



UNI EN 771-3:2011



### Block characteristics

Characteristic	Value	Norm
Product classification:	Full	
Nominal dimensions of the block (L x W x H) mm:	L.250 x W.500 x H.200	UNI EN 771-3:2011
Real dimensions of the block (L x W x H) mm:	L.245 x W.495 x H.195	UNI EN 771-3:2011
Dimensional tollerances mm:	D1	UNI EN 772-16:2011
Single block nominal weight Kg:	22,5	
Drilling percentage:	0%	
Density of the mix Kg/m <sup>3</sup> :	900	UNI EN 771-3:2011
Nominal density tolerance Kg/m <sup>3</sup> :	+ / - 10%	UNI EN 772-13
Medium compressive strength (category II) N/mm <sup>2</sup> :	5,50	UNI EN 772-1:2011
Thermal resistance of the block m <sup>2</sup> k/W:	2,719	UNI TS11300-1 UNI EN ISO 6946 UNI EN ISO 13370
Coefficient of water vapour diffusion $\mu$ :	21,04	UNI EN 1745
Vapour permeability $\delta$ Kg/msPa:	15,62*10 <sup>-12</sup>	UNI EN 1745
Equivalent thermal conductivity of the block $\lambda$ W/mK:	0,1839	
Specific heat Kcal/Kg K:	0,33	
Dangerous substances:	Not present	

### Masonry characteristics

Characteristic	Value	Norm
Nominal mass of the masonry excluding the plaster Kg/m <sup>2</sup> :	450	
Thermal trasmittance of plastered wall* U W/m <sup>2</sup> k:	0,343	UNI EN ISO 6946 UNI EN ISO 13370
Thermal resistance of plastered wall* R m <sup>2</sup> k/W:	2,919	
Periodic thermal trasmittance of plastered wall* YIE W/m <sup>2</sup> k:	0,0018	
Phase displacement - Thermal inertia:	29h. 21'	ISO 13786
Attenuation factor of thermal inertia:	0,0051	
Fire reactivity:	Euroclass A2s1d0	EN 13501-1
Sound insulation value by calculation dB:	59,3	
Pieces per m <sup>2</sup> of masonry:	20	

\* Plaster for internal and external use having a thickness of 15 mm and with a thermal conductivity of 1,00 W/mk (plaster made with sand and cement UNI 10456).



Packaging	
Type of packaging:	Pallet
Pieces per packaging:	48
Total pallet weight Kg:	1084
Pallet dimensions (L x W x H) mm:	L.990 x W.1030 x H.1290

## Fields of application

Load bearing masonry for earthquake zones.

## Specification

*"SMARTBLOCK is a building system, produced and patented by ESB s.r.l., with certified quality system, in accordance with UNI EN ISO 9001 respecting the OHSAS 18000 norm, composed by blocks for infill walls to be plastered, suitable for the construction of internal and external walls. The blocks are CE marked according with UNI EN 771:3 norms, they are made with concrete and highly insulating super light inert material made of virgin expanded polystyrene beads with controlled density and grain size in curve ( $\varnothing 3 \div 6$  mm) and mixed with E.I.A. additive in the production phase to obtain a perfect mixing with water bindings. The nominal dimension of the blocks are L.250 x W.500 x H.200 mm with D1 tollerance and density equal to  $900 \pm 10\%$  kg/m<sup>3</sup>. Fire reactivity class is A2s1d0 (UNI EN 13501-1). The wall made with 1,5 cm of plaster on each side will develop a thermal transmittance equal to 0,343 W/m<sup>2</sup>K and a sound insulation Rw of 59,3 dB according with technical recommendations EAACA. The charges for the making of doors and windows sides, architraves and, if provided by the structural engineer, of lightweight metal reinforcement within the laying mortar and anything else necessary fo a "workmanlike" execution of the mansory. It is included also the supply and laying of special parts, special elements for armed curb and pillar (U-blocks and lintels), for the creation of both horizontal and vertical structural rigidity, simple or trellis metal armor, hardware for connection to the structure, concrete castings for the above-mentioned stiffeners, the sealing of control joints with suitable material, and anything else necessary for a "workmanlike" execution. The scaffolding is included for height up to 3,5 meters from the work surface".*

## Composition of the mix

Cement II/A Rck 4,25 dosed at 300 Kg/m<sup>3</sup>.  
Aggregate with controlled density dosed at 600 Kg/m<sup>3</sup>.  
Politerm Blu and Politerm Blu Fein.  
Water.