

LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

Indoor Sport

FAST BREAK SYSTEM SPORT FLOORING

STORAGE, LAYING AND MAINTENANCE MANUAL



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LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

CONTENTS

1	RECEPTION AND INSPECTION OF MATERIAL	page 3
2	STORAGE	page 3
3	GENERAL INFORMATION	page 4
3.1	PRODUCT DESCRIPTION	page 4
3.2	STANDARD APPLICATIONS	page 5
3.3	REFERENCES	page 6
4	REQUIREMENTS	page 7
4.1	GENERAL SURFACE REQUIREMENTS FOR FLOOR LAYING	page 7
4.2	PRELIMINARY CHECKS	page 7
4.2.1	HUMIDITY CHECK	page 7
4.2.2	FLATNESS OF SUBSTRATE	page 8
4.2.3	ROUGH OR VERY POROUS SUBSTRATES	page 8
4.2.4	COMPACTNESS AND HARDNESS OF SUBSTRATE	page 8
4.2.5	SLIPPERINESS OF SUBSTRATE	page 8
4.2.6	CRACKS AND JOINTS IN FLOOR FOUNDATION	page 8
4.2.7	INSULATING LAYERS AND DIRT DEPOSITS	page 9
4.2.8	TEMPERATURE OF MATERIAL AND SUBSTRATES	page 9
4.2.9	AMBIENT TEMPERATURE	page 9
5	COMPONENTS	page 10
5.1	BOARDS	page 10
5.1.2	STANDARD BOARD	page 11
5.1.3	STANDARD PERIMETER BOARDS	page 12
5.1.4	HALF PERIMETER BOARD	page 13
5.1.5	TWO-COLOUR BOARD	page 14
5.1.6	JOINING, ALIGNMENT, INSTALLATION AND REMOVAL ELEMENTS	page 15
5.2	ACCESSORIES	page 17
5.2.1	ACCESS SLIDE	page 17
6	TRANSPORT	page 18
6.1	GENERAL	page 18
6.2	METAL CRATES	page 18
6.2.1	GENERAL INFORMATION	page 18
6.2.2	CRATE FOR BOARDS	page 19
6.2.3	LAYOUT FOR TRANSPORT	page 20
7	INSTALLATION	page 22
7.1	INTRODUCTION	page 22
7.2	COLLECTING THE CONTAINERS	page 22
7.3	WHERE TO START INSTALLATION	page 23
7.4	LAYING SEQUENCE	page 24
7.5	LAYING THE LAST ROW	page 25
7.6	REMOVAL	page 26
8	MAINTENANCE	page 27
8.1	INTRODUCTION	page 27
8.2	DAILY CLEANING	page 27
8.3	ACCESS	page 28
8.4	MOISTURE AND WATER	page 28
9	MARKINGS	page 29
10	SPARE PARTS	page 30

Issued by Customer Service	Compiled by Luca Reinaudo	First issue date 09/2015	Revised by	Revision level 04	Present revision date 09/2021
----------------------------------	------------------------------	-----------------------------	------------	----------------------	----------------------------------

LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

**INDOOR SPORT - FAST BREAK SYSTEM REMOVABLE WOODEN SPORTS FLOOR
STORAGE, LAYING AND MAINTENANCE MANUAL**

1 Receipt and inspection of the material

- 1.1 Upon receipt of the goods, all packages must be thoroughly checked in the presence of the carrier in order to verify that the number of packs is correct, that the packaging is not damaged and that the labels correspond to the details on the sales invoice issued by Mondo.
- 1.2 Where any concerns exist regarding the amount, condition and content of the packages, it is imperative that the transporter is advised of these concerns; they must also be specified in writing in the section of the Transport Document (DDT) for this purpose, and Mondo must be notified of the problem in writing within 72 (seventy-two) hours.

IMPORTANT

- 1.3 In the event that Mondo is contractually responsible for the transportation of goods, the aforementioned assumes no responsibility for any shortcomings or discrepancies with regard to materials or for material damage caused by obvious external damage to packaging, unless the problem has not been reported punctually on the DDT and notified in writing to Mondo within 72 (seventy-two) hours of receipt of shipment.

2 Storage

- 2.1 The products should be stored in the original packaging supplied by Mondo.
- 2.2 The storage area must be enclosed, clean, dry and well-ventilated, away from direct sunlight, rain and all other weather conditions.
- 2.3 Unless otherwise stated on the product label, all materials supplied by Mondo should be stored at a maximum relative humidity of 60%, a minimum ambient temperature of 18°C and a maximum surface temperature of 20°C.
- 2.4 The panels must always be stored in the special crates. These crates are not stackable, but can be moved with pallet jacks and forklift trucks in both directions.
- 2.5 Storage under unsuitable environmental conditions and storage in an incorrect position can cause damage to the products and permanent deformation.

IMPORTANT

- 2.6 Mondo accepts no liability for damage and defects to products that have been stored in unsuitable environmental conditions and/or in an incorrect position
- 2.7 Before laying or applying the products, check them carefully to ensure that they are free from obvious damage and/or defects.
- 2.8 Where concerns arise regarding the condition of products, these must be reported in writing to Mondo within 10 (ten) days of encountering the problem. In such cases, please await further instructions from Mondo before proceeding with laying.

IMPORTANT

- 2.9 Mondo assumes no responsibility for any damage and/or obvious defects in products where these have not been duly notified to Mondo in writing within 10 (ten) days of encountering them and prior to any laying, application or combination of the product, and to any other treatment, handling or other operation involving the product.

IMPORTANT

- 2.10 Mondo does not accept any liability for damage to products caused in whole or in part by improper handling in and/or outside the premises where they will be laid.

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----------------------------------	------------------------------	-----------------------------	------------	----------------------	----------------------------------

LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

3 General information

3.1 Product description

Modular removable panel flooring for indoor use with an easy tongue-and-groove system with a galvanised steel metal profile release. This exclusive, patented profile is the core of the system because:

- by acting on the special shape of the panels, it correctly and flexibly joins them, guaranteeing a simple, rapid assembly and disassembly system;
- it is shaped like a 'handle' and can be closed on the underside of the panel (when the floor is disassembled), thus reducing its size and making handling, storage and logistics much easier.

The panels are made of 21 mm thick birch plywood. The cladding (exposed face) comes in various finishes and solutions that do not affect the system's strength and durability.

This system first requires a layer of chip foam to be placed on a perfectly flat, suitable substrate. Its thickness and density must ensure consistent performance and uniform adhesion of the system to the substrate.

A layer of mat (chip foam) of a specific thickness must be placed underneath the panels which gives the system a uniform elastic response and meets all the technical and performance requirements outlined in EN 14904 which regulates sports flooring for indoor use as well as ensuring uniform contact with the substrate.

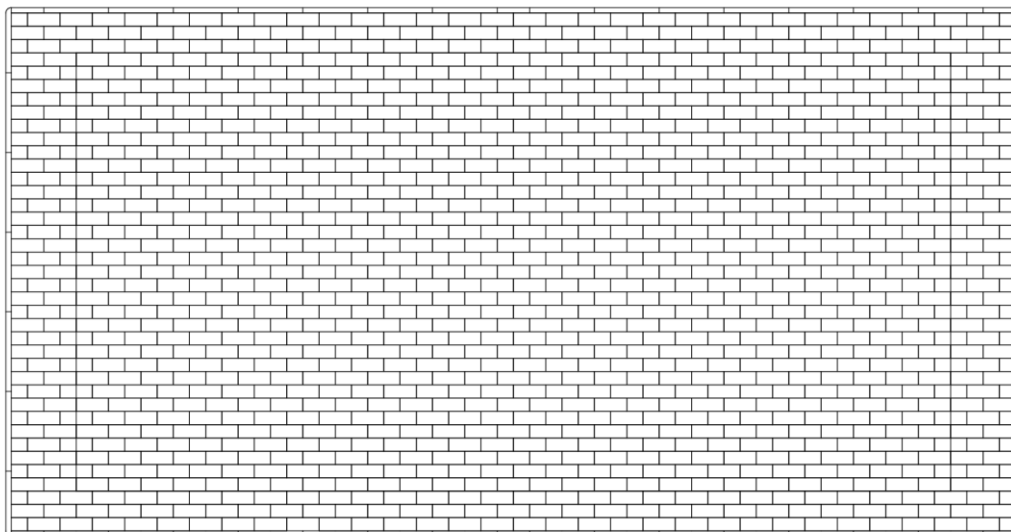
The FBS system is covered by an international patent and fulfils the technical and performance requirements outlined in EN 14904 which regulates sports flooring for indoor use.

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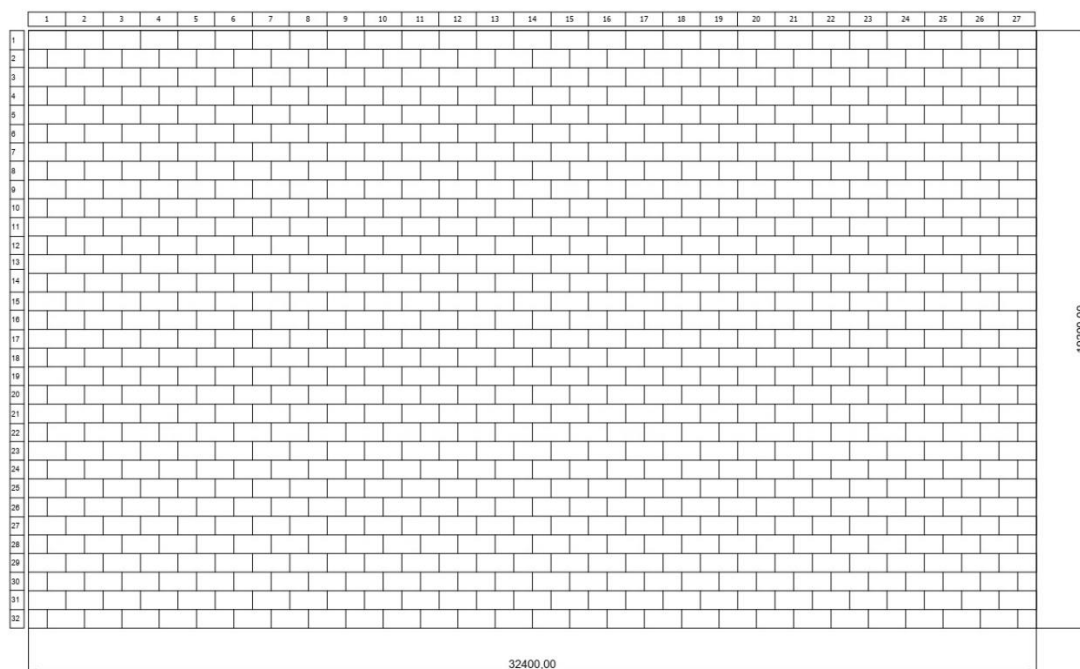
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3.2 Standard applications

Some standard applications of the system are listed below. They are provided for illustrative purposes and do not cover all the product composition options.



Futsal - 33 rows, 31 lines – 24,453 x 45,880m = 1.121,90m²



Basket - 32 rows, 27 lines - 19.200 x 32.400m = 622.08m²

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3.3 References

The flooring system was used in its first test phase at the finals of the first edition of the UEFA Futsal Champions League held in 2019 in Almaty (Kazakhstan):



UEFA Futsal Champions League 2019 – Almaty, Kazakhstan

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4 Requirements

4.1 General surface requirements for floor laying

Although initially waterproofed with a process that uses phenolic adhesives, birch plywood tends to be hygroscopic, i.e. it can absorb and be affected by environmental conditions such as humidity and temperature. This can cause structural changes in the panels and environmental operating conditions with a humidity of below 60% and a temperature of at least 18°C are therefore required.

If these conditions are not met, no liability is accepted. The indications of the technicians/layers must take these aspects into account and any anomalies must be reported in writing.

4.2 Preliminary checks

4.2.1 Humidity check

It is important to comply with the various substrate limits. Use a calcium carbide hygrometer to determine the humidity of the floor foundation. If this is too high, inform the Contractor in writing. The floor can only be laid when the limit value is reached.

In exceptional cases, excessive moisture in concrete substrates can be blocked by applying insulating primers, such as epoxy resin coatings, and carefully following the manufacturer's instructions.

Maximum residual moisture values (in accordance with manufacturing standards and SIA regulations):

- cement screeds 2.3%
- anhydrite screeds 0.5 %

The possibility that there may be slight variations in different standards (e.g. EN) or national guidelines must be taken into account. These are basically lower values and therefore recommended.

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----------------------------------	------------------------------	-----------------------------	------------	----------------------	----------------------------------

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4.2.2 Flatness of substrate

Flatness tolerance for FBS flooring (compliant with manufacturing standards and SIA norms):

Length measured in m	0.4	1	2
Maximum deviation in mm	1	2	3

To determine the difference in level, a straight edge that is at least two metres long must be used. Deviations must be detected using a wedge-shaped feeler gauge. The measurement area must be 100 cm from the corners and 50 cm from the edge.

Warning: never use glue to even out differences in thickness, but use a special self-levelling compound.

4.2.3 Rough or very porous substrates

The quality of the screed surface for laying can be visually assessed. Excessively rough or porous cement and calcium sulphate substrates must be sanded. Then apply a coat of primer and a self-levelling compound if necessary.

4.2.4 Compactness and hardness of substrate

The strength of the laid floor can only be guaranteed if the substrate is sufficiently compact and hard. The areas at risk of cracking can be detected by tapping with a hammer. The compactness and hardness of the screed can be assessed using the grid scratching method. Crumbling and flaking cement or calcium sulphate screeds are not suitable for laying.

4.2.5 Slipperiness of substrate

To guarantee correct maintenance of the boards once assembled and make sure they are easy to lay, the slipperiness of the substrate must not exceed a value of 35 in accordance with UNI EN 12431.

4.2.6 Cracks and joints in the floor foundation

Cracks in the substrate, especially in concrete, are caused by a number of reasons. All existing cracks must be filled in. Shrinkage joints (construction joints, expansion joints) must be treated in the same way as cracks.

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----------------------------------	------------------------------	-----------------------------	------------	----------------------	----------------------------------

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4.2.7 Insulating layers and dirt deposits

If the substrate is not sanded during the normal preparation work, paint residue, dirt and mortar must be removed using plastering tools before laying. This also applies to insulating layers on the laying surface.

4.2.8 Temperature of material and substrates

During laying, the material and substrate must not fall below a temperature of 18°C and the cold substrate must gradually heat up to room temperature.

4.2.9 Ambient temperature

Ambient temperature requirements during installation:

- maximum relative humidity 60%
- minimum ambient temperature 18°C
- maximum surface temperature 20°C

The above environmental conditions must be maintained even when the system is not in use.

IMPORTANT

The Contractor is responsible for installing any protective devices and ventilation and air conditioning systems needed to maintain the environmental conditions listed above and for installing a thermometer and hygrometer that continuously measure and record the ambient temperature and humidity.

IMPORTANT

Mondo does not accept any liability for damage to the product caused, in whole or in part, by unsuitable environmental conditions.

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5 **Components**

5.1 **Standard elements**

5.1.1 **Types of panels**

- A) Birch plywood panels with a top layer in pure wood, 3.5 mm +/- 0.5 mm thick, made by jointing and sanding boards of various woods (oak, ash, beech, etc.) to which a protective coating suitable for indoor sports use is applied in the factory.
- B) Birch plywood panels with a top layer in birch, 1.3mm +/- 0.3mm thick, made by jointing and sanding full-length birch strips to obtain a slatted effect to which a protective coating suitable for indoor sports use is applied in the factory

Both of these materials are available in the following dimensions:

- a) Standard module 1200x600x21 mm
 - b) Half module 600x600x21mm
- C) BB/C grade birch plywood panels on which several layers of monochrome varnish suitable for indoor sports use are applied to cover the wood grain

This material is available in the following sizes

- a) Standard module 1480x741x21 mm
- b) Half module 740x741x21 mm

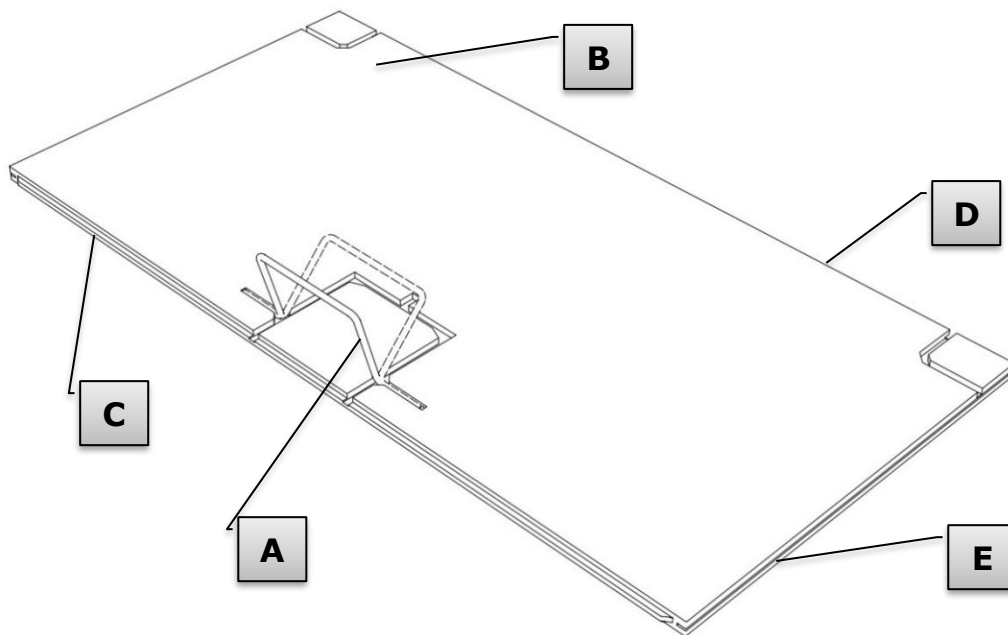
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5.1.2 Standard panel

The main element in the FBS flooring system is the standard panel.

It has mirrored, symmetrical features, a steel handle (A), a pair of angular slots (B), a tongue (C) and groove (D) to maintain flatness and side slots (E) for inserting tongues that align the boards on the short sides.



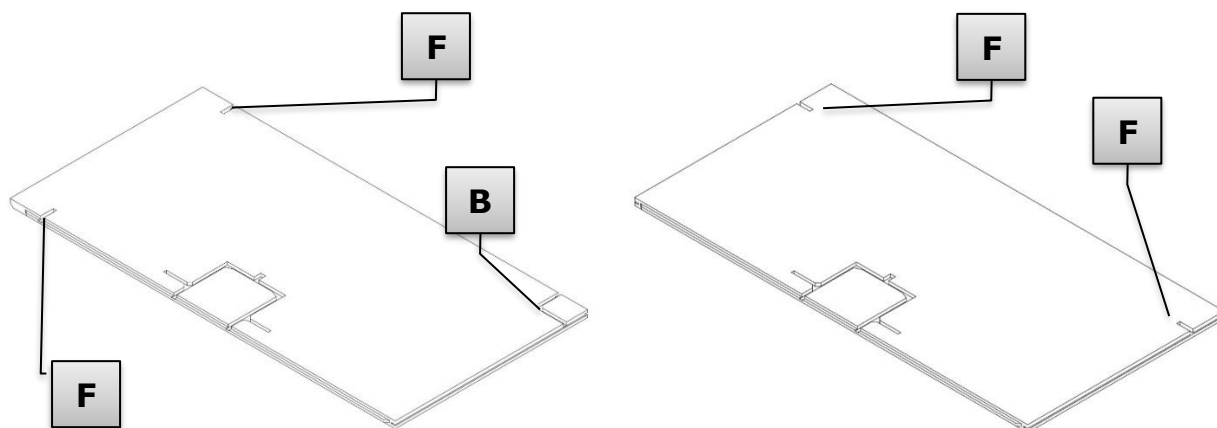
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5.1.3 Standard perimeter panels

The FBS system does not have an additional outer perimeter and so the perimeter panels (whole and half) perform this function, retaining the handle (A) and the same machining as the standard board with the addition of 2 slots (F) for tie-rods (K) on the short side, long side or both for corners. This allows any surface to be fitted without the need for a perimeter profile. In addition, the inclination of the access slide, the inclusion of logos or lettering and the contrasting paintwork can be fully customised.



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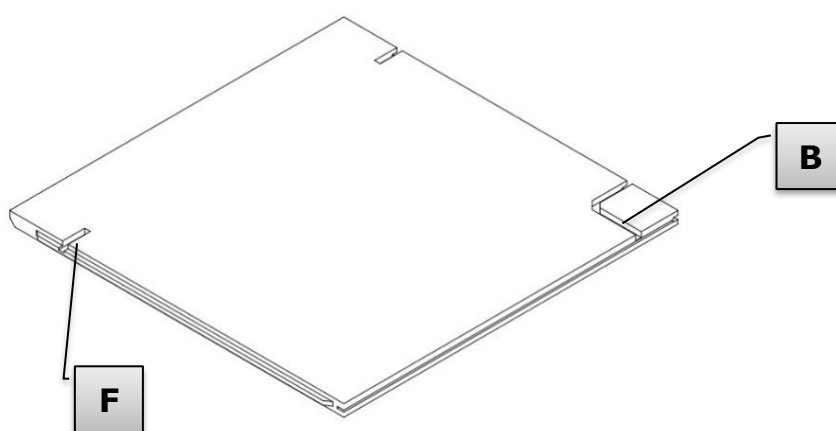
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5.1.4 Half-perimeter panel

A half panel is placed on the two longitudinal ends of the pitch instead of the standard one and is exactly half the size of a standard panel. It therefore has the same features to accommodate the handle (B) and accessories, with the addition of 2 slots for tie-rods (K) on the end of the transverse side.

On request, the half panel can be customised with edge shaping, engraving of lettering and logos and different colours.



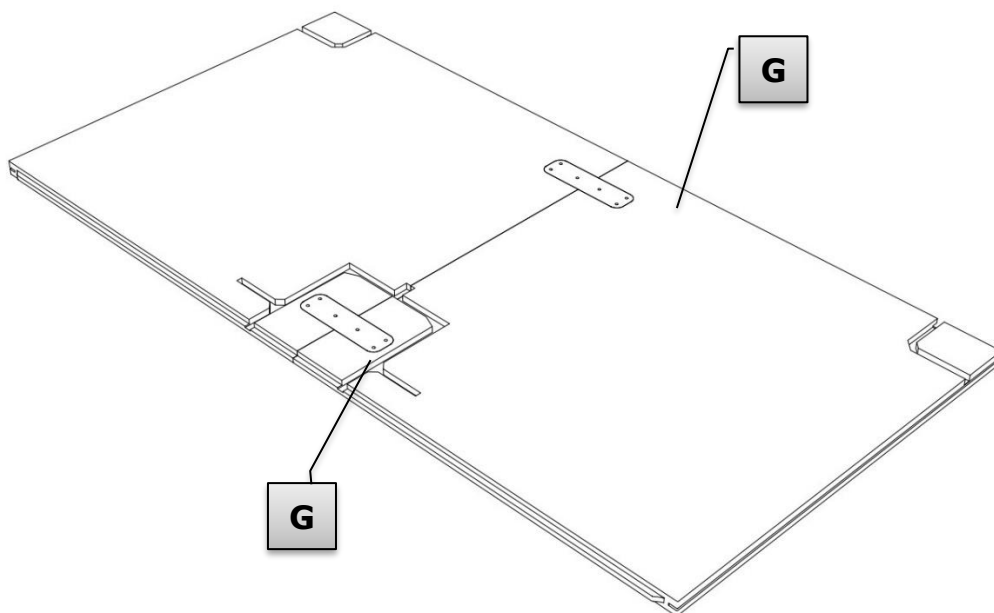
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5.1.5 Two-colour panel

A two-colour panel is a standard element on a pitch with different colours in the “Play” and “Out” areas. It consists of two half panels in two different colours and is placed on the two longitudinal ends of the play area instead of the standard panel. The two halves are joined by steel plates (G) mounted on the underside with 6 screws each without interfering with the installation mechanism.



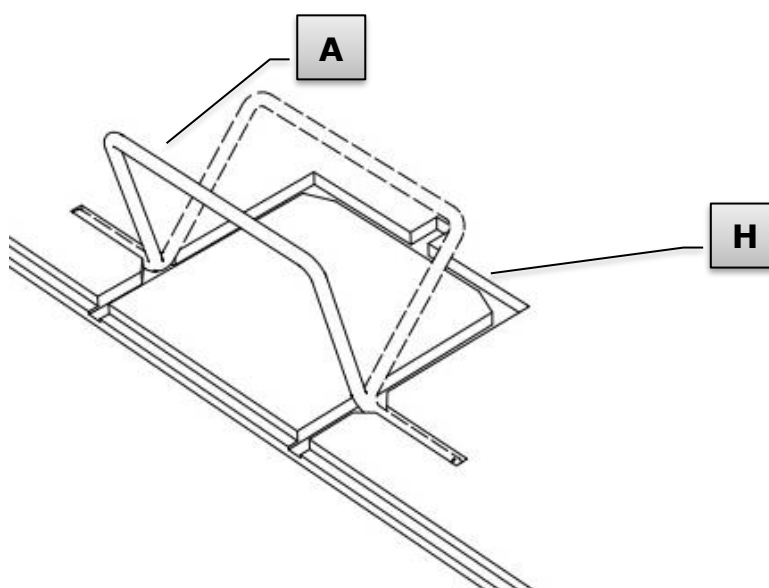
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5.1.6 Joining, alignment, installation and removal elements**5.1.6.1 Handle**

The shaped steel handle (A) centrally located on one side of the panel is the joining element that characterises the system. It is made of galvanised steel and fastened to the panel by two screws, allowing it to rotate on its axis. In this rest position (H) it is an integral part of the floor without protruding, simplifying packaging and logistics. Once rotated 180°, it can be grasped for easy positioning and installation, whereas alignment on the long sides is ensured by tongue-and-groove edge machining



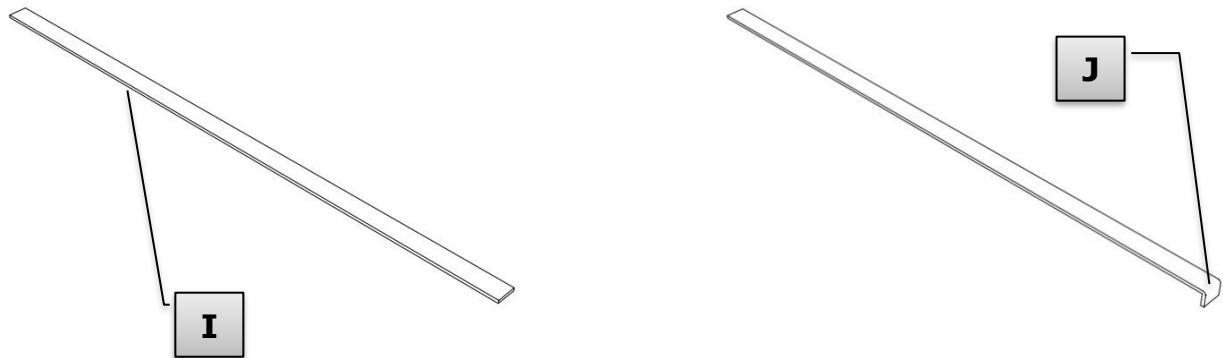
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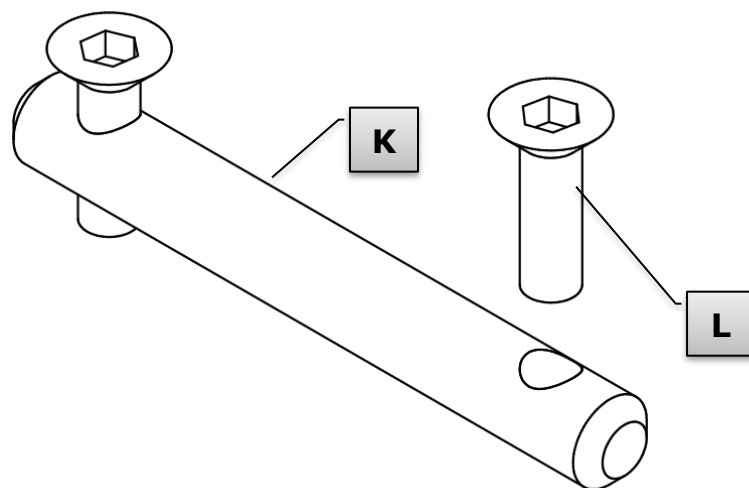
5.1.6.2 Aligning tongues

The steel alignment profile (I) is the element that correctly aligns the boards on the short side. It must be inserted between two boards, already in position, by sliding it fully in. The tongue to be positioned on the long end (J) has a 90° bend of approx. 10mm so that once positioned in its seat it does not have any protrusions.



5.1.6.3 Tie-rod

The tie-rod (K) is a calibrated, galvanised steel cylinder with 2 threaded holes. It fits into the special slot on the underside of the panel and is secured at the top by a pair of M6x20* (L) screws. It serves the dual function of sealing and alignment:



*Different lengths are required if the ramp module has to be joined to the perimeter boards

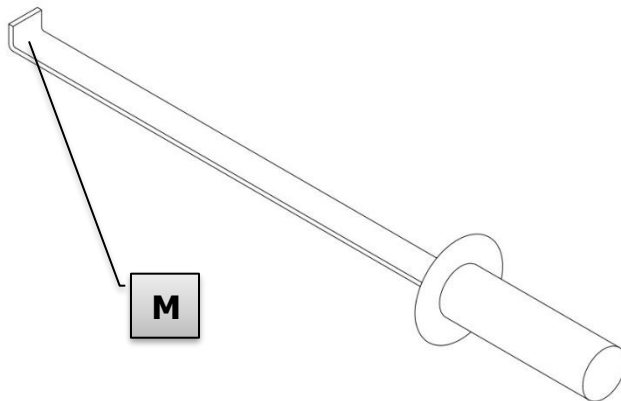
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5.1.6.4 Ejector

This is the tool needed to remove the tongues (J). At the opposite end of the handle with a knob, it has a tooth (M) to attach the end to and pull it out of its seat.



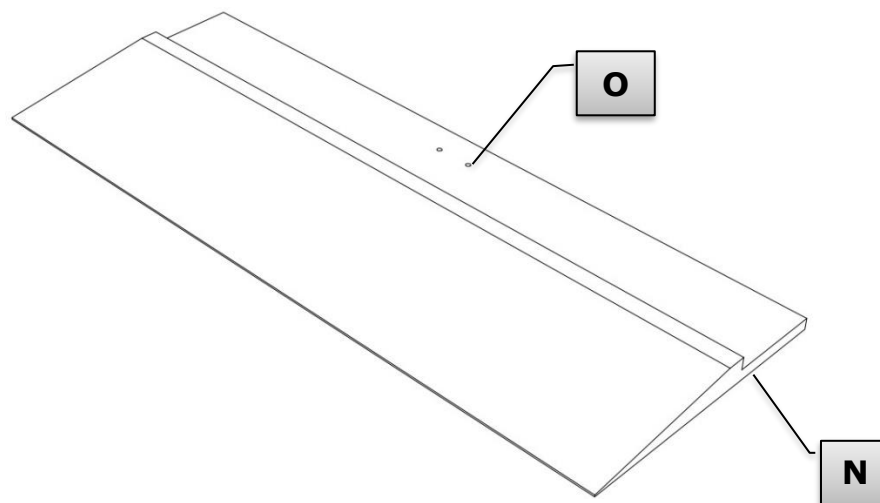
5.2 Accessories

5.2.1 Access slide

On request, the flooring can be integrated with a perimeter edge or optional access slides.

The slide, full or half, makes it easier to get onto the pitch by eliminating the step that the boards and sub-base form in relation to the ground. The various modules are placed under the perimeter boards and connected to each other by steel pins that are inserted into special horizontal holes (N) and are held in place with the screws (L) already used for the tie-rod (K) which fasten the steel bushes (O).

On request, it can be made with a different slope and depth.



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----------------------------------	------------------------------	-----------------------------	------------	----------------------	----------------------------------

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6 Transport

6.1 General information

Due to the product's characteristics, special care must be taken when transporting and storing it. As far as the climatic conditions are concerned, the same points mentioned for installation must be observed.

Incorrect transport and/or storage may affect product performance and even make it unusable.

To ensure that the product and accessories are transported and stored correctly, the following containers are supplied. All packaging complies with the international ISPM 15 – FAO standards and is therefore suitable for transportation to any destination worldwide.

6.2 Metal crates

6.2.1 General information

The metal crates have been specially made for storing and transporting the boards and perimeter. The design criteria and way they are used do not change, but they are supplied with a storage capacity that is in proportion to the pitch size in order to maximise performance with regard to:

- transport costs
- easy pitch installation/removal
- efficient storage

These crates are not stackable, but can be moved with pallet jacks and forklift trucks in both directions. They have removable sides with cardboard corners to protect the material inside and an upper crossrail for safety and reinforcement. The feet have protective caps to avoid damaging the load area. Crates can only be moved if fully assembled and material must not be moved when crates are open, even if only partially.

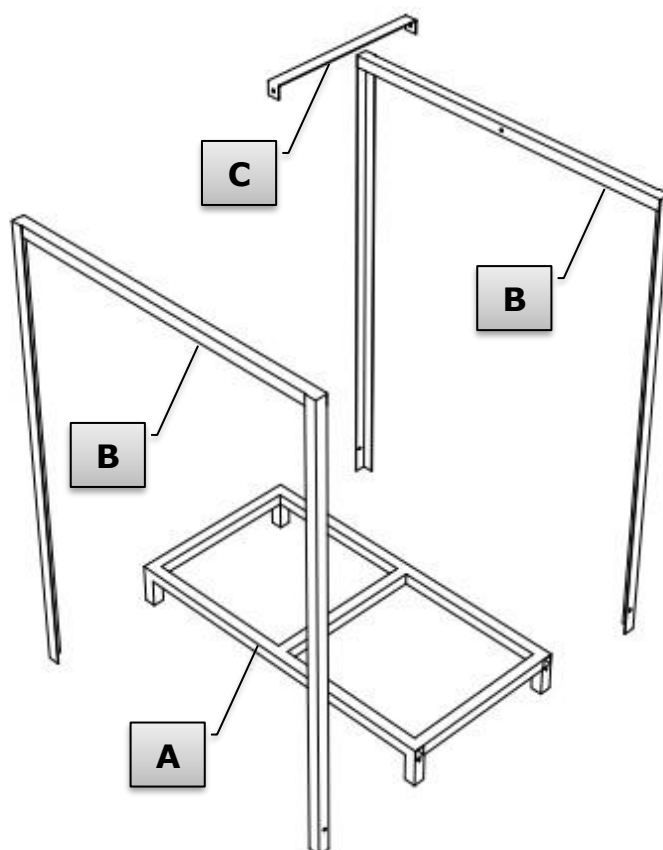
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6.2.2 Crate for boards

A standard crate contains a very large number of boards (up to 60) depending on the pitch configuration that has been chosen.

The crate consists of a base (A), openable sides (B) and an upper crossrail (C).



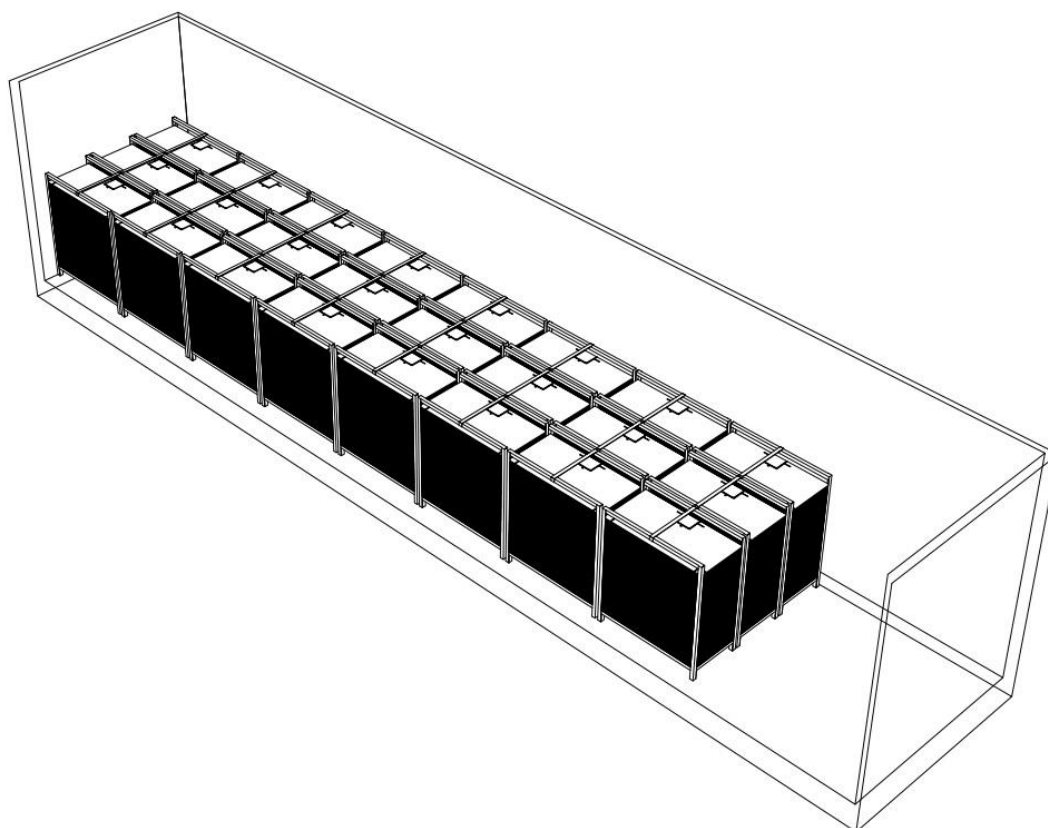
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6.2.3 Layout for transport

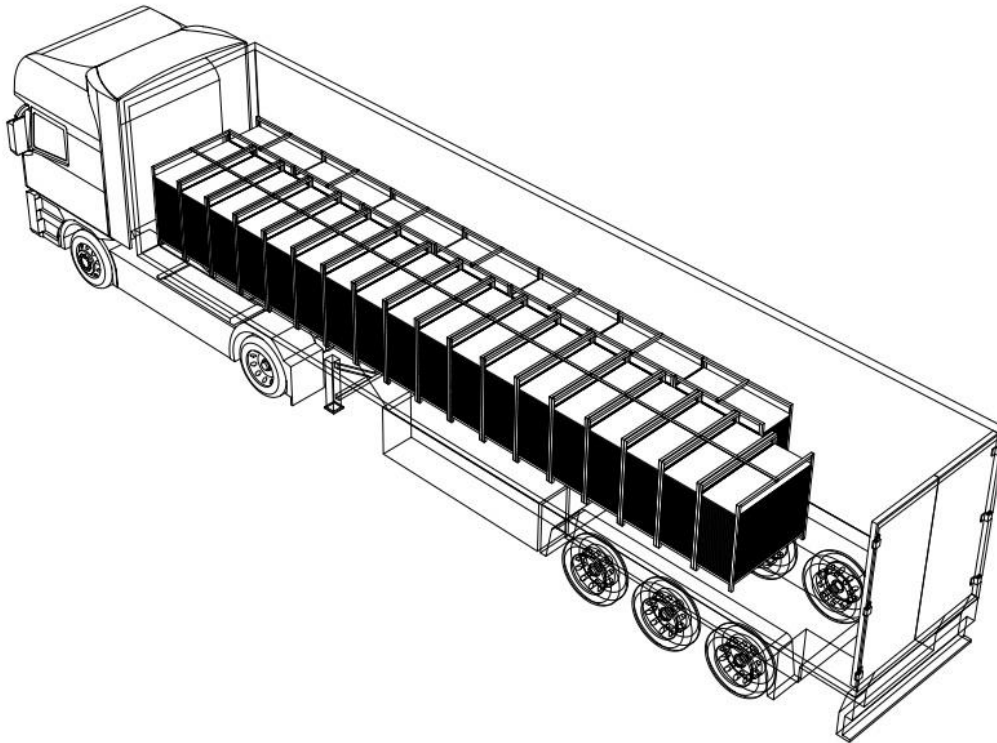
As already mentioned, the crates meet a number of requirements including transport ones. An example of how a standard Futsal pitch is loaded into a single 40" HC container or onto a standard truck with a loading bay width of no more than 2.40 m is given below. The limited amount of space required during transport is also an advantage for storage.



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7 Installation

7.1 Introduction

Once all the checks listed in point 4.1 have been carried out and all the components listed in Chapter **Errore. L'origine riferimento non è stata trovata.** have been correctly identified, you can proceed with the first installation.



Warning: FBS flooring requires a polyurethane foam mat with a minimum thickness of 15mm for installation!

7.2 Collecting the containers

The containers are supplied with a special identification tag which indicates the type of boards inside; for example, for Futsal **two-colour flooring**, the following is supplied:

- N crates for "Play" area boards
- N crates for "Out" area boards
- 1 crate for first row and whole perimeter boards on one short side
- 1 crate for end row and whole perimeter boards on other short side
- 1 crate for two-colour boards
- 1 crate for ½ "Out" area boards

Accessories, spare parts and other customised items can be placed in the crates where there is sufficient storage space. The containers, as mentioned above, are marked externally with an identification tag containing the following information.

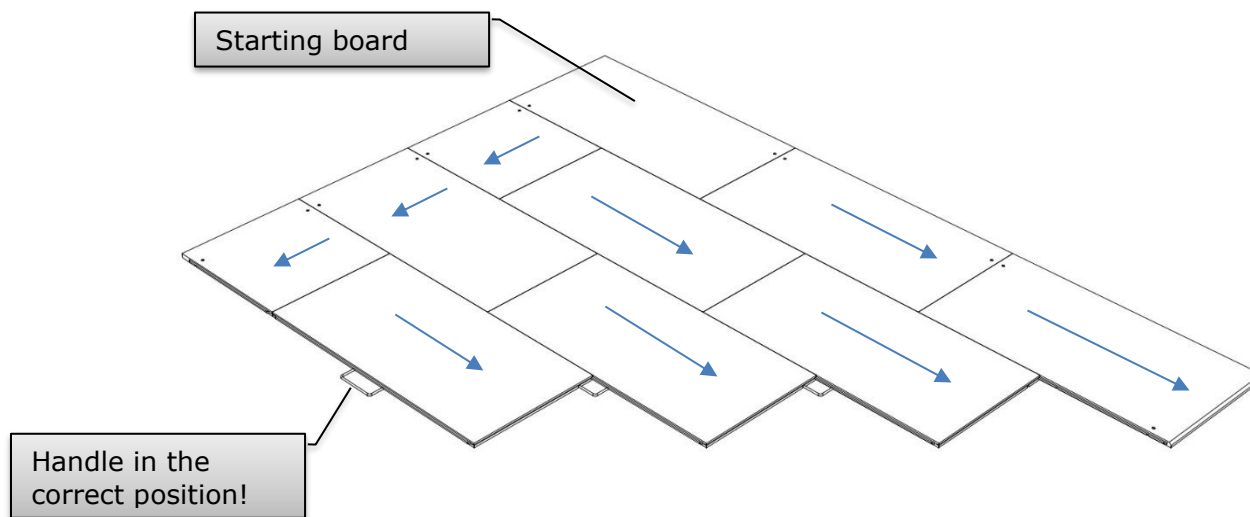
- Quantity of boards inside
- Type of board
- Colour

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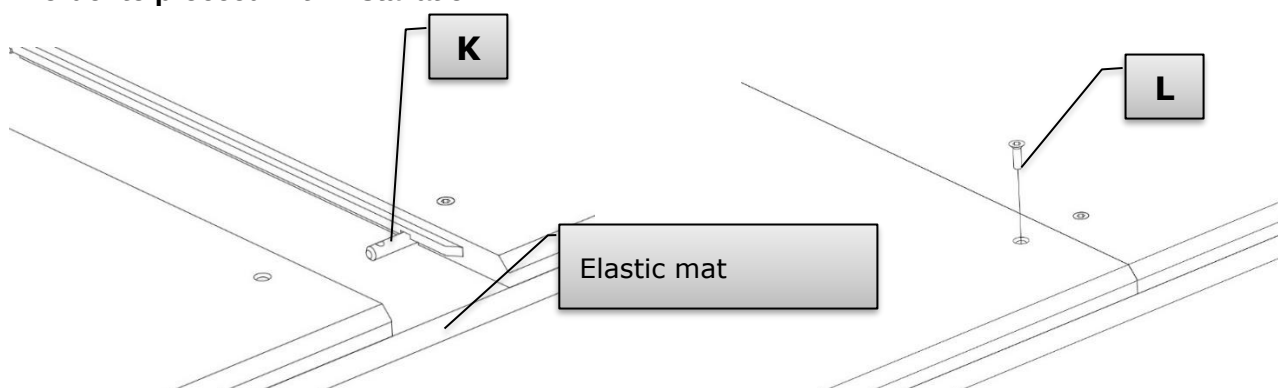
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7.3 Where to start installation

The position for starting installation can be in any one of the 4 corners of the area to be covered, the starting corner board (whole or half) should be placed as shown in the drawing provided, the joint pin (K) should be pre-inserted and fastened with its screw (L) in the lower recesses (F) and the subsequent perimeter boards are fastened with only pins (K) and screws (L) and are aligned with the tabs (I).



Warning: Handle (A) must be correctly extracted from the panel and rest on the foam sub-base in order to proceed with installation!



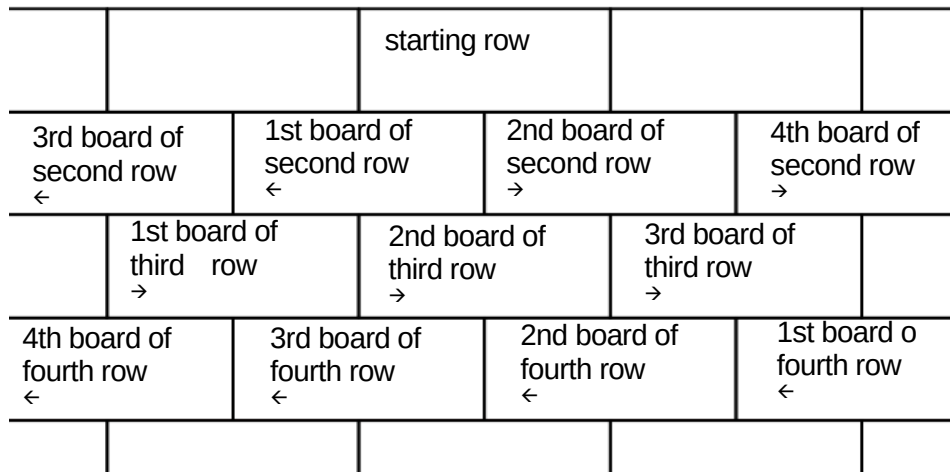
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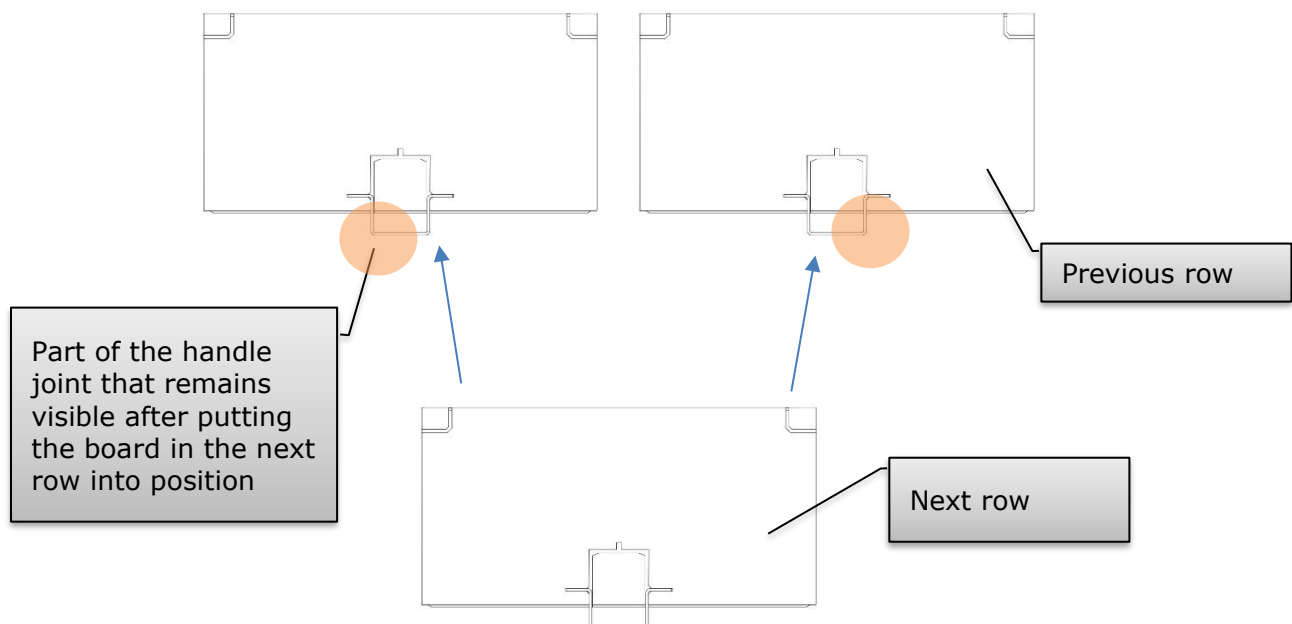
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7.4 Laying sequence

The FBS system has symmetrical boards so there is no single direction of installation. Once part of the first row has been put into position, you can start laying the second set of panels from the centre, one corner or the opposite corner, and continue positioning the panels from that point either to the left or the right, and in the same way with the subsequent rows, as shown in the simulation below.



Installation must then proceed in the above order by matching the handles of the boards already put into position with the slots in the corners of the board to be installed. One half of the handle remains visible so that it is easy to check that it has been fitted correctly which makes the entire process quicker.

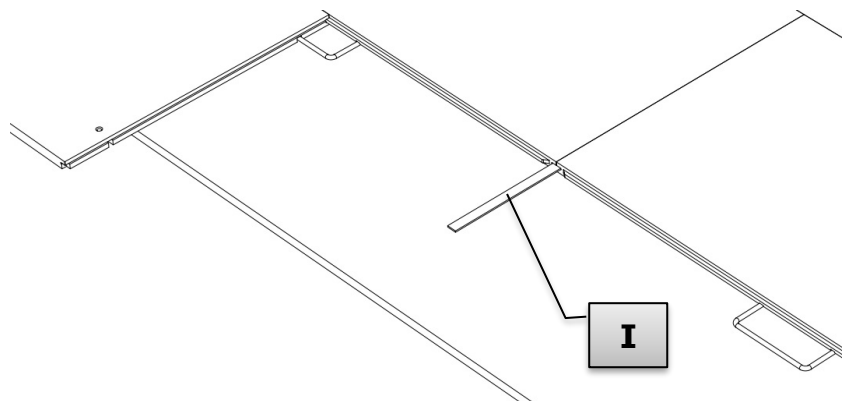


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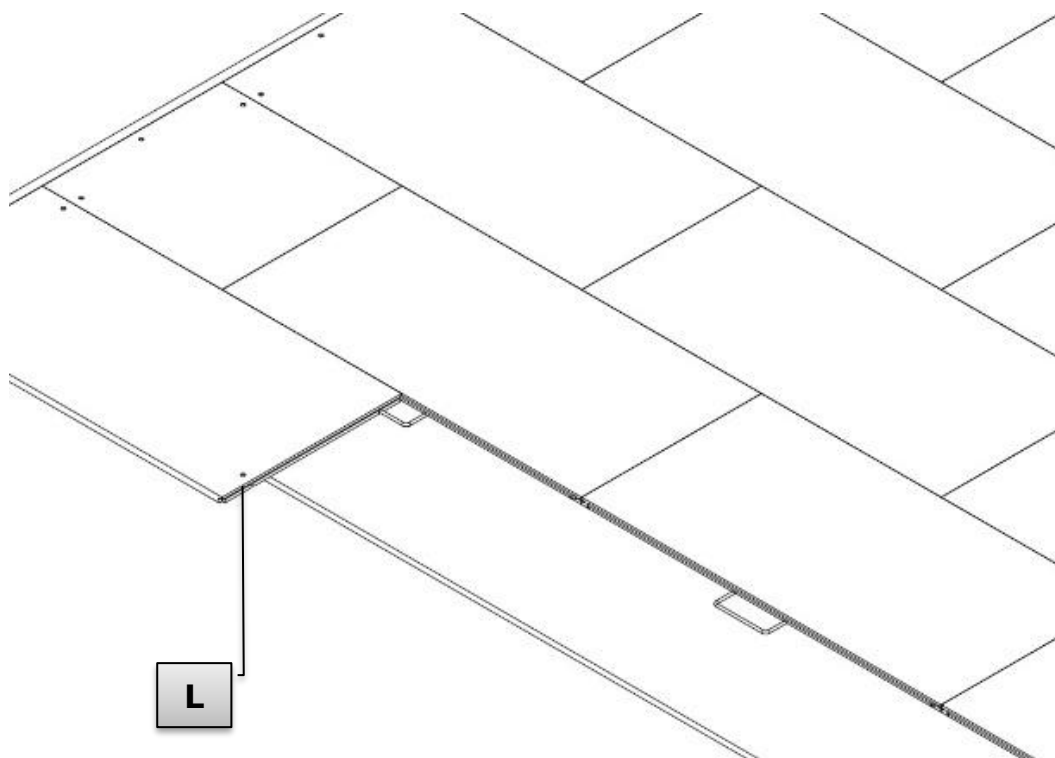
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Installation is completed by inserting the standard tongue (I) into the special slot on the short side of the board. It must be slid fully into place and protrude by about 5/6 mm to make removal easier when the floor is disassembled.



7.5 Laying the last row

The last row is laid in the same way as the first by laying the end boards in sequence and securing and reinforcing the pitch with pin (K) and screws (L). The boards are aligned in this case by inserting the tongue (J) with the end part bent so as not to interfere with the areas around the pitch.



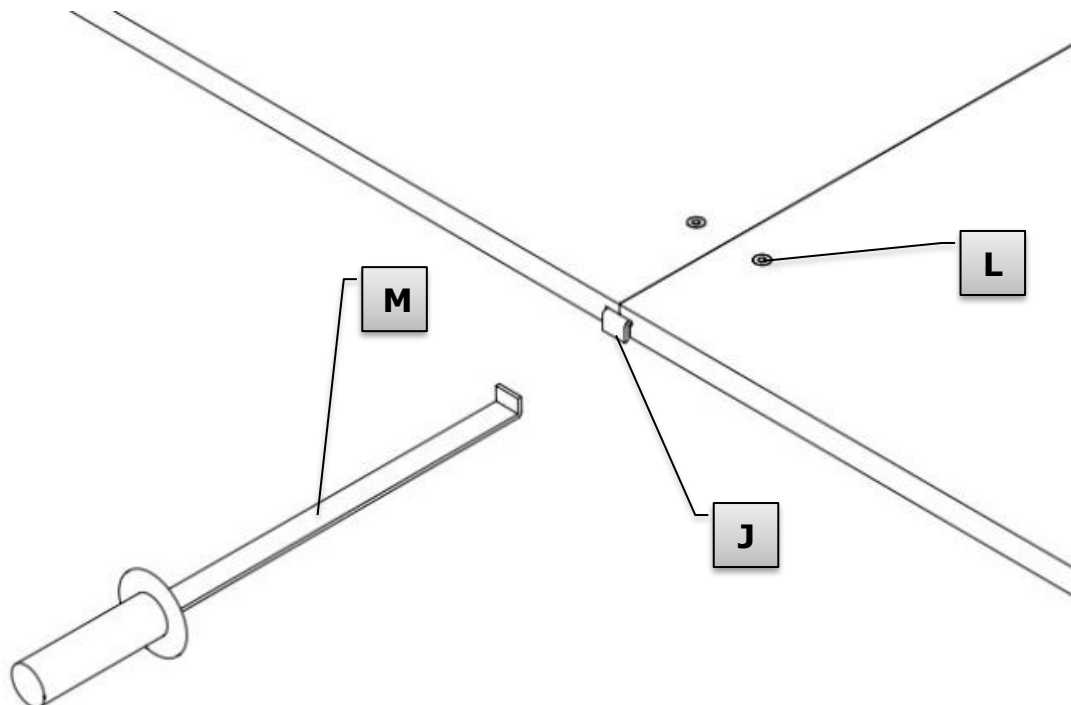
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LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

7.6 Removal and storage

The removal procedure is the same as the installation one, but in reverse order. Unscrew and remove all screws (L) on the pins (K) and loosen the tension of the pitch. Then remove the tongues (J) with the extractor (M) which is fastened to the outermost part which is in contact with the board.

All the boards can now be removed one at a time by simply lifting them carefully, making sure that the joint element is released from its seat. When storing them in the crate, simply put the handle back into position so that the packaging is free of protrusions and follow the same order and composition as the original load.



Warning: to avoid damaging the surface of the flooring, we recommend reassembling the crate with the outer faces in contact with each other!

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8 Maintenance

8.1 Introduction

The FBS floor is made of birch plywood with 21mm nominal thickness (tolerance +/- 0.5mm) to which a coloured or clear varnish is applied that is compatible with the sport that the pitch/court has been made for. The top layer is inevitably subjected to more wear and tear. Cleaning and care before, after and during every play session helps to safeguard performance and service life.

8.2 Daily cleaning

For daily cleaning, simply remove dust and dirt with a dry mop (do not use automatic machines). More stubborn dirt can be removed using a slightly damp cloth.

Mild detergent that does not scratch the surface can be added to the water.

Any other acid- or alkaline-based products may attack the surface and damage it irreparably. We therefore advise carrying out specific tests on an isolated part in order to monitor the result before intervening on the whole surface.



Warning:

- **Never** use products that contain ammonia, solvents, fuel oils and by-products.
- Do not use too much water on the floor since the wood may swell. Avoid using wet cleaning equipment (floor cleaning machines).
- Dry water or other liquid spills on the floor immediately.

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8.3 Access

Dirt, stones, sand and other materials are the main cause of wear and tear on wood and laminate floors. To maintain system performance, we recommend carefully controlling access to the surface by placing a suitable type, size and quantity of mats, drop cloths or matting just before access to the pitch that guarantees that all dirt on the athletes' feet is removed before they step onto the floor.

8.4 Moisture and water

Moisture and water are the main cause of serious damage to the system. Even if the surface is protected by a multi-component industrial coating, the phenolic-bonded plywood inner compound may become less cohesive and high performing. To avoid high levels of humidity and sudden temperature changes, the environment must have a temperature and humidity monitoring system that operates all year round.

The floor should never be wet; if water is accidentally spilt on the floor, it must be removed immediately. If there is a possibility that the water has penetrated one or more boards, they must be dried and/or replaced immediately to prevent the humidity being transferred to the surrounding areas.

If areas of penetrating damp or rising damp are detected or other external reasons that lead to the presence of water, the floor must be removed immediately to make sure that it is not damaged and remove the cause.

IMPORTANT

Mondo does not accept any liability for damage to the product caused, in whole or in part, by the use of unsuitable footwear, litter, debris, dust, sand, gravel, mud, dirt, adhesive tape, food, drink, chewing gum, tobacco, naked flames, welding, engine fluids, unsuitable furnishings or equipment, sharp objects, abrasive surfaces, concentrated loads, excessive distributed load, vehicles and equipment in transit or parked on unprotected sports flooring.

Issued by Customer Service	Compiled by Luca Reinaudo	First issue date 09/2015	Revised by	Revision level 04	Present revision date 09/2021
----------------------------------	------------------------------	-----------------------------	------------	----------------------	----------------------------------

LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

9 Markings

The marking of the playing fields can be done using specific adhesive tapes such as 3M or Mondo approved two-component paint, such as Mondo P10, applied according to the manufacturer's instructions. Always check the expiry date.

IMPORTANT

Mondo accepts no liability for damage to products caused in whole or in part by the use of tape and/or paints not approved by Mondo, or used after the expiry date.

Mark the pitch according to the Sports Federation regulations using adhesive tape to mark the width of the lines if marking is done using paint.

After thorough cleaning of the parts to be treated, paint the line with a foam rubber roller of the same width as the marking.

Remove the tape as soon as the marking has been completed.

The flooring can be walked on 24 hours after laying is completed.

Installed floors must be protected from the traffic and pollutants generated by third-party work. If necessary, provide protective sheets or boards.

IMPORTANT

Mondo does not accept any liability for damage to products caused in whole or in part by third party work.

IMPORTANT

Mondo accepts no liability for damage to products caused in whole or in part by the use of improper or unauthorised laying or marking procedures.

IMPORTANT

Environmental conditions for storage, installation, marking or operation other than those indicated by Mondo; the use of storage, installation, painting or maintenance procedures not approved by Mondo; the use of paints, detergents or other chemical products not approved by Mondo; use of the floor for purposes other than the intended sports purposes; the carrying out of technical work not previously authorised by Mondo will immediately make the Mondo warranty null and void.

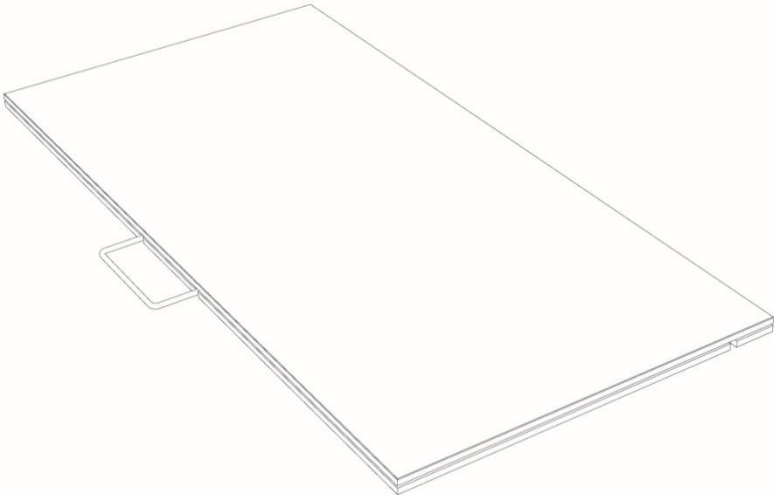
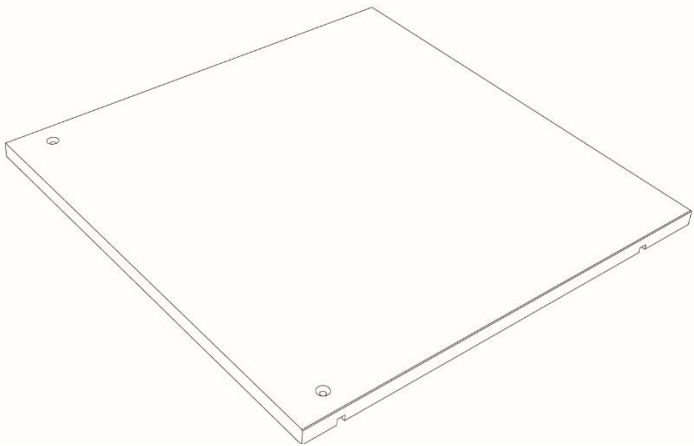
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LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

10 Accessories and Spare Parts

If you wish to purchase spares, please send us a request and indicate the part number and quantity.

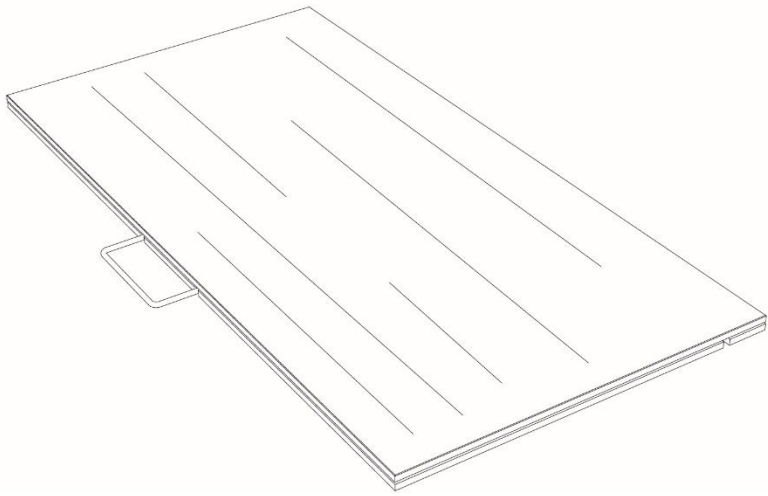
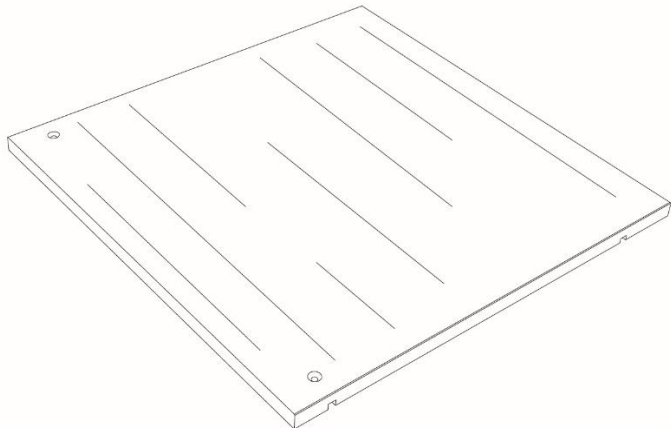
The part number can be found in the following list:

Figure	Number	Description
		Varnished birch 1480x741 1480x747 (tongue)
		Varnished birch 740x741 740x747 (tongue)

Issued by Customer Service	Compiled by Luca Reinaudo	First issue date 09/2015	Revised by	Revision level 04	Present revision date 09/2021
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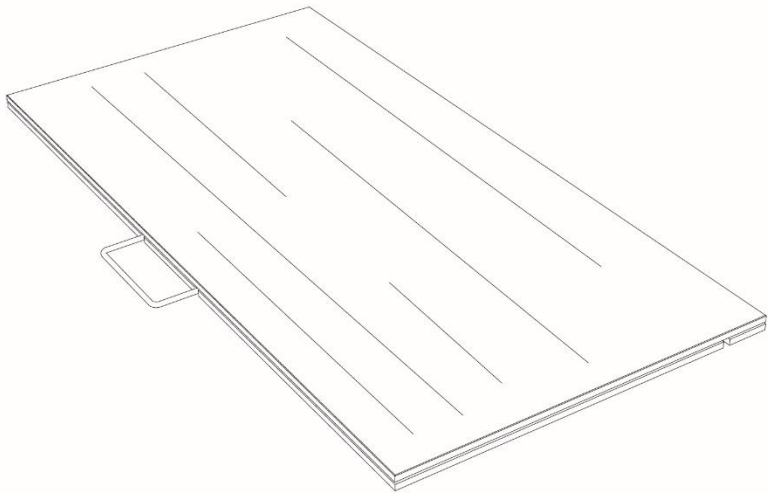
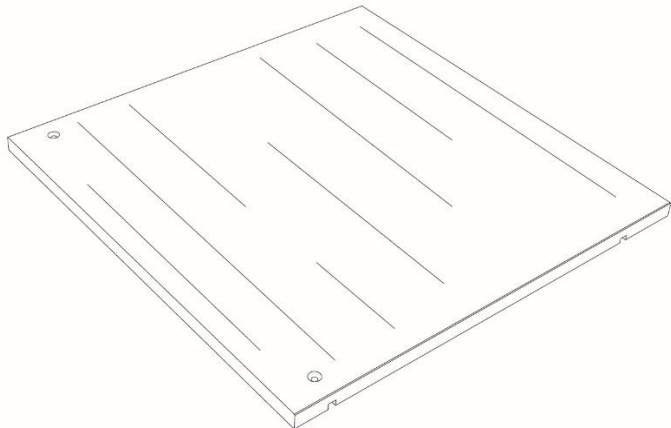
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		Birch strip 1200x600 1200x606 (tongue)
		Birch strip 600x600 600x606 (tongue)

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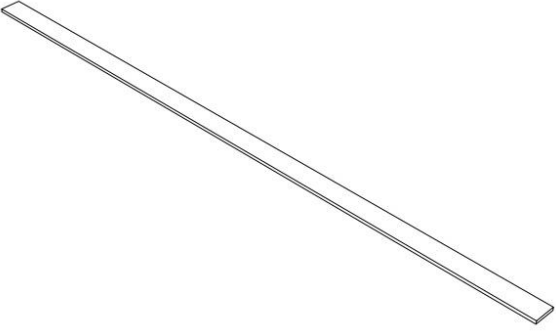
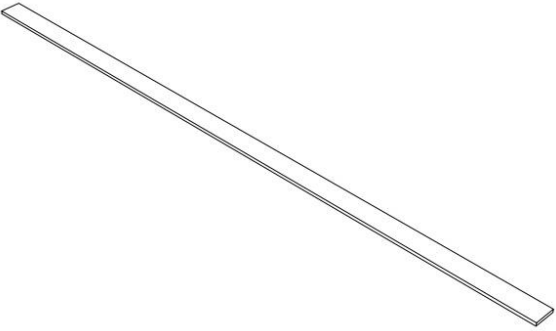
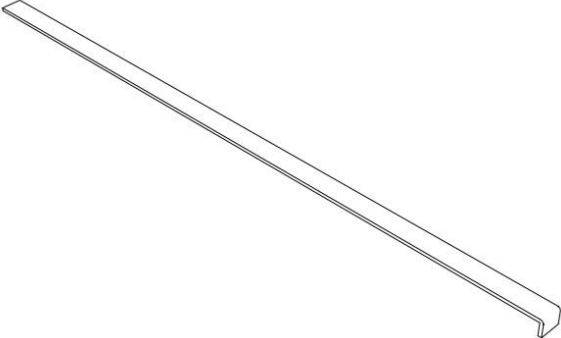
LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

		Birch+solid wood 1200x600 1200x606 (tongue)
		Birch+solid wood 600x600 600x606 (tongue)
Figure	Number	Description

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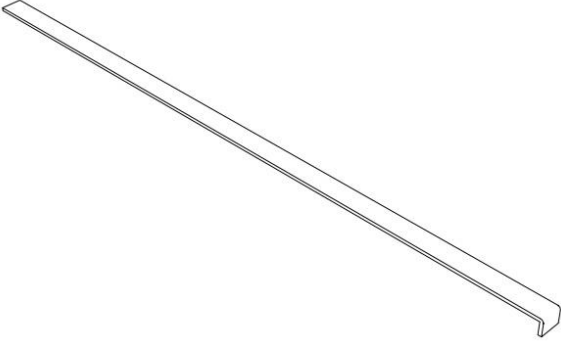
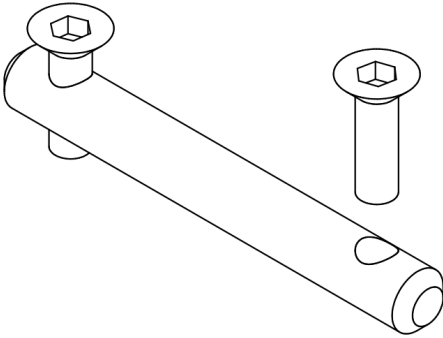
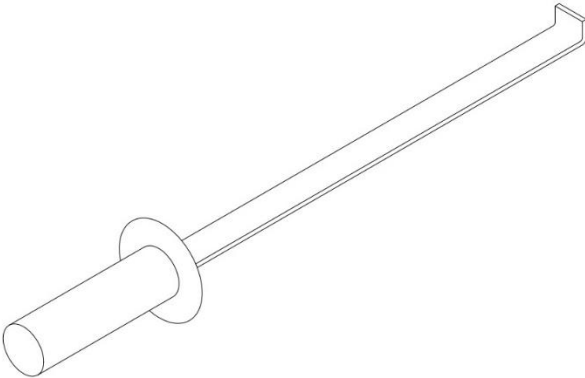
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		Strip 741 mm
		Strip 600 mm
		Perimeter strip 741 mm

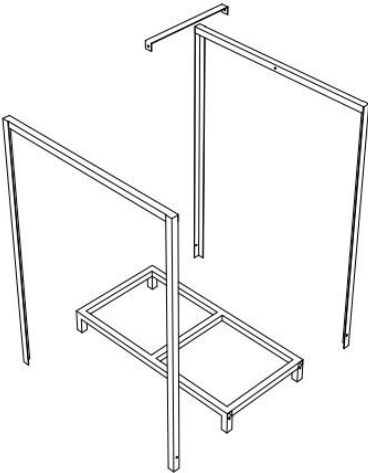
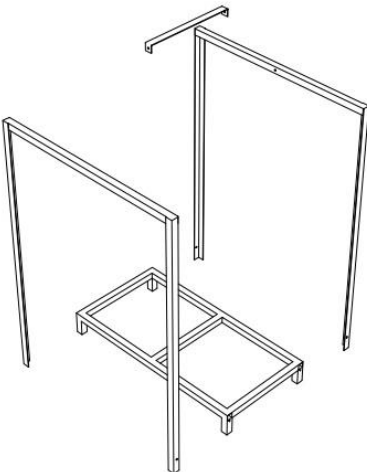
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LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

		Perimeter strip 600 mm
	0009863	Tie-rod diam.10 mm with 2 M6x20 screws
		Ejector

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LAYING, USE AND MAINTENANCE INSTRUCTIONS - CS 5.29

		Removable metal crate for 1200x600 format
		Removable metal crate for 1200x600 format

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