



OSTO[®] Datasheet

2 times
lighter than
gravel

Improved
thermal
properties

Negative
carbon
footprint

Description & Application



OSTO is a carbon-negative lightweight aggregate, for use in concrete.

The typical particle density is 1,600 kg/m³, and the bulk density is 750 kg/m³.

OSTO has a particle size between 3 and 6 mm, a white/yellow appearance, and an angular cylindrical shape.

Lowering your Carbon Footprint

Negative Carbon Footprint

- OSTO permanently stores CO₂ through carbonation
- Avoided impact – the waste we use is destined to be incinerated releasing immediate emissions into the atmosphere.

Additional Environmental Benefits

- The waste materials utilised are unrecyclable – contributing to a circular economy.
- OSTO replaces traditional carbon-intensive lightweight aggregates.
- OSTO is expected to improve the thermal mass of concrete.

Note: All electricity used to produce OSTO is from renewable or zero carbon energy tariffs.

Carbon Savings

For 1kg OSTO an equivalent of 0.86 kg CO₂e is saved.

How is the carbon footprint determined?

A Life Cycle Assessment (LCA) (produced by a third party) which covers everything from the transportation of raw materials, raw materials embodied carbon, process, equipment maintenance, etc. has been produced. Using this LCA, an Environmental Product Declaration (EPD) (also by a third party) which informs on the carbon footprint of the product was produced.

Please view OSTO Environmental Product Declaration (EPD) for more details.

Size distribution

Sieve size / mm	% Passing
8	99.6%
4	26.7%
2	13.4%
1	6.9%

Physical properties

Property	Value
Particle density / kg/m ³	1600
Natural water content	6.8%
Water absorption (24h)	25%
Bulk density / kg/m ³	750



Chemical Composition

The chemical composition of the aggregates was determined by X-ray fluorescence (XRF) analysis performed by the School of Earth and Environment, University of Edinburgh, UK.

Chloride and acid-soluble sulfate were determined by Derwentside Environmental Testing Services (DETS) Limited.

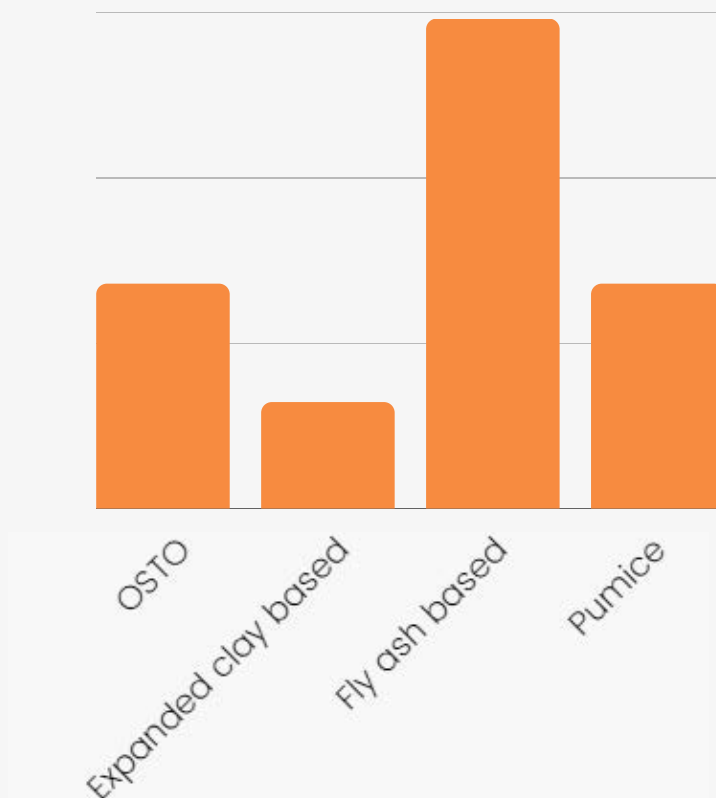
Component	Mass %
SiO ₂	20.1
Al ₂ O ₃	7.18
Fe ₂ O ₃	0.87
CaO	21.42
MgO	4.16
Chloride	0.1
Acid soluble sulfate	0.4


Aggregate Strength

10% Fines Test

Aggregate strength was measured according to the standard procedure BS 812-111 (ten percent fines value).

The value obtained has been compared with other commercial lightweight aggregates.





Leachate and
chemical
analyses were
performed by
Derwentside
Environmental
Testing Services
(DETS) Limited.

PCBs (21 different species): All below LOD (0.01 ppm)

VOCs (53 different species): All below LOD (0.01 ppm)

sVOCs (58 different species): All below the guidance for
commercial land (EA soil guidelines)

PAHs (16 different species): All below the guidance for
commercial land (EA soil guidelines)

Trace metals (10 different elements): All below the guidance
for commercial land (EA soil guidelines)

Leachate Testing

Use Case – Concrete Blocks for Residential Use



Per 10 houses built with OSTO blocks...

...you save 27 tonnes of CO₂e. *

This is equivalent to 5 homes' electricity for 1 year or planting 450 trees.

Unlike OSTO, the traditional lightweight aggregates used in blockwork often have extremely high carbon footprints.

*Based on 2,700 blocks per house and the UK concrete block EPD published by the Concrete Block Association

Additional Information

Disposal Information

If OSTO is no longer needed or you are in possession of excess OSTO, please contact LCM for recommended recycling routes or buyback.

Blockwork produced using OSTO should be recycled as any other concrete blockwork, with the crushed material being used as a recycled aggregate for other concretes.

Safety Information

When stored in an open aggregate bay, as with all aggregates, dust suppression procedures should be taken to reduce local airborne dust.

Additional Information

OSTO is supplied in polypropylene sacks, it is recommended that the sacks are reused onsite to avoid transportation or sent back to LCM for reuse.





More Information

Visit www.lowcarbonmaterials.com

Email contact@lowcarbonmaterials.com

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