

## Load-bearing capability of Polyagg / Polybed / Polysock



A sustainable high-performance alternative to traditional methods

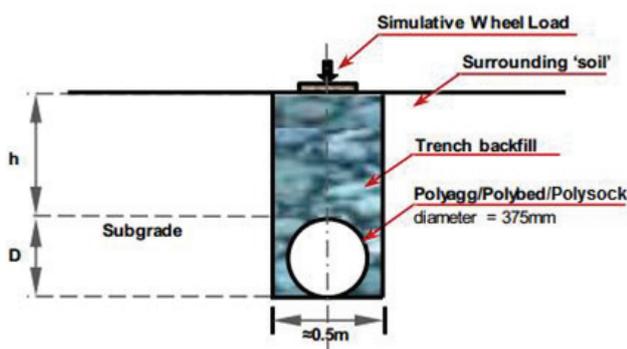


At the heart of the Polybed drainage system is a geosynthetic aggregate (EPS aggregate) manufactured from recycled expanded polystyrene and engineered for optimum performance with a consistent form. Typically the EPS surrounds a perforated plastic pipe encased in polyethylene netting with an overall diameter of 300mm. The Polybed drainage system is suitable for a wide range of applications including domestic and stormwater soakaways, bio-treatment and septic tanks, land drains, sports pitch and golf course drainage and retaining wall and foundation drainage.

The load bearing capability of Polybed has been tested by The University of Nottingham's Transportation Engineering Centre (NTEC) utilising their industry leading pavement engineering test facility.

**NTEC's testing has demonstrated the suitability of Polybed/Polyagg/Polysock as an alternative to traditional pipe and aggregate drainage systems in rail, highway and vehicle parking applications.**

NTEC's tests set out to assess the settlement at the surface of the trench as well as the compression of the pipe as a consequence of compacted and un-compacted backfilling and traffic loading. The diagram below shows a schematic of the testing installation and the instrumentation used to monitor trench surface and embedded pipe displacements –



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Irrespective of whether the product used is Polybed or Polysock, compacted granular backfill to a depth of 600mm gives good performance for ALL traffic types up to and including occasional HGV loading. In fact the presence or not of an internal pipe, or the type of outer wrapping used has little impact on the mechanical performance of the Polybed products.

Furthermore Polybed gives adequate performance under light van trafficking with a covering of only 300mm depth of compacted, graded aggregate and may well be sufficient to withstand an unplanned HGV traversing the trench.

The tests concluded that 450mm is the recommended depth of railway ballast if HGV loading is likely but if only occasional light van traffic is expected then a cover depth of 300mm should be acceptable.

The following table shows the recommended thickness of covering aggregates in millimetres for various loading conditions are –

Vehicle loading	Uncompacted ballast	Uncompacted sub-base/sub-ballast	Compacted sub-base/sub-ballast
Light van	300	600	300
Rare HGV lorry	450	Don't use	300
HGV traffic expected	450	Don't use	450

NTEC also tested Polyagg's buoyancy (Polyagg will experience the greatest buoyancy of the three products) and it was found that the tendency to float was countered by as little as 150mm of aggregate or ballast.

**NTEC concluded that Polybed / Polyagg / Polysock can provide a structurally satisfactory alternative to traditional pipe and gravel based drainage systems.**

For a full description of NTEC's testing please go to [www.polybed.co.uk](http://www.polybed.co.uk) and the full range of Polybed products is described in "Introducing Polybed" and "Polybed Installation Guide" also available for downloading at [www.polybed.co.uk](http://www.polybed.co.uk)



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