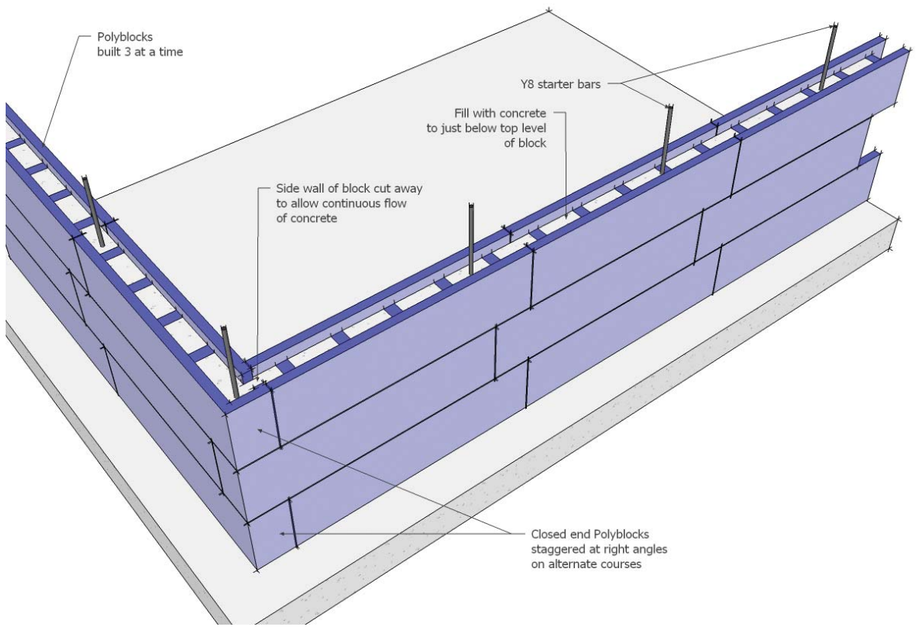
POLYBLOCK 1800M² LIMPOPO EDUCATIONAL CENTRE

POLYBLOCK BUILDING PROCESS



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ABP BUILDING PRODUCTS

Specialists in Energy Efficient Building Solutions

PRODUCT DATA SHEET

POLYBLOCK
EXPANDED POLYSTYRENE HOLLOW BUILDING BLOCK

INTRODUCTION

With the growth of the South African construction industry it has been realised that alternatives to the tradition of brick and mortar are going to have to be used to enable the building demand to be met.

Expanded polystyrene (EPS) building systems are commonplace in the rest of the world primarily because of EPS's thermal insulation properties and light weight.

The Polyblock system is based on proven technology used internationally for the past 35 years.

PRODUCT DESCRIPTION

Polyblock is a hollow EPS building block which acts as a permanent formwork for a reinforced concrete infill and is used for building houses, perimeter and retaining walls, infill panels for steel frame construction, agricultural buildings and high rise developments.

The block stays in place acting as a *thermal insulator* for the building.

The system is finished by using a propriety EPS plaster - Polyplast.

POLYBLOCK SIZE	SALES CODE	FUNCTION	CONCRETE REQ./M² (m³)	WALL WEIGHT/ M² (kg)
1200mm (l) x 300mm (h) x 180mm (w)	TAWB180	External walls	0,1	240
1200mm (l) x 300mm (h) x 150mm (w)	TAWB150	Perimeter walls	0,075	180
1200mm (l) x 300mm (h) x 120mm (w)	TAWB120	Internal walls	0,05	120
1200mm (l) x 300mm (h) x 180mm (w)	TAWB180L	Lintel block		

VARIBLOCK is a retaining wall system supplied in a knock down form of side panels and internal cross bracers.

The VARIBLOCK side walls are the same size as the POLYBLOCK walls with 2 alternative spacer sizes - 330 and 240mm.

This allows the construction of concrete retaining wall thicknesses of wall thicknesses of 270 and 180mm respectively.

SYSTEM APPLICATION

1) Build foundations, either strip or raft as normal keeping foundations as level as possible. Foundations should be stepped by 300mm to suit the height of the block.
2) Place 1m long starter bars in the foundations (100mm deep) at corners, wall joins, on either sides of windows and doors with spacing between1,2 -1,5 m between bars.
3) Place first row of Polyblocks to floor plan leaving spaces for door frames. Ensure all blocks are level.
4) Insert first Y8 horizontal rebar continuously above first block bending around corners by 300mm.
5) Place AutomaPolyblocks 3 high and fill with 15MPa concrete.
6) When concrete set place next 3 rows, fit windows or formwork for windows and continue to fill with concrete placing further 1m lengths of rebar vertically, in line with the starter bars.
7) Use timber or fibre cement formwork above window openings to hold concrete in place above window openings. For 180mm Polyblock walls there is a Polyblock lintel block that has a solid base to hold the concrete above openings without the need for formwork.
8) Above windows and doors insert 2 x Y8 rebar lengths continuously on top of first block above openings to create ring beam and lintel.
9) Attach hoop iron or wire to the ring beam to secure roof sub structure and fill with concrete to wall top.
10) When wall work complete and internal concrete fully set, plaster with Polyplast plaster solution to 6mm thickness.

PRODUCT BENEFITS

Permanent thermal insulation
Polyblock keeps homes warm in winter and cool in summer saving energy costs involved in heating and cooling.

Lightweight
Easy to carry and position.

Polyblock walls filled with concrete are about 50% lighter than equivalent sized brick walls.

Quick to build
Polyblock modular blocks are dimensionally accurate, equivalent in size to 36 bricks and the patented locating mechanism locks the blocks together easily and tightly.

No need for skilled labour
Due to the simplicity of fitting the Polyblocks and the requirement simply to fill with concrete skilled bricklayers are not required

Structurally sound
The structure of the Polyblock system is reinforced concrete which is 2-3 times stronger than brick.

Speed of construction
Walls can be built up to 5 times as fast as brick with building rates of 50m^2 per day per building team readily achievable.

Moisture resistant
EPS is water impermeable and the Polyblocks therefore create a moisture barrier.

Cost competitive
Considering material cost and speed of building constructing with the Polyblock system is competitive with building with brick.

Long life
EPS is resistant to rot, bacterial and termite attack and degradation over time and will retain its thermal insulating and moisture barrier properties for the life of the building.

TECHNICAL DETAILS

Density	20gm/lt
Fire retardant	Yes
Thermal conductivity	R value 1,76
Blocks required/m2 of wall	2,78
Block wall thickness	30mm
Block size configuration	See above
Concrete required/m^2 of wall	See above
Wall weight	See above
Concrete strength specification	15MPa
Rebar specification	Y8 or Y10

3D VIEW OF AN POLYBLOCK