BEWI ClayMaster
Technical Datasheet

Building Substructure – Below ground clay heave protection

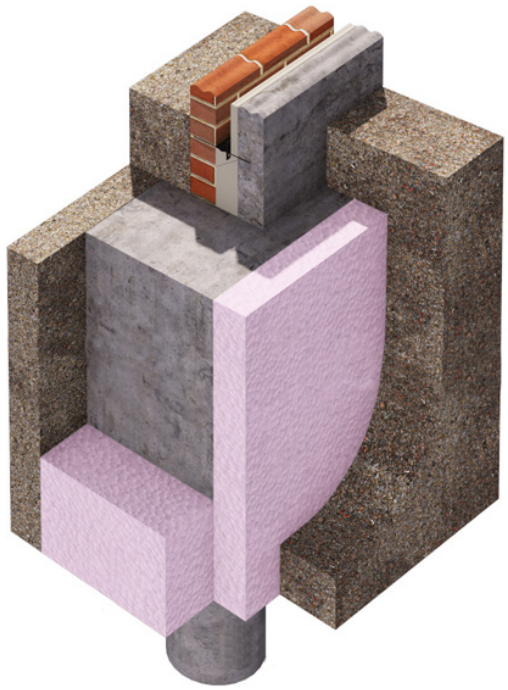
BEWI ClayMaster is an EPS compressible-fill material used to reduce the pressure against foundations due to clay heave. Supplied coloured pink to easily differentiate from standard EPS.

For use below concrete ground beams with a maximum depth of 600mm, in piled foundation construction, and at the vertical face of deep trench foundations. The product must not be used under ground floor slabs.

ClayMaster has been tested and approved by the British Board of Agrément (BBA) as a compressible fill material to reduce the pressure exerted on concrete foundations from expanding clay soils (clay heave). Certificate number 20/5831.

ClayMaster does not degrade when placed in high moisture areas and is resistant to the effects of freeze thaw. ClayMaster will remain an effective compressible fill for the life of the building.

ClayMaster is lightweight and easy to install. There are no requirements for special PPE when installing



Dimensions

Standard Size	1200 × 2400mm and 600 × 1200mm (other sizes available to suit beam dimensions)
Standard Thickness	50, 75, 100, 150 and 200mm (Other thicknesses available to order)

Application

There are no specific requirements in the Building Regulations for the use of compressible-fill materials. Regulation A2 states that 'buildings shall be constructed so that ground movement caused by swelling, (or) shrinkage ...of the subsoil... will not impair the stability of any part of the building'. ClayMaster has been assessed by the BBA to prove its performance in meeting the requirement of this Regulation when installed in areas of possible clay heave.

The NHBC Standards, Chapter 4.2, 'building near trees', states that low-density compressible polystyrene is a suitable proprietary material to alleviate ground pressures on foundations in shrinkable soils.

The table below shows thickness of ClayMaster required to meet the recommended void dimensions given in the NHBC guidance.

Ground heave potential	Underside of beam (Maximum beam depth 600mm)		Side of foundation and beam	
	NHBC Void Required (mm)	**ClayMaster Thickness (mm)**	NHBC Void Required (mm)	**ClayMaster Thickness (mm)**
High	150	**250**	35	**75**
Medium	100	**175**	25	**50**
Low	50	**100**	0	**0**

For more information:
bewi.com e-mail: sales.insulation.uk@bewi.com Tel: 0870 600 3666

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APPLICATION

Design

The following calculation may be used to ascertain the accurate thickness of ClayMaster required.

T = 100 × (H ÷ C) + 10

where:-

T = Thickness of ClayMaster to be specified

H = Predicted maximum clay heave in mm

P = Maximum acceptable vertical pressure on the underside of the concrete ground beam

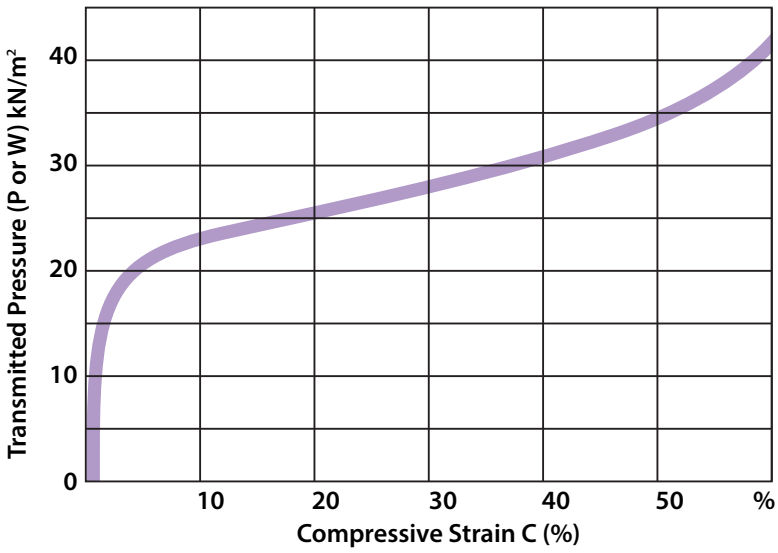
W = Maximum acceptable lateral pressure to the sides of the concrete foundations (usually less than 40kN/mz)

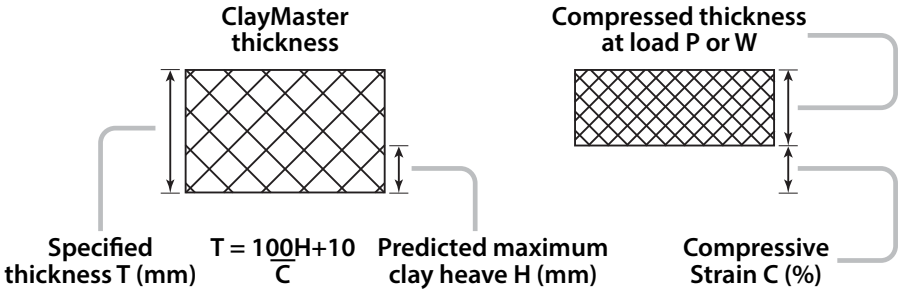
C = Compressive strain (%) in ClayMaster under given pressure P or W (taken from graph below)

This calculation allows for any initial deflection in the ClayMaster under the load of wet concrete.

When designing ground beams to support the weight of the building, care should be taken to prevent excessive local deflection of the beam in areas of low load, such as below patio doors.

BEWI ClayMaster compression curve





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Accreditation

BBA	BEWI ClayMaster has been assessed and approved by the British Board of Agrément for use as a compressible fill material in foundation construction. Certificate number 20/5831
NHBC accepted	NHBC accepts the use of BEWI ClayMaster, provided it is installed, used and maintained in accordance with the BBA Certificate, in relation to NHBC Standards, Chapters 4.2 Building near tress; 4.3 Strip and trench foundations and 4.4 Raft, pile, pier and beam foundations.
Quality	All BEWI products are manufactured in production facilities which are certified to ISO 9001 Quality Management
Environmental Responsibility	All BEWI manufacturing facilities are ISO 14001 certified.
Compliance	BEWI ClayMaster conforms to the required properties as defined in BS EN 14933 – Thermal insulation and light weight fill products for civil engineering applications – Factory made products of expanded polystyrene (EPS) – Specification
Fire	Concrete foundations below ground are not required to provide fire resistance. When properly installed BEWI ClayMaster is fully protected by the foundation construction and soil backfill and will have no adverse effect on the fire performance of the building into which it is installed.

Environment and Sustainability:

100%	BEWI ClayMaster is 100% recyclable.
Biological Properties	BEWI ClayMaster is non-toxic and non-biodegradable. BEWI ClayMaster will not sustain mould growth and has no nutrient value to insects or vermin.

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