

Enviro™ AAC Floor System

A strong, quiet and thermally comfortable flooring system



A solid yet lightweight floor panel, Enviro provides a solid, premium feeling underfoot. Compared with timber-based flooring products, Enviro helps create quieter and thermally comfortable interiors.

Enviro panels are autoclaved aerated concrete (AAC), with steel reinforcing through the centre. Air cells in the concrete absorb and reduce noise, making interior spaces far quieter to live and work in when compared with timber-based alternatives. With its high thermal mass, Enviro helps balance indoor temperatures, absorbing heat and then releasing it as a building cools down.

Panel dimensions: 2200mm x 600mm

Thickness: 75mm

Working Density: 650kg/m³, about ¼ that of 'standard' concrete*

*Standard' concrete estimated at 2400 KG per m³ for comparison purposes.

TYPICAL APPLICATIONS

Residential and light commercial builds.





BENEFITS OF THE ENVIRO AAC PANEL FLOOR SYSTEM

WEIGHT

Strong and lightweight

Enviro has many of the features of a solid concrete floor, but without the weight for handling or loads on the structure. With a working density of 650kg/m³, it's approximately one-fourth of the weight of concrete, while retaining 50% of its strength. Fitted over timber or steel joists, the span tables offer KPA floor load solutions for homes and offices. Self-levelling floor topping may be used to complete the installation or when the floor covering requires it.

EFFICIENT

Simple to install

The Enviro Panel Floor System can be installed quickly and efficiently by screwing and glue-fixing each panel to the floor framing, using galvanised bugle screws for timber framing or dual-grip hex-head screws for steel framing. Panels are then mortared together with Masons Enviro ACC glue mortar or bonded with construction adhesive, creating a continuous lightweight masonry floor. The panel sizes may require a slightly different joist set-out than timber-based products to enjoy the full benefits of the system.

ACOUSTICS

Reducing sound between floors

Enviro panels are effective at absorbing noise and reducing sound transmission between floors, with an STL rating of 35dB for 1000Hz. The porous structure provides sound absorption, along with mechanical vibration energy dampening to reduce sound travel between rooms.

THERMAL

Suitable for the local climate

The porous structure of Enviro ACC panels gives a superior R-value rating compared to some other masonry substrates. This means AAC panels provide a good level of thermal mass, helping to even out temperature fluctuations.

CLEAN

Low environmental impact

The Enviro Panel Floor System is energy-efficient, with no harmful pollutants produced during manufacturing. Its inert material is non-hazardous and does not emit harmful gases or vapours. All waste product at point of manufacture is recycled back into the production process.

MATERIAL PROPERTIES

Working density with steel	>650 kg/m ³
Compressive strength	4.0 Mpa
Structural properties	>1750 N
Dry shrinkage value	0.3-0.5mm/m
Water absorption (by volume)	Up to 24-35%
Thermal conductivity	0.12 w/mk or R .625 (75mm)
Sound transmission loss (STL)	35dB for 1000Hz (see STC chart)
Fire properties	Non-combustible

Note: Masons Enviro Panel Floor System has not been tested or rated as an intertenancy fire solution.



SOUND PERFORMANCE

Estimated performance of 75mm Enviro AAC panel with various mid-floor assemblies

STC	sound transmission class	a minimum of 55 is required by the NZ Building Code
IIC	impact insulation class	a minimum of 55 is required by the NZ Building Code

The designer’s material choices and floor section design make a large contribution to a quiet floor between stories or tenancies. It is best to design to exceed the required minimums as acoustic performance can sometimes be derated in situ.

Enviro 75mm panels over 240mm timber joists IIC 73 STC 56

Cut pile carpet (12mm)
Chip foam underlay (8mm)
75mm Enviro AAC Panel
75mm thick absorptive blanket in cavity
240mm timber joists
Resilient mounts (e.g., GIB Rondo with ST001 Acoustic mount) and furring channels 10mm thick standard plasterboard

75mm Enviro – 240mm IIC 43 STC 55

Timber joists – no floor covering – now ceiling separation or additional mass.
No floor covering
75mm Enviro AAC Panel
75mm thick absorptive blanket in cavity
240mm timber joists
Resilient mounts (e.g., GIB Rondo with ST001 Acoustic mount) and furring channels
10mm thick standard plasterboard

DESIGN NOTES

Additional material selection is required to achieve IIC. Adding mass and separation to the ceiling such as double layers of Gib or suspending the ceiling using a proprietary ceiling mount system, correct use of acoustic sealant and/or addition of a sound-absorbing insulation in the floor cavity will be required. Selection of an acoustic underlay for hard flooring may also be helpful.

INSTALLATION

The Enviro AAC Panel Floor System may be readily installed by building teams or plaster and panel contractors at the client’s discretion. **

SEE THE MASONS WEBSITE FOR THE FOLLOWING RESOURCES:

- Enviro Floor Design and Installation Guide
- Design and Specification Guidance
- CAD drawings/standard details
- A take-off service
- A PS1



** Installation should be supervised by an LPB builder or plasterer