AB/CP/22094/01 - Footpath Validation Report

8th September 2026

SG Estates Ltd
Unit 1,
Rhosddu Industrial Estate,
Old Rhosrobin,
Rhosrobin,
Wrexham,
LL11 4YL

Attn: Mr. Andy Davies

Dear Mr Davies

RE: LAND AT NATIONAL TRUST AND SOUTH OF, WREXHAM ROAD, RHOSTYLLEN, WREXHAM, LL14 4DH – CONDITION 3 OF PLANNING PERMISSION DATED 02.02.26 (REFERENCE: P/2024/1695)

INSPECTION AND VALIDATION OF FOOTPATH/ CYCLEWAY

Further to your recent instructions we have now visited site to inspect and validate the footpath/cycleway works within the National Trust Woodland area of the above site in order to satisfy planning condition 3 of the Planning Permission (Reference: P/2024/1695) dated 02.02.26.

As part of the above works a Supplementary Ground Investigation was undertaken (Ref: SCB/22094/04 dated 9th October 2025) which outlined the presence of asbestos within four of the five tested samples and coliforms and Escherichia Coli within both of the two samples tested, which likely originate from the former sewage treatment works within the National Trust woodland. As a result of this contamination being within the area of the proposed footpath/cycleway (see the green hatched area on Drawing No.22094/16 Rev A attached to this report), a 450mm cover system was proposed, incorporating a two-layer Cellweb design, with each layer of Cellweb of a thickness of 200mm. A 25mm layer of overfill with a further 75mm, compacted to 50mm of aggregate for surfacing was recommended to overly the Cellweb. The 0.5m grass verge area should comprise of 75mm topsoil finish. The Footpath/Cycleway Specification is appended to this report.

REFA visited the site on the 24th August 2026 to assess the depth and thickness of the footpath/ cycleway (i.e. the green hatched area on Drawing No.22094/16 Rev A) and its constituent layers. All layers were considered to be of appropriate thickness and composition as per the manufacturer's specifications. We can confirm that the footpath was comprised of a geotextile membrane, overlain by two 200mm layers of Cellweb infilled with a Type 4/20 aggregate material and overlain by a combined layer of 25mm overfill material comprising of Type 4/20 aggregate. Following our site visit the 75mm compacted to 50mm final surfacing aggregate was laid by the Contractor. Photographs of the excavation and final surfacing aggregate are appended to this report for reference.

We trust that this information meets with your requirements at this time, and we would certainly suggest that this information should be presented to the planning and regulatory authorities to allow Condition 3 to be discharged. Should you require any further assistance regarding this site, then please do not hesitate to contact us directly.

Signed for and on behalf of

Yours Faithfully,

[redacted]

A Boylan B.Sc. (Hons), FGS
Geoenvironmental Engineer

[redacted]

Chris Pilkington BSc (Hons). CGeol FGS
Principal Geoenvironmental Engineer

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Appended:

Appendix A - Photographs
22094 Cellweb Surface Standard Detail
Cellweb Installation Guide
Clean Angular Stone 4-20 Product Data Sheet



Photo 1 – Geotextile Membrane.



Photo 2 – Geotextile Membrane.



Photo 3 - Overview Showing Two Layers Of Cellweb Infilled With Type 4/20 Aggregate.



Photo 4 - Detailed View Of Cellweb System.



Photo 5 - View Of Topsoil Adjoining The Footpath.



Photo 6 - Overview Of Footpath.

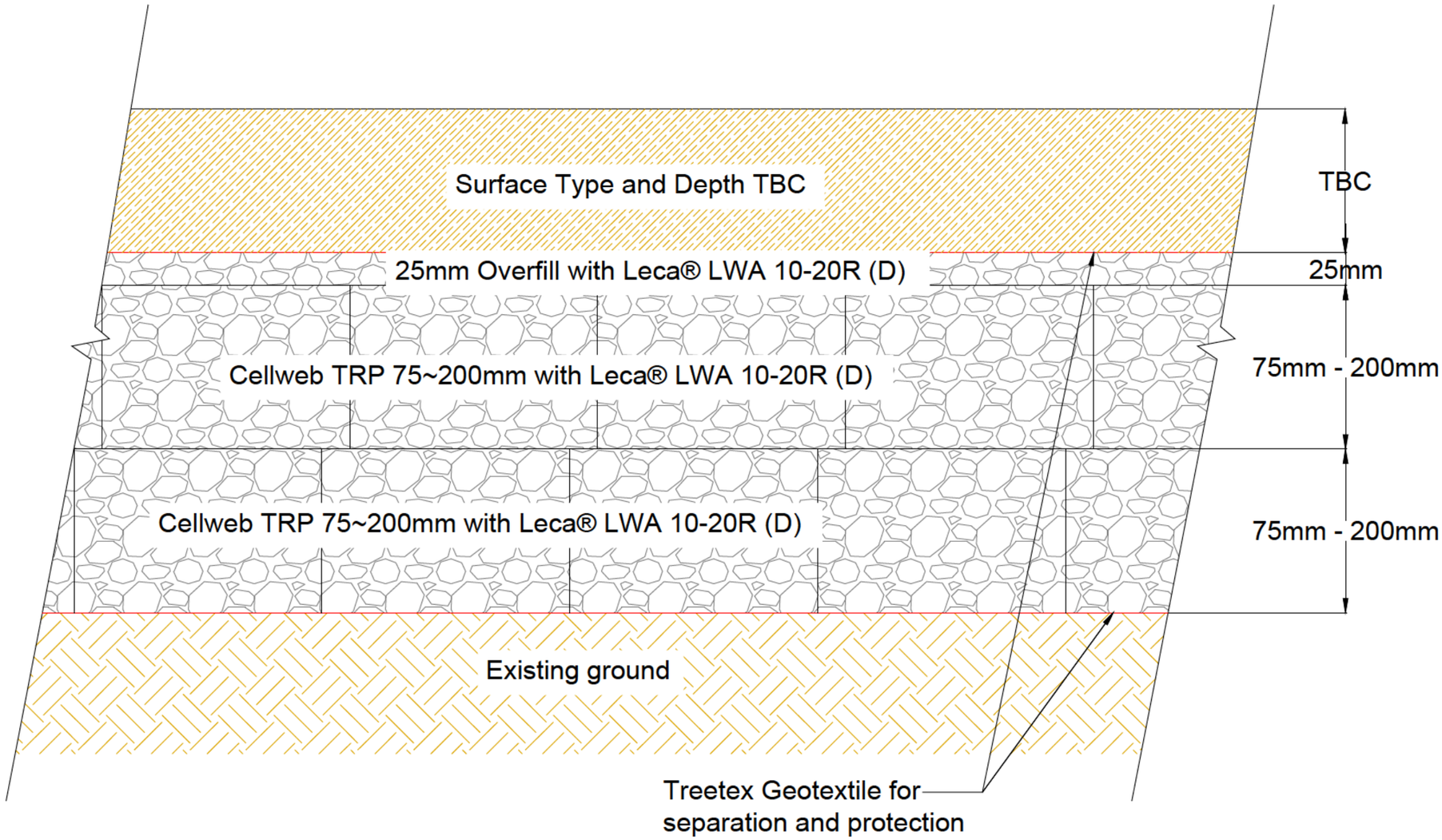


Photo 7 – Finished Footpath/Cycleway With Final Surfacing Aggregate.



Photo 8 - Finished Footpath/Cycleway With Final Surfacing Aggregate.

INDICATIVE CROSS SECTION PROPOSED CYCLEPATH WITH STACKED CELLWEB TRP INFILL LECA MATERIAL



Note: Extra considerations required in flood areas or areas susceptible to rising ground water. Please contact Geosynthetics Ltd. to discuss in more detail

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Our calculations are based entirely on the information provided by you and/or any assumptions made by us in good faith. We shall not be liable to you, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss arising in consequence of incorrect, inaccurate or incomplete information provided to us by you or arising as a consequence of reasonable assumptions made by us in good faith.Any advice (including any calculations) that we give to you in any form is provided solely for your own use and we shall not be liable to any third party, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss arising as a result of or in connection with such advice.

Geosynthetics Ltd
Unit 3, Hinckley Park, Avery Way
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Project:	Description:	Drawn By:	Scale:	Date:	Checked By:
-	Cellweb 75~200mm Surface Standard Detail (LECA)	MM	NTS	23/08/2024	PGE
		Ref: ----	Version: -	Sheet: -	

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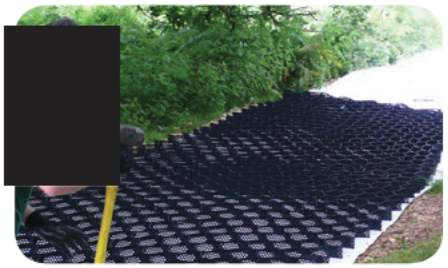
Cellweb® TRP Installation Guide



Step 1: Prepare Surface



Step 2: Lay out Treetex™



Step 3: Lay out Cellweb® TRP

- Cellweb® TRP is a NO DIG tree root protection measure and it is recommended that no excavation be performed without prior approval and guidance from the Local Authority Arboricultural Officer.
- Soil compaction from vehicles, machinery and materials is to be strictly prohibited during construction within Root Protection Areas (RPAs).
- Approval must be obtained from the Local Authority that the design and the method of construction is acceptable.
- Further information is available from the following two documents;
  - British Standard BS5837: 'Trees in Relation to Design, Demolition and Construction' (2012).
  - Arboricultural Advisory and Information Service: Practice note 12 – 'Through the Trees to Development' (APN12).

Installation Method

1. Prepare the Surface

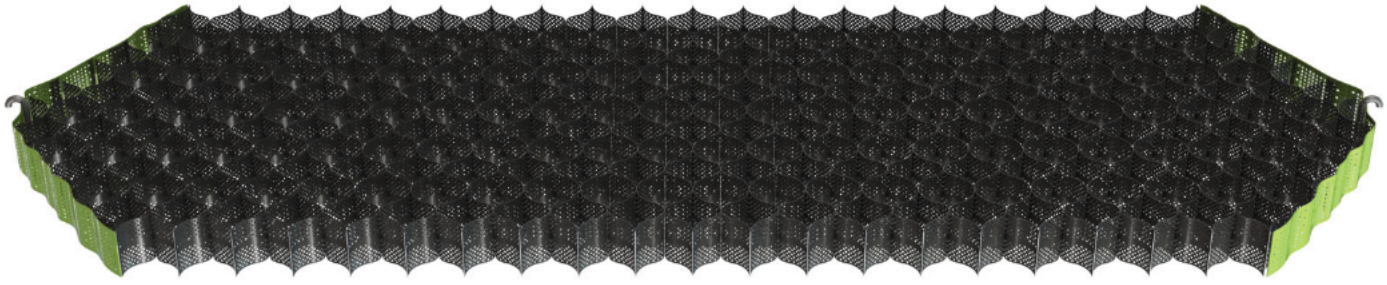
- Remove the surface vegetation using appropriate hand held tools or herbicide (see Note 1).
- Remove any surface rocks, debris and organic material.
- Do not level off high spots or compact the soil through rolling.

2. Lay out the Treetex™ Pollution Control Geotextile

- Lay out the Treetex™ over the prepared area, overlaying the edges of the required area by 300mm.
- Overlap any joins by 300mm minimum or more, depending on soil structure (see Note 2).
- Create a level surface by filling any hollows with clean angular stone or sharp sand.

3. Lay out the Cellweb® TRP Cellular Confinement System

- Lay out the collapsed Cellweb® TRP on-top of the Treetex™.
- Place one of the supplied J pins into the centre cell at the end of the panel and secure into the ground.



Cellweb® TRP - Installation Guide

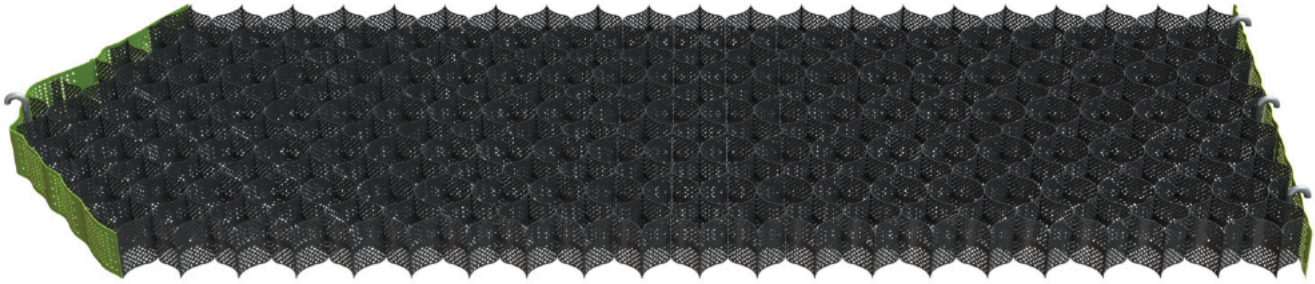


Step 3: Pinning Cellweb ® TRP

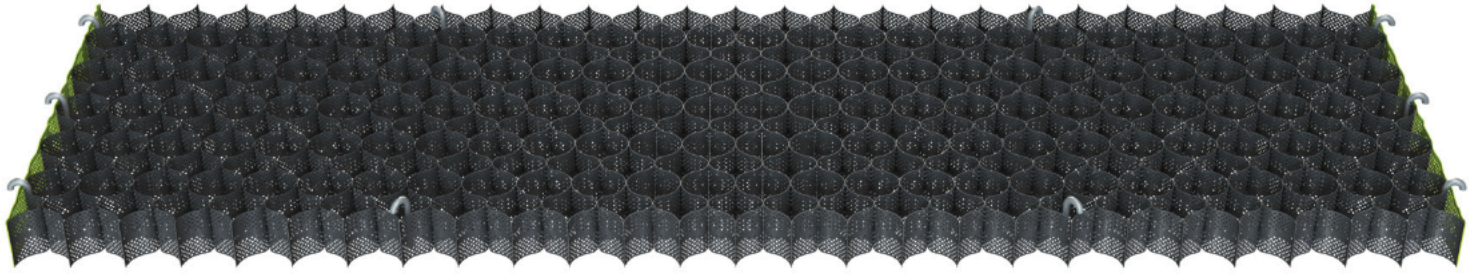


Step 3: Stapling Cellweb ® TRP

- Pull out the Cellweb® TRP to its full 8.1m length and secure its length with another J pin.



- Now measure its width to 2.56m and secure in each of the corners with the J pins.
- Use 10 pins per panel to create a panel measuring 8.1m x 2.56m.



- This will produce a cell size of 259mm x 224mm which is the required cell aperture. Each cell must be fully extended and under tension.
- Staple adjacent panels together at each cell (see Note 3).
- If a curved path or shape is required, this should be cut when the Cellweb® TRP panel is pinned out to 8.1 x 2.56m, ensuring complete cells remain. Do not try to curve or bend the Cellweb® TRP panels into place.
- When cutting Cellweb® TRP, please bear in mind that you will lose two internal cells per cut. Across a 8.1m long panel, this equates to a loss of 0.224m x 2 along the length or 0.259m x 2 across the width.

Cellweb® TRP - Installation Guide



Step 4: Clean Angular Stone



Step 5: Edge Restraints



Step 6: Surface Options

4. Infill the Clean Angular Stone

- The infill material must be a clean angular stone Type 4/20mm (see Note 4).
- Do not use M.O.T type 1 or crushed stone with fines for tree root protection.
- Infill the Cellweb® TRP cells with the clean angular stone, working towards the tree and using the infilled panels as a platform.
- Minimum 25mm overfill of clean angular stone when used in conjunction with a hard surface.
- No compaction is required of the infill. Do not use a whacker plate or other means of compaction.
- Encourage settlement of the stone with the use of a light roller or with 2-3 passes of the construction plant used for installation.
- If the clean angular stone is being used as the final surface; regular maintenance will be required to ensure a minimum overfill of 50mm.

5. Edge restraints

- Excavations for kerbs and edgings should be avoided within the RPAs.
- Where edging is required for footpath and light structures, a peg and treated timber board edging is acceptable
- Other options include wooden sleepers, kerb edging constructed on-top of the Cellweb® TRP system, plastic and metal edging etc.

6. Surface options

- All surfaces in Root Protection Areas must be porous. Surfaces can include porous block paving, porous asphalt, loose gravel, grass and gravel retention systems (e.g Golpla), resin bound gravel, concrete and astro turf.

NOTES

1. **Herbicide:** According to BS5837:2012 "The use of herbicides in the vicinity of existing trees should be appropriate for the type of vegetation to be killed, and all instructions, warnings and other relevant information from the manufacturers should be strictly observed and followed. Care should be taken to avoid any damaging effects upon existing plants and trees to be retained, species to be introduced, and existing sensitive habitats, particularly those associated with aquatic or drainage features."
2. **Geotextile:** We recommend the installation of a Treetex™ under the Cellweb® TRP, or under the sub-base, if installed. The overlapping between adjacent rolls of Geotextile should be: CBR > 3%: 300mm minimum, CBR between 1% and 3%: 500mm minimum. CBR ≤ 1%: 750mm minimum.
3. **Staples:** Number of staples per join: 200mm: 5 staples. 150mm: 4 staples. 100mm: 3 staples. 75mm: 3 staples.
4. **Granular Fill:** Open graded sub-base, clean angular stone Type 4/20 or Type 20/40. Please refer to BS7533-13:2009 and to the Design Manual for Roads and Bridges (DMRB), Volume 4 Geotechnics and Drainage, Section 1 Earthworks, HA44/91, Volume 7 – IAN 73/06 Design Guidance for road pavement foundations and Manual of Contract Documents for Highway Works (MCHW), Volume 1 Specification for Highway Works for the construction and maintenance of the fill material.

This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentation. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. This information may be subject to revision as new knowledge becomes available. Since we cannot anticipate all variations in actual end use conditions, Geosynthetics Limited makes no warranties and assumes no liabilities in connection with this information. Nothing in this publication is to be considered as a licence to operate under or a recommendation to infringe any patent right.

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Clean Angular Stone

Type 4/20

Specification for open graded subbase for use as storage below pervious pavements (also Coarse Aggregate in accordance with Series 500 Clause 503) Type 4/20.

Material to BS EN 13242 or BS EN 12620
Material to comprise crushed rock, concrete or blast furnace slag or similar approved.
Crushed rock from granite, basalt, gabbro
Concrete with more than 90% fractures faces.

Materials NOT permitted/NOT recommended:
Crushed gravel
Limestone
River gravel
Single size aggregate
Rounded aggregate

Properties	Test Method	Value	Comments
Grading	BS EN 13242	Grading 4/20 (Preferred) or 4/40, Gc 80/20, GTc 20/15	Aggregate size in mm
Fines Content	BS EN 13242	f_4	Mass fraction of passing 0.063mm sieve <4%
Shape	BS EN 13242	FI_{20}	Flakiness Index <20
Resistance to Fragmentation	BS EN 13242	LA_{30}	Los Angeles coefficient <30
Durability:			
- Water absorption to BS En 1097-6:2000, Clause 7	BS EN 13242	$WA_{24}2$	Water abs 24h <2%
- For WA > 2%, magnesium sulfate soundness	BS EN 13242	MS_{18}	Magnesium Sulfate loss (by mass) <18%
Resistance to Wear	BS EN 13242	$M_{DE}20$	Micro Deval Coefficient <20
Acid-soluble sulfate content:			
- Aggregates other than air-cooled blast-furnace slag	BS EN 13242	$AS_{0.2}$	Less than 0.2% by mass
- Air-cooled blast-furnace slag	BS EN 13242	$AS_{0.1}$	Less than 0.1% by mass
Total Sulfur:			
- Aggregates other than air-cooled blast-furnace slag	BS EN 13242	$\leq$ 1 % by mass	
- Air-cooled blast-furnace slag	BS EN 13242	$\leq$ 2 % by mass	
Volume Stability of blast-furnace and steel slags:			
- Air-cooled blast-furnace slag	BS EN 13242	Free from dicalcium silicate and iron disintegration in accordance BS EN 13242:2002, 6.4.2.2: V_5 (expansion by volume less than 5%)	
- Steel slag	BS EN 13242		
Leaching of contaminants	BS EN 13242	Blast furnace slag and other recycled materials should meet the requirements of the Environment Waste Acceptance Criteria for inert waste when tested in accordance with BS EN 12457-3	

If compaction is required should be in 150mm layers with 4 passes of a smooth wheeled roller max weight of 1000kg/m width **without vibration**.

Aggregate gradings for sub-base materials to BS EN 12620

Recommended grading is 4mm to 20mm Type 4/20. Other gradings may be used such as 4/40, if they meet all the requirements.

NOT to use single size aggregate.

Sieve Size (mm)	Percentage Passing (%)	
	Coarse aggregate 4/40	Coarse aggregate 4/20
80	100	-
63	98-100	-
40	90-99	100
31.5	-	98-100
20	25-70	90-99
10	-	25-70
4	0-15	0-15
2	0-5	0-5

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DR: 97/V2/04.06.2021