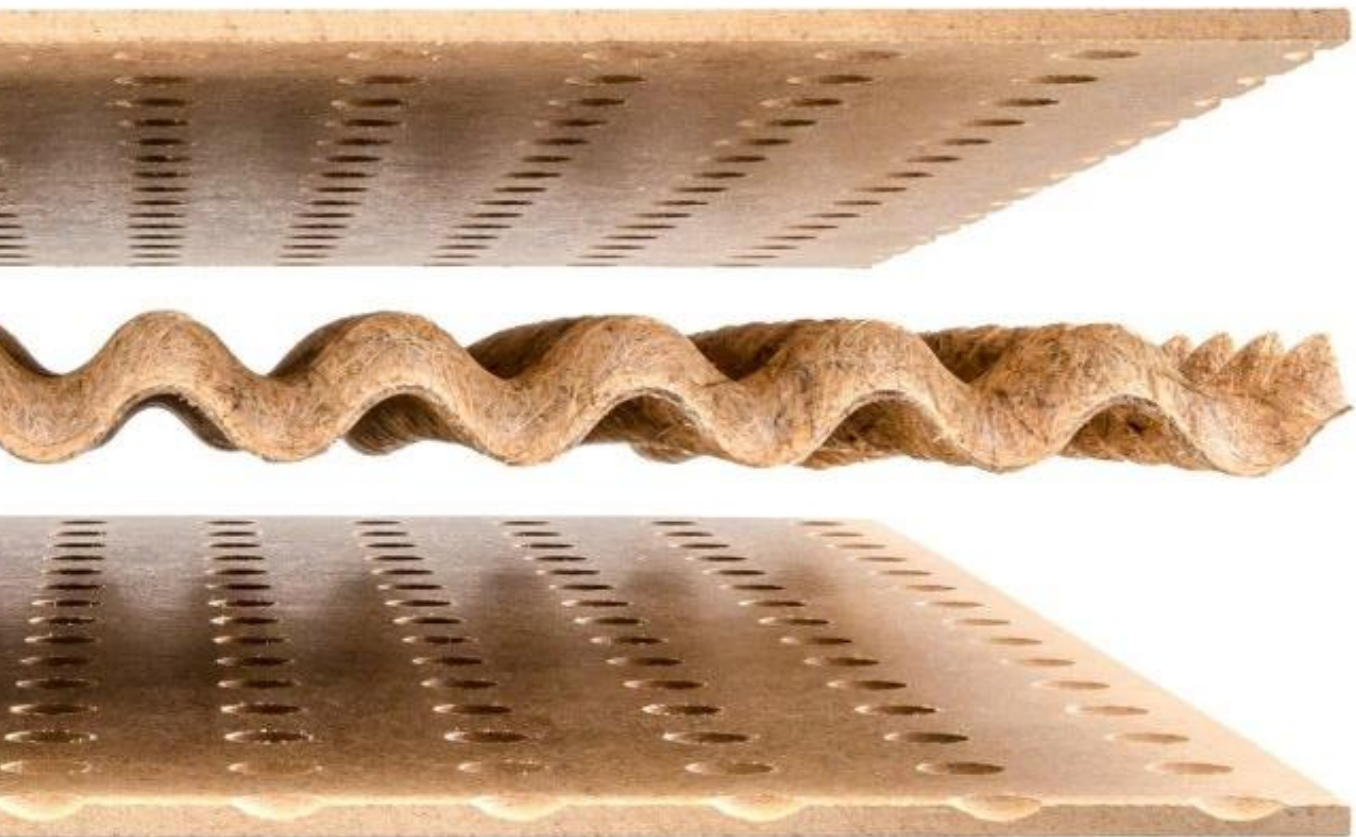


Lisocore[®]

Product Information and Processing
Recommendation



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1 Storage & Transport Instructions

lisocore® panels are delivered with protective boards (top and bottom) and palletized on spacers underneath.

Maximum height of the pallets for

- Transport by truck: ≤ 1150 mm (=max. stacking height of the panels: 1028 mm)
- Transport by container: ≤ 1000 mm (=max. stacking height of the panels: 878 mm)

Thus, two pallets can be transported on top of each other in the truck or container.

When using tension belts to secure the load, make sure that the tension force is adjusted properly to the hollow structure of the panels. The slabs must not slip during transport and not be damaged as a result of excessive tension.

A storage location that is protected from weather and not exposed to high temperature and humidity fluctuations is recommended. The hollow structure allows moisture to quickly penetrate the entire stack of panels. Before further processing, the panels should be conditioned.

Up to five pallets can be stacked on top of each other. The spacers should be placed directly on top of each other.



2 Processing Instructions

lisocore® can be processed on common woodworking machines due to its high internal bond strength.

2.1 Cutting

Cutting is possible on common sliding table saws and panel-sizing saws (vertical and horizontal). For saws that use clamping devices such as pressure beams or collets, make sure that the force or pressure is adjusted according to the lisocore® panel. Excessive pressure from the clamping device could damage the panel.

Unique feature of this sandwich panel:

The continuous connections between the core and the cover layers allow free cutting! Therefore, no attention has to be paid to the direction of the core structure when cutting!

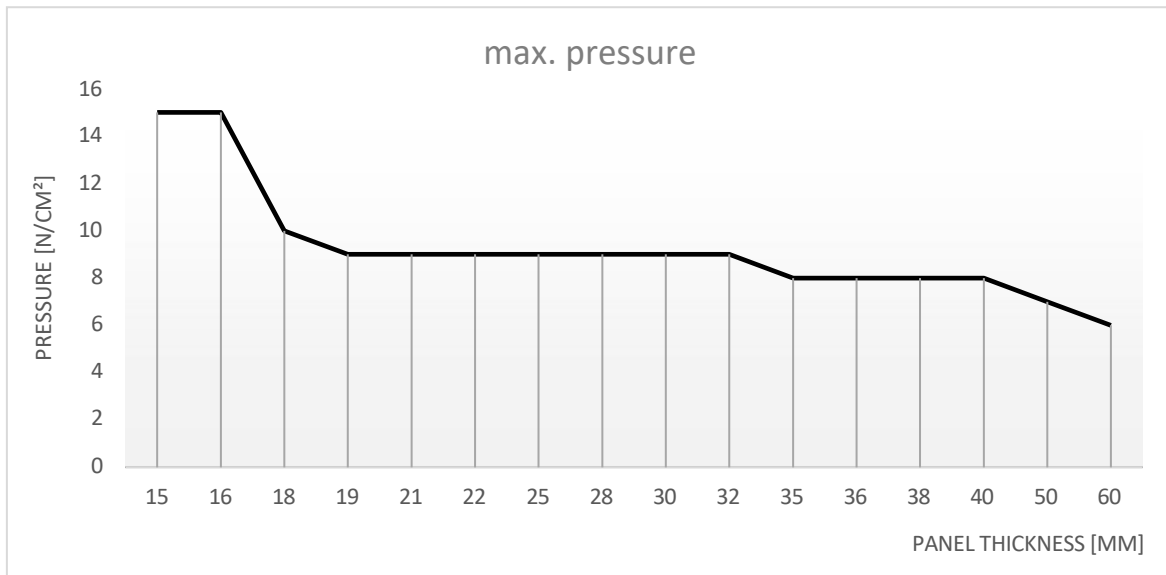
2.2 Surface Coating

Subsequent surface coating of lisocore® is possible with sheet or roll goods on veneer presses or calender presses.

It must be ensured that the adhesive is applied in the quantity actually needed for bonding. A generous application of adhesive promotes an uneven surface, especially with thin, uni colored, or glossy coatings. The reason for this is the punctual support of the cover layers by the core structure. Due to the coating pressure, the adhesive is displaced more strongly in the areas of the core tips than in those without. After the coating process, this can result in a visible pattern on the surface corresponding to the position of the core tips. In addition, an adhesive system with minimal water content is recommended to counteract an uneven surface appearance.

For smaller components or if more pressure is needed, we recommend inserting spacer bars in the component thickness into the press. In the case of calender presses, in order to determine the optimum contact pressure of the rollers, you can start with an undersize of 0.1 mm. If the undersize is adjusted too high, the board can be damaged, or the core structure may be drawn off on the surface.

Following illustration shows the maximum specific pressure depending on the panel thickness:

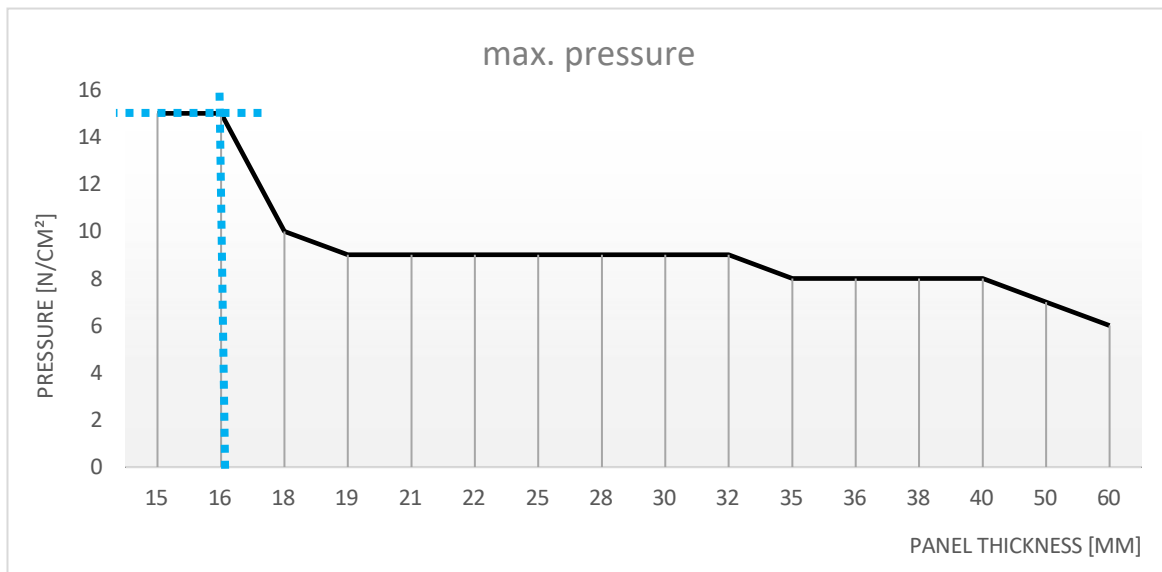


In general, the coating pressure should be reduced when processing lisocore® in order to avoid damage to the panel.

Case study:

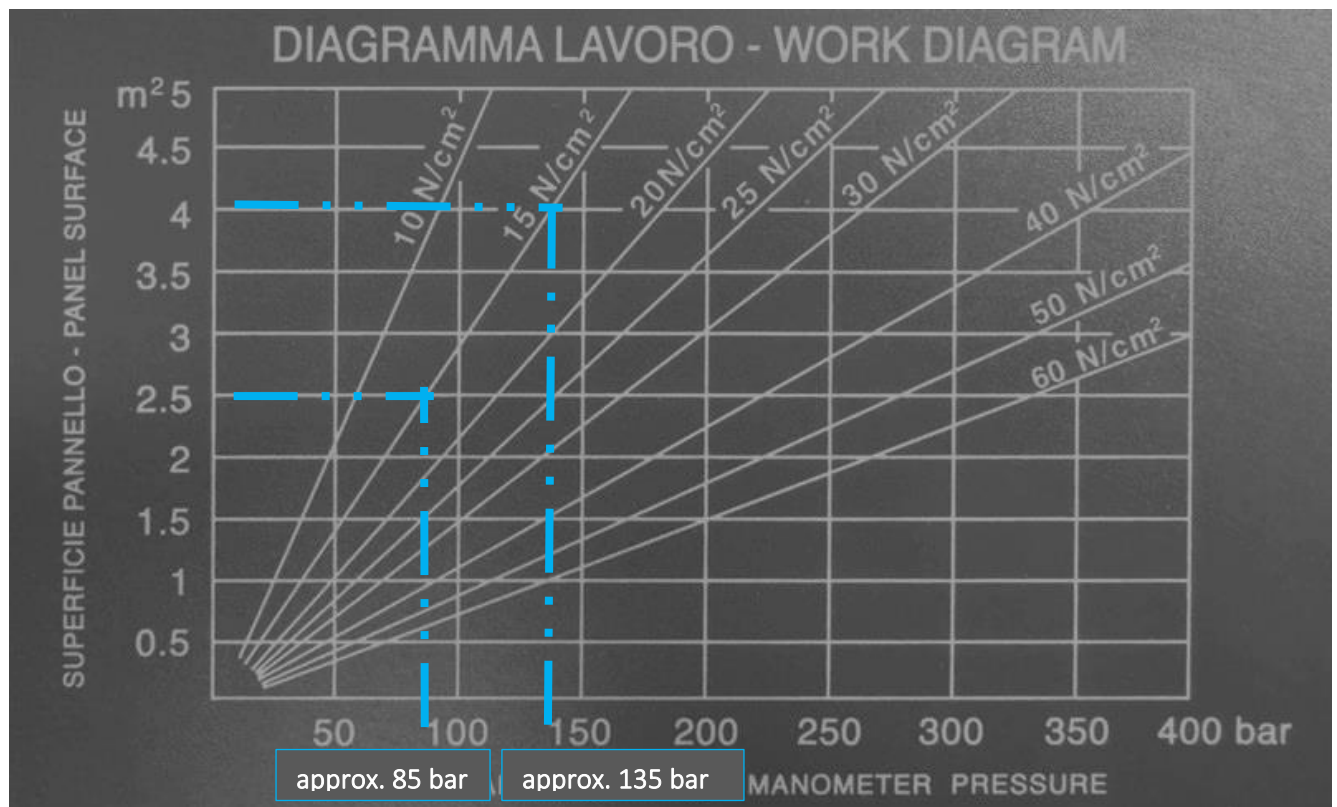
Adjusting pressure gauge on a veneer press for coating lisocore®

- Coating of 2.5 m² lisocore® 15.0 mm
- Coating of 4.0 m² lisocore® 15.0 mm



According to the graphic, the maximum specific pressing pressure to be applied to a 15.0 mm lisocore panel is approx. 15 N/cm².

- With an area of 2.5 m² to be coated, the pressure gauge to be set can be read from approx. 85 bar below
- With an area of 4.0 m² to be coated, the pressure gauge to be set can be read below at approx. 135 bar



Note: The pressure gauge to be set is individual depending on the press model.

Test coating with minimal pressure settings can serve as an indication of ideal pressing conditions of the coating system.

2.3 Edge Banding

The coating of narrow surfaces of lisocore® is basically possible with all established processes. The use of a supporting edge is not mandatory. The structure of lisocore® has a significantly reduced cross-sectional area which is available as a bonding surface.

We recommend doing processing tests in advance and consider the following points:

Edge band:

Depending on the panel thickness, the use of appropriately strong edge bands is recommended. For thinner lisocore® panels, the use of at least 1.5 mm thick edge bands is recommended. For thicker lisocore® panels, edge bands from 2.0 mm are suitable.

Edge bands that are too thin could result in a visible pattern of the panel interior on the edge band surface.

Adhesive:

We recommend the use of PUR adhesives.

Possible adhesive types are:

- Henkel Technomelt 270/7
- Jowat Reactant 608.0
- Kleiberit 707.9.51 ME

(Due to the reduced adhesive area, EVA adhesives are rather less suitable)

Settings of the edge band machine:

Please reduce the contact pressure of the milling units and the upper pressure belt. Too much pressure could compress the lisocore® panel in the narrow surface.

2.4 Drilling & Milling

Drilling, milling and nesting of lisocore® is possible on common machining centers with standard tools.

In order to achieve a clean cut on the top and bottom layers, the tool should be adapted to the respective cover layer material.

To achieve a clean cutting pattern of the middle layer, the highest possible cutting speed should be used. It can be increased by a high rpm of the milling cutter and a large cutter diameter. Up-cut milling (conventional milling) basically shows an improved cutting quality.

Exemplary tool and machining recommendation from Leuco and Leitz:

Werkzeug- und Bearbeitungsempfehlung

Pyrus Panels GmbH: lisocore® mit Holzfaser-Deckschichten



Bild: Pyrus Panels GmbH

AUF EINEN BLICK

- Dreidimensionaler Wabenkern aus Holzfasern oder Pflanzenvlies
- Deckschicht aus HDF/MDF
- Oberfläche roh
- Aufbau 3- oder 5-schichtig
- Punktformige Verklebung der Schichten durch formaldehydfreien Klebstoff
- Form- und stoffschlüssiger Verbund durch gefräste Vertiefungen in den Deckschichten
- Plattenstärke: 15-120 mm

1	HW Formatkreissägeblatt Katana D303x3,2/2,2x30 Z100 WZ/WZ/FZ n=4000-5000min ⁻¹	161201
	DP Formatkreissägeblatt WhisperCut D303x3,2/2,4x30 Z80 HZFA/WZFA n=4000-5000min ⁻¹ U=20-30mm	190698
	HW Plattenaufteilkreissägeblatt Premium D350x4,4/3,2x30 Z72 WZ n=3500-4700min ⁻¹ f _s =0,05-0,1mm	163302
	Ritzkreissägeblätter maschinenspezifisch auf Anfrage	
2	HW Segmentzspaner D250x25x80 Z48 ES LL/RL n=6000min ⁻¹ v _p =25-35 m/min	064410 + 061878 064411 + 061879
3	DP Fügefräser WhisperCut D100x124x30 Z2x11 LL/RL n=9000min ⁻¹ v _p =7-11m/min	192245 / 192246
4	HW Schrump-Schlichtfräser, Marathon, wechselseitiger Drall D16 NL55 S16x50 GL110 Z2+2 n=18000-24000min ⁻¹ v _p =6-15m/min	240408
	HW Schrump-Oberfräser, HeliCut 11 D30 NL120 S30x53 GL195 Z2+2 RL n=9000-18000min ⁻¹ v _p =3-6m/min	041929
	HW Schrump-Schlichtfräser, Marathon D14 NL30 S16x50 GL120 Z3 n=18000-24000min ⁻¹ v _p =6-15m/min	240002
5	HW Dübellochbohrer D10 S10x25 GL70 Z2 LL/RL n=4500-6000min ⁻¹ v _p =1,5-2,5m/min	033540 / 033541
	HW Durchganglochbohrer D8 S10x27 GL70 Z2 LL/RL n=4500-6000min ⁻¹ v _p =1,0-2,0m/min	034104 / 034105
	HW Beschlaglochbohrer D35 S10x26 GL70 Z2/V2 n=4500min ⁻¹ v _p =1,5-2,5m/min	037214



HW = Schneidstoff Hartmetall für universelle Anwendungen	Z = Zähnezahl	D = Durchmesser
DP = Schneidstoff Diamant für längere Werkzeugstandwege (empfohlen für abrasive Werkstoffe)	n = Drehzahl	S = Schaftabmessung
	v _p = Vorschubgeschwindigkeit	GL = Gesamtlänge
	f _s = Zahnvorschub	NL = Nutzlänge
	U = Sägeblattüberstand	

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Hinweis: Die angegebenen Werkzeuge sind beispielhafte Abmessungen. Die empfohlenen Einstellparameter beziehen sich auf die angegebenen Werkzeugausführungen.

PRODUKT INFO



LEUCO t3-System Schafffräser Neue Dimensionen zur Massivholzbearbeitung

Der LEUCO Wendeplattenfräser mit dem richtig ziehenden Schnitt für hervorragende Qualitäten beim Fügen, Fälen und Freiformfräsen von Massivhölzern und Holzwerkstoffen auf CNC sowie Abbundanlagen im Holzbau.



Ihre Vorteile

- I Sehr hohe Zerspanleistung
- I Absolut ausrissfreies Fügen und Fälen
- I Spiralförmiges Eintauchen zum Freiformfräsen möglich
- I Bombierte Triangel-Wendeplatte:
 - Ausgezeichnete Kanten- und Oberflächenqualität ohne Absätze auf der bearbeiteten Oberfläche
 - 3 Standzeiten

Der t3-System Standardfräser

DA	SB1	IMD	IML	Lmax	Z	Nl	Ident-No.
54	78	20	52	133,5	2+2	14	187268
54	63	25	52	120	2+2	12	187299
54	78	25	52	133,5	2+2	14	187300
54	106,5	25	52	162,5	2+2	18	187113

[mm] [mm] [mm] [mm] [mm] [Stk]

Lieferumfang inkl. Wendeplatten HL Solid 20 (Ident-No. 187251)

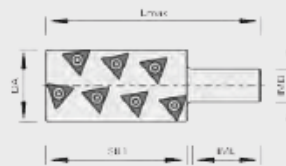
Der neue t3-System Schafffräser kommt auf CNC-Maschinen und Abbundanlagen zum Einsatz. Die bombierten Triangel-Wendeplatten sind das entscheidende Merkmal für die hohe Bearbeitungsqualität des t3-System Schafffräfers.

Der t3-System Nuter

DA	SB1	IMD	IML	Lmax	Z	Nl	Ident-No.
54	35	25	61	100	2+2	8	187269s
61	35	25	61	100	2+2	8	187369

[mm] [mm] [mm] [mm] [mm] [Stk]

keine Kennzeichnung — sofort lieferbar, z — zeichnungsgebundene Fertigung (Sonderwerkzeug)



Die t3-System Ersatzplatten Auswahl

Wendeplatten	Anwendung	SB1	H	T	Ident-No.
HL Solid 20	Hart- & Weichhölzer	20,88	18,3	3,0	187251
HL Solid 20 Vorschneider	für spurfreies Hobeln	20,38	17,99	3,0	9209773
HL Board 06	Hartholz & Holzwerkstoffe	20,88	18,3	3,0	187692
TopCoat 102	3-facher Standweg	20,88	18,3	3,0	187694

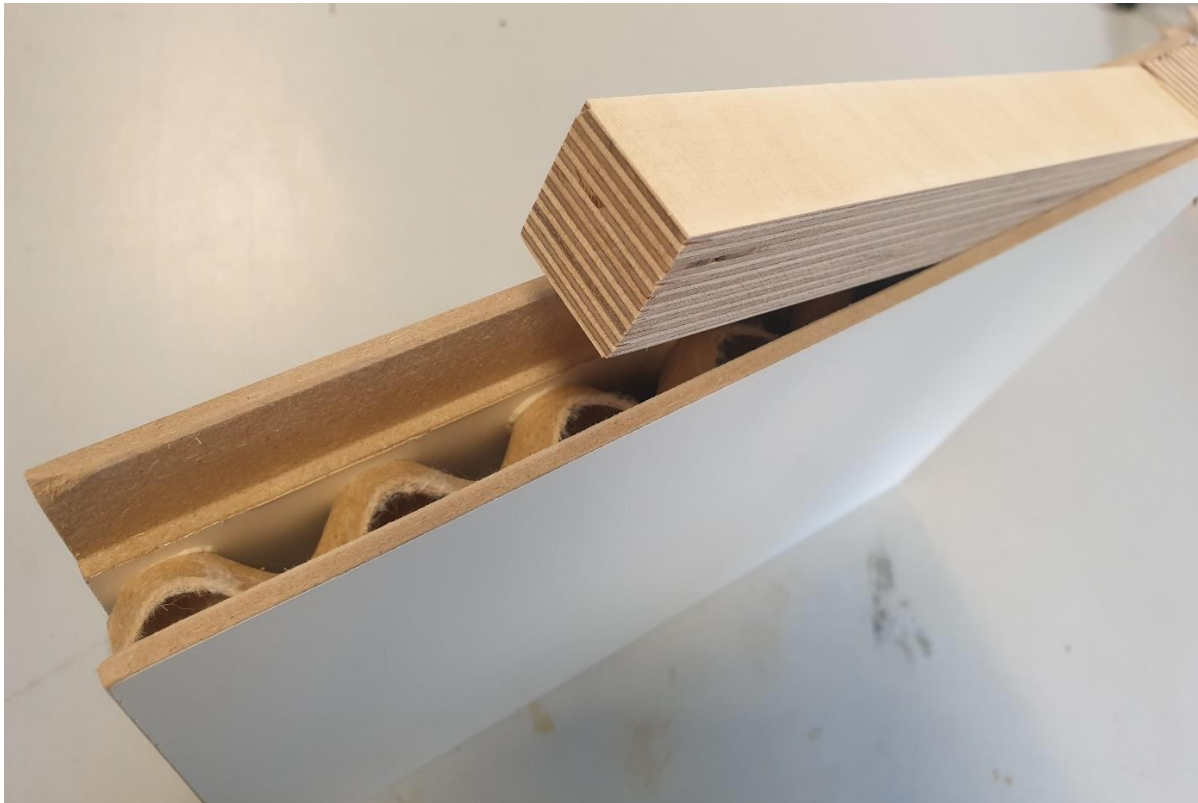
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2.4.1 Inserts

Subsequent rebating of an insert provides optimum stability for using special connectors or fittings in the lisocore® panel.

Suitable insert materials are various wood-based materials, such as chipboard, MDF, plywood, laminated veneer lumber and dried solid wood.



3 Connection & Fitting Technology

The insertion and fastening of connection and fitting technology is possible by using clamps or standard screw systems. lisocore® panels have a high internal bond strength. Therefore, attaching standard screws (such as Spax, Euro screw and Varianta) in just one top layer is often sufficient!

3.1 Blind Rivet Technology

With the help of this technology, removable, high-strength screw fastening points can be inserted into lisocore®. Blind rivet nuts are available in several metric thread sizes such as M4, M6, M8, M10. They are set with the help of path- or power-controlled tools into one cover layer only.



3.2 Cold Melt® Technology

3.2.1 Technology

Thanks to the Cold Melt® technology from Adolf Würth GmbH & Co. KG, high strength fastening points can easily be set in lisocore®. In addition, corner connection systems can be implemented.

This technology enables adhesive-free insertion of variably positionable plastic adapters. Cold melt dowels are set in motion by vibrations in the ultrasonic range. The sonotrode of the hand tool transmits 25000 vibrations per second. The resulting friction heat between the material and the dowel enables merging. In just a few seconds a high-strength and immediately loadable connection is created.



3.2.2 Special drill bits

The necessary special drill bit consists of two separately available elements. The fixed main cutting edge and the variably adjustable secondary cutting edge guarantee a perfect fit of the plastic dowel in lisocore®.



Special Drill bit Screw Connection

Special Drill bit Eccentric Connection

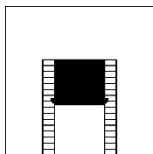


Countersink for special drill bits (screw/eccentric)

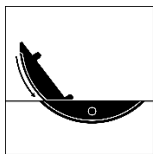
3.3 Lamello Lightweight Connector LC P-16

The LC P-16 is a connector that combines the advantages of lightweight construction with the efficient and aesthetic Clamex connection. Due to its width, the LC P-16 anchors itself in the surface layers and acts as an adapter into which a Clamex P-14 connector is inserted.

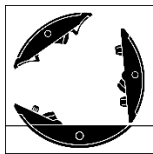
Machining with two to three milling operations is carried out either with the Zeta P2 or, even more efficiently, with the CNC machining center. Thanks to the three sizes of the LC P-16, detachable connections for different lisocore® thicknesses are possible.



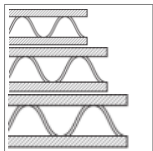
- **Without insert**
Time-saving anchoring directly in the cover layers



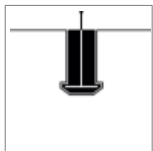
- **Quick installation**
Insertion instead of screwing or mounting



- **Combine**
Can be used with Clamex P-14, Clamex P-14 Flexus, Clamex P-14 CNC



- **Variety in material thickness**
Three product sizes for applications in different panel thicknesses



- **Stable P-System anchoring**
Large-area, form-fitting anchoring



LC P-16 Configurator

For the selection of the correct connector for different material and cover layer thicknesses the LC P-16 configurator is available. This

determines whether the installation of the LC P-16 is possible, which sizes are used as well as which cutter position is ideal.



3.4 Fitting Technology

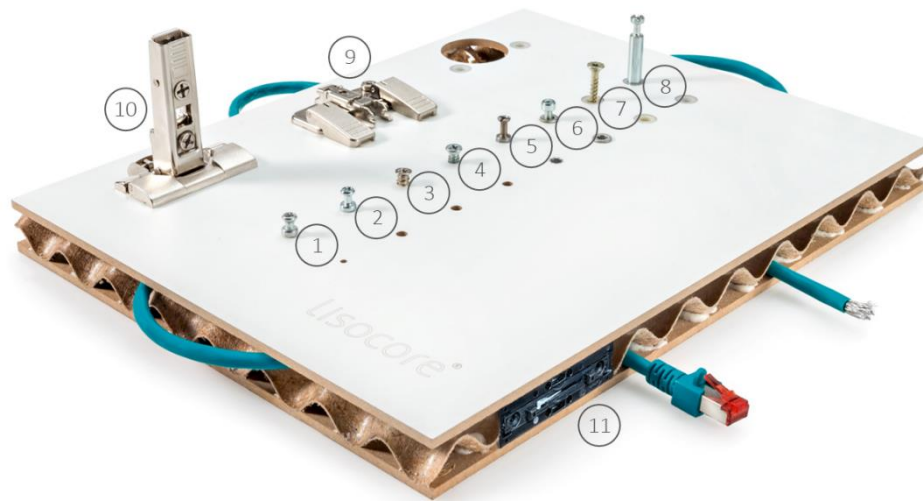
Common hinge systems and mounting plates for screwing or clamping can be used with lisocore® panels. For panels with 4 mm top layers or thicker, clamp fittings may be sufficient. With 3 mm top layers, additional fastening measures are likely to be necessary. For example, fittings with screws can be used or additional aids can be inserted into the panel in the area of the fitting, such as cold-melt dowels, blind rivets or other inserts.

Anchor fitting (screw)
Tensile strength:
4,0 mm 70 - 80 kg - HDF
3,0 mm 50 - 65 kg - Plywood

Rivets
Tensile strength:
4,0 mm 50 - 60 kg - HDF
3,0 mm 35 - 40 kg - Plywood

Direct Screwing
Tensile strength:
4,0 mm 35 - 40 kg - HDF
3,0 mm 25 - 35 kg - Plywood

CLAMEX LC P-16
Tensile strength (90°):
4,0 mm 67 kg - HDF
8,0 mm 110 kg - MDF
Tensile strength (180°):
4,0 mm 64 kg - HDF
8,0 mm 100 kg - MDF



Position	Screw / Dowel	Manufacturer	Product	Metrics	Description
1	System screw	Hettich GmbH	DU 328	4 x 12mm	Directly screwed
2	System screw	Hettich GmbH	DU 321	6.7 x 12mm	Directly screwed
3	Euro screw	Adolf Würth GmbH	SHR-EURO-SEKPF-Z2-(E2J)	6.3 x 13mm	Directly screwed
4	Screw 'Varianta'	Häfele GmbH & Co KG	Varianta-Schrb. HC Zk.	6.2 x 14mm	Directly screwed
5-6	Flat head rivet	Böllhoff GmbH	Rivkle® SFC M4 Flat Head Rivet	for clamping area 3.5 -5.0 mm	Blind rivet technology
7	Cold melt dowel (Euro)	Adolf Würth GmbH	Cold melt dowel for Euro screws	10 x 25 mm	Cold melt technology
8	Cold melt dowel (Spax)	Adolf Würth GmbH	Cold melt dowel for chipboard screw	10 x 25mm	Cold melt technology
9	Mounting plate	Julius Blum GmbH	Blum clip inserta MPL	-	Direct clamping
10	Fitting	Julius Blum GmbH	Blum top BLUMOTION inserta	-	Direct clamping
11	Connector	Lamello AG	Clamex LC P-16	-	Connector

4 Integration of Technology into the board

lisocore® is not only a strong and lightweight panel but also offers the possibility of integrating technology into the board!

Wiring can be laid longitudinally, transversely and diagonally into the cavities inside the panel.

This offers completely new design possibilities, for example, in the case of motorized furniture control units, motors and operating elements can be hidden inside the panel!

5 Cleaning & Care

Coated lisocore® surfaces can be cleaned (depending on the type of coating) with water and gentle cleaning agents. Cleaning agents, cloths and sponges containing abrasive components should be avoided. To remove stubborn dirt, commercially available cleaners that are suitable for plastic surfaces can be used. Before first use, we recommend testing in a non-visible area.

6 Disposal

It is recommended to recycle the material or use it for energy in facilities approved for this service. Within the European Union, waste is classified according to the waste code in the European waste catalog. Outside the European Union, disposal must be carried out in accordance with national law.

If you have any further questions about the processing of lisocore® please do not hesitate to contact us!

Please contact your contact person or
verkauf@pyrus-panels.com!

We look forward to your questions!

PYRUS PANELS