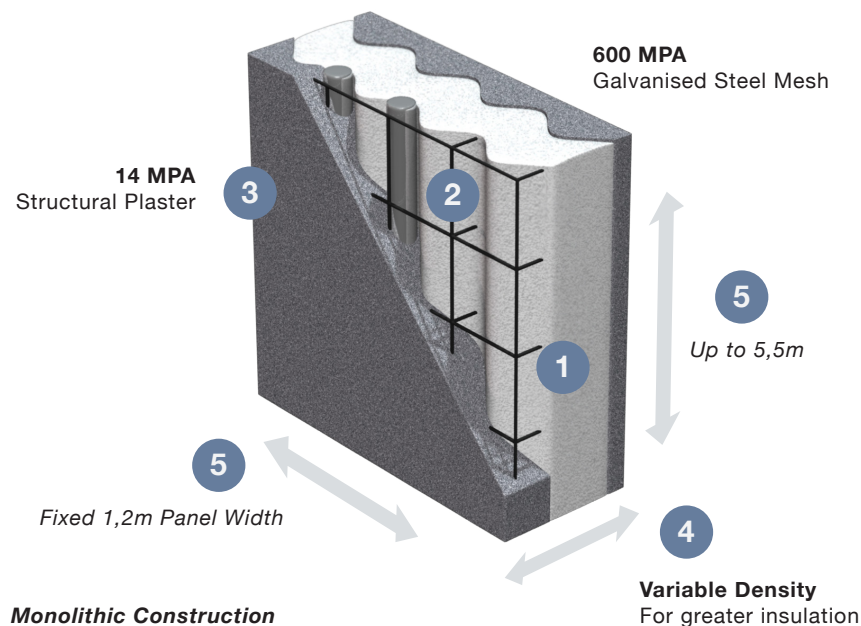


FUTUREHOUSE WALL SYSTEM

The Ikhaya Futurehouse System (IFHS) is a panellised, quick to build, lightweight and thermally insulating walling system. It offers superior structural integrity to traditional methods of construction while addressing energy efficiency.



1 INSULATING EPS CORE

Walls have a central core of corrugated profiled **EPS** at a standard thickness of 80mm. Expanded polystyrene (EPS) has long been accepted as a highly efficient and cost effective thermally insulating material.

2 REINFORCED MESH

The EPS sheet core is encapsulated by a high tensile strength **steel mesh cage**. The steel is galvanised and the sheets are welded to each other through the EPS core.

3 FINISHED WITH STRUCTURAL PLASTER

Once installed on site the panels are completed by the application of 35mm thick structural plaster (20mm above the mesh) on both sides. Decorative finishing can then be done conventionally e.g. smooth plaster, tiles, etc.

4 CORE & PLASTER THICKNESS TO SUIT YOUR REQUIREMENTS

The **EPS** core thickness and density as well as the plaster thickness can vary to suit the requirements of a particular application, e.g. increased insulation or aesthetic reasons.

5 MADE TO CUSTOM HEIGHT SPECIFICATIONS

Our in-factory manufactured wall panel with a fixed width of 1,2m, can be made to custom heights of up to 5,5m.

- Panels can be used **structurally** as well as in **infill** applications.
- The system is extremely **versatile** and can be adapted to the structural, insulation and performance requirements of a specific construction project.

CONSTRUCTION METHODOLOGY

- 1 Starter bars are placed/attached to the foundation
 - Y6-8 anchor reinforcing bars at 300mm centres, spaced alternately on either side of the panel.
 - Starter bars act as positional guides & vertical stabilisers for the wall panels.

- 2 Panels are placed & wire-tied to starter bars

- 3 Panels are wire-tied to each other on the mesh overlap

- 4 Panels are braced to keep them plumb & stable

- 5 Corners & joins are reinforced with wire-tied mesh

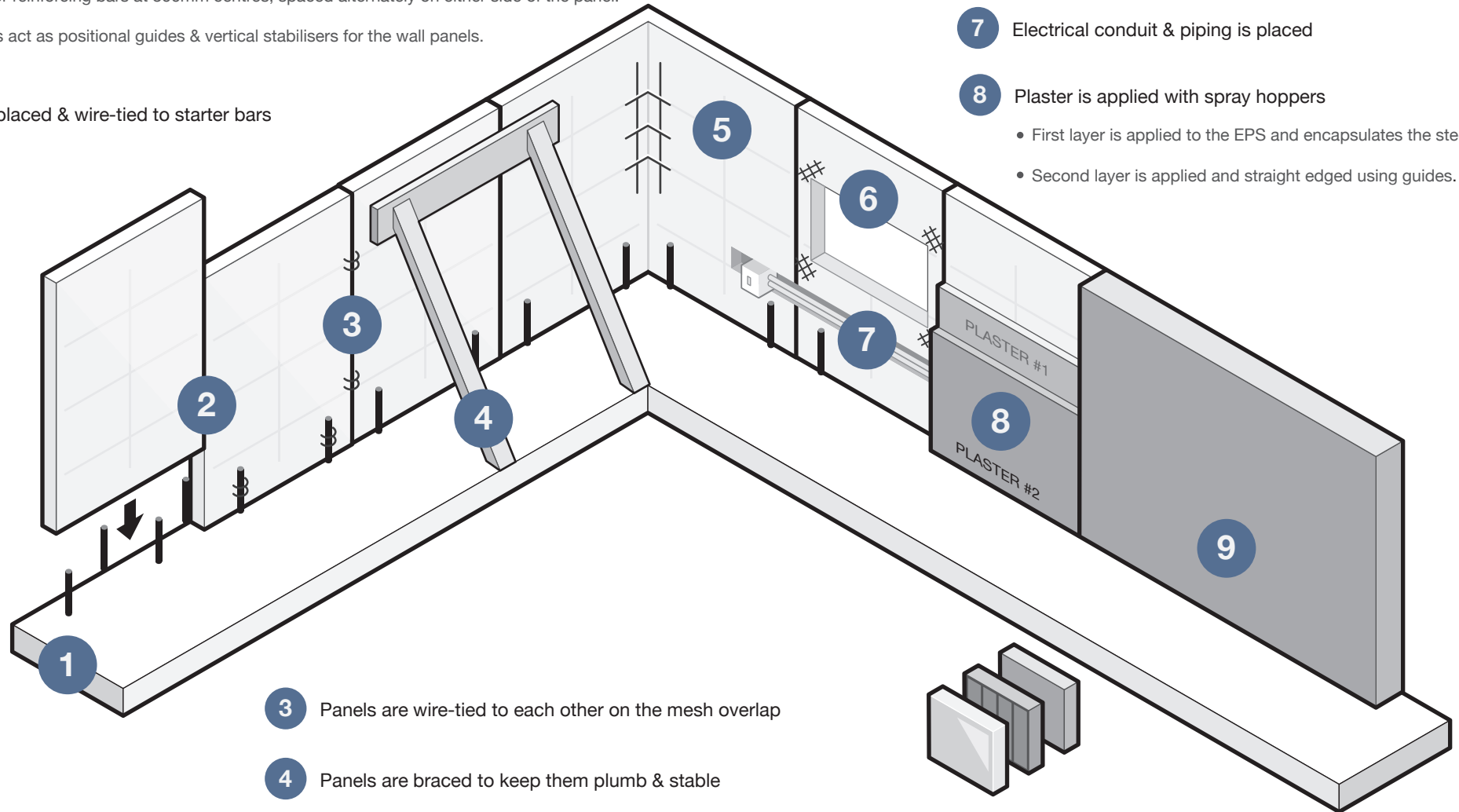
- 6 Window & door openings are cut and reinforced with mesh strips

- 7 Electrical conduit & piping is placed

- 8 Plaster is applied with spray hoppers

- First layer is applied to the EPS and encapsulates the steel mesh.
- Second layer is applied and straight edged using guides.

- 9 Walls can be finished in a variety of ways



PRODUCT BENEFITS

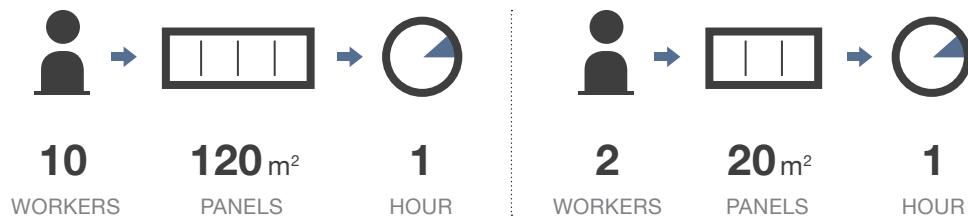
STRUCTURAL PERFORMANCE

The walls are a monolithic reinforced construction providing stability and durability over time as well as preventing the formation of structural cracks.

The high tensile strength vertical steel wires run in the valleys of the corrugated EPS which, when finished with structural plaster, create a series of mini **reinforced vertical columns** - giving a very high load bearing capability to the walls. Further, the two sheets of mesh are welded together through the EPS core to connect the reinforced plaster skins to each other.

SPEED OF CONSTRUCTION

The **IFHS** panels are lightweight and easy to transport and position (approximately 5kg per m² when unplastered). Plastering is quick and easy with spray hoppers.



INSTALLATION & BRACING

SPRAY PLASTER TO LEVEL



SYSTEM APPROVAL

The construction system has been extensively tested and certified internationally and is used on every continent. In South Africa, **IFHS** is both **Agrément** and **NHBRC** approved ensuring fitness for purpose and facilitating municipal and financial approval.

Agrément Certificate **2007/331** - For Single Storey Constructions

Agrément Certificate **2008/347** - For Multi Storey Constructions

Agrément certification incorporates the requirements for:

- South African Department of Housing
- The South African Department of Public Works
- Council for Scientific & Industrial Research (CSIR)
- Int. Council for Building Research, Studies & Documentation (CIB)
- South African Bureau of Standards (SABS)
- World Federation of Technical Assessment Organisation (WFTAO)
- South African National Home Builder's Registration Council (NHBRC)
- Council for the Built Environment (CBE)
- The Independent Development Trust (IDT)



FIRE RESISTANCE

The fire rating of a standard 150mm **IFHS** panel is **60 minutes** and a 120 minute rating can be achieved by increasing the structural plaster thickness by 10mm on each side.



THERMAL INSULATION

Improves building comfort and significantly reduces energy required for heating and cooling, as well as reduced carbon emissions compared to traditional buildings. Keeping you warmer in winter and cooler in summer.

SPECIFICATIONS

PANEL SIZE	<ul style="list-style-type: none">● Standard Panel Width: 1,2m● Standard Heights: 2,5m 2,75m 3m● Can be made to custom heights
EPS CORE THICKNESS	<ul style="list-style-type: none">● Standard Thickness: 80mm● Panel thickness between mesh sheets: 100mm● Can be made to custom thickness ranging from 60mm to 200mm
EPS SPECIFICATIONS	<ul style="list-style-type: none">● Fire-retardant / Non-fire propagating EPS● Variable density according to requirements
WIRE SPECIFICATIONS	<ul style="list-style-type: none">● 3mm diameter (pre-galvanised)● Tensile strength: Minimum 600 MPA
MESH APERTURES	<ul style="list-style-type: none">● 150mm x 80mm
THERMAL CONDUCTIVITY <small>Please refer to accompanying specification sheet for thermal performance for particular panels</small>	<ul style="list-style-type: none">● 80mm Core● 30mm plaster both sides● 'U' value = 0,5 'R' value = 2,2
PLASTER MIX	<ul style="list-style-type: none">● 4:1 ratio of river sand to cement - 14 MPA● Standard thickness: 35mm, at the deepest point, on both sides.● Plaster can be additionally reinforced with polypropylene fibre.

ABOUT IKHAYA FUTUREHOUSE

Ikhaya Futurehouse Systems (IFHS) was established in 2006 after extensive research into alternative building systems available worldwide. The principal construction technology and manufacturing machinery is Italian in origin, established in the 1960's.

IFHS is based in Centurion, Gauteng and sources all raw material locally in South Africa. The company's manufacturing capability can efficiently handle the most demanding supply deadlines and is scalable and flexible to meet custom project requirements.

- STRONG & DURABLE
- THERMALLY INSULATED EPS
- MADE TO YOUR SPECIFICATIONS
- QUICK TO INSTALL

*The **Futurehouse** system has been extensively used world wide for all types of construction for close to fifty years.*

CONTACT DETAILS

14 Marconi Nook, Hennospark, Ext 15. Centurion, Gauteng, 0157

Phone: (012) 653 1938 | Email: info@futurehouse.co.za

www.futurehouse.co.za