultural expertise for roofscape vegetation. With national coverage of over 50 field personnel, you can be assured of a prompt reliable service to fully meet your requirements.

Our Service

Bauder's experienced team will provide you with a tailor-made maintenance programme for your green roof. A typical Bauder Maintenance Programme Includes:

- Full inspection and evaluation of your green roof
- Application of organic slow release granular fertilizer
- Removal of leaves and debris
- Removal of unwanted vegetation
- Inspection and clearance of outlets
- Examination and testing of irrigation

This work is undertaken by Bauder's experienced maintenance engineers who will carry out the necessary risk assessments and comply with all current health and safety legislation throughout the duration of the work. Finally, you will be provided with a bespoke report with photographic verification outlining the condition of the planting and any areas requiring on going treatment.

To discuss your specific requirements, please call our green roof service team for a no obligation quote.

T: 0845 271 8801 **E:** greenmaintenance@bauder.co.uk