POLITERM® BLU

SUPERLIGHT THERMAL INSULATING AGGREGATE FOR THE PREPARATION OF LIGHTWEIGHT MORTARS FOR SCREEDS



POLITERM® BLU
Superlight thermal insulating aggregate for the preparation of lightweight mortars for screeds

COMPOSITION	Expanded virgin close-cell polystyrene beads (∅ 1/8" - 15/64"), perfectly spherical, controlled density, non-toxic, non-absorbent, rotproof, dimensionally stable over time, free of chlorofluorocarbon (CFC, HCFC and HFC) and nutritional values able to sustain growth of fungi and bacteria. During production the beads are mixed with the special E.I.A. additive which allows a perfect mixing with the water binder, eliminates the bead floating phenomenon and guarantees their homogeneous distribution in the mix.
PACKAGING AND STORAGE	· Bag of 444 qt (n° 2 bags = 35.3 ft^3 of finished mortar). · Bag of 180 qt (n° 5 bags = 35.3 ft^3 of finished mortar). · Keep the product away from water and humidity. Store the product in the original closed packaging. Store the material in a dry, well-ventilated place, away from frost, heat sources and direct sunlight.
FIELDS OF APPLICATION	· Base screeds for basements and pilotis floors, space between floors, roofs and wooden floors. · Single-layer screeds for direct gluing of floor finishings, basements, pilotis floors, space between floors, roofs and wooden floors (consult the *"Politerm® Blu Application Manual"*). · Formation of gradients on terraces and flat roofs, also with following direct laying of waterproofing membrane (prefabricated: hot or cold, synthetic bituminous - liquids: provided that solvents are not present). · Insulation of unwalkable attics. · Insulation of pitched roofs, also with following direct laying of waterproofing membrane (prefabricated: hot or cold, synthetic bituminous - liquids: provided that solvents are not present). · Filling of vaults, even highly thick. · Encapsulation of asbestos cement fibre sheets roofs, also with following direct laying of the waterproofing membrane (prefabricated: hot or cold, synthetic bituminous - liquids: provided that solvents are not present). · Filling beneath trafficable asphalt pavements. · Beneath industrial flooring.
CONSUMPTION / YIELD	35.3 ft^3 of finished mortar is obtained with: · N° 2 bags of 444 qt of Politerm® Blu + water + cement *. · N° 5 bags of 180 qt of Politerm® Blu + water + cement *. * *see prescribed dosages.*
PREPARATION OF THE LAYING SURFACE	The laying surface must always be clean, free from dust and fragments of any kind. · **Absorbent laying surfaces in concrete or concrete and masonry:** abundantly wet the surface but do not leave puddles. Gradually wet the surface when laying the lightweight screed. · **Very absorbent surfaces (hollow clay bricks, hollow tile, etc.):** thoroughly clean and remove dust from the laying surface. Apply grout used as adhesive and absorbency reducer. It is based on concrete / Edilstik / clean water (ratio Edilstik / water 1:1). When dry, wet the surface and gradually proceed with the laying of lightweight screed. · **Low absorbent surfaces (cement supports):** treat the base layer before applying Politerm® Blu with the specific adhesion promoter (Edilstik) and proceed wet on wet, or realize an adherence bridge with cement grout with water and Edilstik, or use an adhesive primer. · **Non-absorbent laying surfaces (sheaths, metal, ceramic, insulating sheets, etc.):** apply a galvanized mesh ∅ 5/64" - 19 11/16 x 19 11/16 in (to a third of the final thickness of the casting to be realized), before the laying of Politerm® Blu. · **Single-layer screeds for direct gluing of floor coverings:** it is recommended to lay some special PVC guides called Piano Zero beforehand.

Thermal Insulation & Chemicals Division

EDILTECO group

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QUALITY SYSTEM CERTIFICATION DNV ISO 9001

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MIXING AND APPLICATION

Use only CEM I or CEM II Portland 32.5/42.5/52.5 concrete and in perfect conservation conditions, according to the law. Different types or poor-quality concrete may affect the functionality of E.I.A. additive which is added to Politerm® Blu beads. It would make the mixing difficult and the final properties of the mortar not compliant.

Dosages to obtain 35.3 ft³ of lightweight thermal insulating mortar:

FORMULA	BAGS POLITERM® BLU	WATER qt °	CEMENT lb	SAND lb *
200 - 12.49	444 qt: n° 2 or 180 qt: n° 5	95	440.9	not necessary
250 - 15.60		116	551.2	
300 - 18.73		148	661.4	
350 - 21.84		169	771.6	
500 - 31.21		148	661.4	352.7
800 - 49.94	719 qt	148	661.4	992.1

Dosages to obtain 7,12 ft³ (211 qt) of lightweight thermal insulating mortar (e.g.: mixing in cement mixer):

FORMULA	BAGS POLITERM® BLU	WATER qt °	CEMENT lb	SAND lb *
200 - 12.49	180 qt: n° 1	19	88.2	not necessary
250 - 15.60		23	110.2	
300 - 18.73		30	132.3	
350 - 21.84		34	154.3	
500 - 31.21		30	66.1	70.5
800 - 49.94	143 qt	30	66.1	198.4

* Sand is not necessary thanks to the mixing properties of Politerm® Blu. Sand may however be used being aware of the fact that it reduces performance in terms of lightening, thermal insulation and water retention. If using sand the water dosages will vary depending on the amount of sand and its residual moisture. Sand may have to be used when utilizing pumps type "Turbosol" for sand and cement screeds.

- **Mixing: the mortars prepared with Politerm® Blu can be mixed with:**
  - Cement mixer.
  - Horizontal mixer.
- **Mixing and pumping: the mortars prepared with Politerm® Blu can be mixed and pumped on site with:**
  - Specific equipment type Politerm® Machine and/or Isolcap Machine *(see Edilteco Equipment).*
  - Pumps type "Turbosol" for sand and cement screeds *(contact the Edilteco Technical Department).*
- **Order of component infeed with Politerm® Machine:**
  1. Switch on the mixer;
  2. Add the needed water according to the formulation;
  3. Pour the content of 1 bag of Politerm® Blu;
  4. Pour the necessary amount of cement.
  5. Pour the second bag of Politerm® Blu.
  6. Mix for 10 minutes (loading time included) before pumping.
- **Use of antifreeze:** at temperatures below 41 °F, it is recommended to add liquid antifreeze to the dosages recommended by the manufacturer. Any use of antifreeze additives is compatible with the physical-chemical properties of Politerm® Blu.
- **Single-layer screeds for direct gluing of floor coverings:** consult the *"Politerm® Blu Application Manual"* or contact the *Edilteco Technical Department.*

WARNINGS

- Do not apply with temperatures inferior than 41 °F or under the direct sunlight or with temperatures higher than 95 °F. If the application is made under the direct sunlight, necessary precautions must be taken (e.g. mesh or similar that covers the scaffolding).
- It is recommended to lay edge strips of acoustic insulation wider than the floor covering.
- **Minimum thickness:**
  - *a) Absorbent surface:* 2". In case of sub-thickness consult the *"Politerm® Blu Application Manual"* or contact the *Edilteco Technical Department.*
  - *b) Non-absorbent surface:* consult the *"Politerm® Blu Application Manual"* or contact the *Edilteco Technical Department.*



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	CHARACTERISTICS	FORMULA					
		200 - 12.49	250 - 15.60	300 - 18.73	350 - 21.84	500 - 31.21	800 - 49.94
TECHNICAL CHARACTERISTICS	Density after 28 days lb/ft^3:	~ 13.42	~ 16.54	~ 19.66	~ 22.79	~ 32.15	~ 50.88
	Thermal conductivity λ_D W/mK:	0,065	0,067	0,080	0,103	0,104	0,176
	Compressive strength psi:	100	120	234	245	325	580
	Flexural strength psi:	54	67	138	85	113	145
	Cohesion psi:	12	n.a.	18	n.a.	n.a.	n.a.
	Hot-sealed membrane rupture N/50 mm:	57	n.a.	62	21,28	n.a.	n.a.
	Cold-sealed membrane rupture N/50 mm:	35	n.a.	47	13,00	n.a.	n.a.
	Elasticity module ksi:	34	n.a.	80	n.a.	n.a.	n.a.
	Permeability to water vapour μ:	5,9	6,9	7,2	9,2	10,2	14,0
	Specific heat kJ/kgK:	1,4	1,4	1,4	1,4	1,4	1,4
	Shrinkage (NBN) mm/m:	0,427	n.a.	0,352	0,270	n.a.	n.a.
	Acoustic performance ΔL_w:	n.a.	14 dB *	26 dB **	n.a.	17 dB	19 dB
	Impact noise insulation $L'_{nT,W}$:	n.a.	61 dB thick. 4"+3/8"	n.a.	n.a.	n.a.	n.a.
	Fire reactivity class:	A2-s1,d0					

All the indications provided in this technical data sheet are purely approximate and not binding for legal purpose. The data listed has been gathered from laboratory tests and it hence follows that in practical applications on building sites the final characteristics of the products may be subject to substantial variations depending on the meteorological conditions and the installation. The user must always check suitability of the product for its specific use, undertaking all liability implicit in and deriving from use of the product, as well as comply with all methods and instructions for use generally referable to "workmanlike" execution. Edilteco S.p.A. reserves the right to change the contents of this mechanical data sheet on its final judgements. The spreading of this data sheet through any media, supersedes and cancels the validity of any other technical data sheet previously published.

* Value obtained in laboratory with 2" of Politerm® Blu + 2" of screed. / ** Value obtained in laboratory with 1"+3/4" of Politerm® Blu + Fonotech 5.

DETERMINATION OF THE **THERMAL RESISTANCE "R" *** VALUE

According to the application thickness (lightweight screeds and base screeds)

FORMULA	THERMAL CONDUCTIVITY λ_D W/mK	COEFFICIENT	THICKNESS	
			1 31/32 in *(5 cm)*	3 15/16 in *(10 cm)*
200 - 12.49	0,065	R m^2k/W = (thickness/λ)	0,77	1,54
250 - 15.60	0,067		0,75	1,49
300 - 18.73	0,080		0,63	1,25
350 - 21.84	0,103		0,48	0,97
500 - 31.21	0,104		0,48	0,96
800 - 49.94	0,176		0,28	0,57
(*) Ref. λ_D				

LEED CRITERIA		
SECTIONS	CREDITS	TECHNICAL DESCRIPTIONS
Energy and Atmosphere (EA)	Prerequisite 2	Minimum energetic performances
	Credit 1	Optimization of the energy performances
Materials and Resources (MR)	Credit 5	Extracted, processed and produced at a limited distance materials (regional materials)

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