

TECHNICAL DATA SHEET

Composition:

PLC (Politerm Light Concrete) is produced by mixing Politerm Blu, water and cement in fixed ratios.

Politerm Blu is produced by coating Closed cell virgin expanded polystyrene beads (with grain size (Dia. 3-10mm), perfectly spherical, controlled density, non-toxic, non-absorbent, rotproof, dimensionally over time, chlorofluorocarbon free (CFC, HCFC & HFC), free of nutritional values able to sustain growth of fungi & bacteria) with a specific E.I.A. additive (which allows perfect mixing with the cement, eliminates the bead floating phenomena and guarantees their homogeneous distribution in the mix).

Fields of Application:

- Thermal insulation on roof and floors, also with subsequent direct laying of waterproofing mantles (prefabricated hot or cold bituminous and synthetic liquids or membranes; provided that are solvent free)
- Sloping concrete on roofs and bathrooms
- Insulation of pitched roofs, also with subsequent direct laying of waterproofing mantles (prefabricated hot or cold bituminous and synthetic liquids or membranes; provided that are solvent free)
- Filling on the sunken slabs for bathrooms & other areas
- Substrates for basements and pilot floors, space between floors, roofs and wooden floors.
- Single-layer screeds for direct gluing of floor coverings (tiles, parquet, stones, etc.), basements and pilot floors.
- Formation of gradients on terraces and flat roofs, also with subsequent direct laying of waterproofing mantles (prefabricated hot or cold bituminous and synthetic liquids or membranes; provided that are solvent free)
- Insulation of attics
- Filling of vaults, also very thick
- Confinement of roofs in cement fiber sheets, also with subsequent direct laying of waterproofing mantles (prefabricated hot or cold bituminous and synthetic liquids or membranes; provided that are solvent free)
- Substrates for industrial flooring.

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Consumption / Yield:

To obtain 1CBM of PLC the following is required:

- 2 no. of bags of Politerm Blu (420ltrs. each)
- Water in prescribed doses
- Cement in prescribed doses

Preparing the Laying Surface:

The laying surface must always be clean and free of dust and fragments of any kind.

- For absorbent laying surfaces (normal concrete surfaces, etc.): abundantly wet the surface, but do not leave puddles.
- For poorly absorbent laying surfaces (very dense cement surfaces, etc.): treat the laying surface with adhesion promoter (bonding agent) before casting the PLC and work fresh on fresh, or make an adhesion bridge with cement grout hydrated with water and bonding agent, or use suitable adhesion primer.
- For non-absorbent laying surfaces (sheaths, metal, ceramic, etc.): Before casting the PLC, lay an electro welded lath at a due distance from the laying surface (positioned at least at a third of the final thickness of the casting to be carried out).

Mixing and Application:

Use only good quality CEM I Ordinary Portland 52.5N Cement for the mixes according to the requirements and standards as per Kingdom of Bahrain.

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Doses to obtain 1 CBM of Politerm Light Concrete (PLC):

PLC Mix	Density (Kg/cbm)	Politerm Blu (Bags of 420 lt. each)	Water (Lt.)	Cement (Kg.)	Sand (Kg.)
PLC 200C	Approx. 215	2 Bags	Approx. 100-120	200	Not Required
PLC 250C	Approx. 265	2 Bags	Approx. 125-140	250	Not Required
PLC 300C	Approx. 315	2 Bags	Approx. 150-170	300	Not Required
PLC 350C	Approx. 265	2 Bags	Approx. 175-195	350	Not Required

Note: Water quantity to be adjusted according to the temperature, time of the day, wind speed.

- Sand is not required for the standard mixes of Politerm Light Concrete. Sand may however be used being aware of the fact that it reduces the performance in terms of weight (increase in weight), thermal insulation and water retention. If using sand, the water doses will vary depending on the amount of sand and its residual moisture.
- Mixing: the PLC can be mixed with:
 - o Cement Mixer;
 - o Horizontal Mixer
- Mixing and Pumping: The PLC can be mixed and pumped on site with:
 - o Specific equipment type Politerm Machine
 - o Or any other type of machine as available in the market.

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- Order of component infeed with Politerm Machine:
 1. Water
 2. Politerm Blu
 3. Cement
 4. Mix for 10 minutes (including feeding time) before pumping.

Main Technical Characteristics:

PLC Mix	PLC 200C	PLC 250C	PLC 300C	PLC 350C
Cement Dosage Kg/cbm	200 Kg.	250 Kg.	300 Kg.	350 Kg.
Density after 28 days (Kg/CBM)	Approx. 215	Approx. 265	Approx. 315	Approx. 365
Thermal Conductivity (W/mk)	N.A.	0.077	N.A.	N.A.
Compressive Strength (N/mm ²)	0.69	0.83	1.61	1.69
Flexural Strength (N/mm ²)	0.37	0.46	0.95	0.59
Cohesion (kPa)	82.62	82.62	127.17	N.A.
Hot Sealed Membrane Rupture (N/50mm)	57.00	N.A.	62.00	21.28
Cold Sealed Membrane Rupture (N/50mm)	35.00	N.A.	47.00	13.00
Elasticity Module (N/mm ²)	235.30	N.A.	489.50	N.A.
Factor of resistance to water vapor diffusion (m)	10.11	11.50	12.00	21.04
Specific Heat (kj/kgK)	1.40	1.40	1.40	1.40
Shrinkage (mm/m)	0.427	N.A.	0.352	0.270
Impact sound reduction at 500Hz	N.A.	14dB (thickness 5cm.)	21.5dB (With mat)	N.A.
Impact sound pressure level measure in (situ) [UNI EN ISO 717-2 L'nT,w(C1)]	N.A.	61dB (thickness 11cm.)	N.A.	N.A.
Fire Reactivity Class	A2 (UNI EN 13501-1)			
Smoke Production Class	S1 (UNI EN 13501-1)			
Flammability Class	d0 (UNI EN 13501-1)			