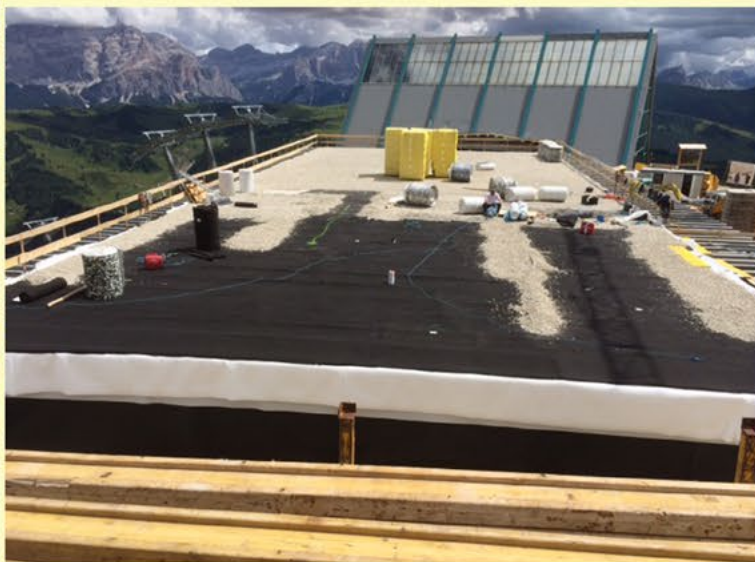


## PROTECTIVE LAYERS FOR BUILDINGS AND SPECIAL APPLICATIONS





## REFO PROTECT

- ■ REFO PROTECT è la linea dedicata ai prodotti per l'edilizia per ciascun tipo di impiego. Questi materiali vengono impiegati per la protezione delle guaine bituminose e di tutte quelle superfici che necessitano di una separazione e di una protezione altamente efficiente a ridosso delle pareti. Indicato in tutte quelle installazioni dove è richiesta una elevata protezione sia verticale e/o sul piano di guaine o strutture prefabbricate quali plinti, pareti in calcestruzzo etc. applicazione speciale a protezione di metanodotti sia interrati che sottomarini o tubazioni che necessita di protezione meccanica adeguata. La sezione dei geo-compositi aggiunge oltre alla elevata efficienza protettiva, anche una notevole capacità drenante ed idraulica nel piano che permette l'impiego in tutte quelle installazioni dove è cruciale evacuare una elevata quantità di acqua e separare proteggendo il piano sottostante da terra, o qualsivoglia materiale che non deve entrare a contatto con le guaine protettive. Per tali caratteristiche non esiste uno specifico impiego ma una indicazione in tutte quelle opere come giardini pensili, tetti verdi, discariche o superfici dove protezione, drenaggio e filtrazione sono requisiti essenziali e funzionali all'opera.

■ ■ REFO PROTECT is the line dedicated to building products for each type of use. These materials are used to protect bituminous membranes and all those surfaces that need them of a separation and highly efficient protection against the walls. Suitable for all those installations where a high protection is required both vertical and / or on the surface of sheaths or prefabricated structures such as plinths, concrete walls etc. Special application to protect both underground and submarine pipelines or pipelines that need adequate mechanical protection. The geo-composite section adds to the high protective efficiency, also a considerable drainage and hydraulic capacity in the plane that allows the use in all those installations where it is crucial to evacuate a large quantity of water and separate protecting the surface from the ground below, or any material that should not come into contact with the protective sheaths. For these characteristics there is no specific use but an indication in all those works such as hanging gardens, green roofs, landfills or surfaces where protection, drainage and filtration are essential and functional requirements for the work.

■ ■ REFO PROTECT es la línea dedicada a productos para la construcción con cualquier tipo de uso. Estos materiales se emplean para la protección de fundas bituminosas y de cualquier superficie que necesite de un mayor aislamiento y una protección eficiente en contacto con paredes. Está indicado para aquellas instalaciones en las que se precisa de máxima protección tanto en el plano vertical como sobre plano horizontal de fundas o estructuras prefabricadas tales como zócalos, muros de hormigón, etc; aplicaciones especiales de protección de metanoductos ya sean subterráneos o submarinos; o sistemas de tuberías que necesitan de una protección mecánica apropiada. La sección geo-compuesta añade a la elevada eficacia protectora, además, una importante capacidad hídrica de drenaje sobre el plano, por lo que puede ser utilizada en todas aquellas instalaciones en las que es imprescindible evacuar una gran cantidad de agua (o cualquier material que no deba entrar en contacto con las fundas protectoras), separando y protegiendo la superficie subyacente del suelo. Dadas todas estas características, no existe un uso específico, sino que se indica en cualquier obra como jardines colgantes, techos verdes, descargas, o superficies en general donde protección, drenaje y filtración son requisitos esenciales y prácticos.

■ ■ REFO PROTECT est la ligne dédiée aux produits de construction applicables à chaque type d'utilisation. Ces matériaux sont utilisés pour la protection des gaines et de toutes les surfaces nécessitant une séparation et une préservation très efficace à proximité des murs. Indiqué dans toutes les installations où se révèle nécessaire une protection élevée verticale et/ou sur le plan des gaines ou de structures préfabriquées tels que plinthes, murs en béton, etc., application spéciale pour la protection de méthanoducs enterrés ou sous-marins ou bien de conduites, qui exige une protection mécanique adéquate. La section des géo-composites ajoute, en plus de la haute efficacité protectrice, une grande capacité drainante et hydraulique à l'étage qui permet l'utilisation dans toutes ces installations où l'évacuation d'une grosse quantité d'eau est vitale, en plus de la séparation tout en protégeant l'étage du dessous de la terre ou de tout n'importe quel matériel qui ne doit pas entrer en contact avec les gaines de protection. Pour ces caractéristiques il n'existe pas d'emploi spécifique, mais plutôt une indication dans tous ces ouvrages tels que jardins suspendus, toits verts, déchetteries ou surfaces où la protection, le drainage et la filtration sont des exigences indispensables et fonctionnelles à l'œuvre.

■ ■ REFO PROTECT ist eine Linie von Produkten für die Bauwirtschaft mit verschiedenen Verwendungsmöglichkeiten. Diese Materialien werden zum Schutz von Bitumen-Membranen, sowie all jener Flächen verwendet, die unweit der Wände eine Abtrennung und einen hocheffizienten Schutz benötigen. Sie sind für all jenen Installationen geeignet, wo ein hoher Schutz, sowohl senkrecht, als auch auf Niveau der Membranen, oder vorgefertigter Strukturen wie Bodenplatten, Stahlbetonwände usw. notwendig sind. Sie dienen auch zum Schutz unterirdischer Gaspipelines, sowie von Untersee-Pipelines, oder Röhren, die angemessenen mechanischen Schutz benötigen. Der Bereich der Geo-Komposita bietet hinzu einen hohen Schutz mit einer starken wasserableitenden und hydraulischen Kapazität auf flacher Ebene. Dies ermöglicht den Einsatz bei all jenen Installationen, wo die Ableitung großer Wassermengen auf flachem Boden notwendig ist. Es dient auch dem Schutz der Fläche über dem Boden und des Materials, das nicht mit dem Schutzmembran in Kontakt kommen darf. Dank dieser Eigenschaften, kann diese Produktlinie bei Bauten wie Dachgärten, grüne Dächer, Deponien, oder Flächen verwendet werden, wo Schutz, Wasserleitung und Filtrierung wesentliche und funktionelle Eigenschaften des Werks sind.

## DRAINING GEOCOMPOSITES

■ ■ *GEOCOMPOSITI DRENANTI - DRENAJE DE GEOCOMPOSITOS*  
*DRAINAGE DE GEOCOMPOSITES - GEOKOMPOSITEN ABLEITEN*

- ■ Il Geocomposito drenante è costituito da un materassino in polietilene a cellule chiuse, accoppiato ad un geotessile non-tessuto filtrante.

LE FUNZIONI  
Separazione - Filtrazione - Protezione - Drenaggio

Il drenaggio dell'acqua di infiltrazione avviene grazie alle apposite scanalature sul lato inferiore e la protezione della membrana impermeabile, grazie alla densità della sua struttura. Il geotessile avente una bassa apertura caratteristica svolge la funzione di filtrazione dell'acqua trattenendo le particelle fini di terreno.

■ ■ The draining geocomposite consists of a closed cell polyethylene mat, coupled with a non-woven filtering geotextile.

FUNCTIONS  
Separation - Filtration - Protection - Drainage

The drainage of the infiltration water takes place thanks to the special grooves on the lower side and the protection of the waterproof membrane, thanks to the density of its structure. The geotextile having a low characteristic opening performs the function of water filtration by retaining the fine particles of soil.

■ ■ El geocompuesto de drenaje consiste en una estera de polietileno de celda cerrada, unida a un geotextil de filtro no tejido.

LAS FUNCIONES  
Separación - Filtración - Protección - Drenaje

El drenaje del agua de infiltración se realiza gracias a las ranuras especiales en el lado inferior y la protección de la membrana impermeable, gracias a la densidad de su estructura. El geotextil que tiene una baja apertura característica realiza la función de filtración de agua al retener las partículas finas del suelo.

■ ■ Le géocomposite drainant est constitué d'un tapis en polyéthylène à cellules fermées, associé à un géotextile filtrant non tissé.

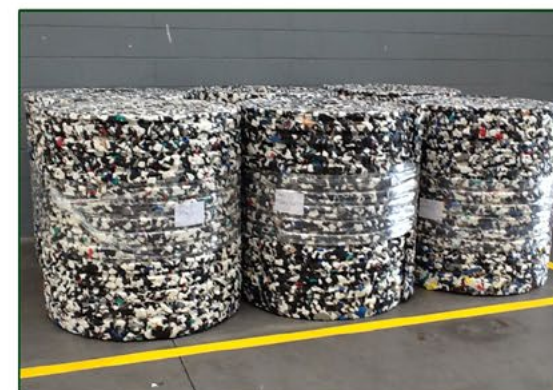
LES FONCTIONS  
Séparation - Filtration - Protection - Drainage

Le drainage de l'eau d'infiltration se fait grâce aux rainures spéciales sur la face inférieure et à la protection de la membrane imperméable, grâce à la densité de sa structure. Le géotextile ayant une faible ouverture caractéristique remplit la fonction de filtration de l'eau en retenant les fines particules de sol.

■ ■ Das Drainage-Geokomposit besteht aus einer geschlossenzelligen Polyethylenmatte, die mit einem nicht gewebten Filter-Geotextil gekoppelt ist.

DIE FUNKTIONEN  
Trennung - Filtration - Schutz - Entwässerung

Die Entwässerung des Infiltrationswassers erfolgt dank der speziellen Rillen an der Unterseite und des Schutzes der wasserdichten Membran dank der Dichte ihrer Struktur. Das Geotextil mit einer geringen charakteristischen Öffnung erfüllt die Funktion der Wasserfiltration, indem es die feinen Bodenpartikel zurückhält.





# REFO PROTECT 12 160

Geocomposite consisting of a drainage mat polyethylene closed-cell foam, chipboard and pressed with horizontal grooves in the round perforated 12 mm thick, laminated to a nonwoven geotextile.



Applications according to products standards: UNI EN 13252:2005 - UNI EN 13257:2005 - UNI EN 13255:2005

In draining systems for Landfills and Roof Gardens, for large and small, civil and public works.

## HYDRAULIC CHARACTERISTICS

*Drainage capacity in the plane (i=1)*  
*Drainage capacity in the plane (i=1)*  
*Drainage capacity in the plane (i=1)*  
*Drainage capacity in the plane (i=1)*  
*Drainage capacity in the plane (i=1)*

UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
l/s*m (10 kPa)	4,10	/	UNI EN ISO 12958:2010
l/s*m (20 kPa)	3,65	/	UNI EN ISO 12958:2010
l/s*m (40 kPa)	2,35	/	UNI EN ISO 12958:2010
l/s*m (100 kPa)	1,84	/	UNI EN ISO 12958:2010
l/s*m (200 kPa)	1,01	/	UNI EN ISO 12958:2010

## WATER PERMEABILITY

## THERMAL INSULATION

*Thermal conductivity*  
*Thermal Stability*

m/s	0,07	+/- 30	UNI EN ISO 11058:2010
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W / m.k	0,038	/	EN 12667
C°			

## PROTECTION EFFICIENCY

Standard used: UNI EN 13719:2004  
 Product standard: UNI EN 13255:2005

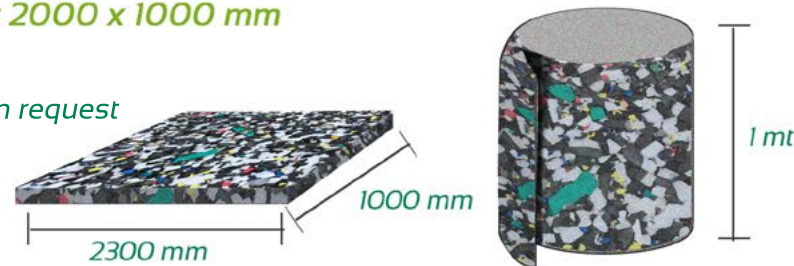
Test Conditions: 300 kN/m<sup>2</sup>  
 Result: < 2,0 %

## FORMAT

Standard supplied in rolls,  
 on request in plates mm 2300 x 1000 or 2000 x 1000 mm

## DIMENSION:

LENGTH 10 mtl (standard) - 20 - 40 mtl on request  
 HEIGHT 1 mt



## PHYSICAL CHARACTERISTICS

	UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
Mass per unit area	g / mq	3.500	+/- 5%	EN ISO 9864
Thickness at 2 kPa	mm	12	+/- 5%	EN ISO 9863

## CHARACTERISTICS MECHANICAL

Tensile strenght longitudinal	kN / m	10,9	-1,5	UNI EN 10319:2008
Tensile strenght transverse	kN / m	12,9	-1,6	UNI EN 10319:2008
Elongation at break	%	65	+/- 10%	UNI EN 10319:2008
Elongation transverse	%	62	+/- 10%	UNI EN 10319:2008
Elongation to impact static	N	2197	/	UNI EN 12236:2006
Resistance to impact dynamic	mm	No drilling	/	UNI EN 13433:2006
Resistance depth to the best impact of damage	%	88	/	UNI EN 13428





# REFO PROTECT D12 160

Geocomposite consisting of a drainage mat polyethylene closed-cell foam, chipboard and pressed with horizontal grooves in the round perforated 12 mm thick, laminated to a DOUBLE nonwoven geotextile.



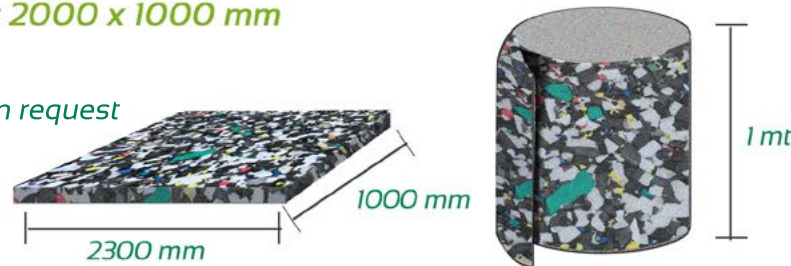
Applications according to products standards:  
UNI EN 13252:2005 - UNI EN 13257:2005 - UNI EN 13255:2005  
In draining systems for Landfills and Roof Gardens

## FORMAT

Standard supplied in rolls,  
on request in plates mm 2300 x 1000 or 2000 x 1000 mm

## DIMENSION:

LENGTH 10 mtl (standard) - 20 - 40 mtl on request  
HEIGHT 1 mt



## PHYSICAL CHARACTERISTICS

UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
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Mass per unit area	g / mq	3.500	+/- 5%	EN ISO 9864
Thickness at 2 kPa	mm	12	+/- 5%	EN ISO 9863

## CHARACTERISTICS MECHANICAL

Tensile strenght longitudinal	kN / m	19,5	-1,5	UNI EN 10319:2008
Tensile strenght transverse	kN / m	24,9	-1,6	UNI EN 10319:2008
Elongation at break	%	61	+/- 10%	UNI EN 10319:2008
Elongation transverse	%	61	+/- 10%	UNI EN 10319:2008
Elongation to impact static	N	5053	/	UNI EN 12236:2006
Resistance to impact dynamic	mm	No drilling	/	UNI EN 13433:2006
Resistance depth to the best impact of damage	%	88	/	UNI EN 13428

## HYDRAULIC CHARACTERISTICS

UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
-----------------	-------	-----------	--------------------

Drainage capacity in the plane (i=1)	l/s*m (10 kPa)	2,29	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (20 kPa)	1,95	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (40 kPa)	1,15	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (100 kPa)	0,87	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (200 kPa)	0,71	/	UNI EN ISO 12958:2010

## WATER PERMEABILITY

m/s	0,07	+/- 30	UNI EN ISO 11058:2010
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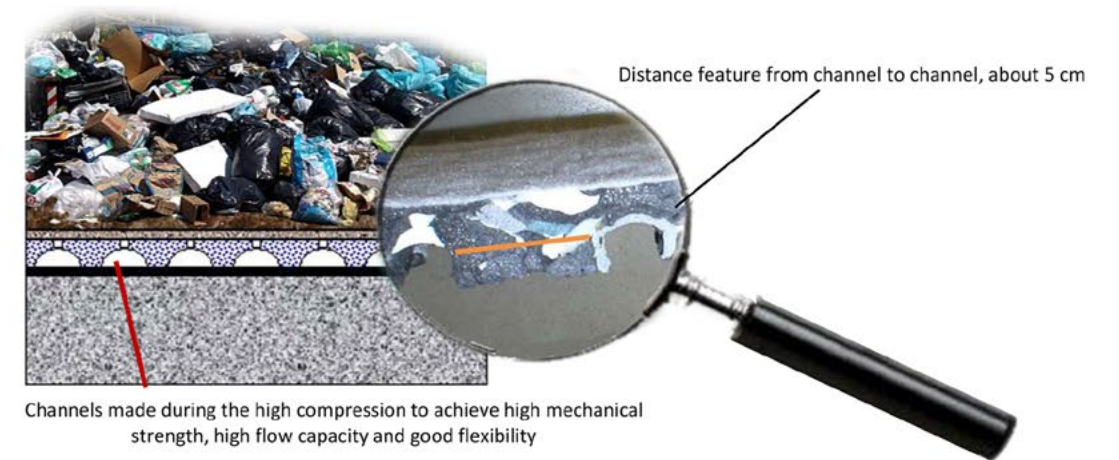
## THERMAL INSULATION

Thermal conductivity	W / m.k	0,038	/	EN 12667
Thermal Stability	C°			

## PROTECTION EFFICIENCY

Standard used: UNI EN 13719:2004  
Product standard: UNI EN 13255:2005

Test Conditions: 300 kN/m<sup>2</sup>  
Result: < 2,0 %





# REFO PROTECT 25 160

Geocomposite consisting of a drainage mat polyethylene closed-cell foam, chipboard and pressed with horizontal grooves in the round perforated 25 mm thick, laminated to a nonwoven geotextile.



Applications according to products standards:

UNI EN 13252:2005 - UNI EN 13257:2005 - UNI EN 13255:2005

In draining systems for Landfills and Roof Gardens, for large and small, civil and public works.

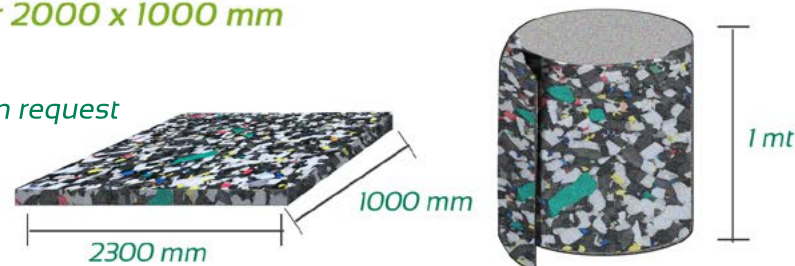
## FORMAT

Standard supplied in rolls,  
on request in plates mm 2300 x 1000 or 2000 x 1000 mm

## DIMENSION:

LENGTH 10 mtl (standard) - 20 - 40 mtl on request

HEIGHT 1 mt



## PHYSICAL CHARACTERISTICS

UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
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Mass per unit area	g / mq	3.500	+/- 5%	EN ISO 9864
Thickness at 2 kPa	mm	25	+/- 5%	EN ISO 9863

## CHARACTERISTICS MECHANICAL

Tensile strenght longitudinal	kN / m	10,7	-1,5	UNI EN 10319:2008
Tensile strenght transverse	kN / m	12,5	-1,6	UNI EN 10319:2008
Elongation at break	%	65	+/- 10%	UNI EN 10319:2008
Elongation transverse	%	64	+/- 10%	UNI EN 10319:2008
Elongation to impact static	N	2516	/	UNI EN 12236:2006
Resistance to impact dynamic	mm	No drilling	/	UNI EN 13433:2006
Resistance depth to the best impact of damage	%	88	/	UNI EN 13428

## HYDRAULIC CHARACTERISTICS

UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
-----------------	-------	-----------	--------------------

Drainage capacity in the plane (i=1)	l/s*m (10 kPa)	4,46	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (20 kPa)	3,84	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (40 kPa)	2,89	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (100 kPa)	2,01	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (200 kPa)	1,15	/	UNI EN ISO 12958:2010

## WATER PERMEABILITY

m/s	0,07	+/- 30	UNI EN ISO 11058:2010
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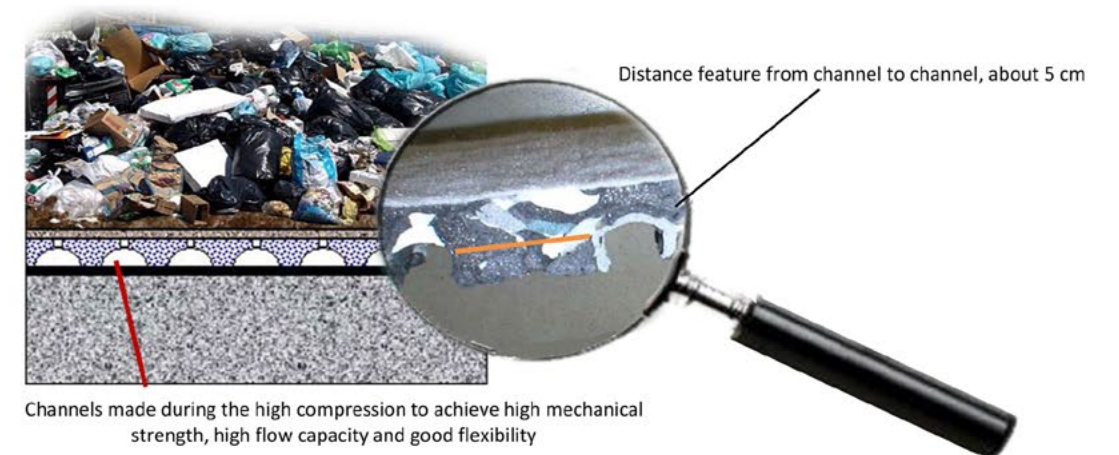
## THERMAL INSULATION

Thermal conductivity	W / m.k	0,038	/	EN 12667
Thermal Stability	C°			

## PROTECTION EFFICIENCY

Standard used: UNI EN 13719:2004  
Product standard: UNI EN 13255:2005

Test Conditions: 300 kN/m<sup>2</sup>  
Result: < 2,0 %





# REFO PROTECT 30 160

Geocomposite consisting of a drainage mat polyethylene closed-cell foam, chipboard and pressed with horizontal grooves in the round perforated 30 mm thick, laminated to a nonwoven geotextile.



Applications according to products standards:

UNI EN 13252:2005 - UNI EN 13257:2005 - UNI EN 13255:2005

In draining systems for Landfills and Roof Gardens, for large and small, civil and public works

## HYDRAULIC CHARACTERISTICS

	UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
<i>Drainage capacity in the plane (i=1)</i>	l/s*m (10 kPa)	5,50	/	UNI EN ISO 12958:2010
<i>Drainage capacity in the plane (i=1)</i>	l/s*m (20 kPa)	4,48	/	UNI EN ISO 12958:2010
<i>Drainage capacity in the plane (i=1)</i>	l/s*m (40 kPa)	3,45	/	UNI EN ISO 12958:2010
<i>Drainage capacity in the plane (i=1)</i>	l/s*m (100 kPa)	2,24	/	UNI EN ISO 12958:2010
<i>Drainage capacity in the plane (i=1)</i>	l/s*m (200 kPa)	1,13	/	UNI EN ISO 12958:2010

## WATER PERMEABILITY

	m/s	0,12	/	UNI EN ISO 11058:2010
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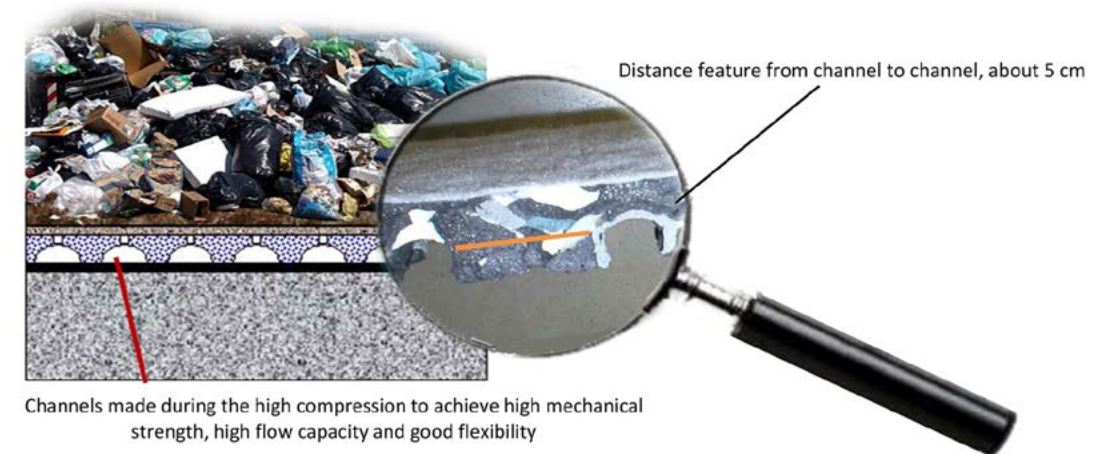
## THERMAL INSULATION

<i>Thermal conductivity</i>	W / m.k	0,038	/	EN 12667
<i>Thermal Stability</i>	C°			

## PROTECTION EFFICIENCY

Standard used: UNI EN 13719:2004  
Product standard: UNI EN 13255:2005

Test Conditions: 300 kN/m<sup>2</sup>  
Result: < 2,0 %



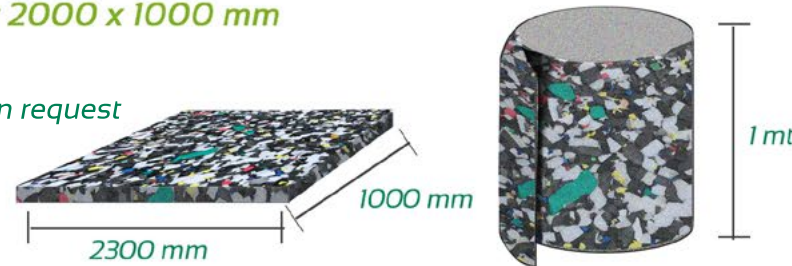
## FORMAT

Standard supplied in rolls,  
on request in plates mm 2300 x 1000 or 2000 x 1000 mm

## DIMENSION:

LENGTH 10 mtl (standard) - 20 - 40 mtl on request

HEIGHT 1 mt



## PHYSICAL CHARACTERISTICS

	UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
<i>Mass per unit area</i>	g / mq	3.500	+/- 5%	EN ISO 9864
<i>Thickness at 2 kPa</i>	mm	29	+/- 5%	EN ISO 9863

## CHARACTERISTICS MECHANICAL

<i>Tensile strenght longitudinal</i>	kN / m	11,2	-1,5	UNI EN 10319:2008
<i>Tensile strenght transverse</i>	kN / m	12,2	-1,6	UNI EN 10319:2008
<i>Elongation at break</i>	%	47	+/- 10%	UNI EN 10319:2008
<i>Elongation transverse</i>	%	56	+/- 10%	UNI EN 10319:2008
<i>Elongation to impact static</i>	N	2328	/	UNI EN 12236:2006
<i>Resistance to impact dynamic</i>	mm	No drilling	/	UNI EN 13433:2006
<i>Resistance depth to the best impact of damage</i>	%	88	/	UNI EN 13428



# REFO PROTECT 35 160

Geocomposite consisting of a drainage mat polyethylene closed-cell foam, chipboard and pressed with horizontal grooves in the round perforated 35 mm thick, laminated to a nonwoven geotextile.



Applications according to products standards:

UNI EN 13252:2005 - UNI EN 13257:2005 - UNI EN 13255:2005

In draining systems for Landfills and Roof Gardens, for large and small, civil and public works.

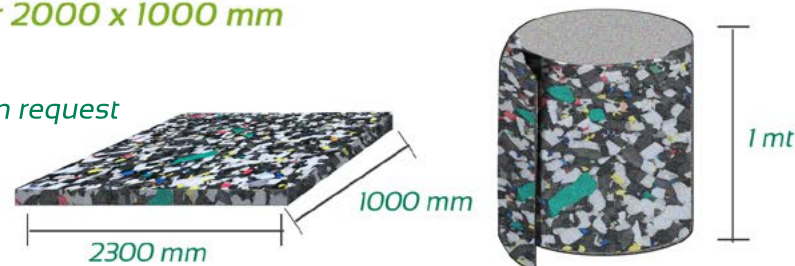
## FORMAT

Standard supplied in rolls,  
on request in plates mm 2300 x 1000 or 2000 x 1000 mm

## DIMENSION:

LENGTH 10 mtl (standard) - 20 - 40 mtl on request

HEIGHT 1 mt



## PHYSICAL CHARACTERISTICS

UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
-----------------	-------	-----------	--------------------

Mass per unit area	g / mq	3.500	+/- 5%	EN ISO 9864
Thickness at 2 kPa	mm	35	+/- 5%	EN ISO 9863

## CHARACTERISTICS MECHANICAL

Tensile strength longitudinal	kN / m	10,2	-1,5	UNI EN 10319:2008
Tensile strength transverse	kN / m	12,2	-1,6	UNI EN 10319:2008
Elongation at break	%	63	+/- 10%	UNI EN 10319:2008
Elongation transverse	%	62	+/- 10%	UNI EN 10319:2008
Elongation to impact static	N	2792	/	UNI EN 12236:2006
Resistance to impact dynamic	mm	No drilling	/	UNI EN 13433:2006
Resistance depth to the best impact of damage	%	88	/	UNI EN 13428

## HYDRAULIC CHARACTERISTICS

UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
-----------------	-------	-----------	--------------------

Drainage capacity in the plane (i=1)	l/s*m (10 kPa)	4,94	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (20 kPa)	3,96	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (40 kPa)	3,21	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (100 kPa)	2,35	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (200 kPa)	1,23	/	UNI EN ISO 12958:2010

## WATER PERMEABILITY

m/s	0,07	+/- 30	UNI EN ISO 11058:2010
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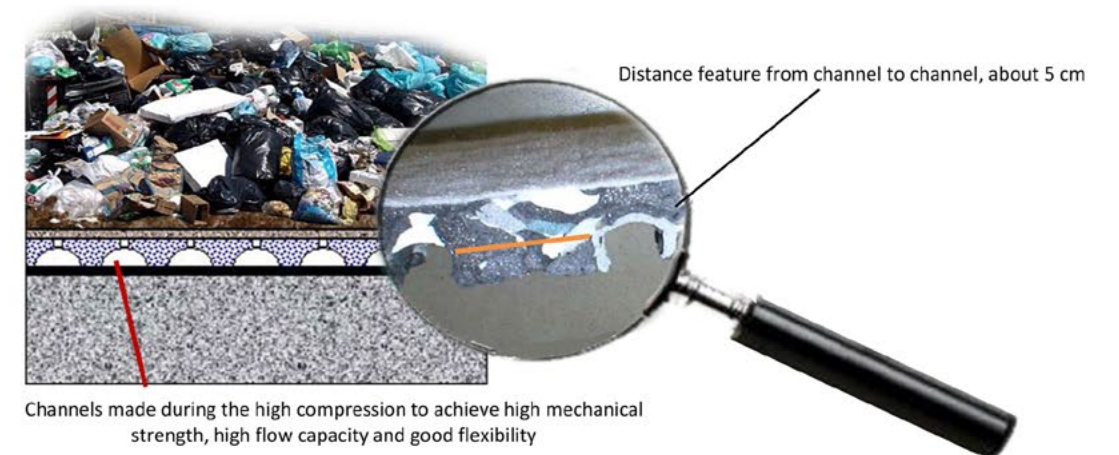
## THERMAL INSULATION

Thermal conductivity	W / m.k	0,038	/	EN 12667
Thermal Stability	C°			

## PROTECTION EFFICIENCY

Standard used: UNI EN 13719:2004  
Product standard: UNI EN 13255:2005

Test Conditions: 300 kN/m<sup>2</sup>  
Result: < 2,0 %

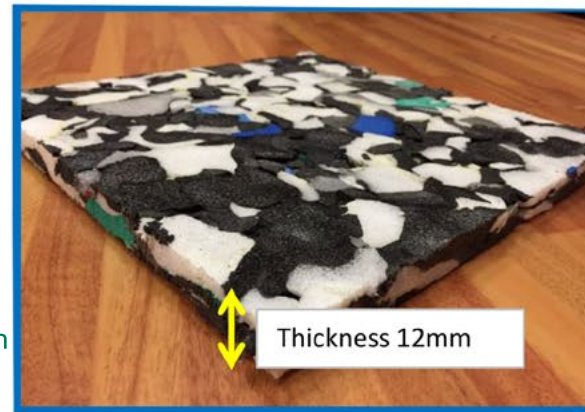




# REFO PROTECT 12 ND

Agglomerate PE foam closed-cell solid material without drilled and grooved, Thickness 12 mm

Protection of bituminous sheaths and of all those surfaces which require a separation and protection against the walls.



## PROPERTY

## TEST METHOD

## UNIT

## RESULT

Thermic Conductivity	Anacon 88	INTERNAL	W / mK	0.0374
			Kcal / mh° C	0.0322
Thermic Stability		ISO 2796	°C	100
	Fire Behaviour	Flame Speed	DIN 75200	mm / min
Shore	Shore O	ASTM D 2240	Shore	23
	Shore OO	ASTM D 2240	Shore	46
	Shore A	ISO R.868	Shore	19
	Shore D	ISO R.868	Shore	1
	Weather condition	/	Hours	> 72
Conditioning	Temperature	/	°C	22
	Dampness	/	%	41

WATER PERMEABILITY NO

## PROTECTION EFFICIENCY

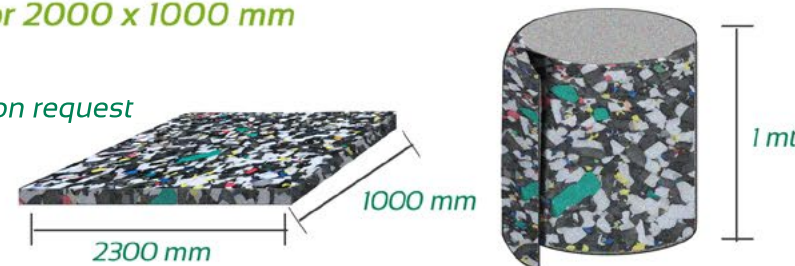
Standard used: UNI EN 13719:2004  
Product standard: UNI EN 13255:2005

Test Conditions: 300 kN/m<sup>2</sup>  
Result: < 2,0 %



**FORMAT**  
Standard supplied in rolls,  
on request in plates mm 2300 x 1000 or 2000 x 1000 mm

**DIMENSION:**  
LENGHT 10 mtl (standard) - 20 - 40 mtl on request  
HEIGHT 1 mt



## PROPERTY

## TEST METHOD

## UNIT

## RESULT

Thickness	ISO 1923	mm	12.06	
Density	ISO 845	Kg/m <sup>3</sup>	100.00	
Compression stress resistance	10%	ISO 3386/1	KPa	28
	25%	ISO 3386/1	KPa	59
	50%	ISO 3386/1	KPa	139
Tensile resistance	ISO 1798	Mpa	0.24	
Lengthening at breaking	ISO 1798	%	37.7	
Tear Resistance	DIN 53 507	N/mm	1.38	
Compression set	25%, 30', 23° C	ISO 1856	%	12.08
	25%, 22h, 23° C	ISO 1856	%	3.51
Compression set	50%, 30', 23° C	ISO 1856	%	30.60
	50%, 22h, 23° C	ISO 1856	%	13.07

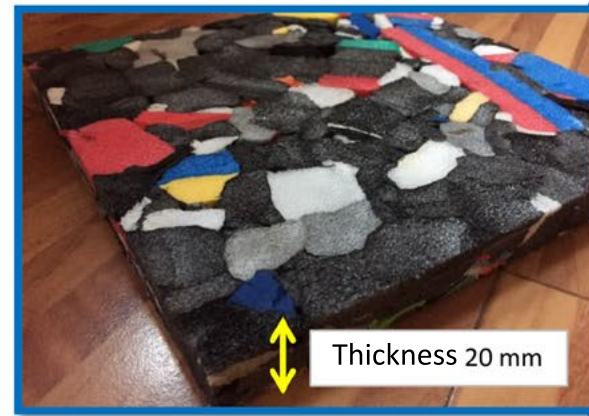


# REFO PROTECT 20 ND

PE foam closed-cell solid material chipboard, without channel and holes, agglomerate and pressed 20 mm Thick.

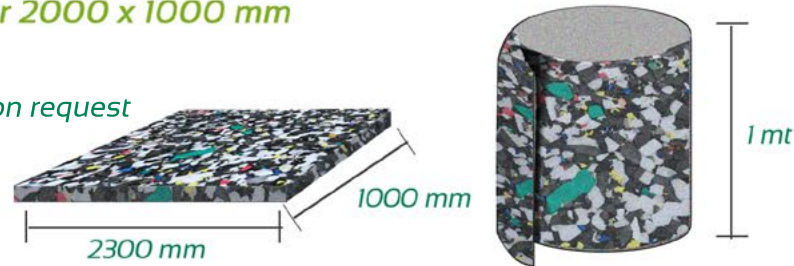
Material used for the protection of bituminous sheaths and of all those surfaces which require a separation and a highly effective security behind the wall.

Indicated for flat surfaces, underground boxes or car parks, where the sheath must be protected before pouring concrete.



- FORMAT**  
Standard supplied in rolls,  
on request in plates mm 2300 x 1000 or 2000 x 1000 mm

- DIMENSION:**  
LENGHT 10 mtl (standard) - 20 - 40 mtl on request  
HEIGHT 1 mtl



## PROPERTY

## TEST METHOD | UNIT | RESULT

<b>Thickness</b>	ISO 1923	mm	20.08	
<b>Density</b>	ISO 845	Kg/m <sup>3</sup>	90.00	
<b>Compression stress resistance</b>	10%	ISO 3386/1	KPa	40.33
	25%	ISO 3386/1	KPa	83.67
	50%	ISO 3386/1	KPa	237.67
<b>Tensile resistance</b> Lengthening at breaking Tear Resistance	ISO 1798	Mpa	0.41	
	ISO 1798	%	35.3	
	DIN 53 507	N/mm	2.15	
<b>Compression set</b>	25%, 30', 23° C	ISO 1856	%	9.54
	25%, 22h, 23° C			2.92
<b>Compression set</b>	50%, 30', 23° C	ISO 1856	%	21.03
	50%, 22h, 23° C			6.99

## PROPERTY

## TEST METHOD | UNIT | RESULT

<b>Thermic Conductivity</b>	Anacon 88	INTERNAL	W / mK	0.0369
			Kcal / mh° C	0.0391
<b>Thermic Stability</b>		ISO 2796	°C	105
	<b>Fire Behaviour</b>	Flame Speed	DIN 75200	mm / min
Shore O		ASTM D 2240	Shore	26
Shore OO		ASTM D 2240	Shore	45
Shore A		ISO R.868	Shore	32
Shore D		ISO R.868	Shore	1
<b>Shore</b>	Weather condition	/	Hours	> 72
	Conditioning	Temperature	°C	22
		Dampness	%	41

- WATER PERMEABILITY** NO

## PROTECTION EFFICIENCY

Standard used: UNI EN 13719:2004  
Product standard: UNI EN 13255:2005

Test Conditions: 300 kN/m<sup>2</sup>  
Result: < 2,0 %





# REFO PROTECT 40 ND

PE foam closed-cell solid material chipboard,, agglomerate and pressed 40 mm Thick.

Material used for the protection of bituminous sheaths and of all those surfaces which require a separation and a highly effective security behind the wall.

Indicated in all installations that require a high degree of protection vertical and on the roof sheathing or prefabricated structures such as footings, concrete walls etc.

Used especially in the field of Building (Metropolitan, large and small works)



## PROPERTY

## TEST METHOD

## UNIT

## RESULT

Thermic Conductivity	Anacon 88	INTERNAL	W / mK	0.0440
			Kcal / mh° C	0.0378
Thermic Stability		ISO 2796	°C	105
	Fire Behaviour	Flame Speed	DIN 75200	mm / min
Shore	Shore O	ASTM D 2240	Shore	28
	Shore OO	ASTM D 2240	Shore	49
	Shore A	ISO R.868	Shore	34
	Shore D	ISO R.868	Shore	1
	Weather condition	/	Hours	> 72
Conditioning	Temperature	/	°C	22
	Dampness	/	%	41

**WATER PERMEABILITY** NO

## PROTECTION EFFICIENCY

Standard used: UNI EN 13719:2004

Product standard: UNI EN 13255:2005

Test Conditions: 300 kN/m<sup>2</sup>



## FORMAT

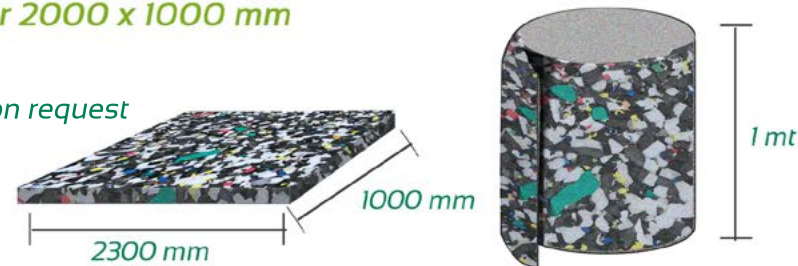
Standard supplied in rolls,

on request in plates mm 2300 x 1000 or 2000 x 1000 mm

## DIMENSION:

LENGHT 10 mtl (standard) - 20 - 40 mtl on request

HEIGHT 1 mtl



## PROPERTY

## TEST METHOD

## UNIT

## RESULT

Thickness	ISO 1923	mm	40.00	
Density	ISO 845	Kg/m <sup>3</sup>	79.00	
Compression stress resistance	10%	ISO 3386/1	KPa	40.33
	25%	ISO 3386/1	KPa	83.67
	50%	ISO 3386/1	KPa	237.67
Tensile resistance	ISO 1798	Mpa	0.38	
Lengthening at breaking	ISO 1798	%	33.5	
Tear Resistance	DIN 53 507	N/mm	2.13	
Compression set	25%, 30', 23° C		8.78	
	25%, 22h, 23° C	ISO 1856	%	2.83
Compression set	50%, 30', 23° C		19.98	
	50%, 22h, 23° C	ISO 1856	%	6.97

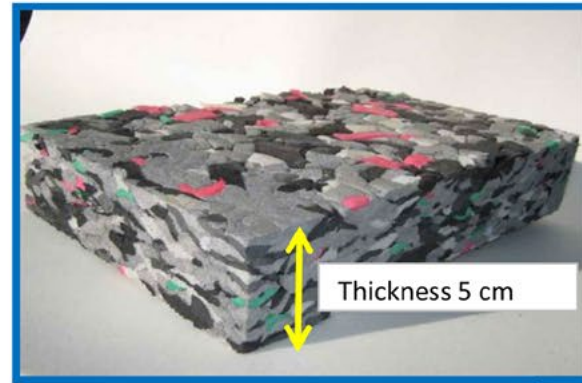


# REFO PROTECT 50 ND

Agglomerate PE foam closed-cell solid material without drilled and grooved, Thickness 50 mm

Material used for the protection of bituminous sheaths and of all those surfaces which require a separation and a highly effective security behind the wall.

Indicated in all installations that require a high degree of protection vertical and horizontal, or on the roof sheathing or prefabricated structures such as footings, concrete walls etc.



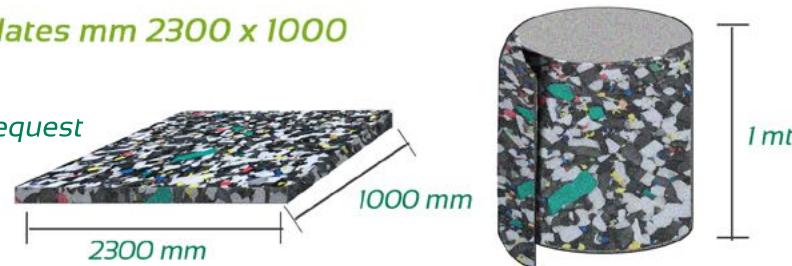
## FORMAT

Standard supplied in rolls, on request in plates mm 2300 x 1000

## DIMENSION:

LENGTH 10 mtl (standard) - 20 - 40 mtl on request

HEIGHT 1 mtl



## PROPERTY

## TEST METHOD | UNIT | RESULT

Thickness	ISO 1923	mm	50.30	
Density	ISO 845	Kg/m <sup>3</sup>	79.00	
Compression stress resistance	10%	ISO 3386/1	KPa	40.33
	25%	ISO 3386/1	KPa	83.67
	50%	ISO 3386/1	KPa	237.67
Tensile resistance	ISO 1798	Mpa	0.38	
	ISO 1798	%	33.5	
Lengthening at breaking	ISO 1798	%	33.5	
Tear Resistance	DIN 53 507	N/mm	2.13	
Compression set	25%, 30', 23° C		8.78	
	25%, 22h, 23° C	ISO 1856	%	2.83
Compression set	50%, 30', 23° C		19.98	
	50%, 22h, 23° C	ISO 1856	%	6.97

## PROPERTY

## TEST METHOD

## UNIT

## RESULT

Thermic Conductivity	Anacon 88	INTERNAL	W / mK	0.0440
Thermic Stability			Kcal / mh° C	0.0378
		ISO 2796	°C	105
Fire Behaviour	Flame Speed	DIN 75200	mm / min	0
	Shore O	ASTM D 2240	Shore	28
Shore	Shore 00	ASTM D 2240	Shore	49
	Shore A	ISO R.868	Shore	34
	Shore D	ISO R.868	Shore	1
	Weather condition	/	Hours	> 72
Conditioning	Temperature	/	°C	22
	Dampness	/	%	41

WATER PERMEABILITY NO

## PROTECTION EFFICIENCY

Standard used: UNI EN 13719:2004

Product standard: UNI EN 13255:2005

Test Conditions: 300 kN/m<sup>2</sup>





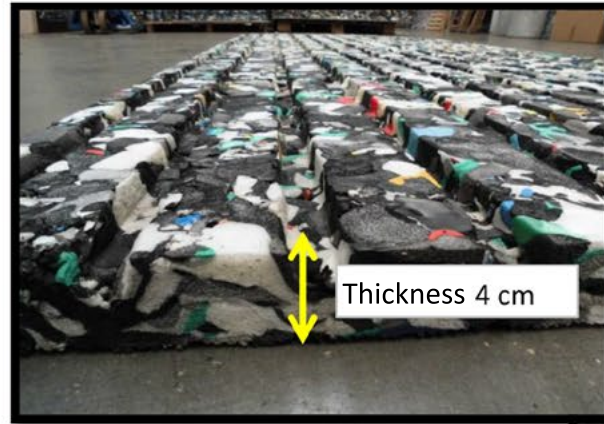
# REFO PROTECT 40 C \*

\* C is definition of channel

Agglomerate PE foam closed cell ,material grooved and non-pierced, 40 mm

Protection of bituminous sheaths and of all those surfaces which require a separation and a highly efficient protection against the walls.

Indicated in all those installations that require a high degree of protection both vertical and/or on the roof sheathing or prefabricated structures such as footings, concrete walls etc.. Special application for protection of both underground and submarine pipelines or pipelines requiring adequate mechanical protection.



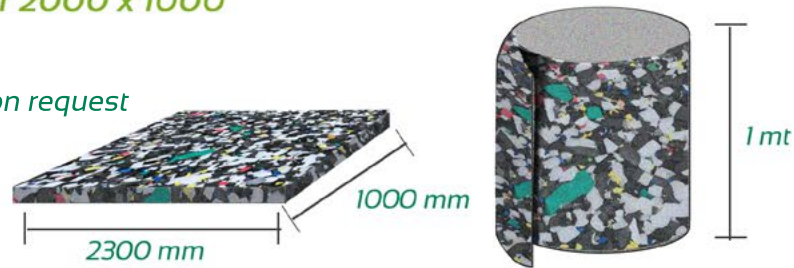
Thickness 4 cm

## FORMAT

Standard supplied in rolls,  
on request in plates mm 2300 x 1000 or 2000 x 1000

## DIMENSION:

LENGHT 10 mtl (standard) - 20 - 40 mtl on request  
HEIGHT 1 mtl



PROPERTY	TEST METHOD	UNIT	RESULT
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<b>Thickness</b>	ISO 1923	mm	40.00	
<b>Density</b>	ISO 845	Kg/m3	100.0	
<b>Compression stress resistance</b>	10%	ISO 3386/1	KPa	21
	25%	ISO 3386/1	KPa	48
	50%	ISO 3386/1	KPa	128
<b>Tensile resistance</b>	ISO 1798	Mpa	0.24	
<b>Lengthening at breaking</b>	ISO 1798	%	47.43	
<b>Tear Resistance</b>	DIN 53 507	N/mm	1.07	
<b>Compression set</b>	25%, 30', 23° C	ISO 1856	%	12.72
	25%, 22h, 23° C			4.91
<b>Compression set</b>	50%, 30', 23° C	ISO 1856	%	31.39
	50%, 22h, 23° C			14.17

PROPERTY	TEST METHOD	UNIT	RESULT
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<b>Thermic Conductivity</b>	Anacon 88	INTERNAL	W / mK	0.0327
			Kcal / mh° C	0.0380
<b>Thermic Stability</b>		ISO 2796	°C	105
	<b>Fire Behaviour</b>	Flame Speed	DIN 75200	mm / min
Shore O		ASTM D 2240	Shore	24
<b>Shore</b>	Shore OO	ASTM D 2240	Shore	50
	Shore A	ISO R.868	Shore	13
	Shore D	ISO R.868	Shore	2
	Weather condition	/	Hours	> 72
<b>Conditioning</b>	Temperature	/	°C	22
	Dampness	/	%	33

<b>WATER PERMEABILITY</b>	m/s	0,07	+/- 30
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**PROTECTION EFFICIENCY**  
Standard used: UNI EN 13719:2004

Test Conditions: 300 kN/m2

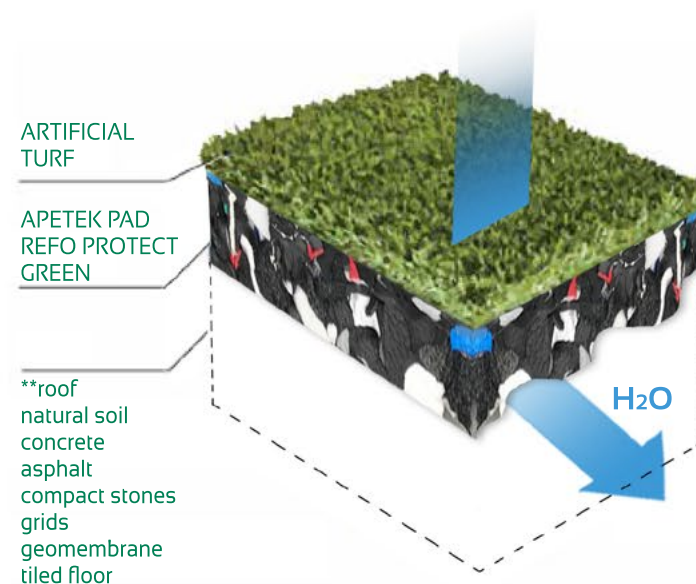




# REFO PROTECT GREEN

Polyethylene foam regenerated coupled with synthetic grass, 23 mm (shock pad + synthetic grass)

Drainage protection vertical and horizontal grooved and drilled



\*\*All surface indicated should be flat and with the right slope



## FORMAT

Standard supplied in rolls

### DIMENSION:

LENGHT 10 mtl (standard) - 20 - 40 mtl on request

HEIGHT 1 mt

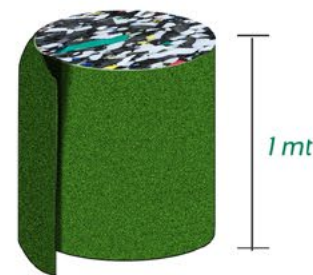


## GRASS TYPE

### LANDSCAPE:

Grass pile height: from 20 mm to 35 mm

at request standard grass pile height 22 mm



## PROPERTY

## TEST METHOD

## UNIT

## RESULT

Thickness	ISO 1923	mm	23 + synthetic grass
Density	ISO 845	Kg/m <sup>3</sup>	120
Dimensional Stability	/	%	0.39
Shock Absorption	/	%	58
Permeability	/	mm/h	> 3000
Hydraulic Capacity	/	l/(m*s)	0,354

Applications: Roof Gardens, Protection of waterproof membranes, Gardens, Terraces and all green areas applications on permeable or waterproof surfaces.

# CONSTRUCTIONS, SYSTEMS, TUNNELS

## COSTRUZIONI, SISTEMI, GALLERIE

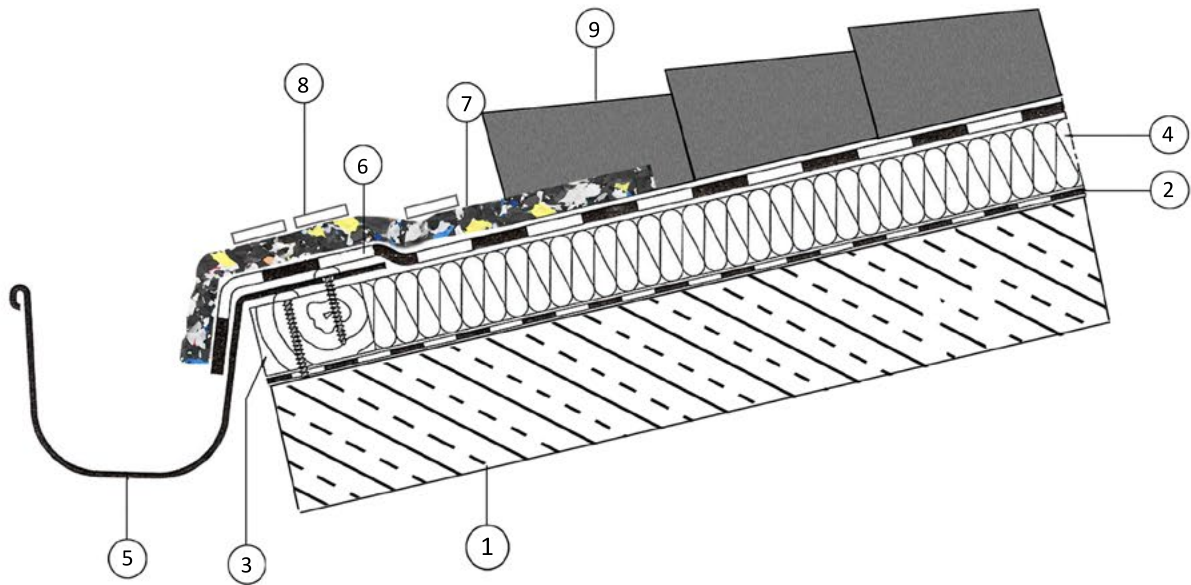
COPERTURE INCLINATE	Copertura a falda inclinata non areato, con pannelli isolanti.
COPERTURE PIANE ISOLATE TERMICAMENTE	Copertura piana con pannelli isolanti termicamente, non areato per superfici verdi naturali o sintetiche.
COPERTURE PIANE, SOLARIUM CON PAVIMENTAZIONI GALLEGGIANTI	Copertura piana con pannelli isolanti termicamente, areato per pavimenti rialzati con supporti.
COPERTURE PIANE CON PAVIMENTAZIONI TRADIZIONALI	Copertura piana con pannelli isolanti termicamente per pavimenti incollati.
COPERTURE PIANE CON PAVIMENTAZIONI GALLEGGIANTI	Copertura piana con pannelli isolanti termicamente, areato per pavimenti non incollati.
COPERTURE PIANE	Con pannelli drenanti per superfici verdi naturali o sintetiche
FONDAZIONI E PARETI CONTROTERRA	Parete e fondazione in CA con pannelli drenanti verticali.
SOLAI IN LEGNO	Solaio interno in legno isolato e con pannelli drenanti
SOLAI PIANI	Solaio esterno in CA isolato e con pannelli drenanti
GALLERIA ANTIFRANA O ANTIVALANGA	Gallerie per le vie di transito per mezzi su rotaia o su gomma rivestite con pannelli protettivi impermeabili all'estradosso del manufatto in CA
TRINCEA A CIELO APERTO	Trincee di strade rivestite con pannelli protettivi impermeabili all'estradosso del manufatto in CA di contenimento.
GALERIA ARTIFICIALE SCATOLARE/IN TRINCEA	Gallerie per le vie di transito per mezzi su rotaia o su gomma rivestite con pannelli protettivi impermeabili all'estradosso del manufatto in CA scatolare
GALERIA ARTIFICIALE METODO "MILANO"	Gallerie prefabbricata costruita con metodo "Cut and cover" per le vie di transito per mezzi su rotaia o su gomma, rivestita con pannelli protettivi impermeabili all'estradosso del manufatto in CA scatolare.
SLOPING ROOFS	Not ventilated sloping roof with insulating panels.
THERMALLY INSULATED	Ventilated flat roofing with thermally insulated panels for natural or synthetic green surfaces.
FLAT ROOFINGS	Ventilated flat roofing with thermally insulated panels for floors raised with supports.
FLAT ROOFINGS, SOLARIUM WITH FLOATING FLOORINGS	Flat roofing with thermally insulated panels for bonded floors.
FLAT ROOFINGS WITH TRADITIONAL FLOORS	Ventilated flat roofing with thermally insulated panels for not bonded floors.
FLAT ROOFINGS WITH FLOATING FLOORS	Draining panels for natural or synthetic green surfaces
FOUNDATIONS AND SOIL RETAINING WALLS	Reinforced concrete walls and foundations with vertical draining panels.
WOODEN SLABS	Insulated inner wooden slab with draining panels.
FLAT SLABS	Insulated reinforced concrete outer slab with draining panels.
LANDSLIDE OR AVALANCHE PROTECTION GALLERY	Railroad or road tunnels with waterproof panel cladding on the upper surface of the reinforced concrete structures.
OPEN TRENCH	Open road trenches with waterproof panel cladding on the upper surface of the reinforced concrete restraint structure.
ARTIFICIAL BOX TUNNEL /OPEN TRENCH	Railroad or road tunnels with waterproof panel cladding on the upper surface of the reinforced concrete box structure.
CUT AND COVER ARTIFICIAL TUNNEL "MILAN"	Cut and cover prefabricated tunnels for railroad or road transit with waterproof cladding on the upper surface of the reinforced concrete box structure.



## INCLINED COVERINGS

COPERTURE INCLINATE - CUBIERTAS INCLINADAS  
COUVERTURES INCLINÉES - GENEIGTE ABDECKUNGEN

- 1- Supporto trattato con primer bituminoso
- 2- Barriera vapore 2 mm
- 3- Profilo in legno fissato meccanicamente
- 4- Pannello isolante
- 5- Canale di gronda fissato meccanicamente
- 6- Membrana impermeabilizzante
- 7- Refo Protect 12,25,30 mm protettivo e drenante
- 8- Fasce riscaldanti
- 9- Manto di copertura



- 1- Support treated with bituminous primer
- 2- Vapor barrier 2 mm
- 3- Mechanically fixed wooden profile
- 4- Insulating panel
- 5- Mechanically fixed gutter channel
- 6- Waterproofing membrane
- 7- Refo Protect 12,25,30 mm protective and draining
- 8- Heating bands
- 9- Roof covering

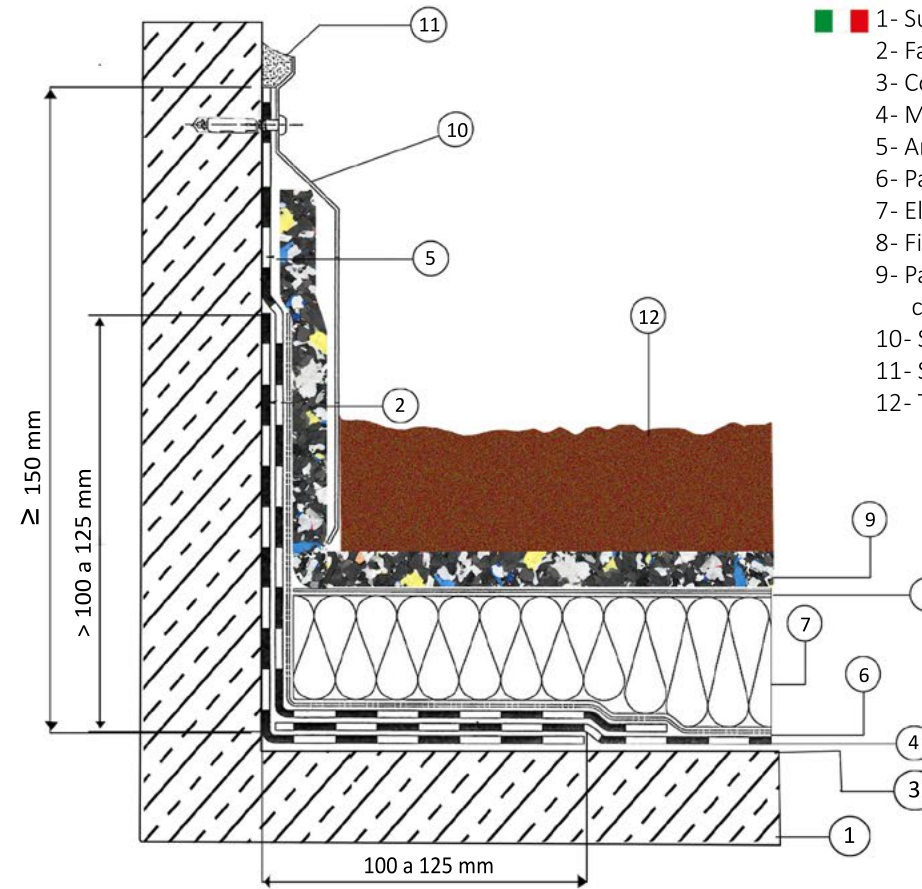
- 1- Soporte tratado con imprimación bituminosa.
- 2- Barrera de vapor 2mm
- 3- Perfil de madera con fijación mecánica.
- 4- Panel aislante
- 5- Canaleta fijada mecánicamente
- 6- Membrana impermeabilizante
- 7- Refo Protect 12,25,30 mm protector y drenante
- 8- Bandas calefactadas
- 9- Cubierta de techo

- 1- Support traité avec un apprêt bitumineux
- 2- Barrière de vapeur 2mm
- 3- Profil en bois avec fixation mécanique
- 4- Panneau isolant
- 5- Gouttière fixée mécaniquement
- 6- Membrane d'étanchéité
- 7- Refo Protect 12,25,30 mm protecteur et drainant
- 8- Bandes de chauffage
- 9- Couverture de toit

- 1- Mit Bitumen-Primer behandelte Stütze
- 2- Dampfbarriere 2 mm
- 3- Mechanisch gefestigtes Holzprofil
- 4- Isolierende Paneele
- 5- Mechanisch gefestigter Rinnenkanal
- 6- Wasserabdichtende Membran
- 7- Refo Protect 12,25,30 mm schützend und wasserableitend
- 8- Wärmende Bänder
- 9- Deckungsschicht

## FLAT COVERINGS ISOLATED THERMICALLY

COPERTURE PIANE ISOLATE TERMICAMENTE - CUBIERTAS PLANAS AISLADAS TÉRMICAMENTE  
TOITS PLATS ISOLÉS THERMIQUEMENT - THERMISCH ISOLIERTE FLACHE ABDECKUNGEN



- 1- Supporto trattato con primer bituminoso
- 2- Fascia di rinforzo angolare di membrana bituminosa
- 3- Colla bituminosa
- 4- Membrana bituminosa
- 5- Angolo di raddoppio in membrana bituminosa
- 6- Pannello REFO PROTECT 12 mm protettivo e drenante
- 7- Elemento termoisolante
- 8- Film di Polietilene
- 9- Pannello REFO PROTECT 12, 25, 30 mm con funzione antiperforazione e drenante
- 10- Scossalina metallica
- 11- Sigillatura
- 12- Terreno di coltura o erba sintetica

- 1- Support treated with bituminous primer
- 2- Corner reinforcement band of bituminous membrane
- 3- Bituminous glue
- 4- Bituminous membrane
- 5- Doubling angle in bituminous membrane
- 6- REFO PROTECT 12 mm protective and draining panel
- 7- Thermal insulation element
- 8- Film of Polyethylene
- 9- REFO PROTECT panel 12, 25, 30 mm with antiperforation and draining function
- 10- Metallic flashing
- 11- Sealing
- 12- Culture soil or synthetic grass

- 1- Soporte tratado con imprimación bituminosa.
- 2- Esquina reforzada con banda de membrana bituminosa
- 3- Cola bituminosa
- 4- Membrana bituminosa
- 5- Doble ángulo de membrana bituminosa
- 6- Panel de REFOPROTECT 12mm protector y drenante
- 7- Elemento termoaislante
- 8- Film de Polietileno
- 9- Panel de REFOPROTECT 12, 25, 30 mm con función antiperforación y drenante
- 10- Cubreuntas metálico
- 11- Sellado
- 12- Suelo de cultivo o césped sintético

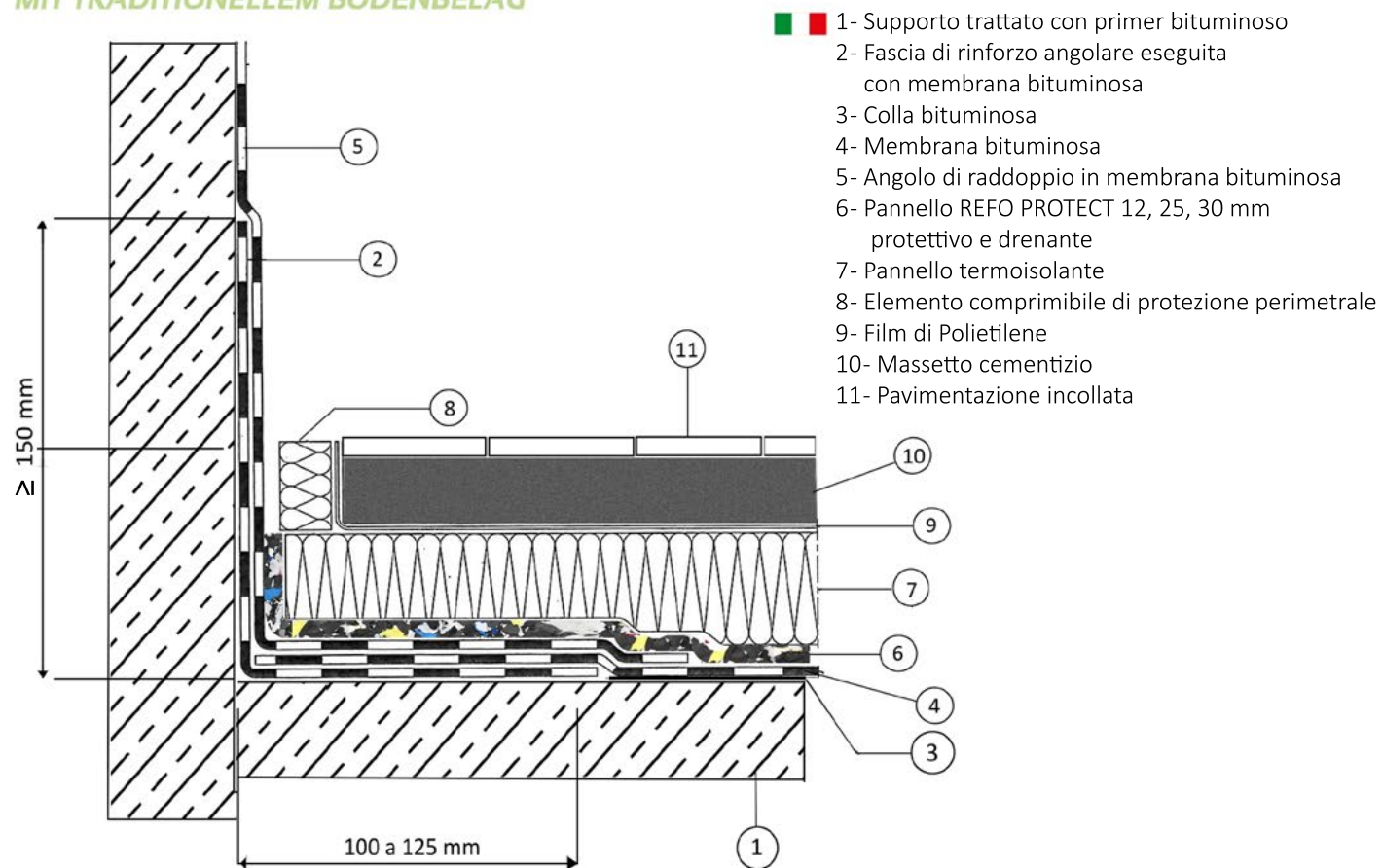
- 1- Support traité avec un apprêt bitumineux
- 2- Coin renforcé avec bande de membrane bitumineuse
- 3- Colle bitumineuse
- 4- Membrane bitumineuse
- 5- Double angle de membrane bitumineuse
- 6- Panneau REFOPROTECT 12mm protecteur et drainant
- 7- Element d'isolation thermique
- 8- Film de polyéthylène
- 9- Panneau REFOPROTECT 12, 25, 30 mm avec fonction anti-perforation et drainante
- 10- Couvre-joint métallique
- 11- Scellé
- 12- Sol de culture ou gazon synthétique

- 1- Mit Bitumen-Primer behandelte Stütze
- 2- Bande zur Eckstütze aus bituminöser Membran
- 3- Bitumen-Kleber
- 4- Bituminöser Membran
- 5- Doppelte Ecke aus bituminöser Membran
- 6- REFO PROTECT Paneele 12 mm schützend und wasserableitend
- 7- Wärmeisolierendes Element
- 8- Polyethylenfolie
- 9- REFO PROTECT-Paneele 12, 25, 30 mm mit antiperforierender und wasserableitender Funktion
- 10- Metall-Blechabdeckung
- 11- Versiegelung
- 12- Nährboden oder künstliches Grass



## FLAT COVERS, FLOORS, BALCONIES ISOLATED THERMICALLY WITH TRADITIONAL FLOORING

COPERTURE PIANE, SOLAI, BALCONI ISOLATI TERMICAMENTE CON PAVIMENTAZIONI TRADIZIONALI - CUBIERTAS, PISOS, BALCONES AISLADOS TERMICAMENTE CON SUELOS TRADICIONALES - COUVERTURES, SÔLS, BALCONS THERMIQUES ISOLÉS AVEC DES SÔLS TRADITIONNELS - FLACHE ABDECKUNGEN, THERMISCH ISOLIERTE DACHBÖDEN UND BALKONS MIT TRADITIONELLEM BODENBELAG



- 1- Supporto trattato con primer bituminoso
- 2- Fascia di rinforzo angolare eseguita con membrana bituminosa
- 3- Colla bituminosa
- 4- Membrana bituminosa
- 5- Angolo di raddoppio in membrana bituminosa
- 6- Pannello REFO PROTECT 12, 25, 30 mm protettivo e drenante
- 7- Pannello termoisolante
- 8- Elemento comprimibile di protezione perimetrale
- 9- Film di Polietilene
- 10- Massetto cementizio
- 11- Pavimentazione incollata

- 1- Support treated with bituminous primer
- 2- Angular reinforcement band made with bituminous membrane
- 3- Bituminous glue
- 4- Bituminous membrane
- 5- Doubling angle in bituminous membrane
- 6- REFO PROTECT panel 12, 25, 30 mm protective and draining
- 7- Panel thermal insulation
- 8- Compressible element for perimeter protection
- 9- Polyethylene film
- 10- Cement screed
- 11- Glued flooring

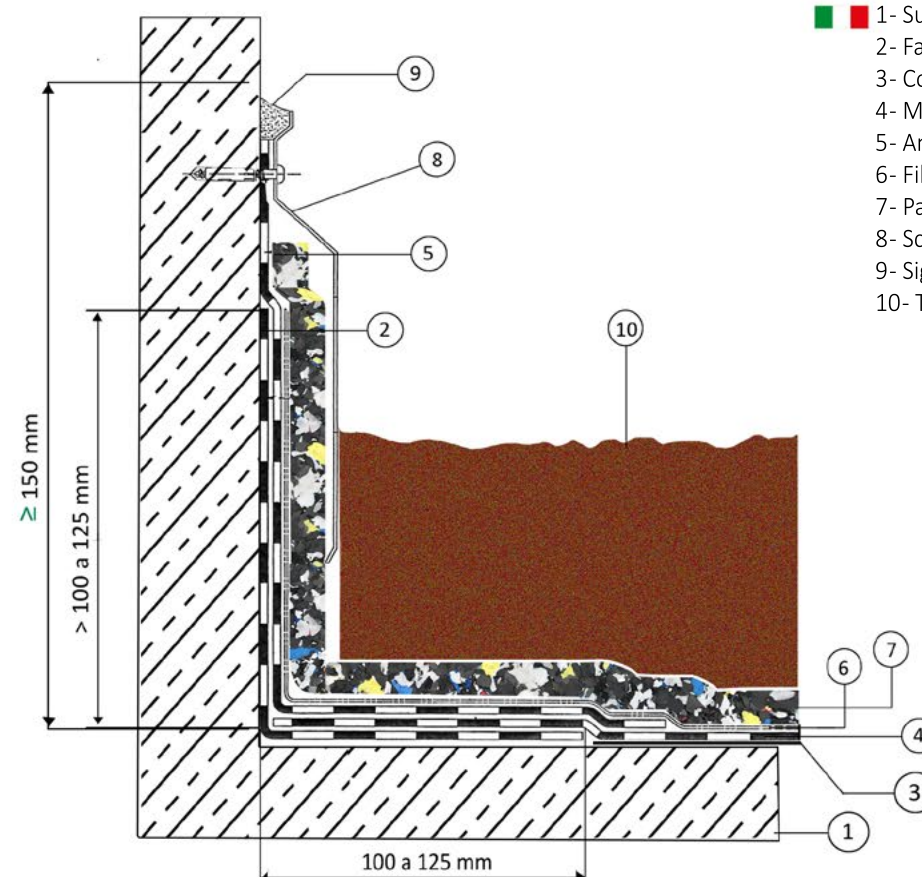
- 1- Soporte tratado con imprimación bituminosa
- 2- Esquina reforzada con banda de membrana bituminosa
- 3- Cola bituminosa
- 4- Membrana bituminosa
- 5- Doble ángulo de membrana bituminosa
- 6- Panel de REFO PROTECT 12, 25, 30 mm protector y drenante
- 7- Panel de aislamiento térmico.
- 8- Elemento comprimible para protección perimetral
- 9- Film de Polietileno
- 10- Solera de cemento
- 11- Piso encolado

- 1- Support traité avec un apprêt bitumineux
- 2- Coin renforcé avec bande de membrane bitumineuse
- 3- Colle bitumineuse
- 4- Membrane bitumineuse
- 5- Double angle de membrane bitumineuse
- 6- Panneau REFOPROTECT 12, 25, 30 mm protecteur et drainant
- 7- Panneau d'isolation thermique
- 8- élément compressible pour la protection périmétrique
- 9- Film de polyéthylène
- 10- Base de ciment
- 11- Plancher collé

- 1- Mit Bitumen-Primer behandelte Stütze
- 2- Bande zur Eckstütze mit bituminöser Membran hergestellt
- 3- Bitumen-Kleber
- 4- Bituminöse Membran
- 5- Doppelte Ecke aus bituminöser Membran
- 6- REFO PROTECT- Paneele 12, 25, 30 mm mit schützender und wasserableitender Funktion
- 7- Wärmeisolierende Paneele
- 8- Komprimierbares Element zum Perimeter-Schutz
- 9- Polyethylenefolie
- 10- Zementestrich
- 11- Geklebter Bodenbelag

## FLAT COVERS

COPERTURE PIANE - CUBIERTAS PLANAS  
COUVERTURES PLATES - FLACHE ABDECKUNGEN



- 1- Supporto trattato con primer bituminoso
- 2- Fascia di rinforzo angolare di membrana bituminosa
- 3- Colla bituminosa
- 4- Membrana bituminosa
- 5- Angolo di raddoppio in membrana bituminosa
- 6- Film di polietilene
- 7- Pannello REFO PROTECT 12, 25, 30 mm protettivo e drenante
- 8- Scossalina metallica
- 9- Sigillatura
- 10- Terreno di coltura o erba sintetica

- 1- Support treated with bituminous primer
- 2- Angular reinforcement band of bituminous membrane
- 3- Bituminous glue
- 4- Bituminous membrane
- 5- Doubling angle in bituminous membrane
- 6- Polyethylene film
- 7- REFO PROTECT panel 12, 25, 30 mm protective and draining
- 8- Metallic flashing
- 9- Sealing
- 10- Culture medium or synthetic grass

- 1- Soporte tratado con imprimación bituminosa
- 2- Esquina reforzada con banda de membrana bituminosa
- 3- Cola bituminosa
- 4- Membrana bituminosa
- 5- Doble ángulo de membrana bituminosa
- 6- Film de Polietileno
- 7- Panel de REFO PROTECT 12, 25, 30 mm protector y drenante
- 8- Cubrejuntas metálico
- 9- Sellado
- 10- Suelo de cultivo o césped sintético

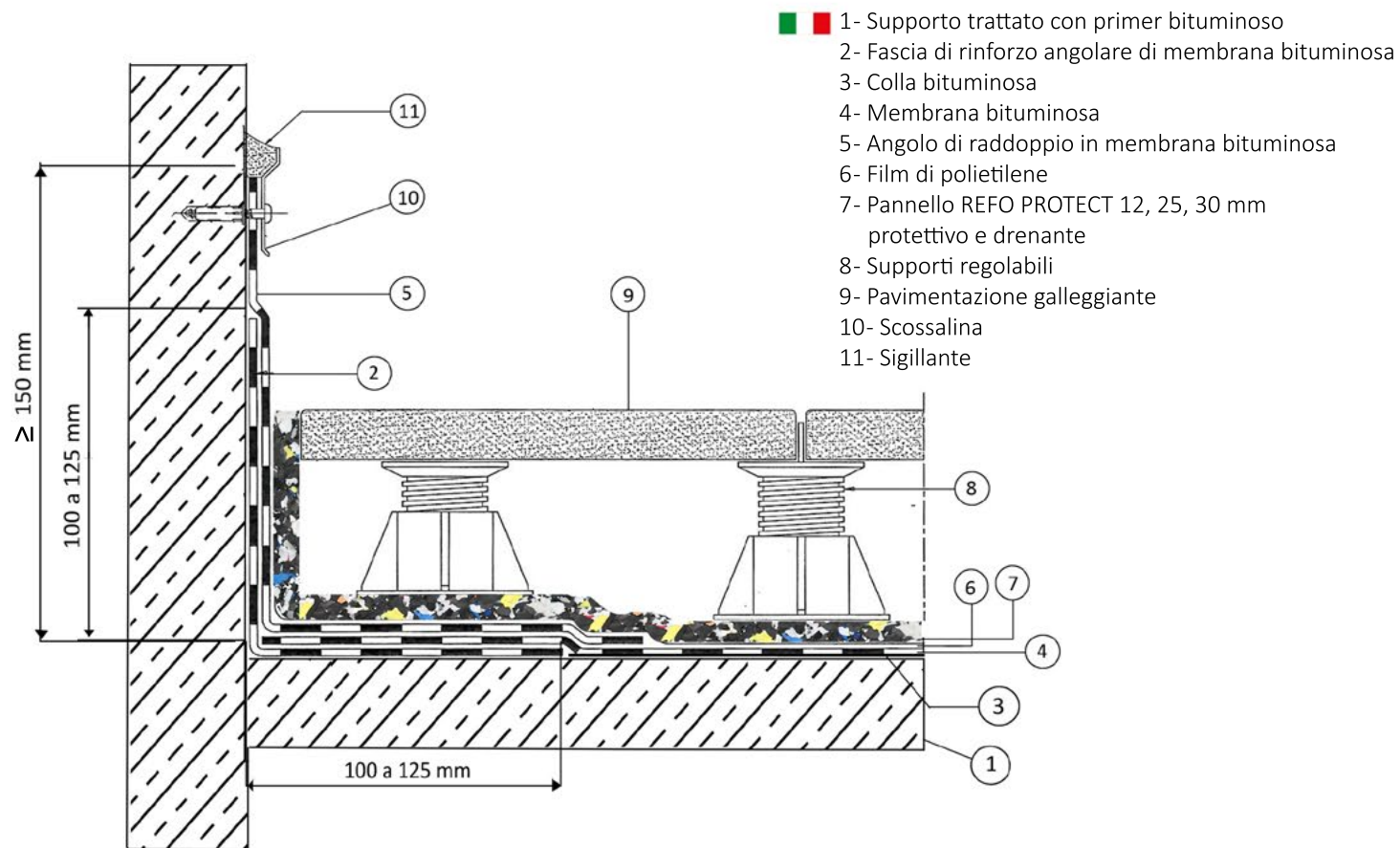
- 1- Support traité avec un apprêt bitumineux
- 2- Coin renforcé avec bande de membrane bitumineuse
- 3- Colle bitumineuse
- 4- Membrane bitumineuse
- 5- Double angle de membrane bitumineuse
- 6- Film de polyéthylène
- 7- Panneau REFOPROTECT 12, 25, 30 mm protecteur et drainant
- 8- Couvre-joint métallique
- 9- Scellé
- 10- Sol de culture ou gazon synthétique

- 1- Mit Bitumen-Primer behandelte Stütze
- 2- Bande zur Eckstütze mit bituminöser Membran hergestellt
- 3- Bitumen-Kleber
- 4- Bituminöse Membran
- 5- Doppelte Ecke aus bituminöser Membran
- 6- Polyethylenefolie
- 7- REFO PROTECT- Paneele 12, 25, 30 mm mit schützender und wasserableitender Funktion
- 8- Metall-Blechabdeckung
- 9- Versiegelung
- 10- Nährboden oder künstliches Grass



## FLAT COVERINGS, SOLARIUM WITH FLOATING FLOORING

COPERTURE PIANE, SOLARIUM CON PAVIMENTAZIONI GALLEGGIANTI  
 RECUBRIMIENTOS DE PISOS, SOLARIUM CON SUELO FLOTANTE -  
 REVÊTEMENTS DE SOL, SOLARIUM À PLANCHER FLOTTANT -  
 FLACHE ABDECKUNGEN, SOLARIUM MIT SCHWIMMEND VERLEGTEM BODENBELAG



- 1- Supporto trattato con primer bituminoso
- 2- Fascia di rinforzo angolare di membrana bituminosa
- 3- Colla bituminosa
- 4- Membrana bituminosa
- 5- Angolo di raddoppio in membrana bituminosa
- 6- Film di polietilene
- 7- Pannello REFO PROTECT 12, 25, 30 mm protettivo e drenante
- 8- Supporti regolabili
- 9- Pavimentazione galleggiante
- 10- Scossalina
- 11- Sigillante

- 1- Support treated with bituminous primer
- 2- Angular reinforcement band of bituminous membrane
- 3- Bituminous glue
- 4- Bituminous membrane
- 5- Doubling angle in bituminous membrane
- 6- Polyethylene film
- 7- REFO PROTECT panel 12, 25, 30 mm protective and draining
- 8- Adjustable supports
- 9- Floating flooring
- 10- Flashing
- 11- Sealant

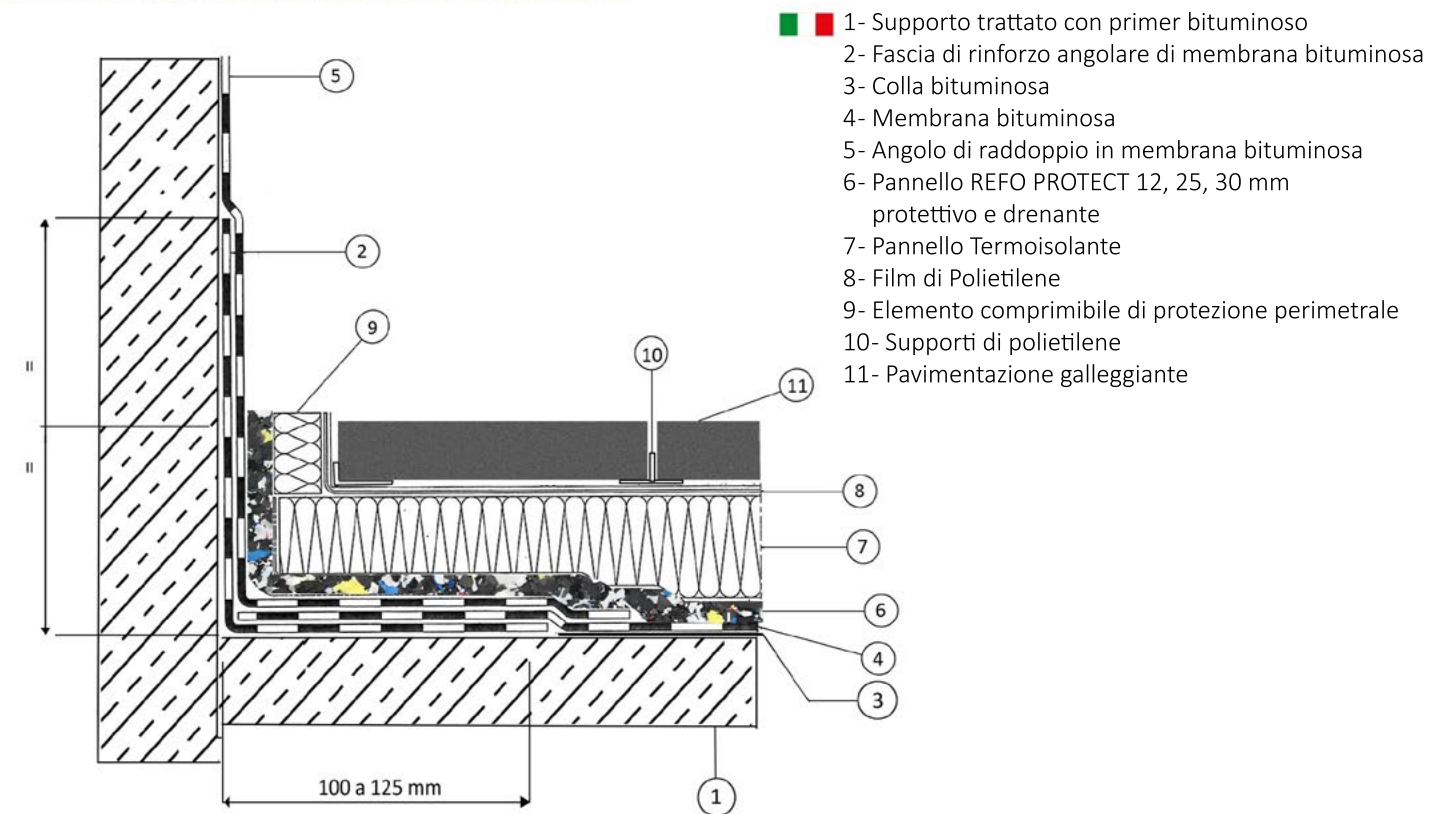
- 1- Soporte tratado con imprimación bituminosa
- 2- Esquina reforzada con banda de membrana bituminosa
- 3- Cola bituminosa
- 4- Membrana bituminosa
- 5- Doble ángulo de membrana bituminosa
- 6- Film de Polietileno
- 7- Panel de REFO PROTECT 12, 25, 30 mm protector y drenante
- 8- Soportes ajustables
- 9- Suelo flotante
- 10- Cubrejuntas
- 11- Sellante

- 1- Support traité avec un apprêt bitumineux
- 2- Coin renforcé avec bande de membrane bitumineuse
- 3- Colle bitumineuse
- 4- Membrane bitumineuse
- 5- Double angle de membrane bitumineuse
- 6- Film de polyéthylène
- 7- Panneau REFOPROTECT 12, 25, 30 mm protecteur et drainant
- 8- Supports réglables
- 9- Plancher flottant
- 10- Solin
- 11- Scellant

- 1- Mit Bitumen-Primer behandelte Stütze
- 2- Bande zur Eckstütze mit bituminöser Membran
- 3- Bitumen-Kleber
- 4- Bituminöse Membran
- 5- Doppelte Ecke aus bituminöser Membran
- 6- Polyethylenefolie
- 7- REFO PROTECT- Paneele 12, 25, 30 mm schützend und wasserableitend
- 8- Regelbare Stützen
- 9- Schwimmend verlegter Bodenverlag
- 10- Metall-Blechabdeckung
- 11- Dichtungsmittel

## FLAT COVERS, BALCONIES, SOLARIUM ISOLATED THERMALLY WITH FLOATING FLOORING

COPERTURE PIANE, BALCONI, SOLARIUM ISOLATE TERMICAMENTE CON PAVIMENTAZIONI GALLEGGIANTI  
 CUBIERTAS, BALCONES, SOLARIUM AISLADO TERMICAMENTE CON SUELO FLOTANTE -  
 COUVERTURES, BALCONS, SOLARIUM THERMIQUEMENT ISOLES AVEC UN SOL FLOTTANT -  
 FLACHE ABECKUNGEN, THERMISCH ISOLIERTE BALKONE UND SOLARIUM MIT SCHWIMMEND VERLEGTEM BODENBELAG



- 1- Supporto trattato con primer bituminoso
- 2- Fascia di rinforzo angolare di membrana bituminosa
- 3- Colla bituminosa
- 4- Membrana bituminosa
- 5- Angolo di raddoppio in membrana bituminosa
- 6- Pannello REFO PROTECT 12, 25, 30 mm protettivo e drenante
- 7- Pannello Termoisolante
- 8- Film di Polietilene
- 9- Elemento comprimibile di protezione perimetrale
- 10- Supporti di polietilene
- 11- Pavimentazione galleggiante

- 1- Support treated with bituminous primer
- 2- Corner reinforcement band of bituminous membrane
- 3- Bituminous glue
- 4- Bituminous membrane
- 5- Doubling angle in bituminous membrane
- 6- REFO PROTECT panel 12, 25, 30 mm protective and draining
- 7- Thermal insulation panel
- 8- Polyethylene film
- 9- Compressible element of perimeter protection
- 10- Polyethylene supports
- 11- Floating flooring

- 1- Soporte tratado con imprimación bituminosa
- 2- Esquina reforzada con banda de membrana bituminosa
- 3- Cola bituminosa
- 4- Membrana bituminosa
- 5- Doble ángulo de membrana bituminosa
- 6- Panel de REFO PROTECT 12, 25, 30 mm protector y drenante
- 7- Panel de aislamiento térmico.
- 8- Film de Polietileno
- 9- Elemento comprimible para protección perimetral
- 10- Soportes de polietileno
- 11- Suelo flotante

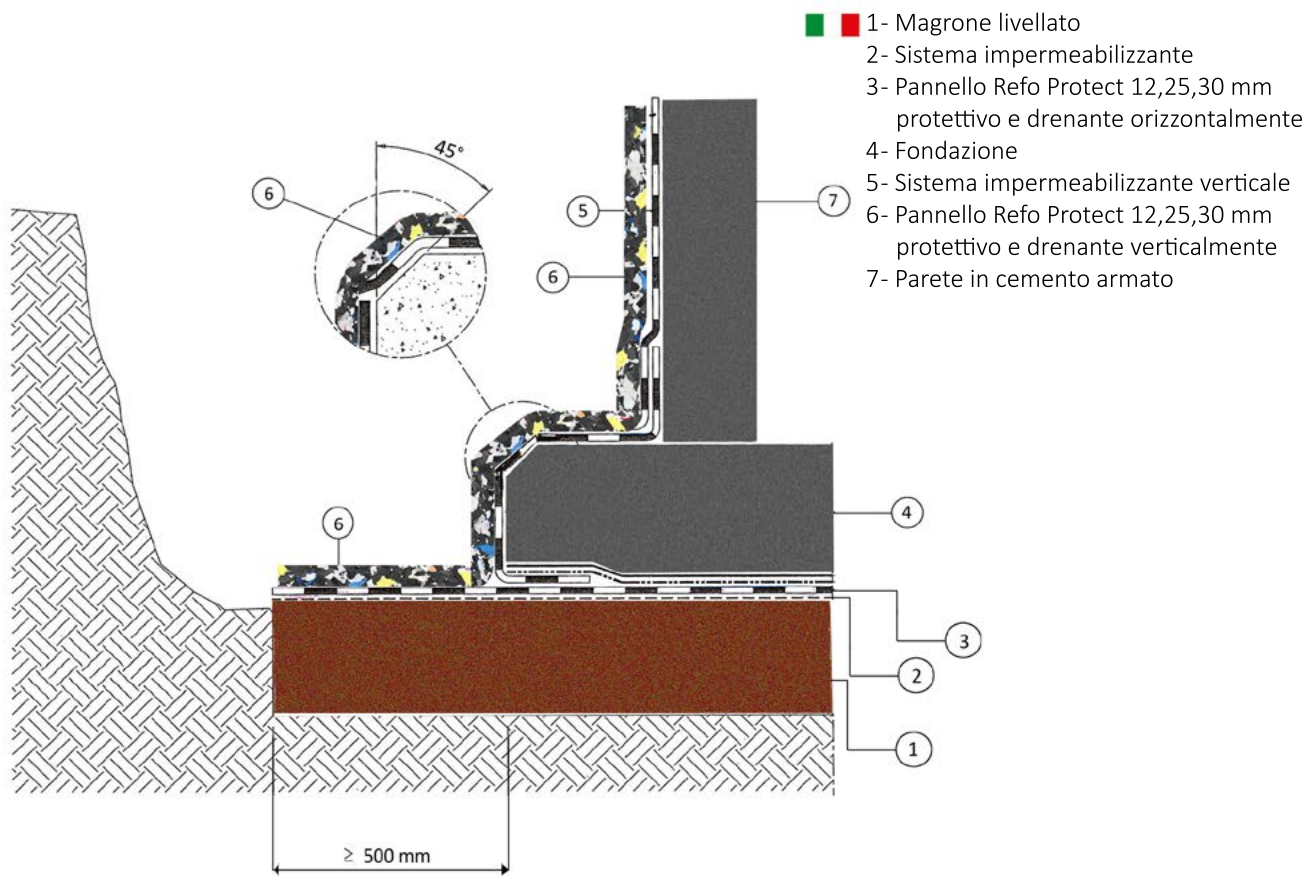
- 1- Support traité avec un apprêt bitumineux
- 2- Coin renforcé avec bande de membrane bitumineuse
- 3- Colle bitumineuse
- 4- Membrane bitumineuse
- 5- Double angle de membrane bitumineuse
- 6- Panneau REFOPROTECT 12, 25, 30 mm protecteur et drainant
- 7- Panneau d'isolation thermique
- 8- Film de polyéthylène
- 9- élément compressible pour la protection périmétrique
- 10- Supports en polyéthylène
- 11- Sol flottant

- 1- Mit Bitumen-Primer behandelte Stütze
- 2- Bande zur Eckstütze mit bituminöser Membran
- 3- Bitumen-Kleber
- 4- Bituminöse Membran
- 5- Doppelte Ecke aus bituminöser Membran
- 6- REFO PROTECT-Paneele 12, 25, 30 mm schützend und wasserableitend
- 7- Wärmeisolierende Paneele
- 8- Polyethylenfolie
- 9- Komprimierbares Element zum Perimeter-Schutz
- 10- Polyethylenstütze
- 11- Schwimmend verlegter Bodenverlag



# FOUNDATIONS AND WALLS OF BASEMENTS

FONDAZIONI E PARETI CONTROTERRA - FUNDAMENTOS Y PAREDES ENTERRADAS  
 FONDEMENTS ET MURS ENSEVELIS - FUNDAMENTE UND WÄNDE GEGEN DAS ERDREICH



- 1- Magrone livellato
- 2- Sistema impermeabilizzante
- 3- Pannello Refo Protect 12,25,30 mm protettivo e drenante orizzontalmente
- 4- Fondazione
- 5- Sistema impermeabilizzante verticale
- 6- Pannello Refo Protect 12,25,30 mm protettivo e drenante verticalmente
- 7- Parete in cemento armato

- 1- Levelled grain
- 2- Waterproofing system
- 3- Refo Protect panel 12,25,30 mm protective and draining horizontally
- 4- Foundation
- 5- Vertical waterproofing system
- 6- Refo Protect panel 12,25,30 mm protective and draining vertically
- 7- Wall in reinforced concrete

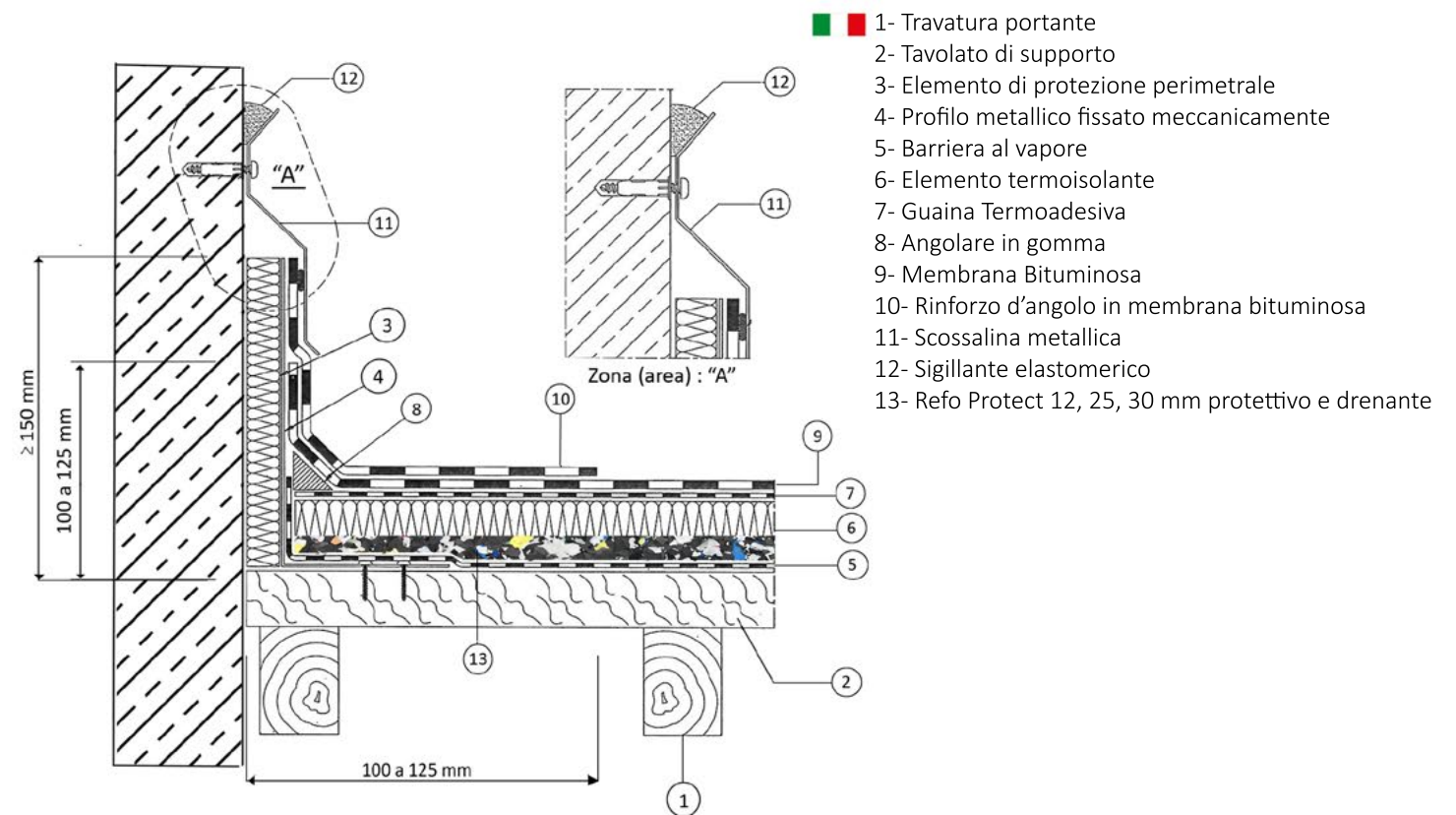
- 1- Grano nivelado
- 2- Sistema impermeabilizante
- 3- Panel de REFO PROTECT 12, 25, 30 mm protector y drenante horizontalmente
- 4- Fundamento
- 5- Sistema impermeabilizante vertical
- 6- Panel de REFO PROTECT 12, 25, 30 mm protector y drenante verticalmente
- 7- Paredes de cemento armado

- 1- Grain nivelé
- 2- Système d'étanchéité
- 3- Panneau REFOPROTECT 12, 25, 30 mm protecteur et drainant
- 4- Fondation
- 5- Système d'étanchéité vertical
- 6- Panneau REFOPROTECT 12, 25, 30 mm protecteur et drainant verticalement
- 7- Murs en béton armé

- 1- Nivellierter Magerbeton
- 2- Abdichtungssystem
- 3- Refo Protect-Paneele 12, 25, 30 mm schützend und horizontal wasserableitend
- 4- Fundament
- 5- Senkrechtes Abdichtungssystem
- 6- Refo Protect-Paneele 12, 25, 30 mm mit schützend und senkrecht wasserableitend
- 7- Wand aus Stahlbeton

# WOODEN SAVINGS

SOLAI IN LEGNO - BAJO TECHOS DE MADERA  
 SOUS PLAFONDS EN BOIS - HOLZDACHBÖDEN



- 1-Supporting frame
- 2-Supporting table
- 3-Perimeter protection element
- 4-Mechanically fixed metal profile
- 5-Steam barrier
- 6-Thermal insulation element
- 7-Thermoadhesive sheath
- 8-Rubber corner
- 9-Bitumen membrane
- 10-Corner reinforcement in bituminous membrane
- 11-Metal flashing
- 12-Elastomeric sealant
- 13-Refo Protect 12, 25, 30 mm protective and draining

- 1-Travatura portante
- 2-Tavolato di supporto
- 3-Elemento di protezione perimetrale
- 4-Profilo metallico fissato meccanicamente
- 5-Barriera al vapore
- 6-Elemento termoisolante
- 7-Guaina Termoadesiva
- 8-Angolare in gomma
- 9-Membrana Bituminosa
- 10-Rinforzo d'angolo in membrana bituminosa
- 11-Scossalina metallica
- 12-Sigillante elastomerico
- 13-Refo Protect 12, 25, 30 mm protettivo e drenante

- 1-Marco de soporte
- 2-Mesa de soporte
- 3-Elemento de protección perimetral
- 4-Perfil metálico fijado mecánicamente
- 5-Barrera de vapor
- 6-Elemento termoaislante
- 7-Envoltura termoadhesiva
- 8-Angulo de caucho
- 9-Membrana bituminosa
- 10-Esquina reforzada con banda de membrana bituminosa
- 11-Cubrejuntas metálico
- 12-Sellante elastomérico
- 13-Panel de REFO PROTECT 12, 25, 30 mm protector y drenante

- 1-Cadre de soutien
- 2-Table de soutien
- 3-Élément de protection périmétrique
- 4-Profil métallique fixé mécaniquement
- 5-Barrière de vapeur
- 6-Élément d'isolation thermique
- 7-Enveloppe thermo-adhésive
- 8-Angle de caoutchouc
- 9-Membrane bitumineuse
- 10-Coin renforcé avec bande de membrane bitumineuse
- 11-Solin métallique
- 12-Scellant elastomerique
- 13-Panneau REFOPROTECT 12, 25, 30 mm protecteur et drainant

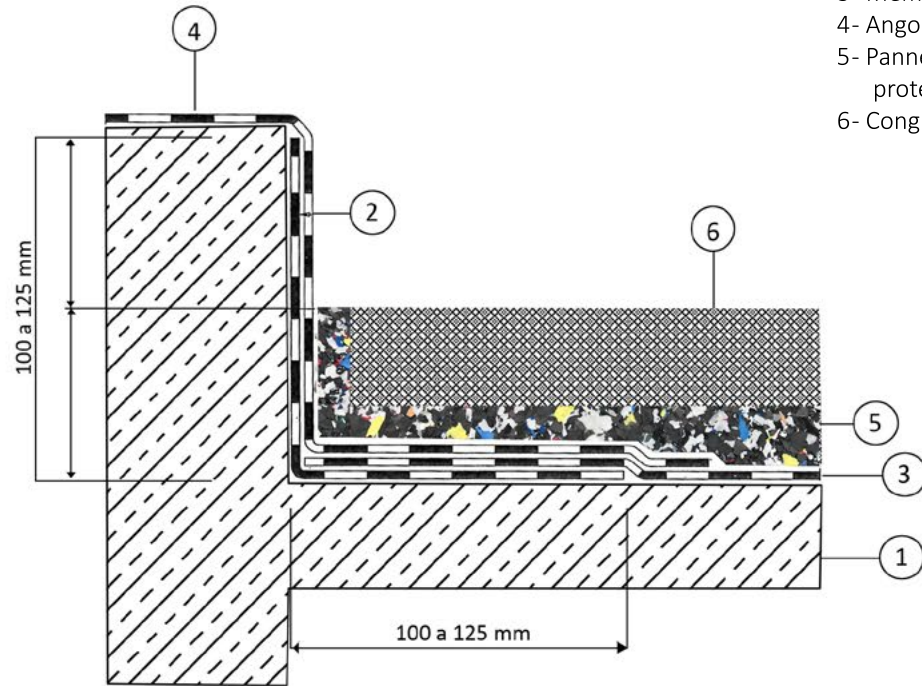
- 1-Tragendes Gebälk
- 2-Stützendes Getäfel
- 3-Element zum Perimeter-Schutz
- 4-Mechanisch gefestigtes Metallprofil
- 5-Dampfbarriere
- 6-Wärmeisolierendes Element
- 7-Wärmeklebende Hülle
- 8-Gummi-Ecke
- 9-Bituminöse Membran
- 10-Doppelte Eckstütze aus bituminöser Membran
- 11-Metall-Blechabdeckung
- 12-Elastomerisches Dichtungsmittel
- 13-Refo Protect-Paneele 12, 25, 30 mm schützend und wasserableitend



## EXTERIOR WOODEN WORKTOPS

SOLAI PIANI ESTERNO FABBRICATI - TRABAJOS EXTERIORES DE MADERA  
TRAVAUX EXTÉRIEURS EN BOIS - FLACHE EXTERNE DACHBÖDEN

- 1- Supporto trattato con primer bituminoso
- 2- Fascia di rinforzo angolare di membrana bituminosa
- 3- Membrana bituminosa
- 4- Angolo di raddoppio in membrana bituminosa
- 5- Pannello REFO PROTECT 12, 25, 30 mm protettivo e drenante
- 6- Conglomerato bituminoso



- 1- Support treated with bituminous primer
- 2- Corner reinforcement band of bituminous membrane
- 3- Bituminous membrane
- 4- Doubling angle in bituminous membrane
- 5- REFO PROTECT panel 12, 25, 30 mm protective and draining
- 6- Bituminous conglomerate

- 1- Soporte tratado con imprimación bituminosa
- 2- Esquina reforzada con banda de membrana bituminosa
- 3- Membrana bituminosa
- 4- Doble ángulo de membrana bituminosa
- 5- Panel de REFO PROTECT 12, 25, 30 mm protector y drenante
- 6- Conglomerado bituminoso

- 1- Support traité avec un apprêt bitumineux
- 2- Coin renforcé avec bande de membrane bitumineuse
- 3- Membrane bitumineuse
- 4- Double angle de membrane bitumineuse
- 5- Panneau REFOPROTECT 12, 25, 30 mm protecteur et drainant
- 6- Conglomérat bitumineux

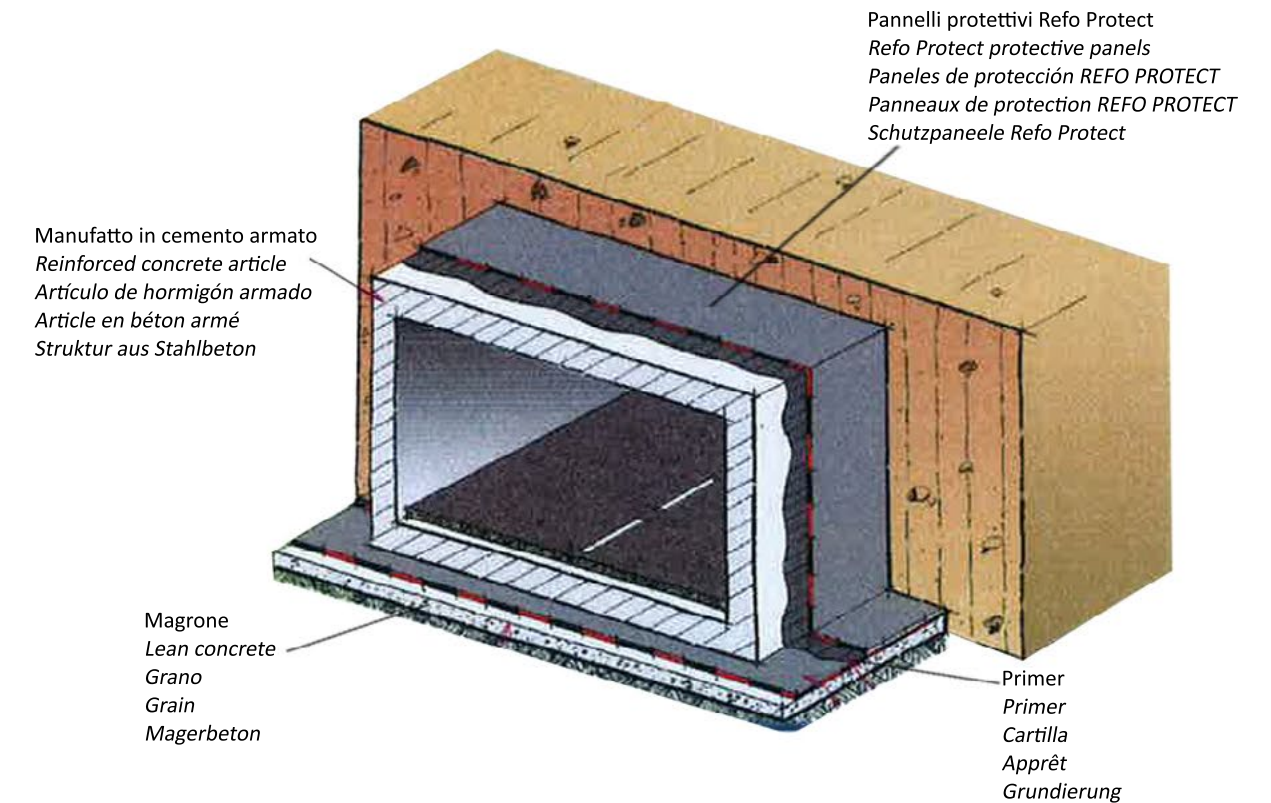
- 1- Mit Bitumen-Primer behandelte Stütze
- 2- Bande zur Eckstütze mit bituminöser Membran
- 3- Bituminöse Membran
- 4- Doppelte Eckstütze aus bituminöse Membran
- 5- REFO PROTECT-Paneele 12, 25, 30 mm schützend und wasserableitend
- 6- Bitumen-Konglomerat

## ARTIFICIAL SCATULAR GALLERY

GALLERIA ARTIFICIALE SCATOLARE  
GALERIA ARTIFICIAL  
GALERIE ARTIFICIELLE  
KÜNSTLICHES SCHACHTELTUNNEL

In presenza di falda freatica

Even in the presence of groundwater - Incluso en presencia de capa freática  
Même en présence de nappe phréatique - Auch mit Grundwasser

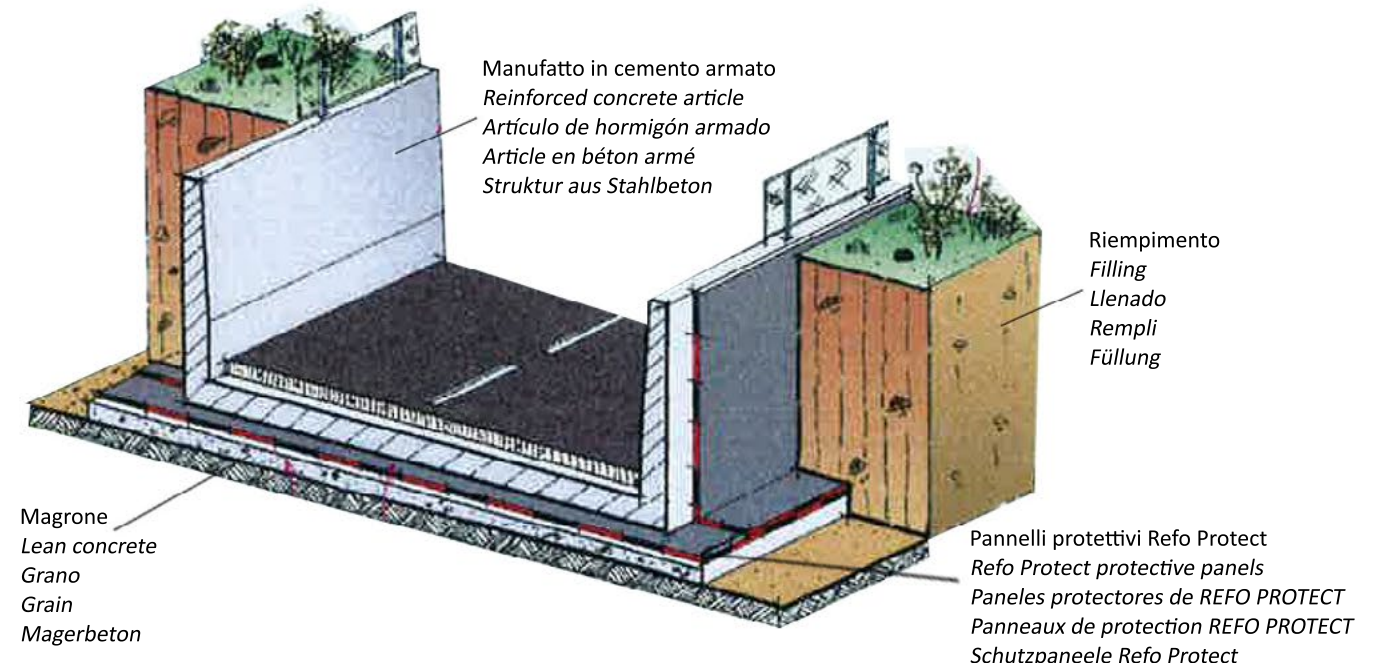


## TRENCHES TO HEAVEN OPEN

TRINCEA A CIELO APERTO  
ZANJA A CIELO ABIERTO  
FOSSÉ À CIEL OUVERT  
FREILICHT SCHUTZGRAB

In presenza di falda freatica

Even in the presence of groundwater - Incluso en presencia de capa freática  
Même en présence de nappe phréatique - Auch mit Grundwasser



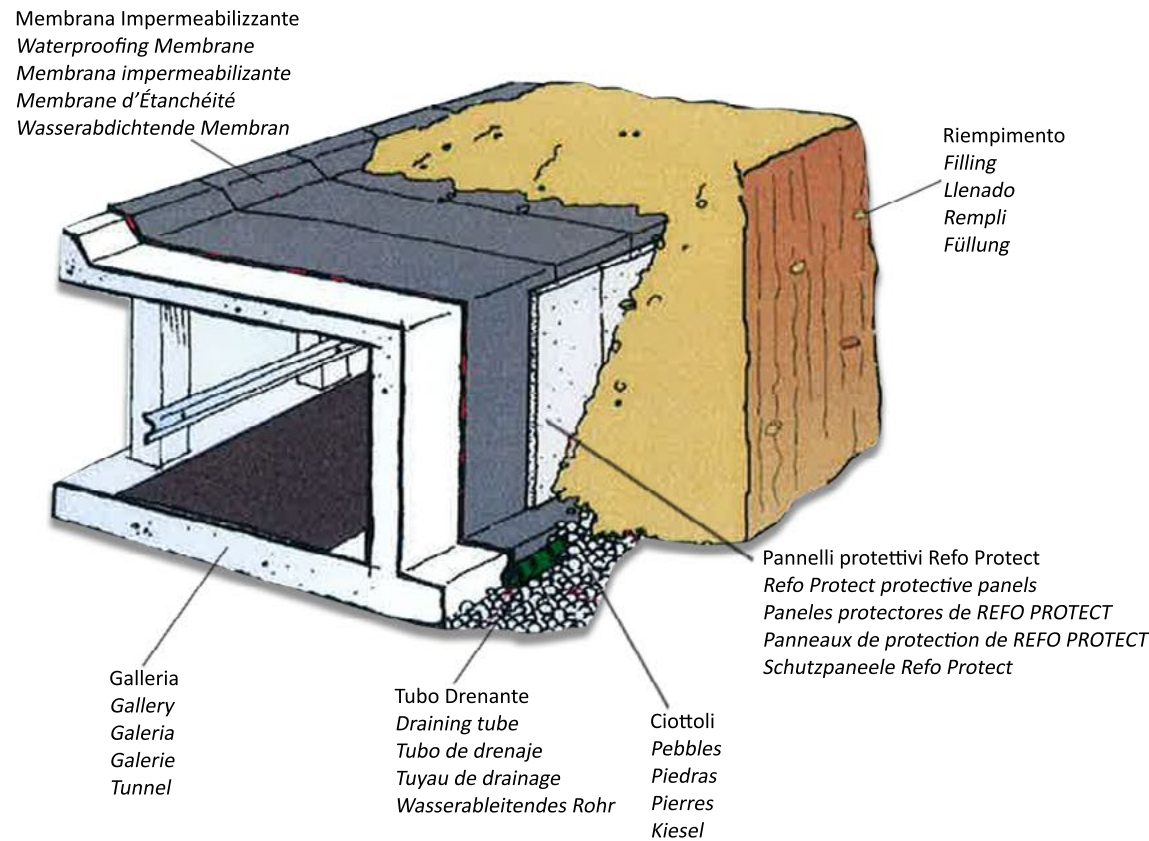


**ANTI-VIBRATION  
OR ANTI-LANGUAGE GALLERY**

**GALLERIA ANTIFRANA O ANTIVALANGA**  
**GALERIA ANTVIBRACIÓN O ANTI-AVALANCHAS**  
**GALERIE ANTIVIBRATION OU ANTI-AVALANCHES**  
**ANTI-ERDRUTSCH-ODER ANTI-LAWINE-TUNNEL**

**In assenza di falda freatica**

*In the absence of groundwater - En ausencia de capa freática*  
*En absence de nappe phréatique - Ohne Grundwasser*

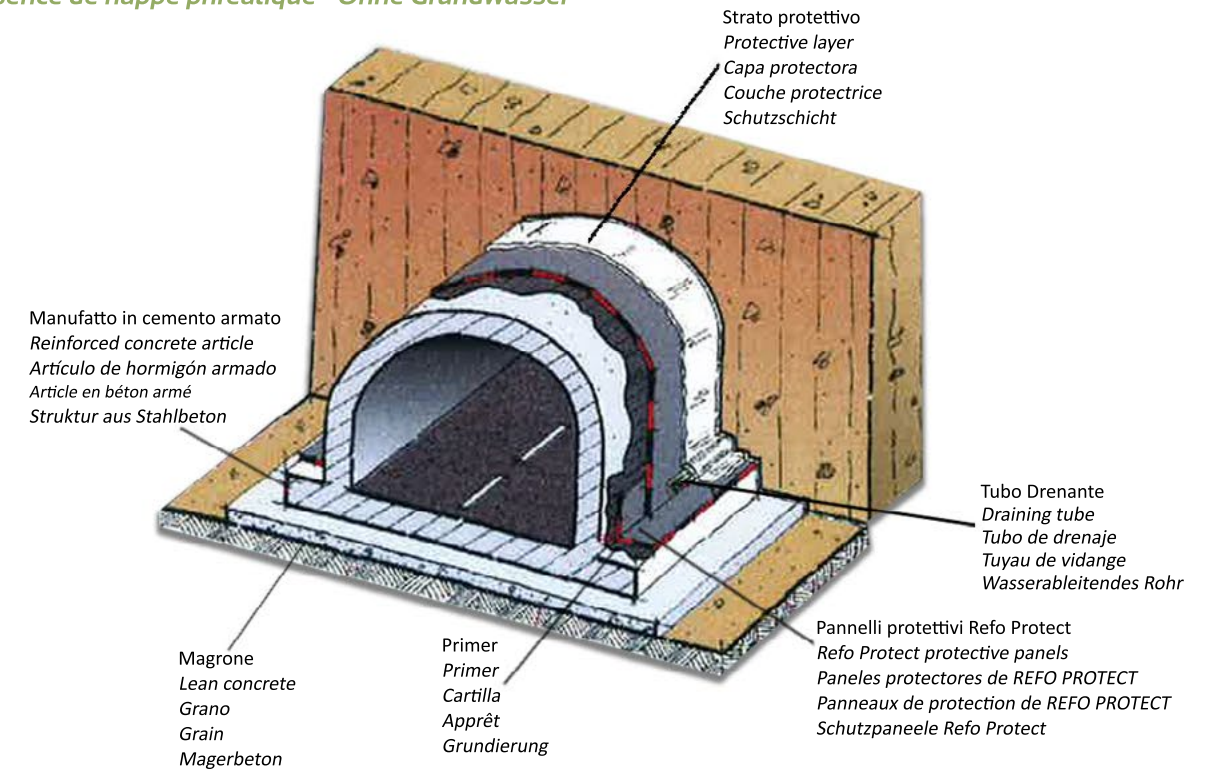


**ARTIFICIAL GALLERY  
IN TRINCEA**

**GALLERIA ARTIFICIALE IN TRINCEA**  
**GALERIA ARTIFICIAL EN ZANJA**  
**GALERIE ARTIFICIELLE EN FOSSÉ**  
**KÜNSTLICHES TUNNEL IN GRAB**

**In assenza di falda freatica**

*In the absence of groundwater - En ausencia de capa freática*  
*En absence de nappe phréatique - Ohne Grundwasser*

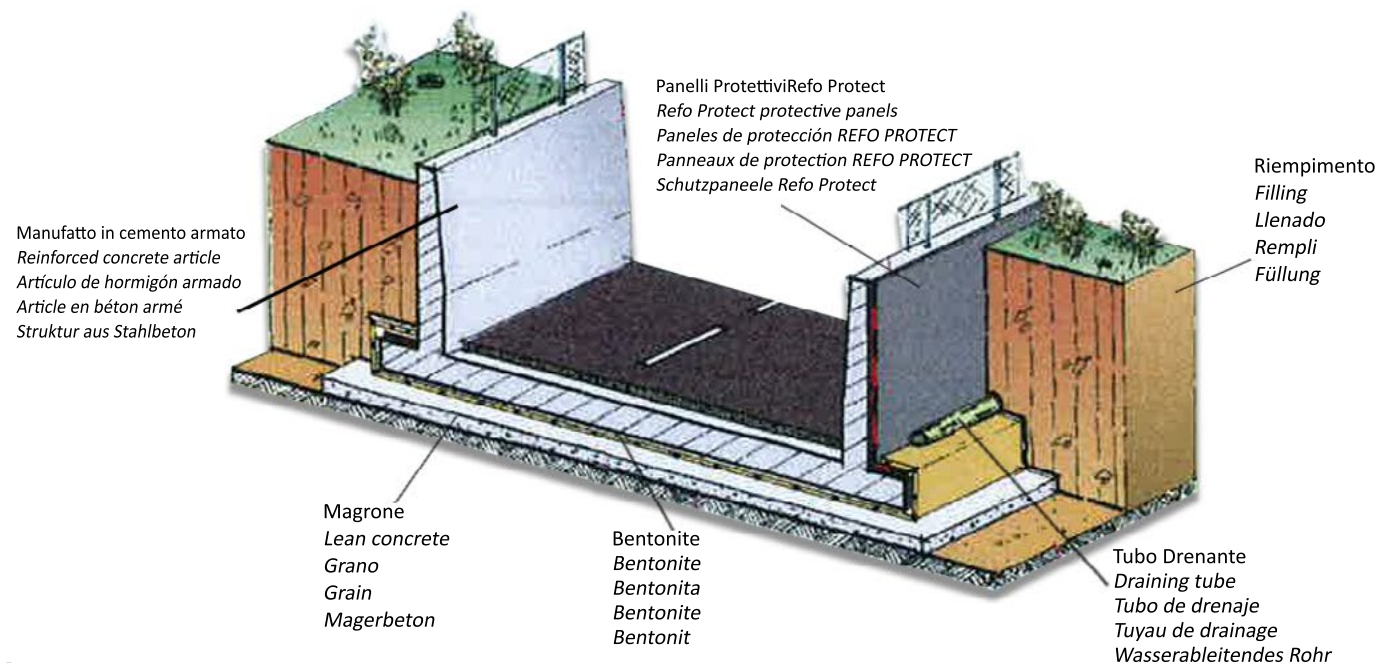


**TRENCHES  
TO HEAVEN OPEN**

**TRINCEA A CIELO APERTO**  
**ZANJA A CIELO ABIERTO**  
**FOSSÉ À CIEL OUVERT**  
**FREILICHT-GRABEN**

**In assenza di falda freatica**

*In the absence of groundwater - En ausencia de capa freática*  
*En absence de nappe phréatique - Ohne Grundwasser*

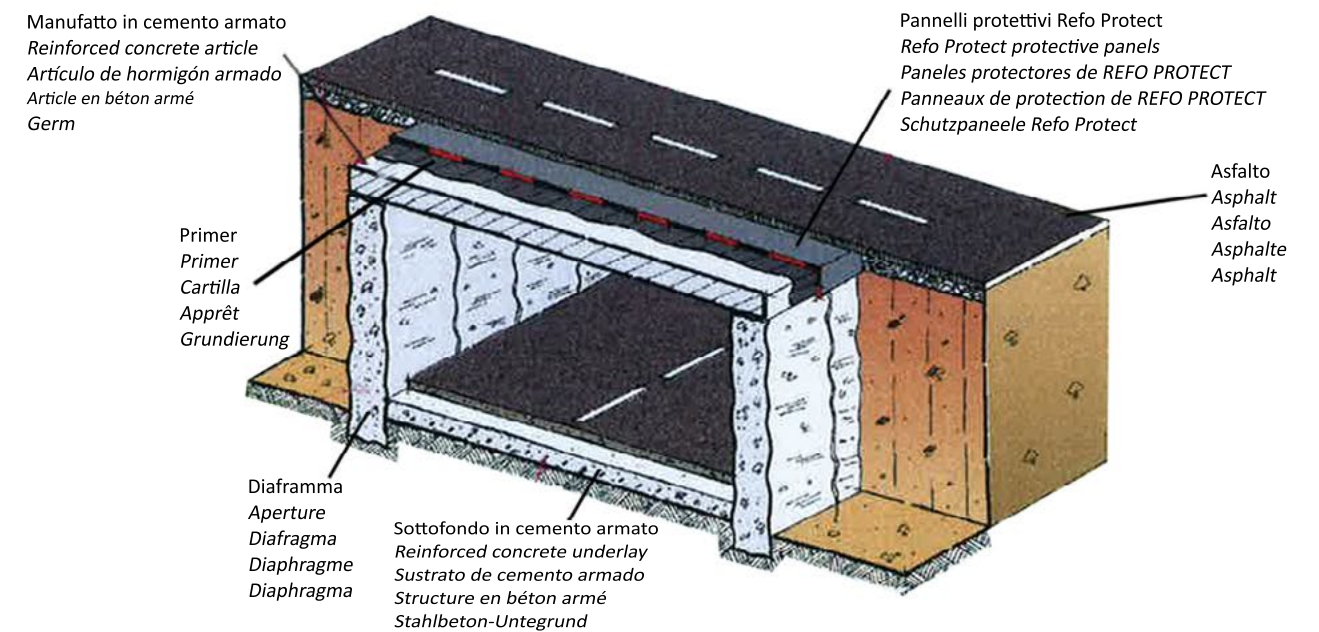


**ARTIFICIAL GALLERY  
METHOD "MILANO"**

**GALLERIA ARTIFICIALE METODO "MILANO"**  
**GALERIA ARTIFICIAL MÉTODO "MILANO"**  
**GALERIE ARTIFICIELLE MÉTHODE "MILAN"**  
**KÜNSTLICHES TUNNEL "MILANO"**

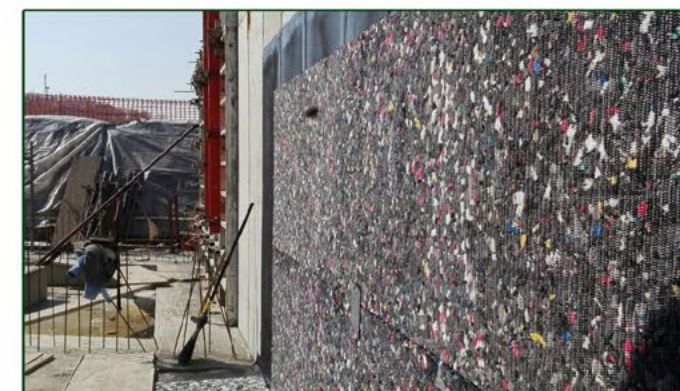
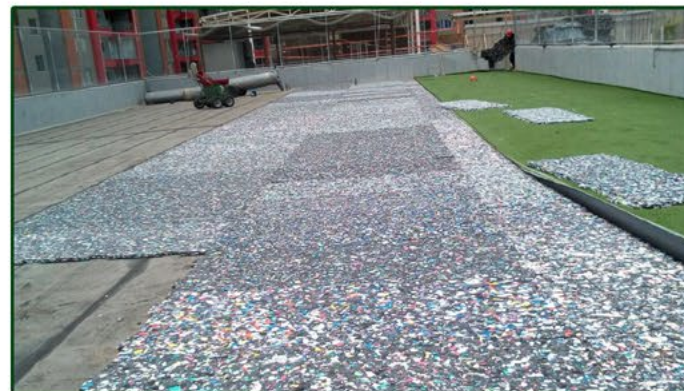
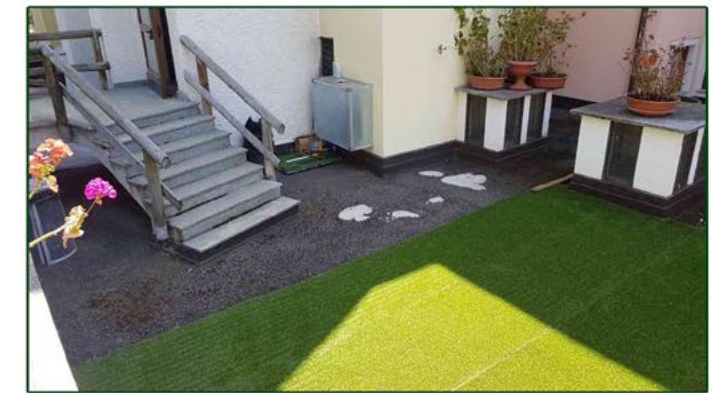
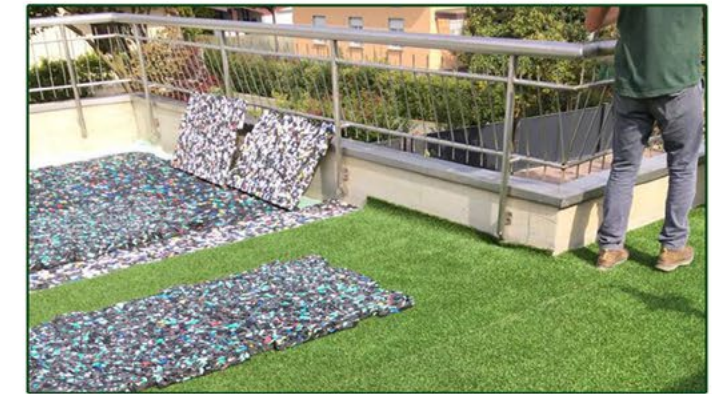
**In assenza di falda freatica**

*In the absence of groundwater - En ausencia de capa freática*  
*En absence de nappe phréatique - Ohne Grundwasser*





# REFERENCES



# REFERENCES



# CERTIFICATIONS

**MIT INTERNATIONAL TESTING**

## CERTIFICATE

CERTIFICATO DI COSTANZA DELLE PRESTAZIONI DEL PRODOTTO  
CERTIFICATE OF CONSTANCY OF PERFORMANCE OF THE PRODUCT

n. 0068/CPR/062-2014

In conformità con il Regolamento UE 305/11 del Parlamento Europeo e del Consiglio del 9 marzo 2011 che fissa le condizioni armonizzate per la commercializzazione dei prodotti da costruzione e che abroga la direttiva 89/106/CEE, si attesta che  
In compliance with Regulation (EU) n° 305/11 of the European Parliament and of the Council laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, it has been stated that:

<b>RICHIEDENTE/CONSTRUTTORE</b> APPLICANT/MANUFACTURER	APETEK S.r.l. Corso Italia, 19 – 24040 Osio Sopra – Bergamo - Italy
<b>SITO PRODUTTIVO</b> PRODUCTION SITE	APETEK S.r.l. Corso Italia, 19 – 24040 Osio Sopra – Bergamo - Italy
<b>NOME COMMERCIALE</b> TRADE MARK	Geocomposto Geocomposite
<b>MODELLI</b> MODELS	REFO PROTECT 12 con TNT 160 g per F+P+S+D REFO PROTECT 12 TNT 160 g destined to F+P+S+D
<b>NORME DI RIFERIMENTO</b> REFERENCE STANDARDS	EN 13252:2016 EN 13255:2016
<b>PRIMA EMISSIONE</b> FIRST ISSUE	30/09/2014
<b>EMISSIONE CORRENTE</b> CURRENT ISSUE	28/02/2018
<b>REVISIONE No.</b> REVISIONE No.	02
<b>SCADENZA</b> EXPIRATION DATE	---

*Il prodotto da costruzione è sottoposto dal fabbricante al controllo di produzione in fabbrica e a prove su campioni prelevati in fabbrica in conformità del piano di prova prescritto e che noi, in qualità di organismo notificato n. 0068 - MIT International Testing S.r.l. - abbiamo effettuato l'ispezione iniziale dello stabilimento di produzione e del controllo della produzione in fabbrica, ed è da noi sottoposto alla sorveglianza, valutazione e verifica continua del controllo di produzione di fabbrica.*  
*Product construction is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that as to the notified body n. 0068 - MIT International Testing S.r.l. - have performed the initial inspection of the manufacturing plant and of factory production control and perform the continuous surveillance, assessment and evaluation of factory production control.*  
*Il presente certificato attesta che tutti i requisiti concernenti la costanza delle prestazioni del prodotto e il rispetto delle caratteristiche descritte nell'allegato ZA della norma sopra indicate sono stati applicati e che il prodotto è conforme ai requisiti prescritti.*  
*This certificate attests that all provisions concerning the constancy of performance and the characteristics describe in Annex ZA of the standard above indicated were applied and that the product fulfils all the prescribed requirements.*

**Annarita Socco**  
Alfano Socco  
MIT International Testing

MIT International Testing Srl  
Via Moscova, 11 – 20127 RHO (MI) – ITALY  
www.mitesting.org  
ORGANISMO NOTIFICATO - NOTIFIED BODY No. 0068

REFO PROTECT 12 160

**MIT INTERNATIONAL TESTING**

## CERTIFICATE

CERTIFICATO DI COSTANZA DELLE PRESTAZIONI DEL PRODOTTO  
CERTIFICATE OF CONSTANCY OF PERFORMANCE OF THE PRODUCT

n. 0068/CPR/080-2014

In conformità con il Regolamento UE 305/11 del Parlamento Europeo e del Consiglio del 9 marzo 2011 che fissa le condizioni armonizzate per la commercializzazione dei prodotti da costruzione e che abroga la direttiva 89/106/CEE, si attesta che  
In compliance with Regulation (EU) n° 305/11 of the European Parliament and of the Council laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, it has been stated that:

<b>RICHIEDENTE/CONSTRUTTORE</b> APPLICANT/MANUFACTURER	APETEK S.r.l. Corso Italia, 19 – 24040 Osio Sopra – Bergamo - Italy
<b>SITO PRODUTTIVO</b> PRODUCTION SITE	APETEK S.r.l. Corso Italia, 19 – 24040 Osio Sopra – Bergamo - Italy
<b>NOME COMMERCIALE</b> TRADE MARK	Geocomposto Geocomposite
<b>MODELLI</b> MODELS	REFO PROTECT 12DF con TNT 160 g per F+P+S+D REFO PROTECT 12DF with TNT 160 g destined to F+P+S+D
<b>NORME DI RIFERIMENTO</b> REFERENCE STANDARDS	EN 13252:2016 EN 13255:2016
<b>PRIMA EMISSIONE</b> FIRST ISSUE	28/11/2014
<b>EMISSIONE CORRENTE</b> CURRENT ISSUE	28/02/2018
<b>REVISIONE No.</b> REVISIONE No.	02
<b>SCADENZA</b> EXPIRATION DATE	---

*Il prodotto da costruzione è sottoposto dal fabbricante al controllo di produzione in fabbrica e a prove su campioni prelevati in fabbrica in conformità del piano di prova prescritto e che noi, in qualità di organismo notificato n. 0068 - MIT International Testing S.r.l. - abbiamo effettuato l'ispezione iniziale dello stabilimento di produzione e del controllo della produzione in fabbrica, ed è da noi sottoposto alla sorveglianza, valutazione e verifica continua del controllo di produzione di fabbrica.*  
*Product construction is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that as to the notified body n. 0068 - MIT International Testing S.r.l. - have performed the initial inspection of the manufacturing plant and of factory production control and perform the continuous surveillance, assessment and evaluation of factory production control.*  
*Il presente certificato attesta che tutti i requisiti concernenti la costanza delle prestazioni del prodotto e il rispetto delle caratteristiche descritte nell'allegato ZA della norma sopra indicate sono stati applicati e che il prodotto è conforme ai requisiti prescritti.*  
*This certificate attests that all provisions concerning the constancy of performance and the characteristics describe in Annex ZA of the standard above indicated were applied and that the product fulfils all the prescribed requirements.*

**Annarita Socco**  
Alfano Socco  
MIT International Testing

MIT International Testing Srl  
Via Moscova, 11 – 20127 RHO (MI) – ITALY  
www.mitesting.org  
ORGANISMO NOTIFICATO - NOTIFIED BODY No. 0068

REFO PROTECT 12 DF 160

**MIT INTERNATIONAL TESTING**

## CERTIFICATE

CERTIFICATO DI COSTANZA DELLE PRESTAZIONI DEL PRODOTTO  
CERTIFICATE OF CONSTANCY OF PERFORMANCE OF THE PRODUCT

n. 0068/CPR/063-2014

In conformità con il Regolamento UE 305/11 del Parlamento Europeo e del Consiglio del 9 marzo 2011 che fissa le condizioni armonizzate per la commercializzazione dei prodotti da costruzione e che abroga la direttiva 89/106/CEE, si attesta che  
In compliance with Regulation (EU) n° 305/11 of the European Parliament and of the Council laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, it has been stated that:

<b>RICHIEDENTE/CONSTRUTTORE</b> APPLICANT/MANUFACTURER	APETEK S.r.l. Corso Italia, 19 – 24040 Osio Sopra – Bergamo - Italy
<b>SITO PRODUTTIVO</b> PRODUCTION SITE	APETEK S.r.l. Corso Italia, 19 – 24040 Osio Sopra – Bergamo - Italy
<b>NOME COMMERCIALE</b> TRADE MARK	Geocomposto Geocomposite
<b>MODELLI</b> MODELS	REFO PROTECT 25 con TNT 160 g per F+P+S+D REFO PROTECT 25 with TNT 160 g destined to F+P+S+D
<b>NORME DI RIFERIMENTO</b> REFERENCE STANDARDS	EN 13252:2016 EN 13255:2016
<b>PRIMA EMISSIONE</b> FIRST ISSUE	30/09/2014
<b>EMISSIONE CORRENTE</b> CURRENT ISSUE	28/02/2018
<b>REVISIONE No.</b> REVISIONE No.	02
<b>SCADENZA</b> EXPIRATION DATE	---

*Il prodotto da costruzione è sottoposto dal fabbricante al controllo di produzione in fabbrica e a prove su campioni prelevati in fabbrica in conformità del piano di prova prescritto e che noi, in qualità di organismo notificato n. 0068 - MIT International Testing S.r.l. - abbiamo effettuato l'ispezione iniziale dello stabilimento di produzione e del controllo della produzione in fabbrica, ed è da noi sottoposto alla sorveglianza, valutazione e verifica continua del controllo di produzione di fabbrica.*  
*Product construction is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that as to the notified body n. 0068 - MIT International Testing S.r.l. - have performed the initial inspection of the manufacturing plant and of factory production control and perform the continuous surveillance, assessment and evaluation of factory production control.*  
*Il presente certificato attesta che tutti i requisiti concernenti la costanza delle prestazioni del prodotto e il rispetto delle caratteristiche descritte nell'allegato ZA della norma sopra indicate sono stati applicati e che il prodotto è conforme ai requisiti prescritti.*  
*This certificate attests that all provisions concerning the constancy of performance and the characteristics describe in Annex ZA of the standard above indicated were applied and that the product fulfils all the prescribed requirements.*

**Annarita Socco**  
Alfano Socco  
MIT International Testing

MIT International Testing Srl  
Via Moscova, 11 – 20127 RHO (MI) – ITALY  
www.mitesting.org  
ORGANISMO NOTIFICATO - NOTIFIED BODY No. 0068

REFO PROTECT 25 160

**MIT INTERNATIONAL TESTING**

## CERTIFICATE

CERTIFICATO DI COSTANZA DELLE PRESTAZIONI DEL PRODOTTO  
CERTIFICATE OF CONSTANCY OF PERFORMANCE OF THE PRODUCT

n. 0068/CPR/050-2013

In conformità con il Regolamento UE 305/11 del Parlamento Europeo e del Consiglio del 9 marzo 2011 che fissa le condizioni armonizzate per la commercializzazione dei prodotti da costruzione e che abroga la direttiva 89/106/CEE, si attesta che  
In compliance with Regulation (EU) n° 305/11 of the European Parliament and of the Council laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, it has been stated that:

<b>RICHIEDENTE/CONSTRUTTORE</b> APPLICANT/MANUFACTURER	APETEK S.r.l. Corso Italia, 19 – 24040 Osio Sopra – Bergamo - Italy
<b>SITO PRODUTTIVO</b> PRODUCTION SITE	APETEK S.r.l. Corso Italia, 19 – 24040 Osio Sopra – Bergamo - Italy
<b>NOME COMMERCIALE</b> TRADE MARK	Geocomposto Geocomposite
<b>MODELLI</b> MODELS	REFO PROTECT 30 con TNT 160 g per F+P+S+D REFO PROTECT 30 with TNT 160 g destined to F+P+S+D
<b>NORME DI RIFERIMENTO</b> REFERENCE STANDARDS	EN 13252:2016 EN 13255:2016
<b>PRIMA EMISSIONE</b> FIRST ISSUE	02/09/2013
<b>EMISSIONE CORRENTE</b> CURRENT ISSUE	28/02/2018
<b>REVISIONE No.</b> REVISIONE No.	03
<b>SCADENZA</b> EXPIRATION DATE	---

*Il prodotto da costruzione è sottoposto dal fabbricante al controllo di produzione in fabbrica e a prove su campioni prelevati in fabbrica in conformità del piano di prova prescritto e che noi, in qualità di organismo notificato n. 0068 - MIT International Testing S.r.l. - abbiamo effettuato l'ispezione iniziale dello stabilimento di produzione e del controllo della produzione in fabbrica, ed è da noi sottoposto alla sorveglianza, valutazione e verifica continua del controllo di produzione di fabbrica.*  
*Product construction is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that as to the notified body n. 0068 - MIT International Testing S.r.l. - have performed the initial inspection of the manufacturing plant and of factory production control and perform the continuous surveillance, assessment and evaluation of factory production control.*  
*Il presente certificato attesta che tutti i requisiti concernenti la costanza delle prestazioni del prodotto e il rispetto delle caratteristiche descritte nell'allegato ZA della norma sopra indicate sono stati applicati e che il prodotto è conforme ai requisiti prescritti.*  
*This certificate attests that all provisions concerning the constancy of performance and the characteristics describe in Annex ZA of the standard above indicated were applied and that the product fulfils all the prescribed requirements.*

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ORGANISMO NOTIFICATO - NOTIFIED BODY No. 0068

REFO PROTECT 30 160



# CERTIFICATIONS



REFO PROTECT 35 160

## Iconography

	Thickness	Spessore	Espesor	Epaisseur	Dicke
	Characteristics mechanical	Caratteristiche meccaniche	Características mecánico	Les caractéristiques mécanique	Eigenschaften mechanisch
	Material supplied	Materiale fornito	Material proporcionado	Matériel fourni en	Materialien zur Verfügung gestellt
	Measures plates/rolls	Misura lastre/rotoli	Medidas placa/rollo	Mesures plaques/rouleaux	Messplatten / Rollen
	Mass unit area	Massa per unità di superficie	Masa por unidad de área	Masa por unidad de área	Masse pro Flächeneinheit
	Density m3	Densità	Densidad	Densité	Dichte
	Type of drainage	Tipo di drenaggio	Tipo de drenaje	Type de drainage	Art der Entwässerung
	Shock absorption	Assorbimento allo shock	Absorción impacto	Absorption au choc	Schockabsorption
	Thermal Insulation	Isolamento termico	Aislamiento termico	Isolation thermique	Wärmedämmung
	Permeability	Perm. dello shock pad	Perm. del material	Perm. Du choc pad	Perm. Schock-Pad
	Compression set	Compressione	Conjunto de compresión	Ensemble de compression	Druckverformungsrest
	Hydraulic Capacity	Capacità Idraulica	Capacidad hidráulica	Capacité hydraulique	Hydraulische Kapazität
	Field of application	Campi di applicazione	Campos de aplicación	Applications	Anwendungen
	Fire Classification	Certificazione al fuoco	Clasificación al fuego	Classification au feu	Feuerklassifizierung
	Synthetic grass	Erba sintetica	Hierba sintética	Herbe synthétique	Synthetisches gras





**REO** sport

protective sportgrounds

**REO** play

protective playgrounds

**REO** target

easy target solutions

**REO** click

easy installing sportgrounds

