



Sundolitt

A Business Built on Air

EPS Structural Fill

Innovation in Civil Engineering

For over 50 years EPS has been used in civil engineering applications. As frost insulation below road constructions from 1965 and the first lightweight embankment fill in 1972 at Fløm in Norway.

With the continuing increase in applications of EPS geofoam across the world this document has been produced by Sundolitt to disseminate the knowledge and advantages that may be gained from the use of EPS Structural Fill.

The high strength to weight ratio provided by Sundolitt EPS Structural Fill means it is confidently specified on demanding projects such as road and rail. Available in compressive strengths from 70 to 500 kPa the product is designated by its strength – S70, S100, S150, S200, S250, S300, S400 and S500. (Physical properties are available on our Technical Datasheet)

Using the knowledge gained from many case studies and academic research ensures operational performance is optimised.



Reduces Cost

Specifying Sundolitt EPS Structural Fill creates cost savings across the whole project.

The areas where significant savings are generated are:

- Material is installed by hand with no expensive hire of heavy plant
- Existing services do not need to be redirected
- Negates preloading and surcharging of the soil
- Longevity of performance reduces maintenance costs
- Reduces construction time

When these factors are included in the project cost assessment savings of over 15% are realised.

Saves Time on Construction Program

When time constraints are imposed EPS Structural Fill is the fastest form of construction particularly where large volumes of fill material are required.

During installation of EPS blocks on a high speed rail project 3,000m³ were placed in 50 hours with the track being handed over within the 100 hours allocated.

Lowers Safety Risk on Site

Excavators, rollers and dumper trucks are not required during the installation of the EPS Structural Fill. This substantially reduces the residual safety risk.

With telehandlers only required for off-loading the EPS blocks the likelihood of operatives being hit by a moving vehicle or vehicles impacting overhead services is greatly reduced.

Sundolitt EPS Structural Fill :



Reduces Cost



Saves time on construction program



Improves environmental impact of project



Lowers the safety risk on site



Improves social responsibility



Reduces maintenance costs



Simplifies design of retaining structures



Reduces Loading on foundation soils

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Improves Environmental Impact of the Project

Carbon emissions for the project are reduced with EPS Structural Fill requiring far fewer deliveries to site.

EPS block delivery will contain 100m³ compared to traditional fill being delivered in loads between 10-16m³ and lightweight aggregate at around 30m³.

Using EPS Structural Fill also negates the requirement for piling or other ground stabilisation methods which may release ground contaminants.

Improves social Responsibility

Fewer deliveries means less disruption from road traffic and lower noise pollution.

The transport and placement of EPS Structural Fill does not create high levels of dust encountered with traditional and lightweight fill materials.

Noise pollution from the site is reduced as there is no requirement for heavy machinery during installation of the EPS blocks.

Reduces Loading on Foundation Soils

Wherever excessive loads cause problems with the design of a project EPS Structural Fill can provide the solution.

EPS can be used to reduce settlement of poor ground under new road constructions, provide fast track construction on rail projects, create impressive landscaping features on buildings, simplify the design of bridges, culverts and tunnels and protect historical buildings from vibration.

This is all achieved by designing EPS into the project to reduce or remove additional loads and specifying a material with the strength and longevity of performance to withstand loads up to 190kN/m² and is resilient to cyclic loading.

Sundolitt continue to support designers and installers using our knowledge and expertise to assist in the creation of great projects.

EPS Structural Fill can provide the perfect solution where project constraints impede design and installation.

Accreditation

Sundolitt Structural Fill is manufactured in accordance with BS EN ISO 14933.

Simplifies Design of Retaining Structures

EPS Structural Fill is used to remove lateral pressures on bridge abutments.

Traditional and other lightweight fill materials would require the design to allow for lateral forces. This may require deep piling or extended base slab to overcome rotational forces.

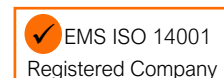
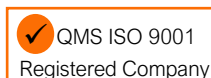
It is proven that where EPS block are used with a vertical face no lateral movement occurs in the EPS. An air gap can be left between the EPS blocks and an abutment wall ensuring zero lateral forces imposed on the structure.

Reduces Maintenance Costs

Long term settlement is reduced through designing EPS into the structure. The weight of the new construction can be designed to equal the weight of soil removed thereby imposing no additional load on poor ground.

Lateral pressures on existing structures can be removed by the use of EPS Structural Fill.

The performance of EPS as a lightweight fill under roads and in embankments has been monitored closely and reported on for over 45 years. All tests and investigations prove the EPS continues to perform as predicted within actual use.



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