

Installation guide **PLYCEM** **HIGH PERFORMANCE SUBFLOOR**



IMPACT
RESISTANT



LIGHTWEIGHT



PLAGUE
RESISTANT



HIGH MECHANICAL
RESISTANCE



NON
COMBUSTIBLE



THERMAL AND
ACOUSTIC COMFORT

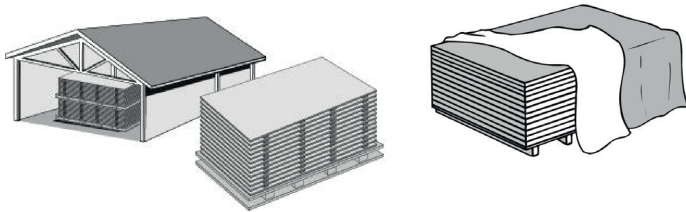


EASY TO
INSTALL

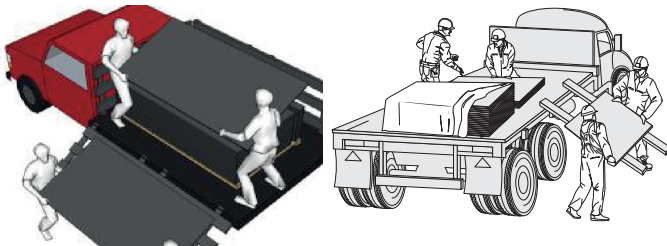
Plycem subfloors is a construction system that creates a solid and stable horizontal surface with the capacity to safely support the stress generated by the action of specific and service loads. It transfers loads to the primary structures of the construction, and defines a vertical limit between two spaces.

TRANSPORTATION, STORAGE, AND HANDLING

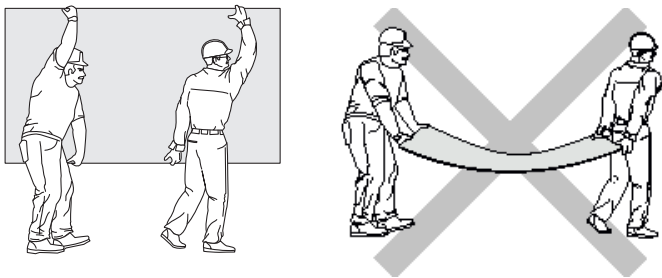
Always store the panels indoors in ventilated and dry areas; both in the commercial warehouse and on the construction site. Do not expose the panels to the outside (rain, sun or snow). In flat surfaces, stack them on pieces of wood (do not leave them directly on the ground). If you leave them temporarily outside, you must cover the pallet with a waterproof mantle.



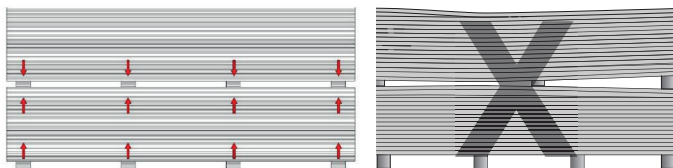
Pystone subfloor panels must be loaded by at least 2 people. Transport the covered panels with a waterproof mantle, preventing them from getting wet on the trip to the commercial warehouse or the construction site.



Always handle the boards on their edges, avoiding deflections in a horizontal position.



Always stack the boards in the correct position on aligned supports. Avoid deformation during stacking. Do not stack more than 3 pallets one on top of the other.

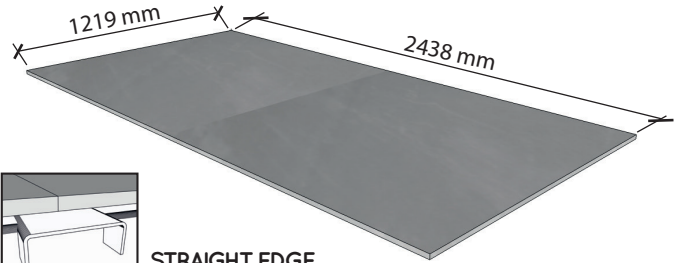


SYSTEM COMPONENTS

Plycem subfloors are composed of different specific and complementary products that compose the subfloor system. The lack or change of these components may affect the final result. Therefore, they should be carefully selected.

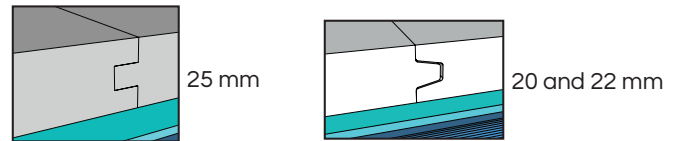
Plycem High Performance Subfloor

These subfloors use Plycem boards with thicknesses of 20, 22, 25 mm (depending on the design load of the subfloor), straight edge or tongue and groove, with a width of 122 cm and a length of 244 cm (ask for minimum production quantity and available stock of other thicknesses (30 mm)). For Plycem technical data sheets please visit www.plycem.com.

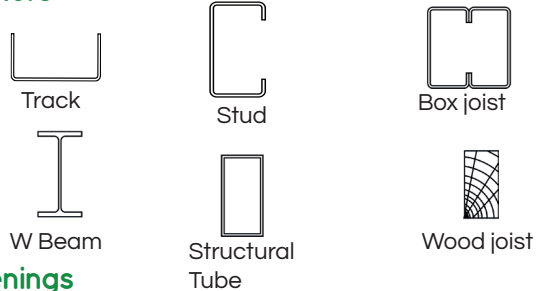


Note: The square tongue-and-groove joint is only in 25 mm board.

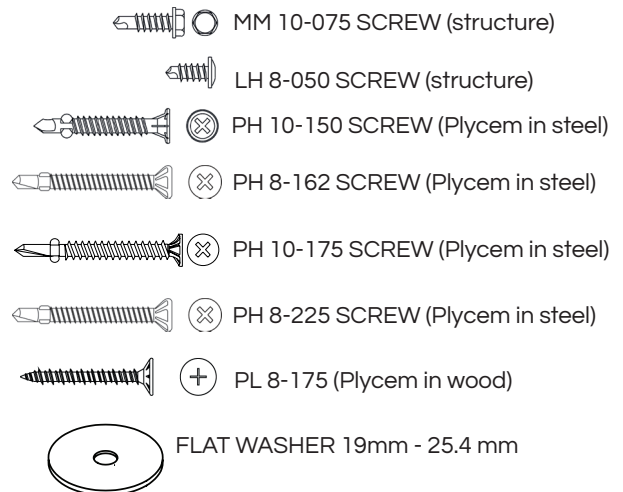
TONGUE-AND-GROOVE JOINT EDGE



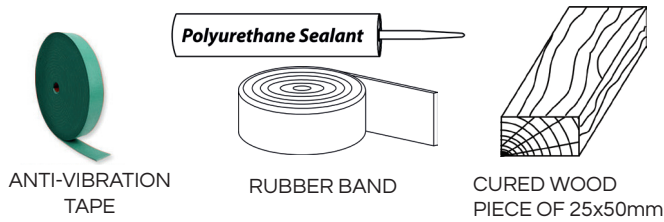
Structure



Fastenings



Acoustic Insulators



Finishing

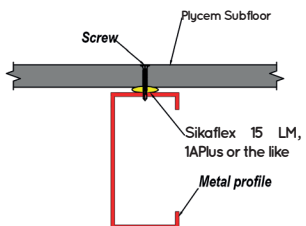


TOOLS



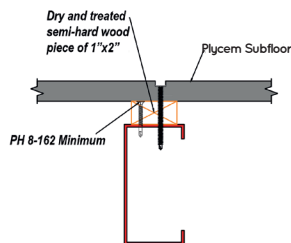
VIBRATION DAMPING SYSTEMS

Polyurethane Sealant



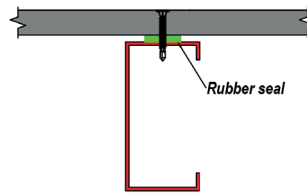
Use a bead of polyurethane sealant Sikaflex 15 LM or the like preferably applied in a zig-zag way along the entire support structure. Applying the polyurethane some hours before placing the panel is required because it must be dry to the touch.

Wood Pieces

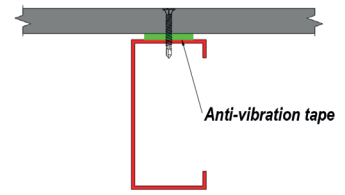


Alternatively, a dry cured wood piece can be placed on the structure (it has great damping features).

Rubber Seal



Anti-vibration Tape

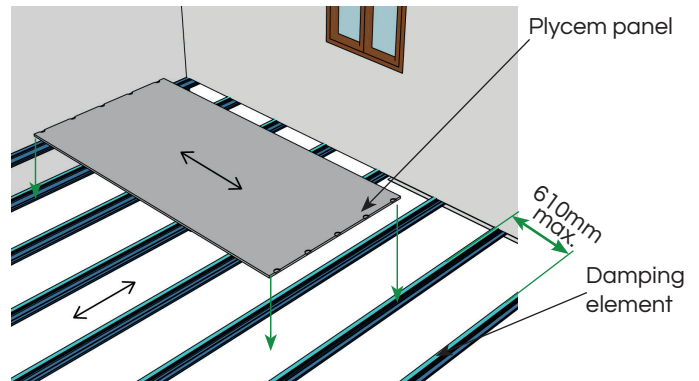


Note: Prodex Acoustics insulation can also be used as a damper (see Prodex website).

INSTALLATION

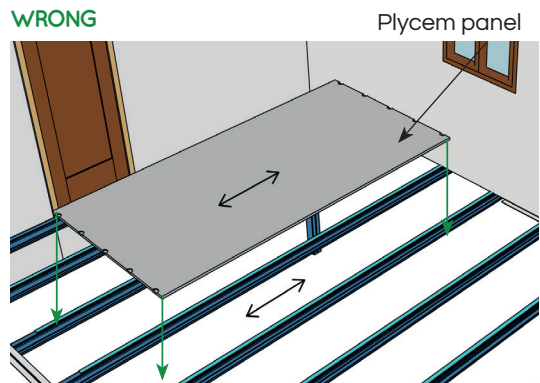
Plycem boards are always placed with their long dimension in direction perpendicular to the position of the floor joists.

RIGHT



Never place the panel on the same direction of the joists (See illustration)

WRONG

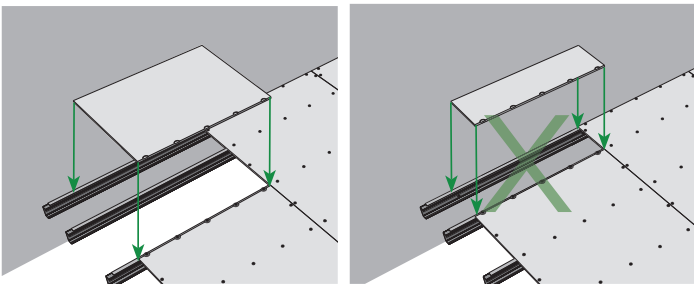


Panels should be fastened by using the Plycem screw indicated for wooden or metal structures. These screws should be self-screwing -as shown below.

USE OF SCREWS DEPENDING ON THICKNESS							
CODE	DESCRIPTION	PLYCEM THICKNESS (inches)					
		WITHOUT DAMPING ELEMENT (*)			WITH DAMPING ELEMENT (*)		
		20	22	25	20	22	25
960795	PH 10-150	✓	-	-	-	-	-
960796	PH 8-162	✓	✓	✓	✓	✓	-
960798	PH 10-175	✓	✓	✓	✓	✓	-
960797	PH 8-225	✓	✓	✓	✓	✓	✓

* Impact anti-vibration tape (3mm maximum)

Make sure that the entire section of the panel is fastened at least on 3 supports; therefore, its maximum length larger than 610 mm

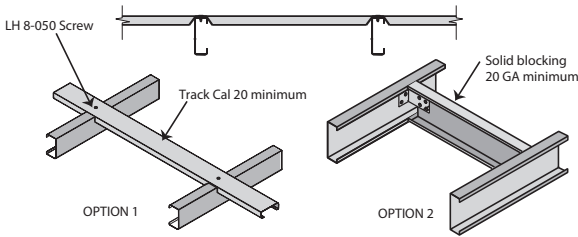


RIGHT

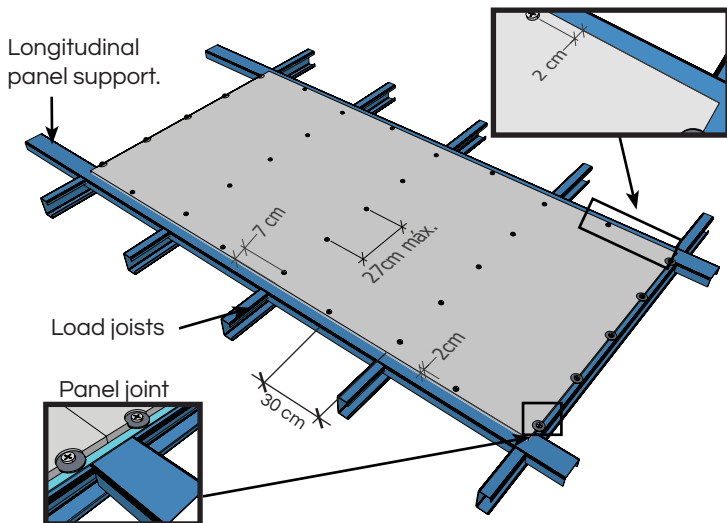
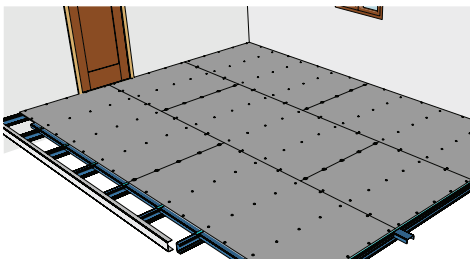
WRONG

STRAIGHT EDGE BOARD

A longitudinal support should be placed on each width of the panel in order to reduce relative displacements in the longitudinal joints.



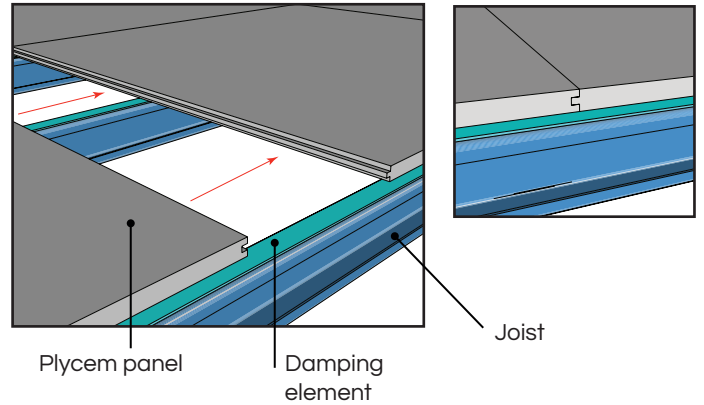
Also placing the panels in a staggered position by at least two supports in order not to have continuous cross-sectional joints (see scheme below).



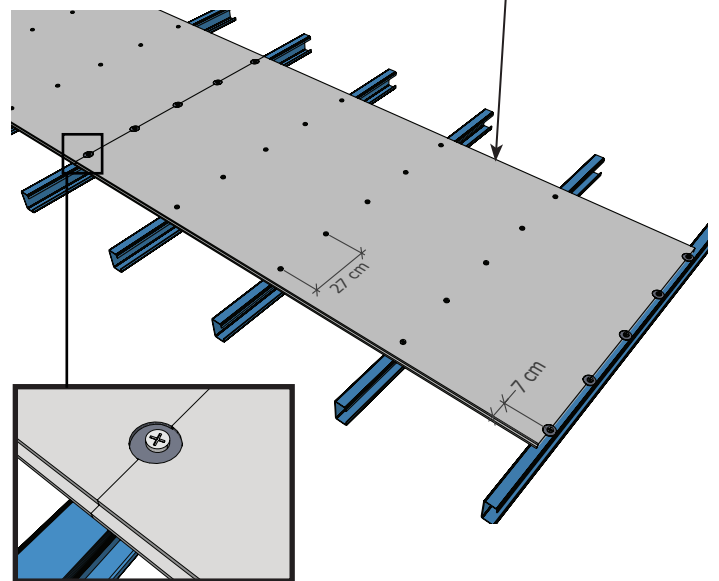
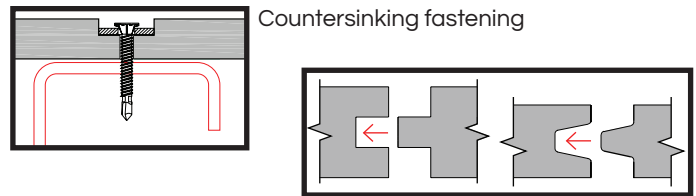
Countersinking fastening with washer of 19 - 25.4 mm

TONGUE-AND-GROOVE BOARD

Plycem also offers boards with a tongue and groove joint in the long dimensions that ensure support between them, without requiring the support piece in the structure (blocking).



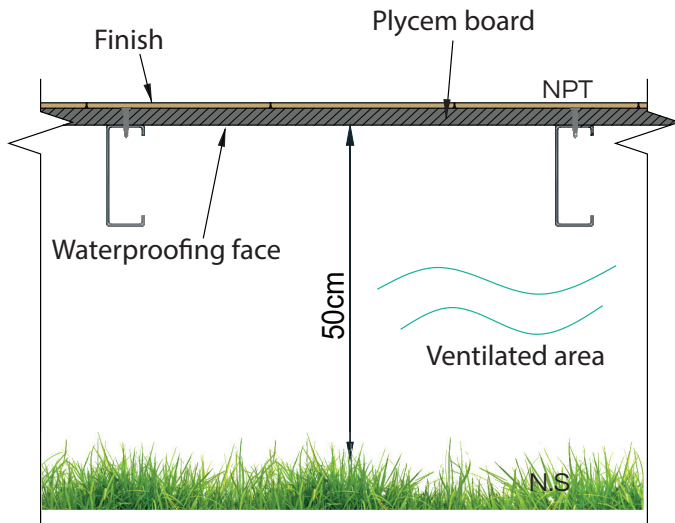
The screws should be placed according to the distribution and distances that indicates the scheme. Important to ensure edge distances and the distance between screws.



NOTE:

- A waterproof wrap is recommended for subfloors exposed to rain or high levels of moisture at least on nonworking hours or during installation. Finishing systems must be applied on the dry Plycem surface.

-The subfloors close to the ground (less than 50cm) must be waterproofed on the underside. Always ensure a cross ventilation system in the space between the floor and the subfloor.

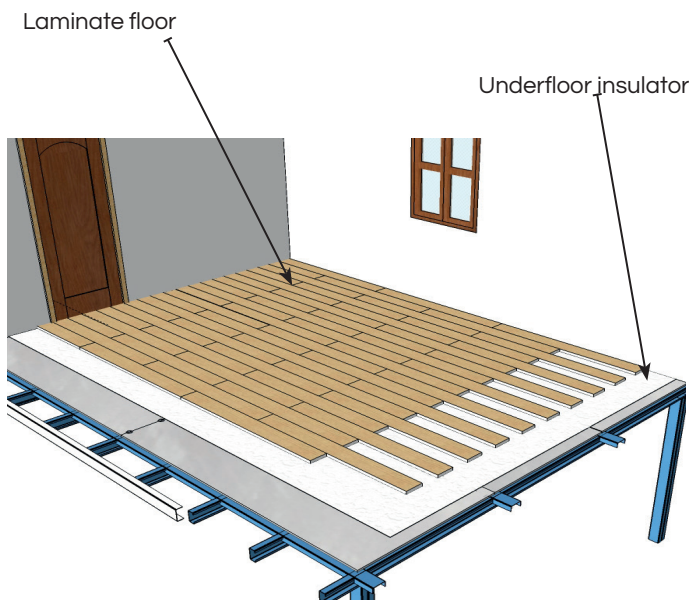


FINISHING

TYPES OF FINISHING ON PLYCEM SUBFLOOR

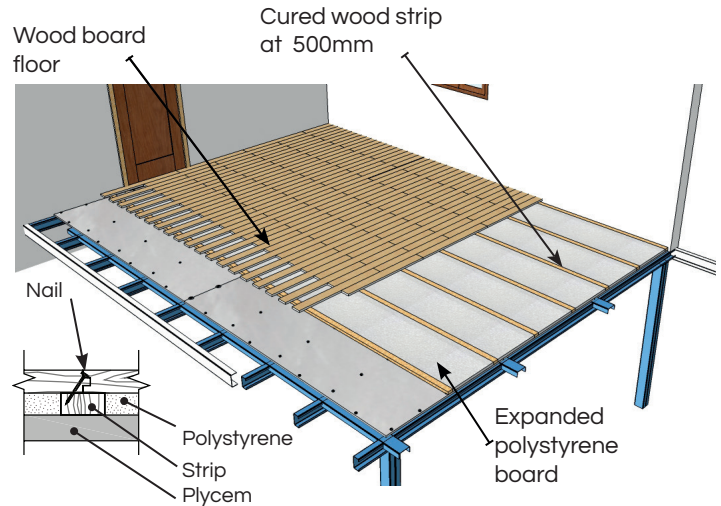
1- Laminate Floor

Laminate wood floor is placed directly according to the manufacturer's instructions. Usually this floor has a polyethylene insulation of the Underfloor type (Prodex or similar).



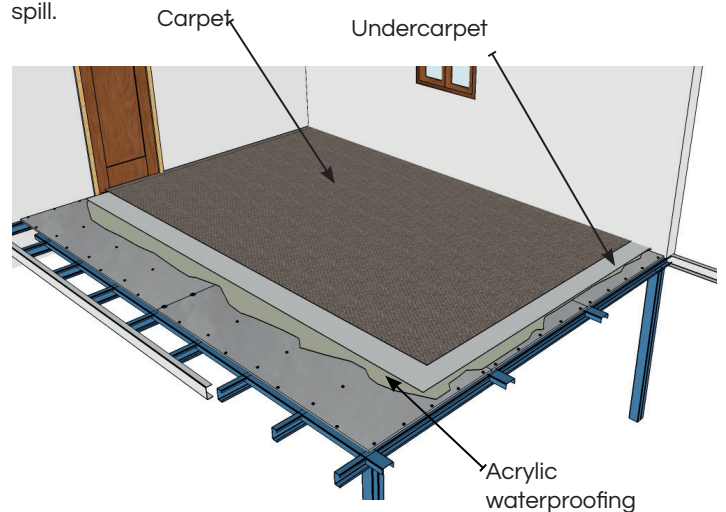
2- Wood Floor

The wood board floor is placed directly on the Plycem base or on cured wood strips of 25x50 mm every 500mm. The space between wood strips can be filled with a 25.4 mm expanded polystyrene board glued with white glue to the Plycem base and to the wood board. The tongue and groove wood floor is fastened with nails according to the scheme.



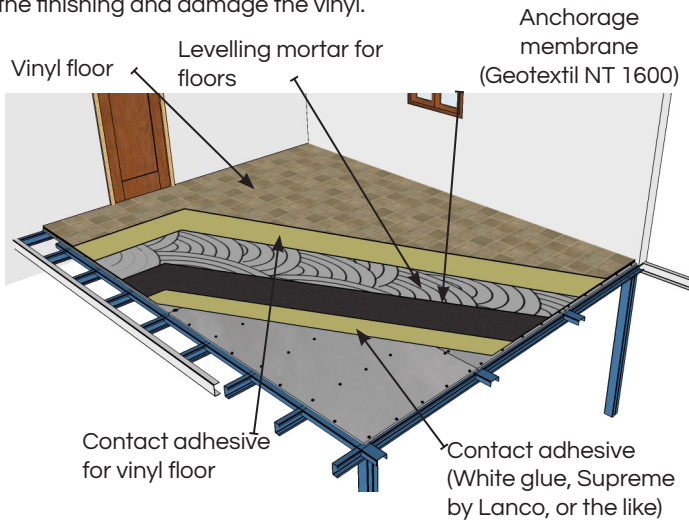
3- Carpet Floor:

The carpet is directly placed on the Plycem base according to the manufacturer's instructions. An undercarpet can be placed as insulator, and then the carpet can be placed. In all cases, seal the Plycem surface with some acrylic waterproofing to protect it from moisture that can be accumulated on the carpet due to any water spill.



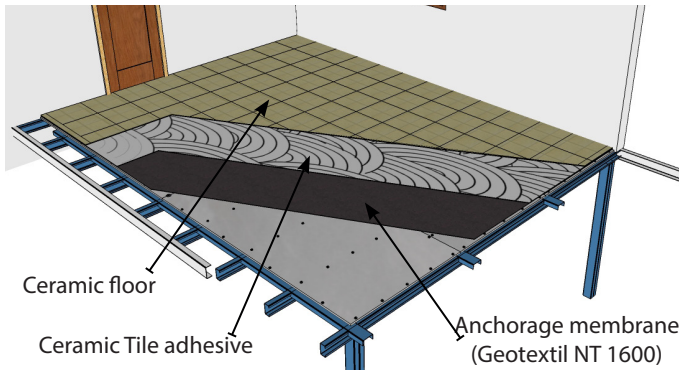
4- Vinyl Floor

The vinyl floor as resilient membrane requires the Plycem base surface to be duly levelled in order not to copy any deformation in the finishing and damage the vinyl.



5- Ceramic Floor

The application of ceramic or porcelain tiles requires treating the joint and the surface of the baseboard. To do this, the thinnest NT-1600 (non-woven) geotextil membrane should be used. It will serve as interface between the fibercement and the ceramic tile, and it will prevent any stress or horizontal movement on the base from cracking the ceramic.



In order to glue the membrane, use acrylic contact adhesive -Supreme Multipurpose Flooring Adhesive by LANCO, or the like, which is moisture-resistant.

Installation for Ceramic Floors

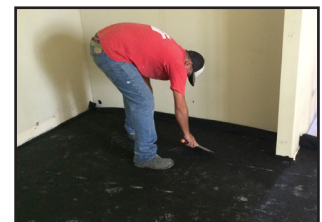
1- Clean the surface from dust, waste or dirt.



2- Apply the acrylic adhesive (Lanco Supreme or the like) on the surface of the Plycem panel by using a notched trowel and leaving a thin layer.



3- Immediately place the geotextil and extend it without leaving any overlapped section or folds on the surface. Press it down with the trowel.

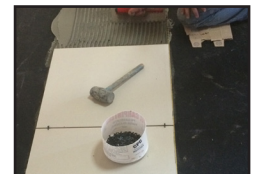


White glue can also be used. This is for dry floors only.



4- Proceed to glue the ceramic tiles with cement-based mortar.

Note: Do not wet the glued geotextil or saturate the ceramic.



Treat the joints with common mortar for ceramic joints, but previously dampen the mortar joint with a paint brush.

NOTE:

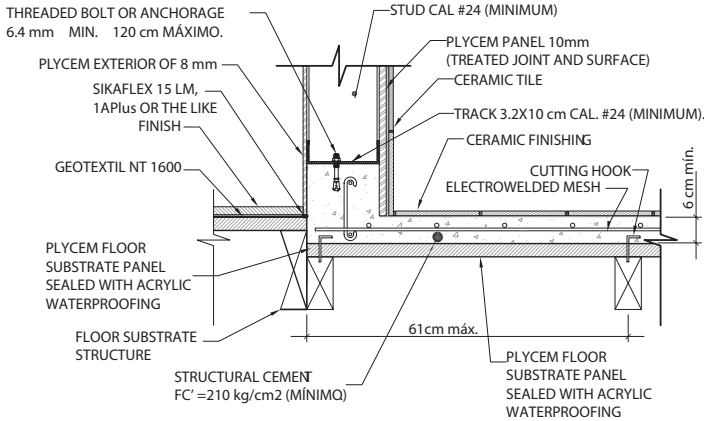
-In high traffic floors without ceramic finish or other, place as abrasion protection, a heavy duty vinyl band, paint with epoxy paint or other similar system.

-Plycem Subfloor boards boards have size tolerance. The thickness can vary up to +/- 0.6 mm. Therefore, level differences between sheets must be solved with the leveling mortar (consult local suppliers). This is mainly for floors with vinyl or painted finish.

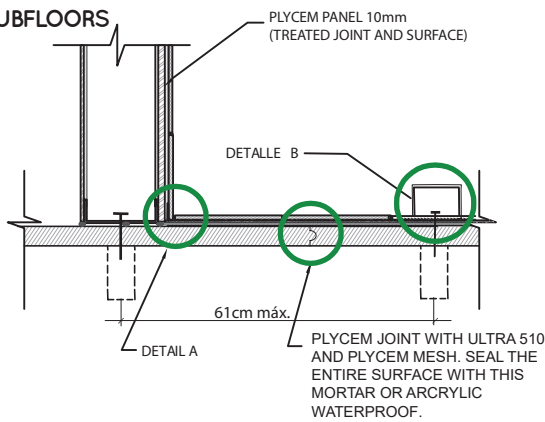
Details of wet areas in bathrooms and kitchens:

In wet area floors (bathrooms and kitchens) previously protect the surface of the Plycem with acrylic waterproofing and use moisture resistant adhesives for the bonding of the ceramic. (Ask about availability)

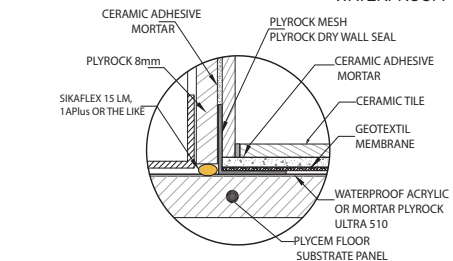
a .DETAIL OF FLOORING WITH CONCRETE SLAB (LOST FORMWORK)



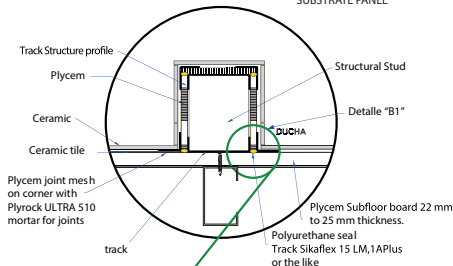
b .PLYCEM SUBFLOORS



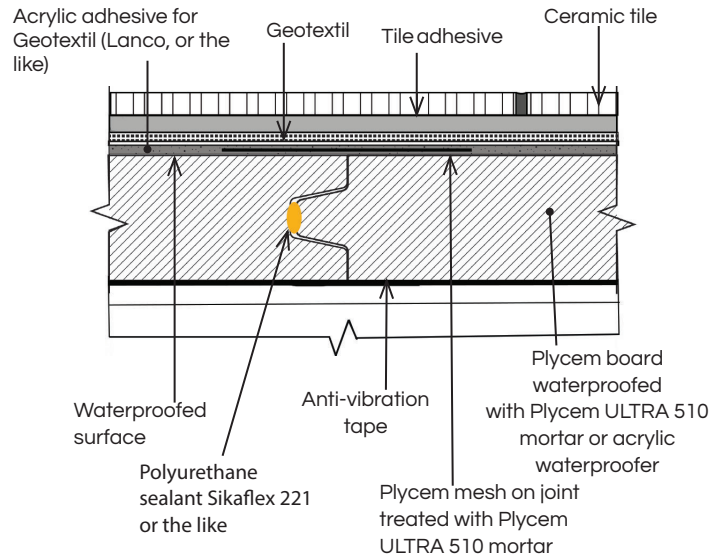
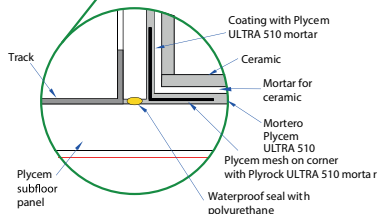
DETAIL A



DETAIL B



DETAIL "B1"



Note:

- Make test of water impermeability in joints, surfaces, edges and wall connection for prior to the installation of ceramic finishes on subfloors.
- For details of floors exposed to outdoor rain, consult Plycem's technical department.

BUDGETING AND COVERAGE:

SUPPORTS DISTANCE	COVERAGE OF ANTI-VIBRATION ELEMENTS		COVERAGE OF ANTI-VIBRATION ELEMENTS
	STRAIGHT	TONGUE AND GROOVE JOINT	
61cm	12	10	2.6 ml/m ²
	10		
40.5cm	17	13	3.4 ml/m ²
	13		

MATERIAL	COVERAGE / m ²
Plycem 20, 22, 25 mm	0.33 boards /m ²
Geotextil (unit 4 m width)	0.25 ml /m ²
Adhesivo acrílico LANCO	16 m ² / gal

For more details, find the subfloor installation video at www.plycem.com

For other details or installation instructions, contact Plycem's Technical Department.

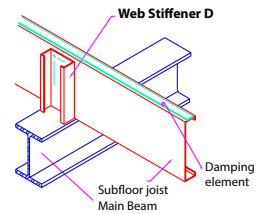
Recommendations and instructions given in this manual are an adequate guide for using, storing, and handling the product. This guide does not replace the responsibility of the responsible engineer, the structural engineer, or the supervisor of each project where the product is used. For projects where special measures or conditions are requested, the product will be manufactured according to the plans and the design provided by the client, assigned constructor, or engineer. Installation instructions provided by the client will apply without any liability by PLYCEM. PLYCEM does not assume any responsibility for misuse of the product, incorrect handling, incorrect storage, or use of materials different from the complementary materials recommended. PLYCEM does not help in the installation and management of the structural design. Therefore, this manual does not represent a co-responsibility in this regards, and its responsibility will be exclusively limited to the material.

The product warranty only applies if the installation instructions in this manual are followed. For details regarding the warranty, go to www.plycem.com/web/plycem/garantia

SUBFLOORS- ALLOWABLE LOADS PER PLYCEM PANEL (kg/m ²)			
Thickness (mm)	20	22	25
Spacing (cm))			
40.6	1052	1401	1820
61	3104	13	606

TOLERANCE mm			APPARENT DENSITY
LENGHT	WIDTH	THICKNESS	
± 2	±2	± 0.6	1.05 g/cm ³

Detail of the web stiffener D



According to the INTE/ISO 8336:2018 standard, this product is manufactured for outdoor and indoor uses (Category A, Class 1).

FLOOR SUBSTRATES - ALLOWABLE SPANS FOR STRUCTURE (m)
(with web stiffeners)

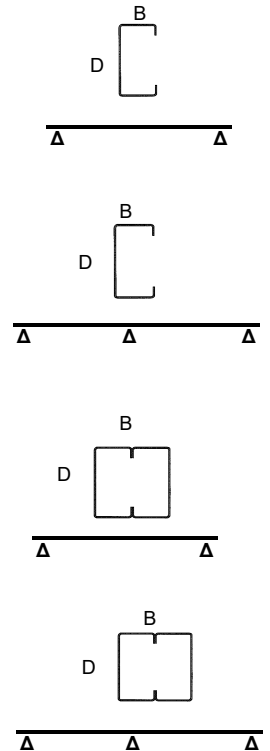
Non-factored dead load: 100kg/m²

TYPE OF JOIST	Non-factored Live Load (kg/m ²)				200		250		300		350		400		
	Spacing between joist (cm)				40.6	61	40.6	61	40.6	61	40.6	61	40.6	61	
	Dimensions				D (mm)	B (mm)	t (mm)	kg/m							
One Span Simple Joist Section	PE 5x10-16	100	50	1.5	2.52	3.03e	2.65e	2.82e	2.44e	2.65e	2.27e	2.52e	2.13e	2.41e	2.04e
	PE 5x15-16	150	50	1.5	3.11	4.16e	3.48e	3.86e	3.20e	3.63e	2.98e	3.43e	2.80e	3.25e	2.65e
	PE 5x20-16	200	50	1.5	3.70	5.21e	4.25e	4.79e	3.91e	4.46e	3.64e	4.19e	3.42e	3.96e	3.23e
	PE 5x20-14	200	50	1.9	4.65	5.63e	4.82e	5.23e	4.43e	4.92e	4.12e	4.68e	3.87e	4.47e	3.66e

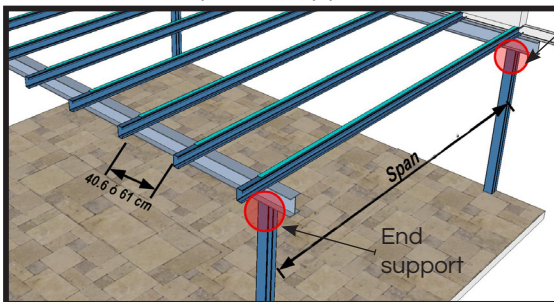
TYPE OF JOIST	Non-factored Live Load (kg/m ²)				200		250		300		350		400		
	Spacing between joist (cm)				40.6	61	40.6	61	40.6	61	40.6	61	40.6	61	
	Dimensions				D (mm)	B (mm)	t (mm)	kg/m							
Two Span Simple Joist Section	PE 5x10-16	100	50	1.5	2.52	3.25i	2.65i	2.99i	2.44i	2.78i	2.27i	2.61i	2.13i	2.47i	2.02i
	PE 5x15-16	150	50	1.5	3.11	4.27i	3.48a	3.92i	3.20a	3.65a	2.98a	3.43a	2.80a	3.25a	2.65a
	PE 5x20-16	200	50	1.5	3.70	5.21a	4.25a	4.79a	3.91a	4.46a	3.64a	4.19a	3.42a	3.96a	3.23a
	PE 5x20-14	200	50	1.9	4.65	5.90i	4.82i	5.43i	4.43i	5.06i	4.12a	4.75i	3.87a	4.49i	3.66a

TYPE OF JOIST	Non-factored Live Load (kg/m ²)				200		250		300		350		400		
	Spacing between joist (cm)				40.6	61	40.6	61	40.6	61	40.6	61	40.6	61	
	Dimensions				D (mm)	B (mm)	t (mm)	kg/m							
One Span Box Joist Section	PE 5x10-16	100	100	1.5	5.04	3.82	3.33	3.55	3.1	3.34	2.91e	3.17	2.77e	3.03	2.65e
	PE 5x15-16	150	100	1.5	6.22	5.24	4.58e	4.86e	4.25e	4.58e	4.00e	4.35e	3.80e	4.16e	3.63e
	PE 5x20-16	200	100	1.5	7.40	6.59e	5.75e	6.12e	5.34e	5.76e	5.03e	5.47e	4.77e	5.23e	4.57e
	PE 5x20-14	200	100	1.9	9.30	7.1	6.20e	6.59	5.75e	6.2	5.41e	5.89	5.14e	5.63e	4.92e

TYPE OF JOIST	Non-factored Live Load (kg/m ²)				200		250		300		350		400		
	Spacing between joist (cm)				40.6	61	40.6	61	40.6	61	40.6	61	40.6	61	
	Dimensions				D (mm)	B (mm)	t (mm)	kg/m							
Two Spans Box Joist Section	PE 5x10-16	100	100	1.5	5.04	4.29i	3.74i	3.98i	3.45i	3.75i	3.21i	3.56i	3.02i	3.40i	2.85i
	PE 5x15-16	150	100	1.5	6.22	5.88i	4.92i	5.46i	4.53i	5.14i	4.21i	4.85i	3.96i	4.59i	3.74i
	PE 5x20-16	200	100	1.5	7.40	7.36i	6.01i	6.77i	5.53a	6.31i	5.15a	5.92a	4.83a	5.60a	4.57a
	PE 5x20-14	200	100	1.9	9.30	7.97i	6.81i	7.40i	6.27i	6.96i	5.83i	6.61i	5.48i	6.33i	5.18i



Joist Condition: 1 Span (2 supports)

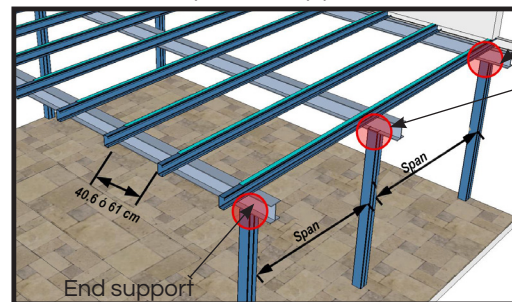


t: steel thickness
e: web stiffener in end supports /i: in intermediate support / a: in all supports
Load factors: 1.2 DL (dead or permanent load); 1.6 LL (live or temporary)

Note:

The values shown in these tables must be reviewed, verified and endorsed by the professional responsible for the project.

Joist Condition: 2 Span (3 supports)



Support lengths for web crippling: 4" extreme condition; 4" internal condition
Fy = 30 ksi (2114 kg/cm²) minimum
Steel Elastic Module: 2.1 x 10E06kg/cm²
Deflection limits: Total load: L/240; Live load = L/360
Tables do not take into account vibration, impact or point load analyses
Non-drilled joists



Find us in:

www.plycem.com

contactplycem@elementia.com



/Experto Plycem

Manufactured by:

PLYCEM Construsistemas Costa Rica S.A.



PLYCEM Construsistemas El Salvador S.A.

