



# PROTECTION MEMBRANES, GEOTEXTILES & FIXINGS

2020



**SPECIALIST MATERIALS FOR BUILDING ENVELOPE  
LANDSCAPING  
&  
STRUCTURAL WATERPROOFING**

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## PROTECTION MEMBRANES

Sheet membranes designed to protect waterproofing from abrasion or puncture damage.

### PROTECTO-BOARD – BITUMINOUS



### PROTECTO-MAT – RUBBER CRUMB





## PROTECTO-BOARD – BITUMINOUS

This semi flexible board is a convenient way to ensure adequate protection to waterproofing membranes against damage caused by site traffic, other trades, mechanical damage and ground settlement.

Made from a mixture of fibres saturated with at least 75% bitumen, Bituminous Protecto-board is completely waterproof and provides superior impact and abrasion resistance.

Bituminous Protecto-board is ideal for vertical applications since it can be heat bonded, providing very good adhesion.

**Wallbarn Bituminous Protecto-board is available 3mm and 6mm thick.**

Protecto-board is ideal for protection against backfill on vertical waterproofing; against other site traffic and works during the construction process; against ground movement in foundation wall structures; on green roofing; as a recovery board for overlaying existing systems, and as permanent protection layer on more delicate horizontal membranes.



Protecto-board is lightweight and easy to handle. It can be used on both horizontal and vertical applications and can be bonded directly onto the waterproofing membrane without interfering with the seal. It is covered one side with a polyethylene film, meaning the bitumen does not bleed during storage or after application onto other surfaces.



It is very easy to handle and apply. The boards will tolerate high temperatures so can be laid directly into hot melt waterproofing membranes without issue. The boards can be spot bonded or fully bonded to the membrane beneath or loose laid and taped around the edges of each board. They can also be mechanically fixed to the surface beneath.

Protecto-board can also be torch applied. The boards are flexible and adaptable and can be folded and cut easily to give accurate detailing.



The material is supplied in 1m x 2m sheets and packed onto double size pallets for effective movement to site. The pallets hold 200 x 3mm sheets or 100 x 6mm sheets.



The pallets are tightly strapped and mechanical lifting equipment is recommended to offload. Each sheet is covered both sides with a polythene film which prevents the boards sticking together on the pallet in warmer temperatures. None of the bitumen will bleed out, so issues such as liquid bitumen or fumes affecting applicators is avoided.

Installation is fast and straightforward.



Protecto-board can be left exposed for a certain period of time and will not delaminate when coming into contact with water.





Bituminous Protecto-board is designed to be user friendly and easy to install. It has been used successfully on basement tanking, podium decks, roofs, tunnels, waterways and civil engineering projects. By installing a protection membrane applicators can have an added assurance that waterproofing membranes will be protected over time.



The boards are flexible enough to manipulate and shape around particular details. The sheets can be scored or cut with a sharp knife to fit around corners and multiple layers can be fitted on top of one another to give extra protection on susceptible areas.

It is a highly adaptable product. It can be spot bonded using adhesive, fixed with double sided bitumen tape, or heat bonded to the surface. Multiple sheets can be bonded together to form a uniform layer, and because of its light weight, it can be held in the vertical position in the long term.



Bituminous Protecto-board can be used as a permanent layer, part of the waterproofing system, or as a temporary protection which is removed after the passing trades have finished.

These boards are very tough and durable and can withstand concrete pour easily. The boards are rot-proof and will not delaminate even when immersed in water, unlike many card fibre based protection boards on the market. They are intended to provide long term protection for waterproofing systems.

CODE	PB-BIT-03	PB-BIT-06		
PROPERTIES	TEST METHOD	UNITS	TYPICAL VALUES	
THICKNESS	EN 1849-1	MM	3.1	6.1
DIMENSIONS	EN 1848-1	M	2 x 1	2 x 1
MASS PER UNIT AREA	EN 1849-1	KG/M <sup>2</sup>	4.09	8.34
BITUMEN CONTENT			>75%	
SOFTENING POINT			115°C-130°C	
POLYTHENE FILM		μ	15	
RESISTANCE TO STATIC LOADING	EN 12730	KG	25	
RESISTANCE TO IMPACT	EN 12691	MM	>700	
PUNCTURE RESISTANCE	ASTM E-154	N/MM	1,474N/37MM	1,497N/34MM
WATERTIGHTNESS TO WATER	EN 1928-1	KPA	>400	

Tested in ISO 9001 certified laboratory 03/01/2013 and witnessed by Inspectorate International (Saudi Arabia) Ltd

## PROTECTO-MAT – RUBBER CRUMB

Wallbarn Rubber Crumb Protecto-mat is a very flexible and easy-to-install protection membrane for use on a large variety of surfaces, applications and membranes. It is durable and tough and has a density of 950 kg/m<sup>3</sup>.

It has been developed and selected for waterproofing systems where bituminous protection boards are not compatible, such as Polyurethane or PVC single ply membranes.

It protects the waterproofing membrane both during the construction process from damage caused by abrasion, point loading, blunt materials, backfilling and concrete casting; and can also form part of a long-term after completion as a permanent protection, thus ensuring and extending the lifespan of the membrane.

It is manufactured in a non-rigid roll format from rubber crumb, sourced from recycled rubber. This makes it one of the greenest and sustainable protection membranes on the market. The rubber crumb particles are bound together with a mixture of polyurethane resins to form a strong membrane which will not delaminate when exposed to the elements.



It is ideal for horizontal and vertical surface protection for applications such as podium decks, green roofs, regularly trafficked roofs, inverted roofs, parking areas, walkways, on maintenance areas; in underground waterproofing such as foundation walls, basements, drains, tunnels, and ditches.

It is lightweight and non-toxic to handle, making it a much better prospect for site handling than other protection boards.

It is strong enough to tolerate concrete pour and the application of hot materials straight onto its surface.



Wallbarn Protecto-mat is ideal for vertical surfaces and detailing and can be easily cut using a sharp knife and shaped around particular corners and details.



Protecto-mat rubber crumb membrane comes in rolls rather than sheets. It is important that each roll is overlapped. Wallbarn advises that rolls are overlapped by at least 8cm during installation, to ensure the whole area is fully protected. It is important to ensure that each roll is fitted securely to the next roll.

It is recommended that applicators seek the advice of the manufacturer of the waterproofing membrane on the best way to secure the protection.



This membrane is completely rot-proof. It can be immersed in water without risk of delaminating or compromising its performance.



## TECHNICAL DATA

PHYSICAL-MECHANICAL PROPERTIES								
DESCRIPTION	M.U.						NORMS	TOLERANCES
RUBBER THICKNESS	MM	2	3	4	5	6	EN 13849-1	± 10%
RUBBER DENSITY	KG/M3	950						± 7%
ELONGATION AT BREAK	%	35					EN ISO 1798	± 5%
TENSILE STRENGTH	N/MM2	0.9					EN ISO 1798	± 2%
STATIC PUNCTURE RESISTANCE	KG	30	30	35	40	45	EN 12730 MET B	MIN
DYNAMIC PUNCTURE RESISTANCE	MM	≥2250	≥2250	≥2250	≥2250	≥2500	EN 12691 MET. A	MIN
HEAT RESISTANCE (PROLONGED PERIOD)	°C	UP TO +90						-
HEAT RESISTANCE (COMPROMISED POINT)	°C	+130						
HEAT RESISTANCE (DISINTEGRATION POINT)	°C	+160						
IGNITION POINT	°C	+300						-
COLD RESISTANCE (PROLONGED POINT)	°C	UP TO -30						
COLD RESISTANCE (COMPROMISED POINT)	°C	-120						
FIRE RATING		B2					DIN 4102	-
SHORE A HARDNESS		50						± 10%

THERMAL PROPERTIES					
DESCRIPTION	SYMBOL	M.U.	VALUE	NORMS	NOTES
THERMAL CONDUCTIVITY	(λ)	W/MK	0.1226	UNI EN 12667:2002	CERT.N° 078-09-THE TR

CHEMICAL PROPERTIES	
CHARACTERISTIC	PERFORMANCES
RESISTANCE TO MICROBES	RESISTANT TO FUNGI, INSECTS AND MICROBE ATTACK
CHEMICAL INTERACTION	HIGHLY RESISTANT TO ACIDS AND ALKALINE DETERGENTS, ROT-PROOF
ELECTROSTATICS	DOES NOT ACCUMULATE STATIC CHARGE AND PREVENTS STATIC MOVEMENT BETWEEN MATERIALS
ECCO-SUSTAINABILITY	100 % RECYCLABLE
STATIC PUNCTURE RESISTANCE	KG

DIMENSIONS AND PACKAGING							
	M.U.	VALUE					TOLERANCES
THICKNESS	MM	2	3	4	5	6	10%
ROLL HEIGHT	M	1	1	1	1	1	2%
ROLL LENGTH	M	18	15	12	10	8	1%
WEIGHT PER M2	KG/M2	1.9	2.25	3	3.75	4.5	7%
NUMBER OF ROLLS PER PALLET	PCS	16	16	16	16	16	
TOTAL AREA PER PALLET	M2	288	240	192	160	128	
PALLET DIMENSION	CM	100X120X110CM					





## GEOTEXTILE FABRICS



## GEOTEXTILE FABRICS

Wallbarn supplies a large range of geotextile fabrics suitable for a wide number of uses – including protection, drainage, filtration, soil stabilisation & green roofing.

These nonwoven fabrics are strong, flexible but permeable membranes which allow water to pass through but hold the particles in place. The soil does not become saturated, thereby improving the strength and stability of the ground.

The geotextile is manufactured through a thermal process without the use of glues or staples. The fabric is run through a number of super heavy presses to ensure the fibres are securely bonded. The makeup of the fabric is uniform throughout the roll, so no weak spots will be present in the layer.



A number of different grades and strengths of fabric are available from Wallbarn, depending on the exact nature of the project.

Wallbarn supplies geotextile fabrics manufactured from virgin fibre polypropylene or recycled polyester. The material is supplied packed into tight rolls and we can supply material in a very large variety of roll sizes, from 1 metre wide up to 6 metres wide for very large-scale projects.



These super-jumbo rolls are designed for use for very large projects, such as road construction, reservoirs and landfills. Using very wide rolls reduces the number of joints between individual rolls. This cuts down on labour by having less individual rolls to stitch together, and also makes the whole fabric layer stronger by having less weak points at the joints.





For applications such as roofing, smaller rolls would be required to make access to the roof space easier. Wallbarn can supply all its geotextile fabrics in 1 metre wide rolls for these purposes.



## HIGH TENACITY VIRGIN FIBRE GEOTEXTILE

The prime material supplied by Wallbarn is a high tenacity polypropylene fabric (PPST). This material goes through a special process during manufacture to give it increased tensile strength and puncture resistance. It is available in different weights and has been fully tested to comply with specifications for a large range of uses such as road, rail and runway construction, landfills and reservoirs.



Its soft, cushioning properties mean it can be placed onto rough areas to prevent sharp objects from passing through into the system above but still allow the passage of water. This means sealing and waterproofing sheet membranes can be installed above them without the risk of ground settlement causing any damage above.



At much lower weights, the high tenacity polypropylene fabric has also been used as an effective protection layer for waterproofing membranes including single ply sheet membranes. The cushioning effect is seen as a major advantage. It has been used successfully as a separation layer in inverted waterproofing systems, protecting the insulation boards from damage caused by the ballast.

Wallbarn can offer different grades of fabric to match up to the technical specifications required for each project. A second grade of virgin fibre polypropylene fabric is available called PPEXT is available with slightly lower mechanical properties to provide a more cost effective solution.

They are often used as subterranean soil stabilisation membranes. Either covering buried pipes or lining drains, they will ensure the passage of water without risk of land slippage, greatly improving the quality of the area. They can also be used on areas where new built-up ground is being created, such as artificial islands and reclaimed land, to prevent subsidence before the soil is fully consolidated.



## RECYCLED POLYESTER GEOTEXTILE - PECT

Designers and installers can choose a more sustainable option by using recycled polyester fabrics.

Although these materials have much lower tensile strength and mechanical properties of the virgin fibre materials, recycled polyester fabrics can be used effectively as separation and filtration layers. They are ideal for green roof applications since they are made from recycled fibres. Wallbarn uses the multi-coloured PECT recycled polyester fabrics within its own M-Tray® green roof system build-up.



All Wallbarn geotextile fabrics are manufactured under ISO 9001:2000 standards and comply with Directive 89/10/EEC 1988 (as amended by 93/68/EEC 1993). Fabrics can be coloured and engineered so that the UV resistance is extended beyond the standard 15 days should any fabric be exposed for prolonged periods.

# PPST HIGH STRENGTH POLYPROPYLENE

PHYSICAL PROPERTIES		TEST METHOD	UNIT	TOLERANCE																													
WEIGHT/ MASS PER UNIT AREA		EN ISO 9864	G/M²	70	90	100	110	120	130	150	180	200	230	250	280	300	320	350	380	400	450	500	600	700	800	1000	1200	1500	2000	±	10%		
THICKNESS		EN ISO 9863-1	MM	0.40	0.60	0.65	0.70	0.80	0.90	1.00	1.20	1.30	1.40	1.50	1.55	1.60	1.65	1.80	2.20	2.50	2.65	3.00	4.00	5.00	5.50	6.50	7.00	7.50	7.50	±	20%		
MECHANICAL PROPERTIES																																	
TENSILE STRENGTH	MD	EN ISO 10319	KNM	3.2	6.0	7.0	8.0	9.0	10.0	12.0	14.0	16.0	18.0	20.0	23.0	25.0	27.0	28.0	30.0	32.0	35.0	40.0	45.0	50.0	60.0	70.0	80.0	95.0	100.0	150.0	200.0	-	10%
	CMD	EN ISO 10319	KNM	3.5	6.0	7.0	8.0	9.0	10.0	12.0	14.0	16.0	18.0	20.0	23.0	25.0	27.0	30.0	32.0	36.0	40.0	50.0	65.0	80.0	90.0	105.0	140.0	155.0			-	10%	
ELONGATION AT MAX LOAD	MD	EN ISO 10319	%	55	55	55	55	55	55	55	60	60	65	65	65	65	70	70	70	70	80	80	80	80	80	80	80	80	80	80	±	30%	
	CMD	EN ISO 10319	%	60	60	60	60	60	60	60	65	65	70	70	70	70	70	70	70	70	80	80	80	80	80	80	80	80	80	80	±	30%	
ENERGY INDEX		EN ISO 10318	KJ/M²	1.0	1.7	2.0	2.3	2.6	2.9	3.5	4.4	5.0	6.1	6.8	7.8	8.4	9.1	10.0	10.5	11.2	13.6	15.0	18.0	22.0	26.0	30.0	35.0	45.0	46.0	±	20%		
STATIC PUNCTURE RESISTANCE		EN ISO 12236	KN	0.7	0.9	1.2	1.3	1.5	1.7	1.9	2.2	2.4	2.7	3.0	3.5	4.0	4.2	4.5	5.0	5.5	6.0	6.5	8.0	9.0	10.0	13.0	14.0	18.0	20.0	-	10%		
DYNAMIC PUNCTURE RESISTANCE (CONE DROP TEST)		EN ISO 13433	MM	>50	44	38	34	32	30	26	22	20	16	14	12	10	10	8	8	6	6	4	2	1	0	0	0	0	0	+	20%		
PYRAMID PUNCTURE RESISTANCE		EN 14574	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	200	220	280	320	330	340	350	350	400	500	700	900	1000	1300	1600	2200	2200	-	20%			
HYDRAULIC PROPERTIES																																	
PERMEABILITY NORMAL TO THE PLANE		EN ISO 11058	MMS	130	130	125	120	115	110	100	95	90	80	75	70	65	60	50	40	35	30	30	25	20	20	15	15	5		-	30%		
IN-PLANE FLOW CAPACITY		EN ISO 12958	10-3L/MS	0.8	0.80	0.80	0.80	0.80	0.80	1.60	1.60	2.10	2.10	2.30	2.30	2.50	2.70	2.80	3.20	4.00	5.00	7.80	8.00	8.50	9.00	9.00	9.00	7.00		-	30%		
TRAMISSIVITY		EN ISO 10318	L/M S	0.80	0.80	0.80	0.80	0.80	0.80	1.60	1.60	2.10	2.10	2.30		2.50		3.20			5.00			8.50	9.00								
OPENING SIZE		EN ISO 12956	µM	120	120	120	110	110	100	90	90	80	70	60	50	50	50	50	50	50	50	50	50	40	40	40	40	20		±	30%		
DURABILITY PROPERTIES																																	
WEATHERING RESISTANCE		EN 12224	PASSES EN 12224 WEATHERING TEST. IT IS HIGHLY RECOMMENDED THAT THE GEOTEXTILE IS COVERED WITHIN 30 DAYS FROM THE DAY OF INSTALLATION. THE MATERIAL CAN BE EXPOSED TO SUNLIGHT FOR A MAXIMUM OF 4 MONTHS WITH A DEGRADATION OF THE MECHANICAL PROPERTIES DEPENDING ON SEASON.																														
PRODUCT COMPOSITION			MADE FROM VIRGIN FIBRE POLYPROPYLENE, UV STABILISED. SPECIFIC WEIGHT OF POLYMER IS 0.91 KG/DM3 . RAW MATERIAL IS STAPLE FIBRES, PRODUCED THROUGH NEEDLEPUNCHING AND CALANDERING. MELTING POINT IS 165-175 °C. FIBRE DIAMETER IS 25-30 µM. THE MATERIAL IS PRODUCED ACCORDING TO THE QUALITY MANAGEMENT SYSTEM OF EN ISO 9001:2008. IT FULFILLS THE REQUIREMENT OF EUROPEAN REGULATIONS RELATED TO CONSTRUCTION PRODUCTS AS PER 1213-CPR 3269.																														
OXYDATION RESISTANCE		EN ISO 13438	FORECAST MINIMUM DURABILITY OF 25 YEARS FOR EVERY APPLICATION IN NATURAL GROUNDS WITH 4<PH<9 AND SOIL TEMPERATURE <25°C																														

THE VALUES GIVEN ARE AN AVERAGE OBTAINED IN OUR LABORATORIES AND IN OFFICIAL TESTING INSTITUTES  
 THE CONFIDENCE LEVEL IS 95%  
 WE RESERVE THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE



1213-CPD-3269



# PPEXT POLYPROPYLENE NONWOVEN VIRGIN FIBRE FABRIC – SECOND STRENGTH GEOTEXTILE FABRIC

PHYSICAL PROPERTIES		TEST METHOD	UNIT	TOLERANCE															
WEIGHT			G/M <sup>2</sup>	100	120	150	200	250	300	400	500	600	800	1000	1200	1500	±	10%	
THICKNESS		EN ISO 9863-1	MM	0.7	0.8	1.00	1.30	1.60	1.80	2.50	3.30	3.60	4.40	5.50	7.00	8.50	±	20%	
MECHANICAL PROPERTIES																			
TENSILE STRENGTH		MD EN ISO 10319	KN/M	2.0	2.7	3.5	4.5	6.0	9.0	10.0	12.0	18.0	24.0	30.0	35.0	40.0	-	15%	
		CMD EN ISO 10319	KN/M	2.5	3.2	4.0	5.5	8.0	11.0	14.0	18.0	22.0	32.0	40.0	45.0	50.0	-	15%	
ELONGATION AT MAX LOAD		MD EN ISO 10319	%	70	70	70	70	80	80	80	80	80	90	90	95	95	±	25%	
		CMD EN ISO 10319	%	80	80	80	80	85	85	85	90	90	95	100	100	100	±	25%	
ENERGY INDEX		EN ISO 10318	KJ/M <sup>2</sup>	0.8	1.1	1.4	1.9	2.9	4.1	5.0	6.4	8.5	13.3	16.6	19.5	21.9	±	25%	
STATIC PUNCTURE RESISTANCE		EN ISO 12236	KN	0.4	0.5	0.9	0.9	1.3	1.5	1.8	2.5	3.6	4.8	6.0	8.0	10.0	-	10%	
DYNAMIC PUNCTURE RESISTANCE (CONE DROP TEST)		EN ISO 13433	MM	>50	>50	36	28	22	18	14	10	6	2	1	0	0	+	25%	
PYRAMID PUNCTURE RESISTANCE		EN 14574	N	N/A	N/A	N/A	150	200	300	340	400	500	700	1100	1400	1600	-	20%	
HYDRAULIC PROPERTIES																			
PERMEABILITY NORMAL TO THE PLANE		EN ISO 11058	MM/S	110	100	80	70	50	35	25	20	20	20	20	20	20	-	30%	
IN-PLANE FLOW CAPACITY		EN ISO 12958	10-3L/MS	0.6	0.8	1.2	1.8	2.0	2.2	2.6	3.5	4.5	5.3	6.0	6.3	7.0	-	30%	
DURABILITY PROPERTIES																			
WEATHERING RESISTANCE		EN 12224	PASSES EN 12224 WEATHERING TEST. IT IS HIGHLY RECOMMENDED THAT THE GEOTEXTILE IS COVERED WITHIN 15 DAYS FROM THE DAY OF INSTALLATION. THE MATERIAL CAN BE EXPOSED TO SUNLIGHT WITH A DEGRADATION OF THE MECHANICAL PROPERTIES DEPENDING ON SEASON.																
PRODUCT COMPOSITION		MADE FROM POLYPROPYLENE VIRGIN FIBRE. SPECIFIC WEIGHT OF POLYMER IS 0.91 KG/DM <sup>3</sup> . RAW MATERIAL IS STAPLE FIBRES, PRODUCED THROUGH NEEDLE PUNCHING AND CALANDERING. MELTING POINT IS 165-175 °C. THE MATERIAL IS PRODUCED ACCORDING TO THE QUALITY MANAGEMENT SYSTEM OF EN ISO 9001:2008. IT FULFILLS THE REQUIREMENT OF EUROPEAN REGULATIONS RELATED TO CONSTRUCTION PRODUCTS AS PER 1213-CPR 3269.																	
OXYDATION RESISTANCE		EN ISO 13438	FORECAST MINIMUM DURABILITY OF 5 YEARS FOR EVERY APPLICATION IN NATURAL GROUNDS WITH 4<PH<9 AND SOIL TEMPERATURE <25°C																

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1213-CPD-3269

# PEIT RECYCLED POLYESTER – NONWOVEN GEOTEXTILE FABRIC

PHYSICAL PROPERTIES		TEST METHOD	UNIT	TOLERANCE															
WEIGHT			G/M <sup>2</sup>	150	200	250	300	350	400	500	600	700	800	1000	1200	1500	±	10%	
THICKNESS		EN ISO 9863-1	MM	0,90	1,10	1,30	1,60	1,75	1,90	2,20	2,80	3,00	3,50	4,00	4,50	6,00	±	20%	
MECHANICAL PROPERTIES																			
TENSILE STRENGTH	MD	EN ISO 10319	KN/M	1,2	1,8	2,0	2,5	2,8	3,2	4,2	5,5	6,0	6,5	7,5	13,0	20,0	-	10%	
	CMD	EN ISO 10319	KN/M	1,2	1,8	2,0	2,7	3,2	4,0	5,2	7,5	8,0	9,0	10,5	16,0	25,0	-	10%	
ELONGATION AT MAX LOAD	MD	EN ISO 10319	%	50	50	50	50	50	50	60	70	70	80	80	80	80	±	30%	
	CMD	EN ISO 10319	%	60	60	60	60	60	60	70	80	80	90	90	90	90	±	30%	
ENERGY INDEX		EN ISO 10318	KJ/M <sup>2</sup>	0,3	0,5	0,6	0,7	0,8	1,0	1,5	2,4	2,6	3,3	3,8	6,2	9,6	±	20%	
STATIC PUNCTURE RESISTANCE		EN ISO 12236	KN	0,2	0,3	0,4	0,5	0,6	0,7	0,8	1,2	1,4	1,8	2,2	2,8	4,0	-	10%	
DYNAMIC PUNCTURE RESISTANCE (CONE DROP TEST)		EN ISO 13433	MM	>50	>50	45	40	30	20	16	6	2	2	0	0	0	+	20%	
PYRAMID PUNCTURE RESISTANCE		EN 14574	N	N/A	N/A	N/A	100	150	180	200	250	270	300	500	700	800	-	20%	
HYDRAULIC PROPERTIES																			
PERMEABILITY NORMAL TO THE PLANE		EN ISO 11058	MM/S	110	100	80	60	50	40	30	25	25	20	20	20	20	-	30%	
IN-PLANE FLOW CAPACITY		EN ISO 12958	10-3L/MS	1,6	2,1	2,3	2,7	3,0	3,2	5,0	7,0	7,0	8,0	9,0	9,0	9,0	-	30%	
OPENING SIZE		EN ISO 12956	µM	65	60	55	55	55	45	45	35	35	35	30	30	30	±	30%	
DURABILITY PROPERTIES																			
WEATHERING RESISTANCE		EN 12224		PASSES EN 12224. IT IS HIGHLY RECOMMENDED THAT THE GEOTEXTILE IS COVERED WITHIN 15 DAYS FROM THE DAY OF INSTALLATION. THE MATERIAL CAN BE EXPOSED TO SUNLIGHT WITH A DEGRADATION OF THE MECHANICAL PROPERTIES DEPENDING ON SEASON.															
PRODUCT COMPOSITION				MADE FROM POLYESTER WHITE FIBRE. SPECIFIC WEIGHT OF POLYMER IS 0.38 KG/DM3 . RAW MATERIAL IS STAPLE FIBRES, PRODUCED THROUGH NEEDLEPUNCHING AND GALANDERING. THE MATERIAL IS PRODUCED ACCORDING THE QUALITY MANAGEMENT SYSTEM OF EN ISO 9001:2008. IT FULFILLS THE REQUIREMENT OF EUROPEAN REGULATIONS RELATED TO CONSTRUCTION PRODUCTS AS PER 1213-C-PR 3269.															
OXYDATION RESISTANCE		EN ISO 13438		FORECAST MINIMUM DURABILITY OF 5 YEARS FOR EVERY APPLICATION IN NATURAL GROUNDS WITH 4<PH<9 AND SOIL TEMPERATURE <25°C															

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1213-CPD-3269



# PECT MULTI-COLOURED RECYCLED POLYESTER GEOTEXTILE FABRIC

PHYSICAL PROPERTIES		TEST METHOD	UNIT	TOLERANCE															
WEIGHT			G/M <sup>2</sup>	150	200	250	300	350	400	500	600	700	800	1000	1200	1500	±	10%	
THICKNESS		EN ISO 9863-1	MM	1.00	1.20	1.40	1.60	1.80	2.00	2.30	2.60	2.90	3.30	4.00	4.50	6.40	±	20%	
MECHANICAL PROPERTIES																			
TENSILE STRENGTH		MD EN ISO 10319	KN/M	1.0	1.6	2.0	2.4	2.8	3.2	4.0	5.4	6.7	8.0	10.0	12.0	15.0	-	10%	
		CMD EN ISO 10319	KN/M	1.0	1.6	2.1	2.5	3.0	3.4	5.0	7.4	9.0	10.5	13.5	15.0	20.0	-	10%	
ELONGATION AT MAX LOAD		MD EN ISO 10319	%	50	50	50	50	50	50	60	60	70	70	80	80	90	±	30%	
		CMD EN ISO 10319	%	60	60	60	60	60	60	60	60	70	70	80	80	90	±	30%	
ENERGY INDEX		EN ISO 10319	KJ/M <sup>2</sup>	0.3	0.4	0.6	0.7	0.8	0.9	1.4	1.9	2.7	3.2	4.7	5.4	7.9	±	20%	
STATIC PUNCTURE RESISTANCE		EN ISO 12236	KN	0.2	0.3	0.4	0.5	0.6	0.8	1.2	1.8	2.2	2.6	4.2	5.0	6.0	-	10%	
DYNAMIC PUNCTURE RESISTANCE (CONE DROP TEST)		EN ISO 13433	MM	>50	46	40	36	32	24	14	10	8	6	2	2	0	+	20%	
PYRAMID PUNCTURE RESISTANCE		EN 14574	N	N/A	200	300	400	450	500	600	800	950	1100	1500	1700	2000	-	20%	
HYDRAULIC PROPERTIES																			
PERMEABILITY NORMAL TO THE PLANE		EN ISO 11058	MM/S	90	90	70	60	60	50	30	30	25	20	10	10	10	-	30%	
IN-PLANE FLOW CAPACITY		EN ISO 12958	10-3L/MS	2	2	2	3	3	3.2	5	7	7	8	9	9	9	-	30%	
OPENING SIZE		EN ISO 12956	µM	65	60	55	55	55	45	45	35	35	35	30	30	20	±	30%	
DURABILITY PROPERTIES																			
WEATHERING RESISTANCE		EN 12224		PASSES EN 12224. IT IS HIGHLY RECOMMENDED THAT THE GEOTEXTILE IS COVERED WITHIN 15 DAYS FROM THE DAY OF INSTALLATION. THE MATERIAL CAN BE EXPOSED TO SUNLIGHT WITH A DEGRADATION OF THE MECHANICAL PROPERTIES DEPENDING ON SEASON.															
PRODUCT COMPOSITION				MADE FROM MULTICOLOURED POLYESTER RECYCLED FIBRE. SPECIFIC WEIGHT OF POLYMER IS 0.38 KG/DM3 . RAW MATERIAL IS STAPLE FIBRES, PRODUCED THROUGH NEEDLEPUNCHING AND GALANDERING. THE MATERIAL IS PRODUCED ACCORDING THE QUALITY MANAGEMENT SYSTEM OF EN ISO 9001:2008. IT FULFILLS THE REQUIREMENT OF EUROPEAN REGULATIONS RELATED TO CONSTRUCTION PRODUCTS AS PER 1213-CPR 3269.															
OXYDATION RESISTANCE		EN ISO 13438		FORECAST MINIMUM DURABILITY OF 5 YEARS FOR EVERY APPLICATION IN NATURAL GROUNDS WITH 4<PH<9 AND SOIL TEMPERATURE <25°C															

THE VALUES GIVEN ARE AN AVERAGE OBTAINED IN OUR LABORATORIES AND IN OFFICIAL TESTING INSTITUTES  
 THE CONFIDENCE LEVEL IS 95%  
 WE RESERVE THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE



1213-CPD-3269





**FIXINGS & ANCHORS**



## FIXINGS & ANCHORS

Wallbarn offers a number of fixings and anchors suitable for Protecto-drain and a variety of other sheet membranes. These robust and durable products are designed to help installers create solid fixings when applying sheet material to the horizontal or vertical surface.

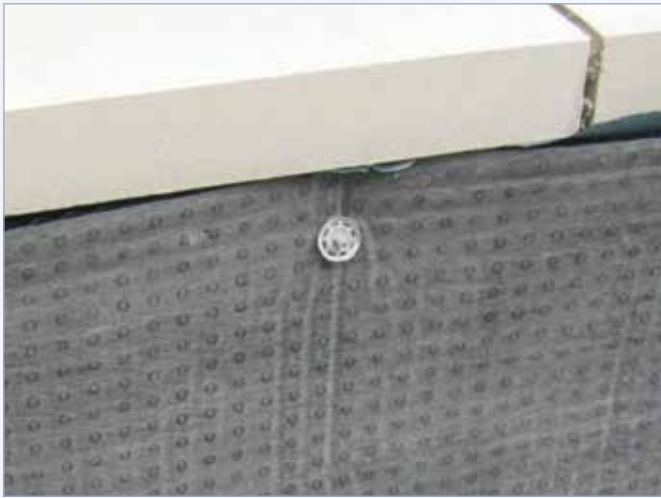
Hammer fixed and screw fixed anchors are available and the tension loading of the fixing depends on the type of anchor chosen.

They are suitable for fixing insulation boards, plasterboard, ply and plastic sheet membranes to timber and masonry.

When fixing to vertical plane it is recommended that 8-12 pieces per m<sup>2</sup> are installed.



The Fixing & Anchor pins comprise a polypropylene sleeve or sheath with an integrated circular flange / washer around the top. There is a separate pin also made from plastic which penetrates the structure.



Wallbarn offers three ranges, the “D” Range, the “D Plus range” and the “D H Range”. Each range has different strength and anchoring specifications; which means different codes can be used for different applications. Please review the technical data to be assured the product chosen matches and exceeds the anchoring strength and depth required for the project.

### D RANGE

This is the standard anchor fixing product. It is designed to be hammered into the structure. It comprises a plastic sleeve or sheath with a circular flange / washer around the top. There is a separate pin also made from plastic which is driven into the sheath to create the fixing. The sleeve diameter is also 10mm.

### D PLUS RANGE

This fixing is stronger than the D range. It is also designed for hammering into the structure. The fixing is again made from plastic but is designed to have a greater tension load when fastened into the surface. The sleeve diameter is also 10mm.

### D H RANGE

The D H fixings is designed to be screwed into the structure. This will give a much firmer fixing on the vertical or horizontal plane. The sheath and sleeve is made from plastic but the nail is rust-proof metal with an integrated plastic cap.



## ACCESSORIES

A cover piece is also available for use with all three ranges above, a simple cover cap with surrounding flange, to dress the fixing area if required. It is made from Impact Resistant Polypropylene.

Wallbarn also sells polystyrene caps and plugs, for where installers need to fill any cavity to prevent water collection or to ensure complete and overall thermal protection. They are available as a circular pad or in a dowel shape to fill the hole created.

If they are drilling the fixing anchor into place so that it is flush with the exterior surface but the metal nail fixing enters further, the cavity can be plugged easily with the dowel shaped cap.

## TECHNICAL DATA

### D RANGE

CODE	DESCRIPTION & SLEEVE DIAMETER / LENGTH OF PIN	
AF-DOWEL-THERM-D-10/070	FIXING DOWELS THERMOMASTER D 10/70MM (BOX OF 250 PIECES)	TENSION LOAD IN CONCRETE (NRK, ETAG 014) 0.25KN, ANCHORING DEPTH MIN. 40MM
AF-DOWEL-THERM-D-10/090	FIXING DOWELS THERMOMASTER D 10/90MM (BOX OF 250 PIECES)	
AF-DOWEL-THERM-D-10/110	FIXING DOWELS THERMOMASTER D 10/110MM (BOX 250 PIECES)	TENSION LOAD IN SOLID BRICK (NRK, ETAG 014) 0.25KN, ANCHORING DEPTH MIN. 50MM
AF-DOWEL-THERM-D-10/120	FIXING DOWELS THERMOMASTER D 10/120MM (BOX 250 PIECES)	TENSION LOAD IN HOLLOW OR PERFORATED MASONRY (NRK, ETAG 014) 0.15KN, ANCHORING DEPTH MIN. 50MM
AF-DOWEL-THERM-D-10/140	FIXING DOWELS THERMOMASTER D 10/140MM (BOX 250 PIECES)	
AF-DOWEL-THERM-D-10/160	FIXING DOWELS THERMOMASTER D 10/160MM (BOX 250 PIECES)	

### D PLUS RANGE

CODE	DESCRIPTION & SLEEVE DIAMETER / LENGTH OF PIN	
AF-DOWEL-THERM-DPLUS-10/070	FIXING DOWELS THERMOMASTER PLUS 10/70MM (BOX OF 200)	TENSION LOAD IN CONCRETE (NRK, ETAG 014) 0.6KN, ANCHORING DEPTH MIN. 50MM
AF-DOWEL-THERM-DPLUS-10/090	FIXING DOWELS THERMOMASTER PLUS 10/90MM (BOX OF 200)	
AF-DOWEL-THERM-DPLUS-10/120	FIXING DOWELS THERMOMASTER PLUS 10/120MM (BOX OF 200)	TENSION LOAD IN SOLID BRICK (NRK, ETAG 014) 0.4KN, ANCHORING DEPTH MIN. 50MM
AF-DOWEL-THERM-DPLUS-10/140	FIXING DOWELS THERMOMASTER PLUS 10/140MM (BOX OF 200)	
AF-DOWEL-THERM-DPLUS-10/160	FIXING DOWELS THERMOMASTER PLUS 10/160MM (BOX OF 200)	TENSION LOAD IN HOLLOW OR PERFORATED MASONRY (NRK, ETAG 014) 0.3KN, ANCHORING DEPTH MIN. 50MM
AF-DOWEL-THERM-DPLUS-10/180	FIXING DOWELS THERMOMASTER PLUS 10/180MM (BOX OF 200)	
AF-DOWEL-THERM-DPLUS-10/200	FIXING DOWELS THERMOMASTER PLUS 10/200MM (BOX OF 200)	
AF-DOWEL-THERM-DPLUS-10/220	FIXING DOWELS THERMOMASTER PLUS 10/220MM (BOX OF 100)	

### D H RANGE

CODE	DESCRIPTION & SLEEVE DIAMETER / LENGTH OF PIN	
AF-DOWEL-THERM-DH-090	FIXING DOWELS THERMOMASTER DH 90MM (BOX OF 200 PIECES)	TENSION LOAD IN CONCRETE (NRK, ETAG 014) 0.4KN, ANCHORING DEPTH MIN. 40MM
AF-DOWEL-THERM-DH-110	FIXING DOWELS THERMOMASTER DH 110MM (BOX OF 200 PIECES)	
AF-DOWEL-THERM-DH-130	FIXING DOWELS THERMOMASTER DH 130MM (BOX OF 200 PIECES)	TENSION LOAD IN SOLID BRICK (NRK, ETAG 014) 0.4KN, ANCHORING DEPTH MIN. 50MM
AF-DOWEL-THERM-DH-150	FIXING DOWELS THERMOMASTER DH 150MM (BOX OF 200 PIECES)	
AF-DOWEL-THERM-DH-170	FIXING DOWELS THERMOMASTER DH 170MM (BOX OF 200 PIECES)	
AF-DOWEL-THERM-DH-190	FIXING DOWELS THERMOMASTER DH 190MM (BOX OF 200 PIECES)	



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