

recomplax[®]
Recycled fiberglass slab



**THE FIRST PANEL MANUFACTURED
FROM THERMOSETTING AND
FIBER-REINFORCED RETICULATED PLASTICS**

waterproof like plastic
flexible like multi-layer
workable like particle boards
stable like glass
formaldehyde-free
100% recycled and recyclable



GEES RECYCLING SRL

We turn the thermoset plastic wastes problem into new sustainable and performing recycled panels

Who we are

Gees Recycling was founded in Pordenone (Italy) in 2010.

We work untiringly to make our dreams come true: to reduce significantly CO2 emissions and the pollution of thermosets plastics through a profitable recycling process that facilitate the transition to a circular economy.



What we do

After five years of research we have obtained an international patent and created the first GRP recycling plant in Aviano. Our industrial recycling process can turn wastes into new construction materials through a sheer mechanical process and a minimal use of fresh raw materials.

We are recycling a broad range of fiber-reinforced and thermosets materials, foam and composite panels, into re-aggregated particleboards:

- formaldehyde emission-free
- totally water-repellent
- bacteria-resistant
- recyclable again at their end-of-life



Environmental-friendly design

The new recycled material can be processed combining carpentry and CNC milling. Its surface can be finished using different techniques: lamination, micro-cements, resins.

The density of the new materials can be adjusted from 400 up to 1,300 kg/m³.

This allows the designer to make use of the recycled panel in a wide range of contexts.



Technical values

Fiberglass and plastic foams are made to last for a long time, even under strong chemical and climatic stress. Our recycled panel can replace wood and other non-water-repellent materials.



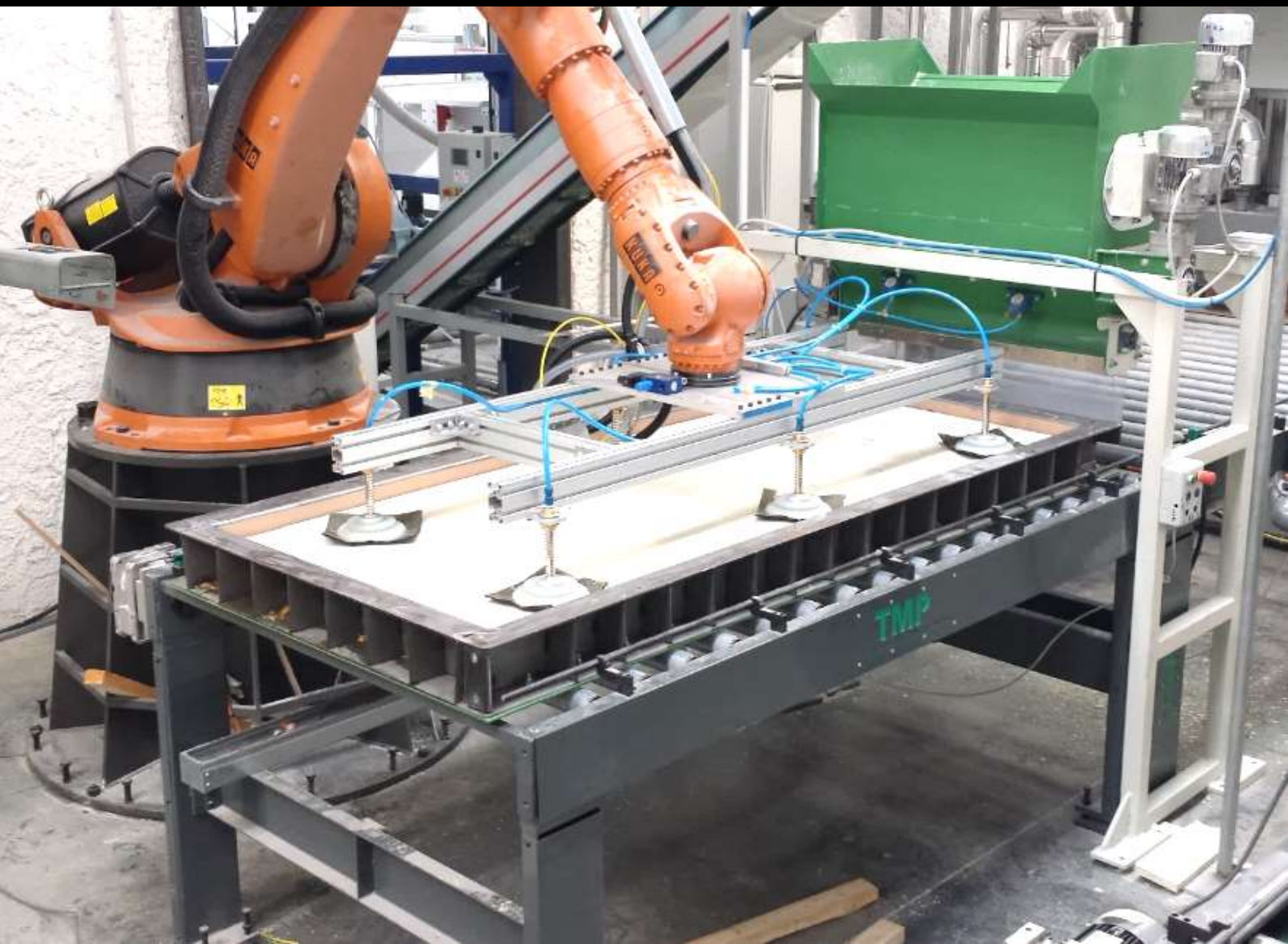
Work preserving peoples safety and waste recycling regulations.

This is one of the main commitments in the Gees Recycling project: achieve industrial efficiency applying all the best practices.





The new processing plant in Aviano



Milled recomplax® panel

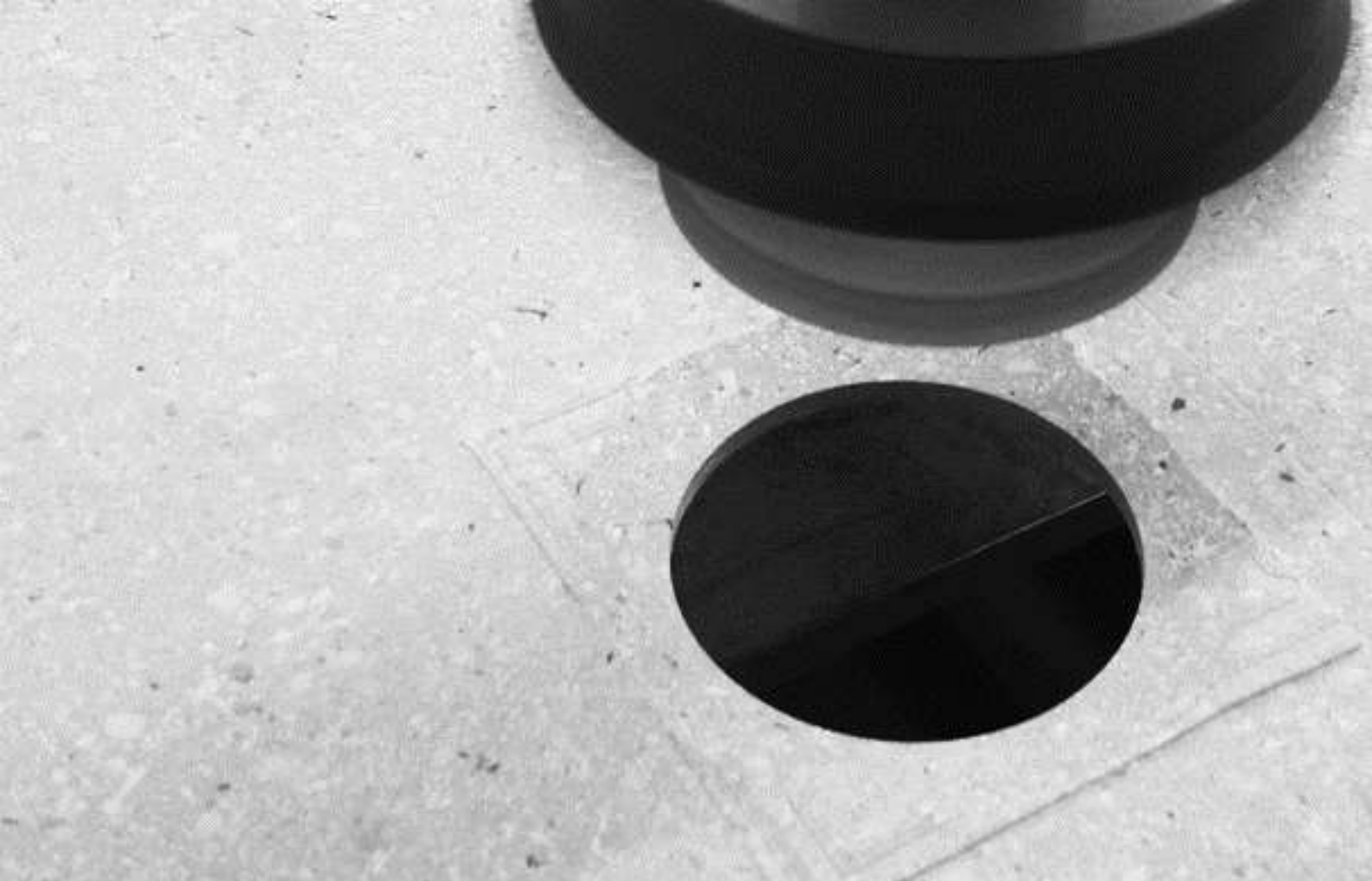


High cohesion in gluing with laminates and fiberglass sheets



Tested for its resistance to screw extraction





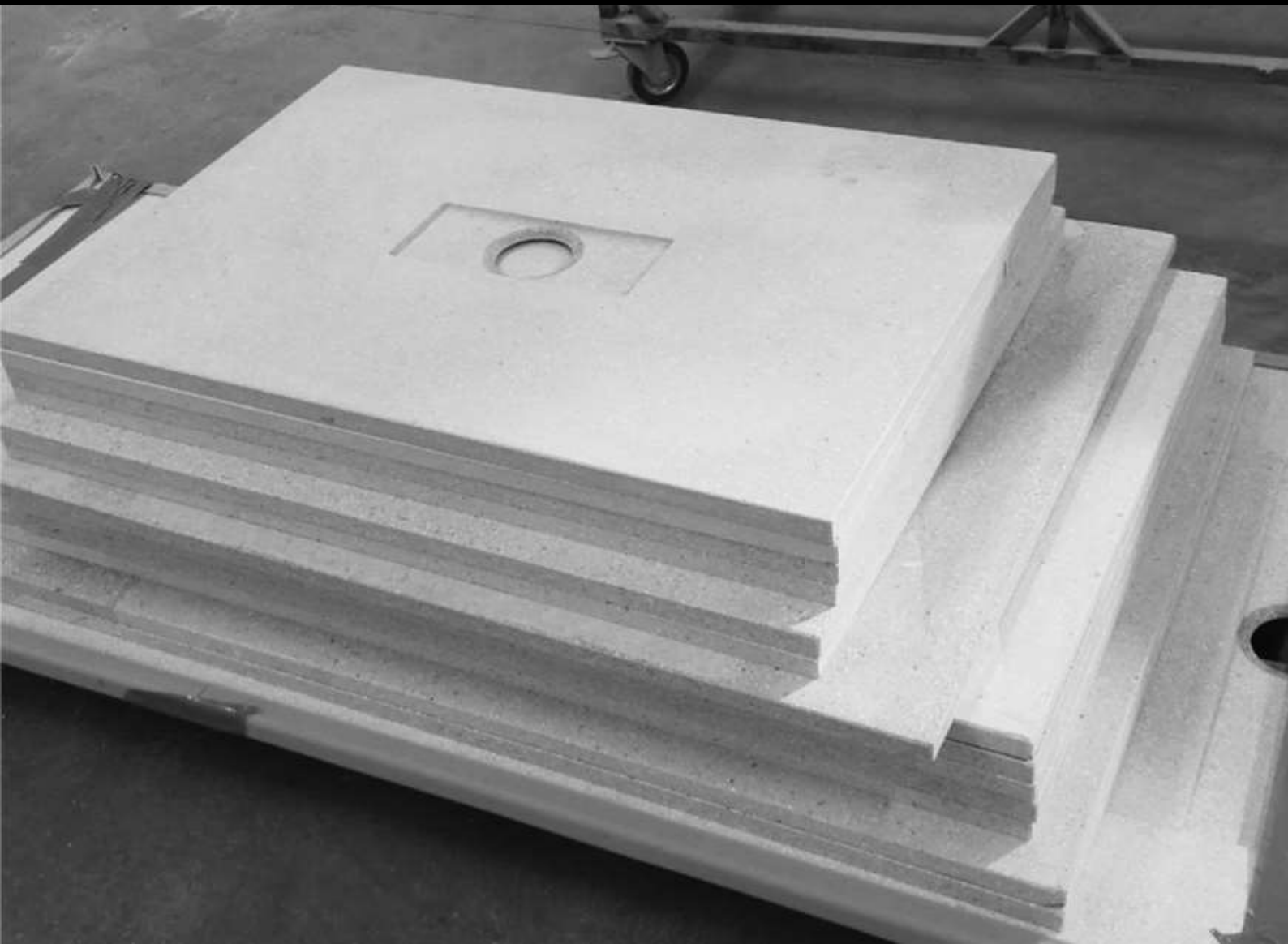
recomplx® 1100 panel shaped through CNC technologies



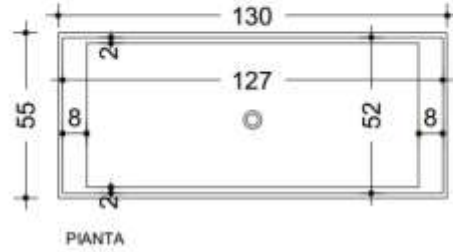
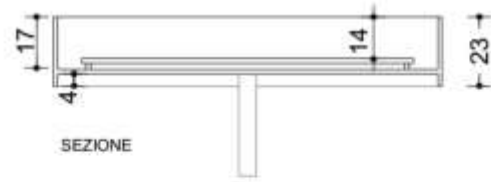
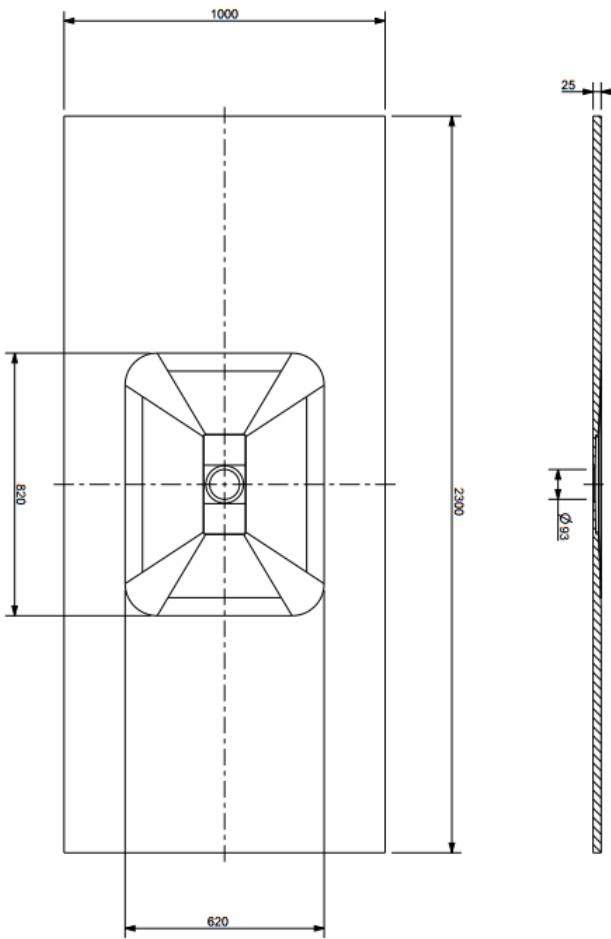
Water-cut recomplx® 1100 resin-coated panel



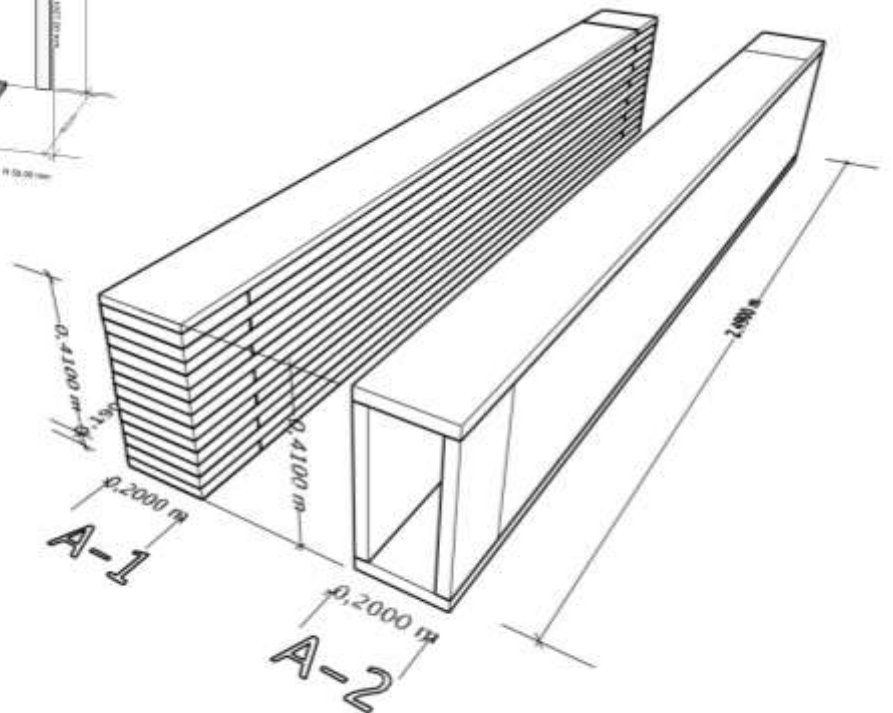
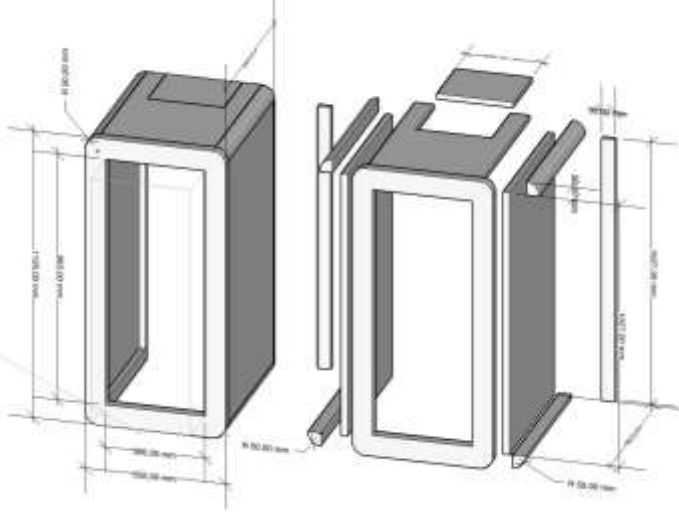
recomplax® 1100 shower tray ready to be coated with resin







recomplx® design: combining the logics of furniture and CNC





recomplax® Decò: table top 3D modeling





recomplax® Decò resin-coated panel: engraved decorative patterns



recomplax®
Recycled fiberglass slab



recomplax® Decò standard colors

Features

The **recomplax**[®] **1100** panel is made of **recycled fibro-reinforced composites** (fiberglass-kevlar-carbon fiber) finely worked and re-aggregated at high pressure, with a minimum percentage of virgin glues. The process is patented and generates an **innovative double-green material**, which can be recycled at the end of its life. The density of the pure fibro-reinforced composite panel (1100 kg / m³) ensures robustness to the entire section, allowing a three-dimensional processing without risk of fretting. The **recomplax**[®] **1100** panel is a sustainable material certified by CSI.

Practical uses

Maximum flexibility in processing the **recomplax**[®] **1100** panel with common woodworking equipment: drilling, milling, water cutting, cutting with a saw or reciprocating saw, gluing, screwing, rolling.
The panels can be sanded, painted and lacquered.
Being **totally water-repellent, resistant to fungi and bacteria**, and stable even in extreme weather conditions, the **recomplax**[®] **1100** panels are ideal in all indoor and outdoor wet environments, even in salted fog and extreme temperature ranges.

Technical class

1000 x 2330 mm panel, thickness from 10 to 30 mm. Made of fibro-reinforced composite fragments, recycled and re-aggregated by pressure (density > 1100 kg / m³), can be used as a non load-bearing element, and is suitable for indoor and outdoor wetlands. Compactness and micro-surface porosity allow treatments such as: micro-mortars and two-component cements, varnishing, lacquering, laminating.

Tipo



Dati fisico meccanici	Norma rif.	Unità mis.	Valore	Tolleranza
Massa Volumica	Catas	kg/m ³	997	5%
Resistenza Flessione	Catas	Mpa	9,8	8%
Elasticità a Flessione	Catas	Mpa	1689	8%
Resistenza alla Trazione	Catas	Mpa	1,47	8%

Prestazioni lavorazione	Norma rif.	Unità mis.	Valore	Tolleranza
Resistenza estrazione vite - faccia	Catas	Mpa	3916	8%
Resistenza estrazione vite - bordo	Catas	Mpa	3247	8%

Comportamento agenti esterni	Norma rif.	Unità mis.	Valore
Rigonfiamento dopo 24 ore in acqua	Catas	%	0,20%
Resistenza sbalzi temperatura	UNI 9429:2015	Rotture	0
Resistenza sbalzi temperatura	UNI 9429:2015	Calo	0
Resistenza sbalzi temperatura	UNI 9429:2015	Sbiancamento	0
Resistenza alla Luce	UNI EN 15187	Scala grigi	< 4
Resistenza calore umido	UNI EN 12721:2013	Classe CEN /TS	A
Resistenza calore secco	UNI EN 12722:2013	Classe CEN /TS	C
Resistenza prodotti pulizia	PTP 53 2016	Classe CEN /TS	5

Contenuto in Formaldeide	EN 120	mg/100g	≤0,2
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Prodotto riciclato 100%	CSI Recycled Composites	FRP-P14001
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Features

The **recomplax**[®] **700** panel is made of **recycled fibro-reinforced composites** (fiberglass-kevlar-carbon fiber) mixed with expanded materials (PET, Polyurethane, Polystyrene) finely worked and re-aggregated at high pressure, with a minimum percentage of virgin glues. The process is patented and generates an **innovative double-green material**, which can be recycled at the end of its life. The density of the panel (700 kg / m³) and the presence of mineral fibers bring strength to the entire section allowing a three-dimensional processing without risk of fretting. The expanded and insulating materials present in the mixture give the mass a low thermal transmittance compared to the **recomplax**[®] **1100**.

The **recomplax**[®] **700** panel is a sustainable material certified by CSI.

Practical uses

Maximum flexibility in processing the **recomplax**[®] **700** panel with common woodworking equipment: drilling, milling, water cutting, cutting with a saw or reciprocating saw, gluing, screwing, rolling.

The panels can be sanded, painted and lacquered. Being totally water-repellent, resistant to fungi and bacteria, and **stable even in extreme climatic conditions** (minimum thermal expansion), the **recomplax**[®] **700** panels are **ideal for floating floors**, in all indoor and outdoor wet environments, even in salt spray and harsh climates.

Technical class

1000 x 2330 mm panel, thickness from 16 to 30 mm. Made of fibro-reinforced and expanded composites, recycled and re-aggregated by pressure (density > 700 kg / m³), can be used as a non load-bearing element, suitable for indoor and outdoor wetlands. Compactness and surface micro-porosity allow treatments such as: two-component mortars and cements, varnishing, lacquering, laminating.

Tipo



Dati fisico meccanici	Norma rif.	Unità mis.	Valore	Tolleranza
Massa Volumica	Catas	kg/m ³	670	5%
Resistenza Flessione	Catas	Mpa	7,6	8%
Elasticità a Flessione	Catas	Mpa	842	8%
Resistenza alla Trazione	Catas	Mpa	1,26	8%

Prestazioni lavorazione	Norma rif.	Unità mis.	Valore	
Resistenza estrazione vite - faccia	Catas	Mpa	3916	8%
Resistenza estrazione vite - bordo	Catas	Mpa	3247	8%

Comportamento agenti esterni	Norma rif.	Unità mis.	Valore
Rigonfiamento dopo 24 ore in acqua	Catas	%	0,40%
Resistenza sbalzi temperatura	UNI 9429:2015	Rotture	0
Resistenza sbalzi temperatura	UNI 9429:2015	Calo	0
Resistenza sbalzi temperatura	UNI 9429:2015	Sbiancamento	0
Resistenza alla Luce	UNI EN 15187	Scala grigi	< 4
Resistenza calore umido	UNI EN 12721:2013	Classe CEN /TS	A
Resistenza calore secco	UNI EN 12722:2013	Classe CEN /TS	C
Resistenza graffiatura	UNI EN 15186:2012	Classe CEN /TS	D
Resistenza prodotti pulizia	PTP 53 2016	Classe CEN /TS	5

Contenuto in Formaldeide	EN 120	mg/100g	≤0,2
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Prodotto riciclato 100%	CSI Recycled Composites	FRP-P14001
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Features

The **recomplax**[®] **400** panel is made of **recycled fibro-reinforced composites** (fiberglass-kevlar-carbon fiber) mixed with expanded materials (PET, Polyurethane, Polystyrene) finely worked and re-aggregated at low pressure, with a minimum percentage of virgin glues. The process is patented and generates an **innovative double-green material**, which can be recycled at the end of its life. The density of the panel (400 kg / m³) and the presence of mineral fibers bring strength to the entire section allowing a three-dimensional processing without risk of fretting. The expanded and insulating materials present in the mixture give the mass a **low thermal transmittance** and a high **noise barrier** performance.

The **recomplax**[®] **400** panel is a sustainable material certified by CSI.

Practical uses

Maximum flexibility in processing the **recomplax**[®] **400** panel with common woodworking equipment: drilling, milling, water cutting, cutting with a saw or reciprocating saw, gluing, screwing, rolling.

Being totally water-repellent, resistant to fungi and bacteria, and **stable even in extreme climatic conditions** (minimum thermal expansion), the **recomplax**[®] **400** panels are ideal in all indoor and outdoor wet environments, even in salt spray and harsh climates.

Technical class

1000 x 2330 mm panel, thickness from 25 to 40 mm. Made of fibro-reinforced and expanded composites, recycled and re-aggregated by pressure (density > 400 kg / m³), can be used as a non load-bearing element, suitable for indoor and outdoor wetlands. Compactness and surface micro-porosity allow treatments such as: two-component mortars and cements, varnishing and laminating.



Contenuto in Formaldeide	EN 120	mg/100g	≤0,2
Prodotto riciclato 100%	CSI Recycled Composites		FRP-P14001

Features

The **recomplax® Decò** panel is based on the formulation of the **recomplax® 1100** panel with the addition of amalgamated **natural pigments** (oxides).
The process is patented and generates an aesthetically innovative double-green material. The panel can be **fully recycled at the end of its life**.
The high density of the panel (1300 kg / m³) and the uniformly distributed pigmentation in the entire section of the panel, allow a three-dimensional processing without risk of fracture or variation of the aesthetic effect.
The **recomplax® Decò** panel is a sustainable material certified by the CIS.

Practical uses

Maximum flexibility in processing the **recomplax® Decò** panel with common woodworking equipment: drilling, milling, water cutting, cutting with a saw or reciprocating saw, gluing, screwing, rolling.
The panels can be sanded and painted. Being **totally water-repellent**, resistant to fungi and bacteria, **stable in UV rays** and in extreme climatic conditions, the **recomplax® Decò** panels are ideal as indoor and outdoor furniture, as kitchen tops, in building ventilated walls, curtain walls and floors.

Technical class

1000 x 2330 mm panel, thickness from 10 to 30 mm. Made of recycled fibro-reinforced composite fragments and natural oxides re-aggregated through pressure (density > 1300 kg / m³), can be used as a non load-bearing element, ideal for indoor and outdoor wetlands. Compactness and surface micro-porosity make this material suitable for single and two-component surface protection treatments.

Tipo



Comportamento agenti esterni	Norma rif.	Unità mis.	Valore
Rigonfiamento dopo 24 ore in acqua	Catas	%	0,20%
Resistenza sbalzi temperatura	UNI 9429:2015	Rotture	0
Resistenza sbalzi temperatura	UNI 9429:2015	Calo	0
Resistenza sbalzi temperatura	UNI 9429:2015	Sbiancamento	0
Resistenza alla Luce	UNI EN 15187	Scala grigi	< 4
Resistenza calore umido	UNI EN 12721:2013	Classe CEN /TS	A
Resistenza calore secco	UNI EN 12722:2013	Classe CEN /TS	C
Resistenza graffiatura	UNI EN 15186:2012	Classe CEN /TS	D
Resistenza prodotti pulizia	PTP 53 2016	Classe CEN /TS	5

	Norma rif.	Prodotto	Valore
Resistenza sostanze chimiche	EN 14688:2015	Acido acetico 10% V/V	nessun difetto
	EN 14688:2015	Idrossido di sodio 5% m/m	nessun difetto
	EN 14688:2015	Etanolo 70% V/V	nessun difetto
	EN 14688:2015	Ipclorito di sodio, 5%	nessun difetto
	EN 14688:2015	Cloruro di sodio 85 g/l	nessun difetto

Contenuto in Formaldeide	EN 120	mg/100g	≤0,2
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Prodotto riciclato 100%	CSI Recycled Composites	FRP-P14001
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Table 5: Thermal conductivity of the board.

Specimens	Thermal Conductivity (W/(mK))
Low density material (500 - 650 kg/m ³)	Average: 0,128 St. dev.: 0,001



Department for Materials
Laboratory for Polymers

Ljubljana, 30. 8. 2018

Note: According to the experimental results the uncertainty of the thermal conductivity obtained by this method is about ± 10 %.

Conduktivita termica in funzione della densita media (estratto della norma UNI EN 14342)

Legno e prodotti a base legno	Densita media (*) a umidita del 12% (Kg/m3)	Conduktivita termica (valore di progettazione) (W/mK)
Legno massiccio e legno compensato	300	0,09
	500	0,13
	700	0,17
	1000	0,24
Pannelli di particelle	300	0,10
	600	0,14
	900	0,18
Pannelli di fibre	400	0,10
	600	0,14
	800	0,18

(*) Per densita non indicate in tabella, il valore di conduktivita termica (λ) puo essere calcolata per interpolazione.

**Analysis of the
Compressive strength**



GEES
RECYCLING

Aviano 25/11/17

Test compressione

Pressa Hydromac 150 T a 500 bar

Dimensioni pressore mm. 150 x 150

POTENZA DI SPINTA

Materiale	Densita KGM3	Spessore MM	3000 kg	6000 kg	15000 kg	30000 kg	60000 kg
			10 BAR	20 BAR	50 BAR	100 BAR	200 BAR

Deformazione permanente / impronta mm.

BASIC 1100	1050	25	0	0	0	0	N.E.
BASIC 700	650	25	0	0	0	1,5	3 Collasso



centro ricerche-sviluppo e laboratori prova
settori legno-arnale, ambiente e alimenti

CATAS S.p.A.
Iscr. Reg. Imprese Udine
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RAPPORTO DI PROVA

230514 / 2

Ricevimento campione: 10/04/17

Esecuzione prova: 26/04/17

Emissione rapporto: 27/04/17

Denominaz.campione: PANNELLO VETRORESINA RICICLATA GEES RECYCLING DENSITA' 1100

GEES RECYCLING S.R.L.
VIA I MAGGIO 8
33070 BUDOIA (PN)
ITALIA

Piccola fiamma su una sola faccia UNI 8457:2010

Preparazione delle provette: senza supporto incombustibile

Tempo di contatto con la fiamma pilota: 30 s

Risultati della prova

Provetta n°	Tempo di post-combustione				Tempo di post-incandescenza				Zona danneggiata				Gocciolamento				Rottura del filo di cotone	
	1° serie		2° serie		1° serie		2° serie		1° serie		2° serie		1° serie		2° serie		1° ser.	2° ser.
	s	liv.	s	liv.	s	liv.	s	liv.	mm	liv.	mm	liv.	Rilev.	liv.	Rilev.	liv.	Rilev.	Rilev.
1	0	1			0	1			40	1			assente	1			no	
2	0	1			0	1			40	1			assente	1			no	
3	0	1			0	1			40	1			assente	1			no	
4	0	1			0	1			40	1			assente	1			no	
5	0	1			0	1			45	1			assente	1			no	
6	0	1			0	1			40	1			assente	1			no	
7	0	1			0	1			40	1			assente	1			no	
8	0	1			0	1			45	1			assente	1			no	
9	0	1			0	1			45	1			assente	1			no	
10	0	1			0	1			40	1			assente	1			no	
Livello attribuito	1				1				1				1					
Fattore moltiplic.	2				1				2				1					
Totale parziale	2				1				2				1					

Osservazioni e/o fenomeni particolari: /

Provette n° 1 - 2 - 3 - 4 e 5: ricavate in direzione longitudinale.

Provette n° 6 - 7 - 8 - 9 e 10: ricavate in direzione trasversale.

TOTALE

6

CATEGORIA

1



Mod. 002.0

CSI SpA
Sede Legale
20133 Sorago - SR - I
Cascina Sventagata 23

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20027 Bollate - MI - I
Via Lombardo 20
Tel. +39 02 383311
Fax +39 02 37137402
www.csi-spa.com



Certificato n°: Certificate n.:	FRP-PI40001
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Si certifica che i prodotti di seguito indicati realizzati da / we hereby certify that the following products manufactured by

GEES RECYCLING Srl
Sede legale / Registered office
Via 1° Maggio, 8 - 33070 Budoin (PN) - Italia
Unità operativa di / Place of business
Via 1° Maggio, 8 - 33070 Budoin (PN) - Italia

sono conformi a / Are in compliance with:
Regole Particolari (doc.002/13)

Prodotti / Products:
**Semilavorati e prodotti finiti in fibrorinforzati (FRP) da riciclo
 (denominazioni commerciali "Gees Recycling", "d'Ecò" e "Pietrastesa")**

*L'entità verificata è autorizzata ad utilizzare il marchio CSI COMPOSITI RICICLATI secondo quanto disposto dalle regole particolari 002/13 / The organization is
 authorized to use the CSI RECYCLED COMPOSITES mark according to specific rules 002/13*



*Il presente attestato è soggetto al rispetto del Regolamento generale per la concessione ed il mantenimento delle certificazioni volontarie di prodotti,
 processi e servizi (doc.001/06) e delle regole particolari (doc.002/13).
 La validità dell'attività di valutazione eseguita sono contenute nel rapporto di verifica. La validità del presente attestato è subordinata ad verifica
 triennale.
 This attestation is subject to the compliance with CSI CERT general rules and regulations for the issuance and maintenance of voluntary certification
 of products, processes and services (doc.001/06) and with specific rules for the certification of recycled plastic and recycled plastic products
 (doc.002/13).
 Evidence of the evaluation activity carried out are indicated in the audit report. The validity of this attestation is subjected to three years renewal.*

19/05/2014	24/05/2017	-----	23/05/2020
Rilascio <i>Issued</i>	Rinnovo <i>Renewed</i>	Aggiornamento <i>Update</i>	Scadenza <i>Expiry</i>



Ing. P. Fumagalli
R. U. Prodotto / R. U. Product

Data: 2017.06.06
17:21:59 +02'00'

Pagina 1 di 1



Rapporto di prova n° 547/16

**Prove di reazione al fuoco dei prodotti da costruzione
Determinazione del potere calorifico (UNI EN ISO 1716:2010)**

Descrizione del campione: Macinato poliestere e fibra di vetro

Densità:

Massa per unità di superficie:

Tipologia di prodotto:

Componenti:

Condizionamento: UNI EN 13238

Osservazioni :

Data delle prova: 2016-07-15

CALCOLO DEL POTERE CALORIFICO SUPERIORE (PCS)

PROVINO 1	PCS 16,86 MJ/kg
PROVINO 2	PCS 19,19 MJ/kg
PROVINO 3	PCS 18,94 MJ/kg

*La riproduzione del presente documento è ammessa solo in copia conforme integrale.
I risultati di prova sono collegati al comportamento delle provette di un prodotto nelle particolari condizioni di prova; non sono da intendersi come l'unico criterio per la valutazione del potenziale rischio di incendio del prodotto nel suo impiego.
I risultati riportati nel seguente rapporto si riferiscono esclusivamente ai campioni provati.*



GEES RECYCLING SRL

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