



POLITERM® BLU FEIN

ULTRA LIGHT THERMAL INSULATING AGGREGATES FOR THE PREPARATION OF LIGHTWEIGHT BOUND EPS (BEPS) MORTARS

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Ultra-light thermal insulating aggregates for the preparation of lightweight Bound EPS (BEPS) mortars

COMPOSITION	<p>High quality expanded close-cell virgin polystyrene (EPS) beads (\varnothing 2mm), perfectly spherical, with controlled density, non-toxic, non-absorbent, rotproof, dimensionally stable over time, free of chloro-fluorocarbons (CFC, HCFC και HFC) and nutritional values able to sustain the growth of fungi and bacteria. In the production phase, the beads are mixed with special additives which allow for their perfect mixing with the water binder, for the elimination of the bead floating phenomenon and for guaranteeing their homogenous distribution in the mix.</p>
PACKAGING AND STORAGE	<ul style="list-style-type: none"> • Bag of 420 L (2 bags = 1 m³ of finished BEPS mortar) • Bag of 170 L (5 bags = 1 m³ of finished BEPS mortar) <p>Store the product in its original closed package and keep it away from water and humidity. Store the material in a dry, well-ventilated area, away from frost, heat sources and direct exposure to sunlight.</p>
FIELD OF APPLICATION	<ul style="list-style-type: none"> • Thermal insulation on walkable and semi-walkable roof/terraces/verandas/balconies (with or without simultaneous gradient formation). Suitable for the direct adhesion of hot applied bituminous membrane. • Ultra-lightweight thermal insulating base screeds (with or without simultaneous gradient formation), on pitched or flat roofs, domed or vaulted roofs, metal roofs etc. • Thermal insulation on non-walkable roofs. • Thermal insulating and/or lightweight screeds of very high thickness. • Floor thermal insulation between different stories/floors above closed non heated spaces/floors above pilotis. • Thermal insulating substrate below underfloor heating. • On ground thermal insulation/underneath industrial flooring/underneath asphalt. • Mortar for Flex house system and for thermal insulation bricks with EPS aggregates
CONSUMPTION/YIELD	<p>For 1m³ of finished BEPS mortar you will need:</p> <ul style="list-style-type: none"> • 2 bags of Politerm Blu Fein 420 L + water + cement*. • 5 bags of Politerm Blu Fein 170 L + water + cement*. <p>* See dosages</p>
SURFACE PREPARATION	<ul style="list-style-type: none"> • Clean the laying surface thoroughly. Completely remove the dust and fragments and residue of any kind. • Prepare the leveling points. • For absorbent surfaces: Wet the surface without leaving puddles. • For highly absorbent surfaces: Proceed with the perfect cleaning of the surface. Completely remove the dust. Apply a grout which will serve as an adhesive layer and an absorbing reducing layer composed of cement/Edilstik/clean water (Edilstik/water ratio 1:1). After drying, wet the surface and proceed with the application of Politerm Blu Fein. • Non-absorbent surfaces: Do not wet the surface. Apply a metal mesh, properly anchored to the surface and having some space from it. • Single layer screeds for direct gluing or tiles: Use the special PVC guides Piano Zero.



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Use only CEM I and CEM II Portland type cements which has been stored properly according to the law/regulations. Different cements of poor quality can affect the functionality of the special additives of the Politerm Blu beads. This will make the mixing and pumping difficult, and it will result in different final properties which may result in the mortar being not compliant.

Dosages for obtaining 1m³ of thermal insulating Bound EPS (BEPS) mortar

Type	Politerm bags	Water L	Cement Kg	Sand*
180	2 bags of 420L ή	90-100	150	Not necessary
200		100-120	175	
250		120-140	225	
300	5 bags of 170L	140-160	275	
350		160-180	325	

*Sand is not required because of the mixing properties of Politerm Blu Fein. Sand may however be used but be aware that the addition of sand will reduce the performances in terms of lightening, thermal insulation, and water retention. If you use sand, the water dosages will vary depending on the amount of sand and its residual moisture.

MIXING AND PUMPING

- **Mixing:** the mortars made with Politerm Blu Fein can be mixed with:
 - ✓ Cement mixer
 - ✓ Horizontal mixer
- **Mixing & pumping:** the mortars made with Politerm Blu Fein can be mixed and pumped with:
 - ✓ Machine for cellular concrete and/or specialized equipment type Politerm Machine and/or Poliplus Machine (contact our technical department)
 - ✓ Pump type “Turbosol” and/or “Putzmeister” for sand and cement screeds)
- **Order of adding the components in the Politerm Machine:**
 1. Switch on the mixer
 2. Add the needed water according to the type chosen
 3. Add 1 bag of Politerm Blu Fein
 4. Add the necessary quantity of cement
 5. Add the second bag of Politerm Blu Fein
 6. Mix for 10 minutes (loading time included) before pumping
- **Using antifreeze:** For temperatures less than +5°C it is recommended to add liquid antifreeze to the dosages recommended by the manufacturer. Any use of antifreeze additive is compatible with the physical-chemical properties of Politerm Blu Fein.
- **Single layer screeds for direct gluing of tiles:** Consult the “Politerm Blu application manual” or contact our technical department.

WARNINGS

- Do not apply with temperatures less than +5 °C or above +35 °C.
 - It is recommended to lay edge strips for acoustic insulation, wider than the floor covering.
 - **Minimum thickness:**
 - a) *Absorbent surfaces:* 5cm. For less thickness contact our technical department
 - b) *Non-absorbent surfaces:* consult the “application manual” or contact our technical department.
- For detailed information consult the “Application manual” (*available upon request*) or contact TEKTO’s technical department.
- Do not wet the mortar. Protect the mortar from rain for the first 24 hours. Mix only with clean water of drinking water quality. Mix the whole bag at once. Do not separate the bag in to smaller batches.

APPLICATION DETAILS

Consult the application manual. Special circumstances may be present on the job-site which are beyond the scope of this data sheet and/or the application manual. Consult the supervisor engineer, or contact TEKTO HELLAS S.A.

CERTIFIED APPLICATORS

It is advised that the application of Politerm Blu Fein be performed by certified applicators and according to TEKTO HELLAS S.A. guidelines.

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TECHNICAL CHARACTERISTICS

CHARACTERISTICS	TYPE				
	180	200	250	300	350
Bound EPS density, Kg/m³ (ELOT EN 1602)	200	225	275	330	380
Thermal conductivity λ_D W/m²K (ELOT EN 12667 & 16025-1)	0,059	0,067	0,074	0,084	0,130
Average thermal conductivity λ_{mean} W/m²K (ELOT EN 12667)	0,054	0,064	0,072	0,079	0,123
Thermal conductivity $\lambda_{23,50}$ 23°C with 50% humidity (ELOT EN 12667)	-	0,067	-	-	-
Compression strength, MPa (N/mm²)	-	0,55	0,84	1,32	1,69
Compression strength, kPa	-	550	840	1.320	1.690
Flexural strength, MPa (N/mm²)	-	0,33	0,48	0,51	0,59
Average compression strength in 10% deformation, 5cm samples, kPa (ELOT EN 826)	210	289	487	789	-
Average compression strength in 10% deformation, 30cm samples, kPa (ELOT EN 826)	238	382	512	714	-
Reaction to fire (ELOT EN 13501-1)	A2-s1, d0				
Water vapour permeability, μ (ELOT EN 12086)	5-20				
EPS granulometry – Amount of dust (ELOT EN 933-1)	PS5(N) - D0				
Specific heat, J/kgK	1000				
Shrinkage, mm/m	n.a.	0,427	n.a.	0,352	0,270
Resistance to moisture	Rotproof				
Residual moisture after 28 days	<2% (5 cm thickness, absorbent surfaces)				

All the indications provided in this technical data sheet are purely approximate and are not binding for legal purposes. The data listed herein have been gathered from laboratory tests meaning that in practical applications on building sites the final characteristics of the product may be subject to substantial variations depending on the meteorological conditions and the installation. The user must always check the suitability of the product for its specific use, undertaking all liability implicit in and deriving from the use of the product, as well as comply with all methods and instructions for use generally referred to as "workmanlike" execution. TEKTO HELLAS S.A. reserves the right to change the contents of this technical data sheet on its final judgement without any notification. The distribution of this data sheet supersedes and cancels the validity of any other data sheet published previously.



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