

Introduction

WeatherPan® is a prefabricated sandwich panel designed for external and internal non load-bearing partition applications. Its weight is only 1/5 to 1/7 of traditional 120mm block wall, which greatly reduce the foundation costs and transportation costs and is suitable for fast track construction techniques with simple erection. The panel is easy to install and no skilled labour is required. On average, an experienced labour can install 25m² panels per day which is 15 times quicker than traditional block wall erection.

WeatherPan® is a pure dry trade wall system, thus providing a clean working site condition. It provides all the benefits of masonry wall without incurring the additional costs of labour and time in wet trade plastering. The panels when joined together not just provide a smooth surface to receive skim coat but also maintain an excellent integrity of the partition making its impact resistance 1.5 times better than that of traditional block wall. A 75mm thick panel will provide the required fire rating, acoustic performance, water tightness and physical strength of a 120mm block wall which in return increase usable area by minimum 5-10%. WeatherPan® is ready to receive screws and nails for fixing wardrobes and furniture. The average anchorage load is above 45kg per screw. The panel can be decorated by painting, tiling, papering or wood veneering.

WeatherPan® is 100% free from asbestos or sepiolite and is a breathing panel which helps in condensation control. The board is manufactured to ISO 9001 quality management system and ISO 14001 environment management system, and has obtained the Green Protect Label Award issued by National Environment Protection Bureau.

Description



WeatherPan® comprises of 5mm thick fibre cement / calcium silicate board facings with WeatherCore which is a lightweight concrete mix of Portland cement, expanded polystyrene bead aggregates and admixture. The sandwich panel is 100% free from asbestos or sepiolite and the manufacturing process including mixing and casting are fully controlled by a central processor.

WeatherPan® is designed with tongue and groove jointing systems for easy assembly. The panel provides exceptional dimensional stability and an unrivalled resistance to movement due to effects of moisture or heat. When subject to fire attack above 1200°C, the panel wall provides fire resistance up to 3.5 hours without losing integrity and insulation and will not emit toxic gas. The panel is immune to insect and will not support fungal growth and is unaffected by sunlight or steam.

WeatherPan® will not degrade with time and within normal application, the life of the product is limited only by durability of the building. WeatherPan® is off white in colour and has a high quality smooth finish on both faces. When construction of curved wall or where using precast WeatherPan® units are limited. WeatherPan®-S, a field applied panel system with in-situ grouting of WeatherCore can be erected on site. It has the same performance as WeatherPan®. Please contact the technical department of Soben International for further details.

Sizes

Thicknesses	50 / 75 / 100 / 125 / 150mm
Widths	610mm
Lengths	2440 / 3000mm (maximum length for 50mm thick panel is 2440mm)



Manufacturing Tolerances

Length tolerance	+/- 5mm
Width tolerance	+/- 2mm
Thickness tolerance	+/- 1mm
Surface smoothness	+/- 2mm



Performance

*Based on 75mm panel



WeatherPan® can carry heavy objects



WeatherPan® external tall wall

Nominal Weight	Ambient	50mm thick - 44 kg/m ² 75mm thick -64 kg/m ² 100mm thick - 77 kg/m ² 125mm thick - 99 kg/m ² 150mm thick - 110 kg/m ²
Thermal Conductivity	EN 12664	0.253 W/mK
Flexural Strength (longitudinal)		4.27 MPa
Flexural strength (transverse)		4118 N
Moisture Movement		0.06%
Moisture Content		9%
resistance to continuous heating		80°C
Surface alkalinity		pH 10
Non-combustibility (Face board)	BS EN ISO 1182, BS476: Part 4 JIS A 1321	Pass
Heat of combustion (Face board)		BS EN ISO 1716: 2002
Building regulations classification (Face board)	EN 13501-1	Euro Class A1
Fire rated partition	AS 1530.4, BS EN 1364-1 BS 476: Part 22	2 hour FRP
Carbon dioxide and carbon monoxide release during fire	NIOSH Guide of National Institute for Occupational Safety and Health	Safe, minimal release far below and acceptance to NIOSH
Water tightness (face board)	ASTM C1185, BS EN 12467	No droplets observed behind the panel
Durability (Face board)	BS EN 12467: Category A	Sheets intended for application where many be subject to heat, high moisture and severe frost. Tests included of impermeability, warm water, 50 cycles of soak-dry, 100 cycles of freeze thaw, 50 cycles of heat-rain
Impact test	BS EN 1128	14.60 mm/mm
Punching Shear load	UWA, Australia	11.90 KN
Lintel loading test	UWA, Australia	9.50 KN, 3.0m long upright panel
Buckling load	UWA, Australia	32 KN
Anchorage Load		Min. 45 kg
Partition stiffness - heavy duty grade	BS 5234: Part 2 :1992, Annex A	Pass
Resistance to structural damage by multiple impacts from a large soft body – heavy duty grade	BS 5234: Part 2: 1992, Annex E	No collapse or dislocation
Surface damage by hard body impact – heavy duty grade	BS 5234: Part 2: 1992, Annex B	Pass
Effects of door slamming – heavy duty grade	BS 5234: Part 2: 1992, Annex B	Pass
Resistance to crowd pressure – heavy duty grade	BS 5234: Part 2: 1992, Annex G	
Heavy weight anchorage (high level wall cupboard) eccentric downward	BS 5234: Part 2: 1992, Annex K	No collapse or damage
Acoustic Performance	AS 1276.1	No damage or detachment of anchor
	AS 1191	Thick Rw, dB STC
	ASTM E90	50mm 36 36
	ASTM E413	75mm 38 38
	BS EN ISO 140-3	100mm 39 39
	BS EN ISO 717-1	125mm 40 40
		150mm 41 41
	composite	Up to 56 Up to 56

Specific Properties



Decorative finishes by tiles, paint or wall paper



Dimensional stability



Easy to install, transport; and low wastage



Economical



Good acoustic performance



Good chemical resistance



Good mechanical resistance and rigidity



Lightweight but strong



Non-combustible and fire rated
BS CN
BS 476: Part 22



Resistance to seismic movement

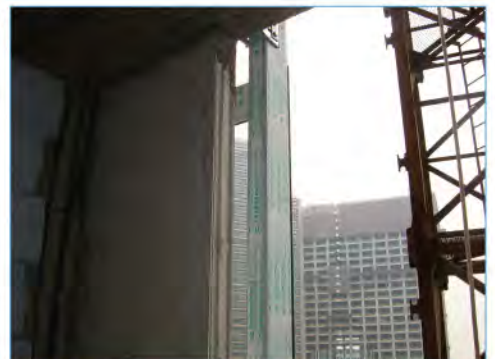


Weatherproof

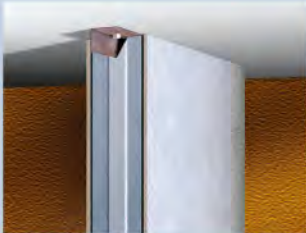
Application

WeatherPan® provides an ideal non-load bearing partition system for high-rise and / or low-rise building construction such as:

- Offices
- Residential towers and apartments
- Shopping malls
- Hospitals
- Schools
- Factories
- Military buildings
- Sporting complexes
- Modular housings
- Entertainment buildings and casinos



Construction Details



Typical head fixing anchor detail



Typical floor fixing detail

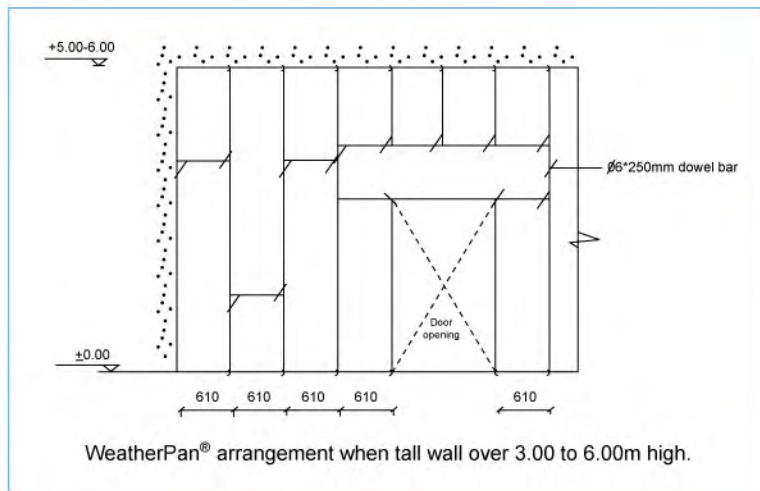
Erecting panels



Services embedment



Skim coat finish on WeatherPan®



For details of construction, please contact your local Soben International Office or refer to WeatherPan® Installation guide.

Health & Safety

WeatherPan® is formulated without asbestos or sepiolite or any inorganic fibres. When using power saws or sanders in a confined space, dust extraction equipment is recommended to control dust levels. WeatherPan® is designed for non-load bearing construction. Horizontal boards or ceiling panels must not be walked on as they are not designed to take additional loads between supports; if there is a risk of this occurring, warning notices should be displayed. Fixers must ensure that they work from adequate and safe platforms where necessary.