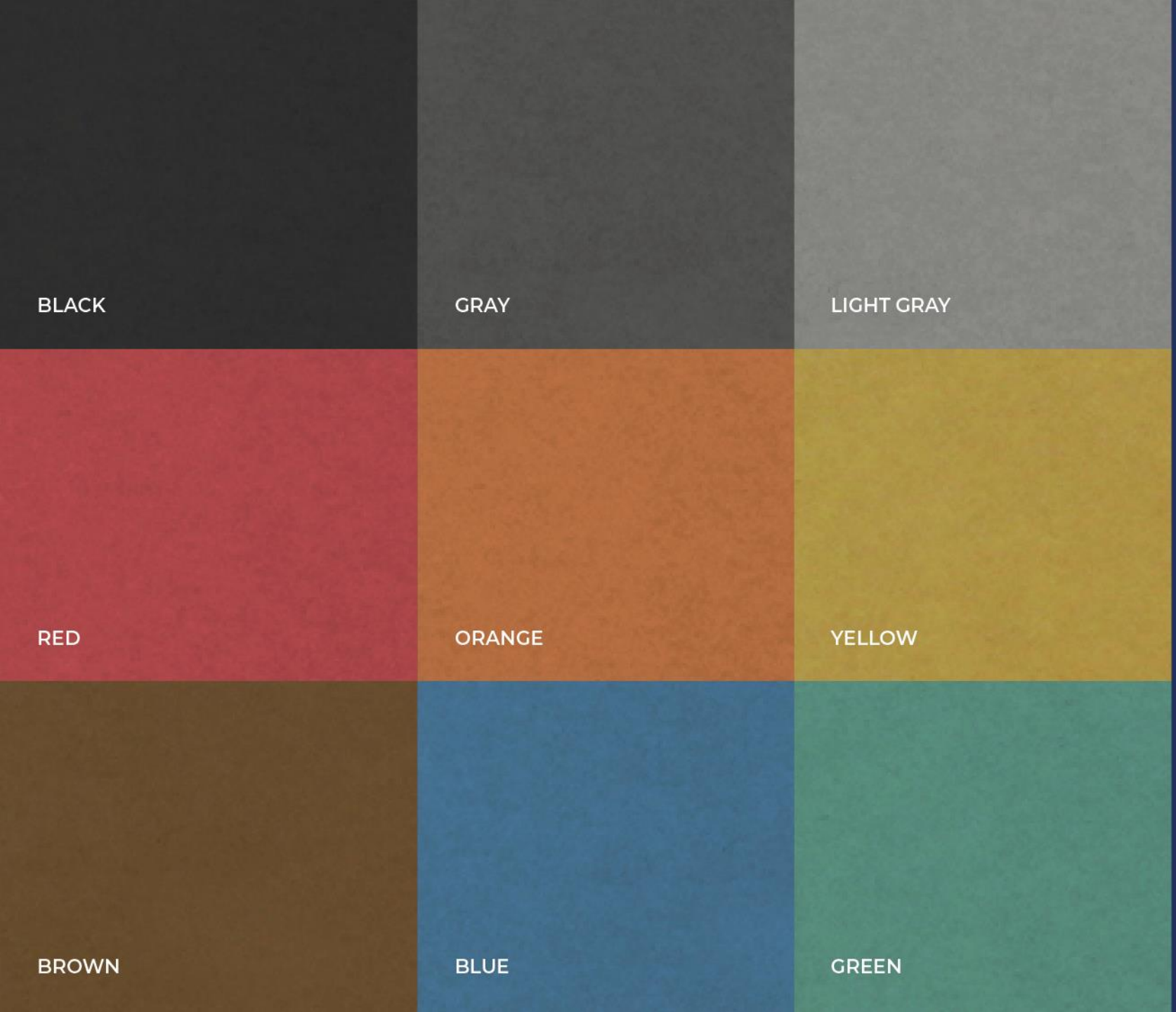
FORESCOLOR

TECHNICAL DATA



Size:
1220 mm (Width) x 2440 mm (Length)

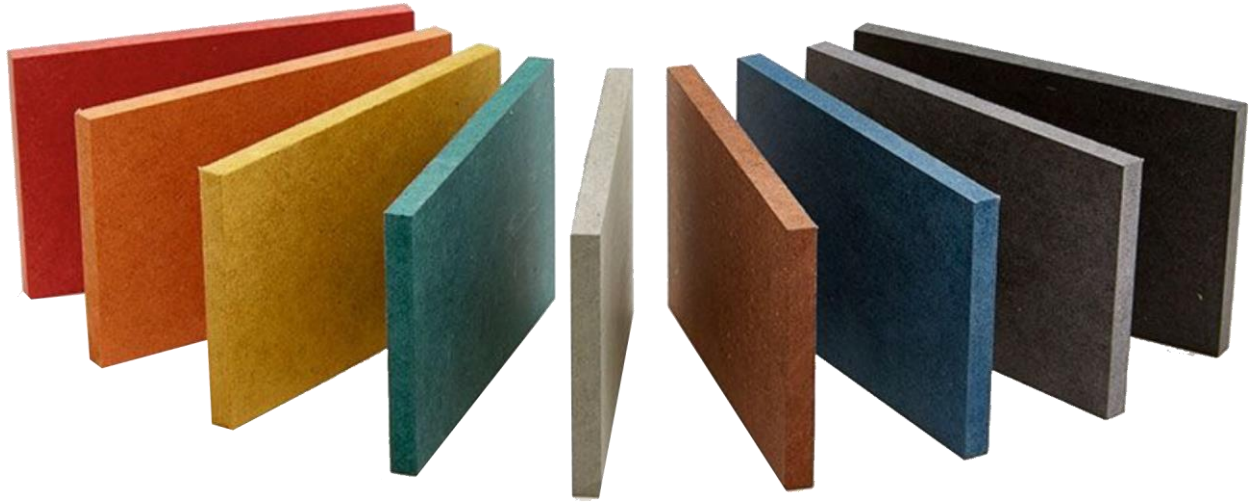
Thickness:
5, 8 and 16 mm are available in stock
9, 12 and 18 mm are available on request

FORESCOLOR

Specific Features

FORESCOLOR has consistent COLOR distribution from surface to all the way through and it allows various visual effect and extensively diverse in design concept.

By using eco-friendly materials which is harmless to humans and has high color fastness, it enables to apply in enclosed interior space and direct human contact material such as infant-toddler toys.



General Specifications

General Specification

Attribute Classification			Standard Figures				
Properties	Standard	Unit	5	8/9	12	15/16	18/19
Tolerances (Thickness)	EN 324-1	mm	±0.2	±0.2	±0.2	±0.2	±0.2
Tolerances (Length & Width)	EN 324-1	mm/m	±3.0	±3.0	±3.0	±3.0	±3.0
Tolerances (Squareness)	EN 324-2	mm/m	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Tolerances (Edge Strightness Length&Width)	EN 324-2	mm/m	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5
Tolerances (Density)	EN 323	%	±7	±7	±7	±7	±7
Formaldehyde Emission (E0 Class)	EN 120		Class E1 / Class E0 in desicator method				

Technical Specifications

Technical Specifications

Attribute Classification			Standard Figures				
Properties	Standard	Unit	5	8/9	12	15/16	18/19
Thickness	EN 324-1	mm	5	8/9	12	15/16	18/19
Density	EN323	Kg/m3	820	780	760	760	740
Moisture Content	EN322	%	7 ± 2.0				
Thickness Swelling/24hr	EN317	%	18	12	10	8	8
Internal Bond	EN319	N/mm2	≥1.00	≥0.80	≥0.80	≥0.75	≥0.75
Bending Strength	EN310	N/mm2	≥34	≥34	≥32	≥30	≥30
Modulus of Elasticity	EN310	N/mm2	≥3000	≥3000	≥2800	≥2700	≥2700
Swelling After Cyclic Test	EN321	%	25	19	16	15	15
Internal Bond After Cyclic Test	EN321	N/mm2	0.35	0.30	0.25	0.20	0.20

APPLICATION

Hotel, Restaurant Interior
Interior material for commercial or office facilities

Door, Moulding

Furniture, Interior decoration

Kitchen, Bathroom,
Wall Panel Interior

Exhibition, booth, Stage, Sign

Toy, Educational tool

FORESCOLOR

ADVANTAGE

Moisture Resistant

- FORESCOLOR has high moisture resistance due to high melamine content of resin used.
- It can be used where humidity is a concern such as kitchens, bathrooms with the correct finishing.

Color Throughout

- Consistent Color distribution from surface to all the way through.

Non Toxic

- The formaldehyde emission of FORESCOLOR is classified E0 grade. (with desicator method)
- Non toxic and excellent color-fastness due to use of special resin and organic dyes.

Tool Friendly

- Due to its excellent density profile and high melamine content of resin used, there is little or no sanding required after machining.

FORESCOLOR

ON REQUEST

Flame Retardant

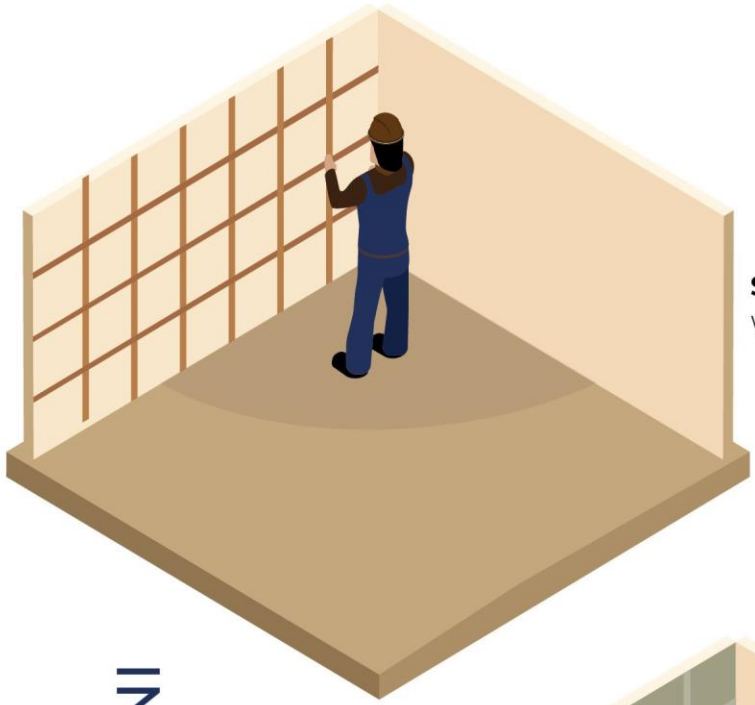
- Flame Retardant is also available (Class B-s2, d0)

No Added Formaldehyde

- No formaldehyde resin is used during the manufacturing process.

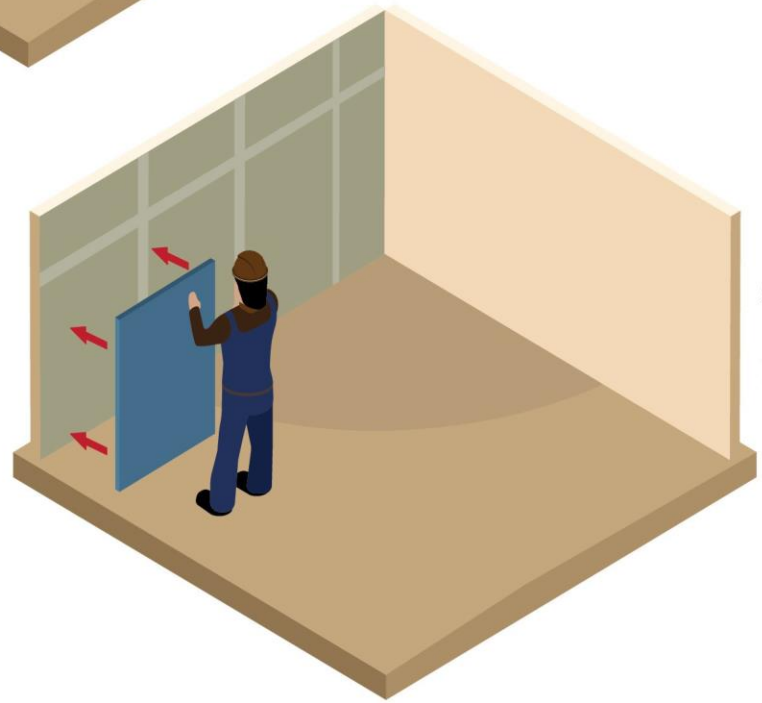
FORESCOLOR

INSTALLATION GUIDE

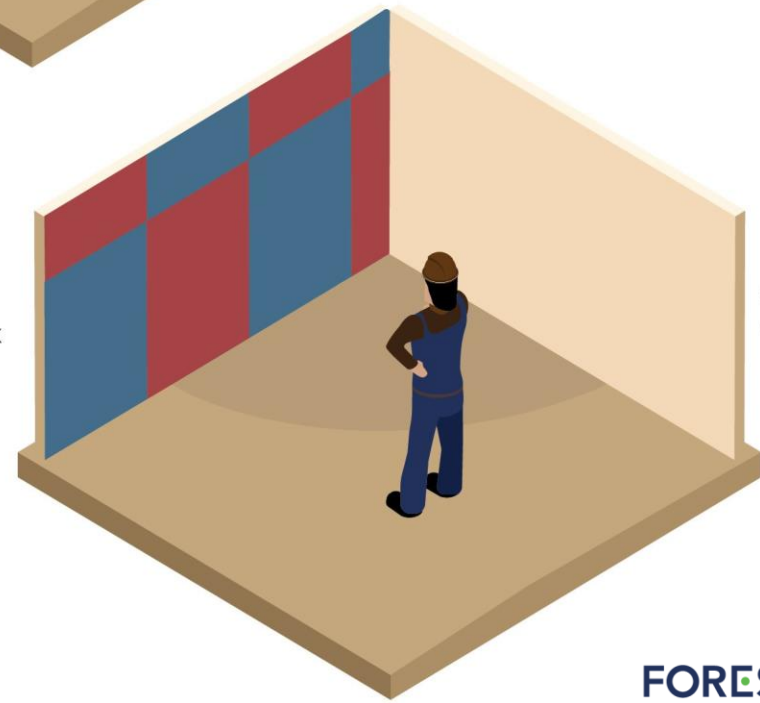


STEP1
Wall structure finishing

STEP2
Plywood paneling by pin takka
or fixed bolt and Sorting up the walls



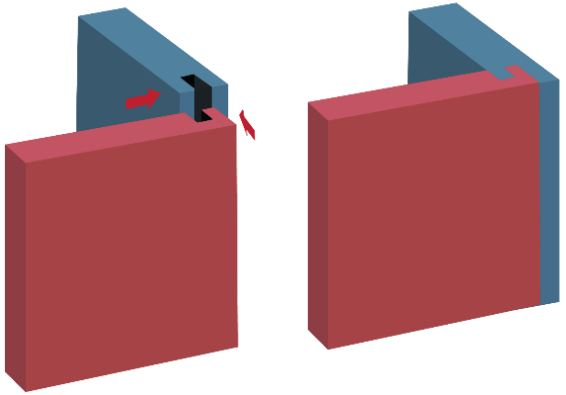
STEP3
Bond FORESCOLOR & fix
by takapin



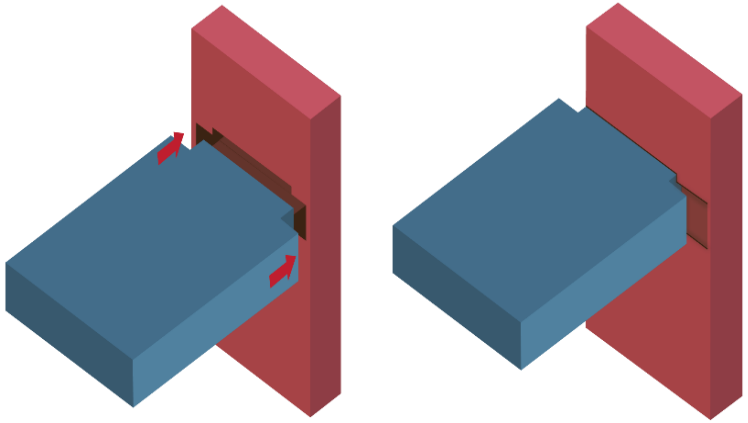
STEP4
Complete

FORESCOLOR

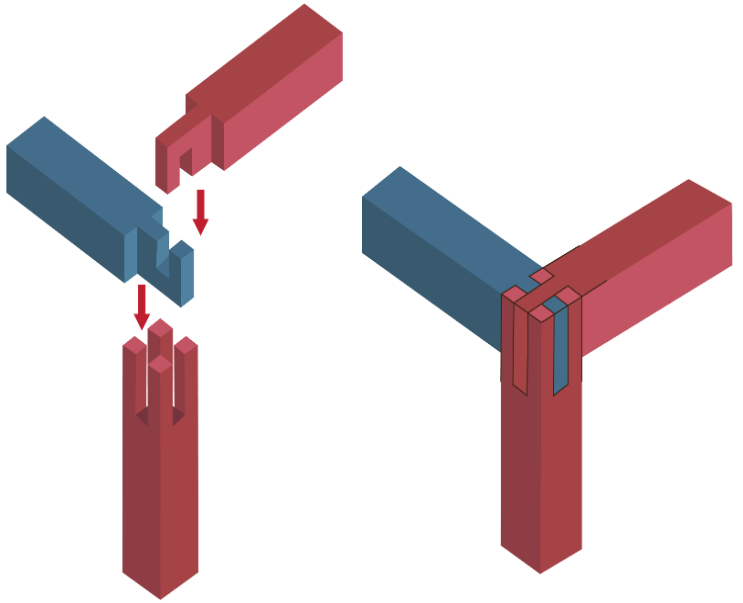
Furniture Installation Guide



Insert the panel following the arrow



Joint the panel following the arrow



Joint the panel following the arrow

FORESCOLOR

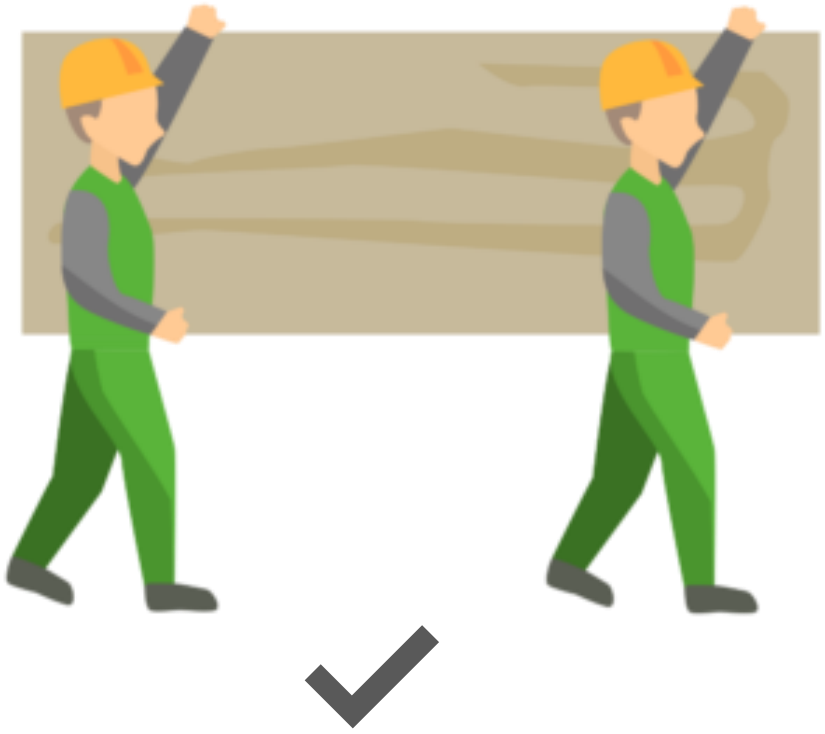
Handling and Storage of MDF

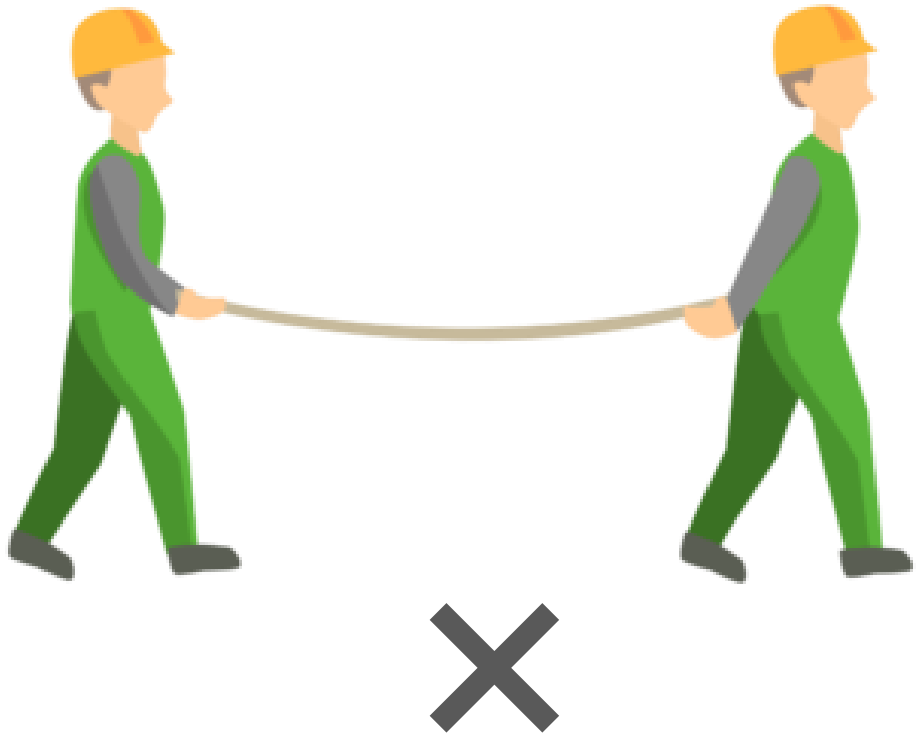
The product is wood based panel board and is composed of wood, resin, wax, and natural colors. Since the formaldehyde contained In the product may irritate the eyes and respiratory systems,
the warehouses and workplaces where a large quantity is stored should be ventilated. In addition, products should be carefully stored and handled even as they have passed the required inspections. Take note of the cautions indicated below considering the possible problems before and after work.

Cautions in the transport and storage of products

1. MDF products are weak against moisture and should be stored in a well-ventilated, non-humid place and kept away from direct sunlight.
2. Protect the products from external weather (snow and rain, etc.) during storage and transport.
3. Load the products on a non-humid flat ground using four or more well-dried, same-sized supports(4.5mm or lower products require six or more sup-ports).
4. When loading the products in 2 or more layers, use vertical and horizontal supports in the same positions to prevent possible bending. (Low-density products may be deformed if loaded in 3 or more layers.)
5. If the products need to be stored for a long time, cover them with vinyl.
6. When loading or transporting the products, maintain a uniformly arranged state.
7. When transporting the products, the connectors of bundles may snap, take care against possible safety accidents.
8. Since the products are heavy, adequate operation equipment should be used considering the safety load when transporting or loading the products.

TECHNICAL DATA

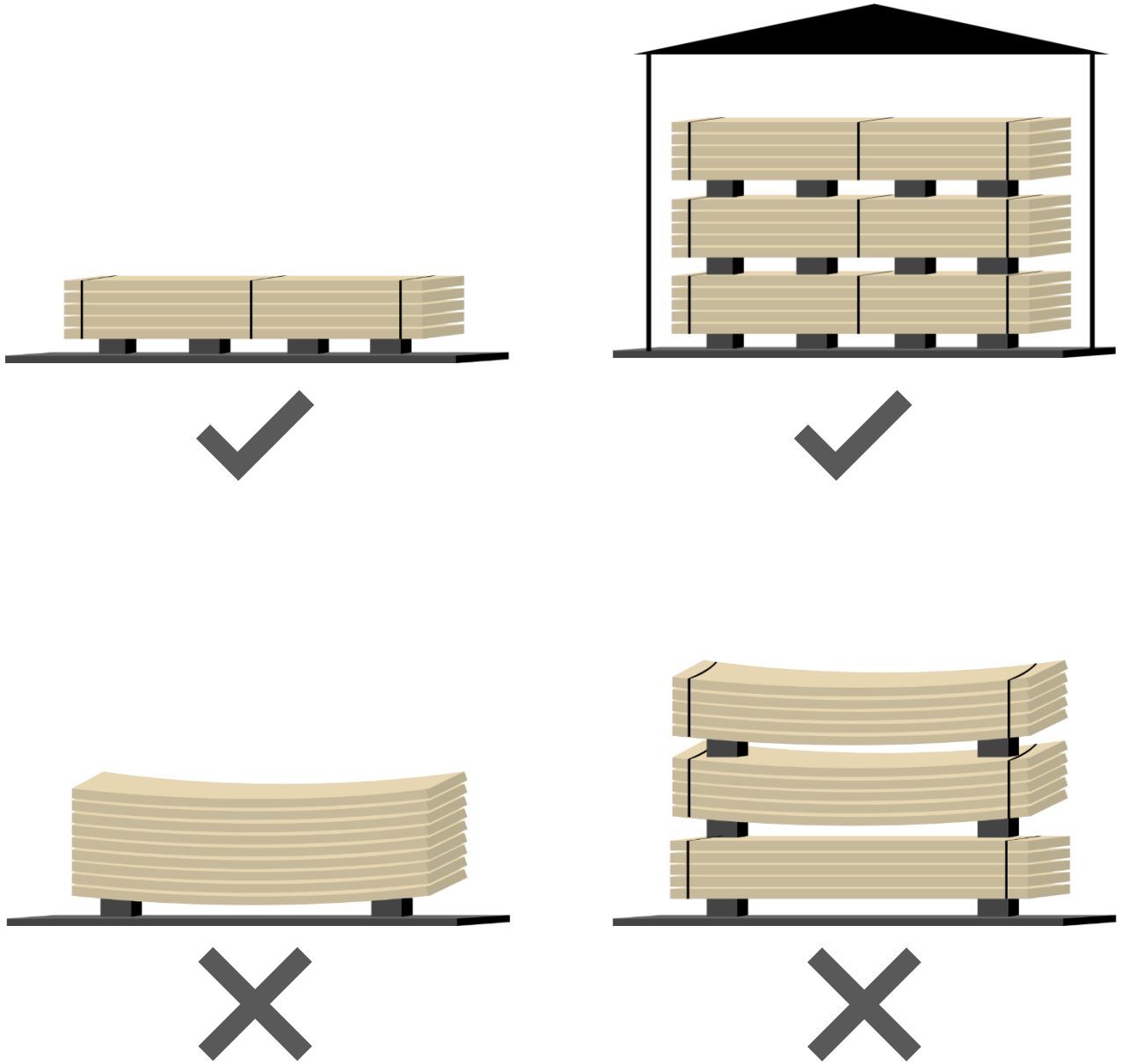




Handling

Whenever possible, the panels should be handled using appropriate equipment, such as forklifts or panel lifters, etc. When the panels have to be manually moved, they must be moved one by one, in the vertical position, in order to remain level without bending. The panels are heavy, so they should not be moved without a sufficient number of people.

TECHNICAL DATA



Storage

When ready for transport, the panels are piled up on pallets, strapped, and with labeled with cardboard identification. Pallet straps should only be removed to acclimatize the panels to the place of application. FORESCOLOR must be stored in a roofed area, protected from sunlight and rain, on a horizontal flat base. The pallets must be placed on supports of sufficient height (more than 90 mm) to allow easy access with a forklift. The maximum distance between the supports should not exceed 800 mm and the maximum distance between the 1st support and the top of the pallet should not exceed 210 mm. If the pallets are piled on top of each other, all the support bases must be aligned to prevent deformation.

Cautions in processing

1. When humidity increases during rainy season, or temperature drops in winter season, do not adhere or process the products to avoid possible weakness of adhesion.
2. If the products are processed in a state wherein the temperature of the products is high, quality may be affected depending on the secondary processing condition; therefore, the work should be performed only after sufficient cooling.
3. Low-density products may generate naps during NC work; therefore, products should be selected considering the condition of secondary processing work and usage of the products.
4. As with other wood products, the dust generated during cutting and other processes may irritate the eyes, respiratory systems, and skin; therefore, al-ways keep the workplace clean, use adequate dust-collecting apparatus, and wear protective devices.
5. When cutting the products, take care against possible fire caused by friction with tools.
6. Odors and gases may be emitted during heat compression work in secondary processing; there-fore, ventilate the workplace.
7. During secondary processing of the surface, the adhesive, which has high moisture content, may generate problems during processing.
8. When processing both faces of the products, the difference in moisture content and contraction/expansion rates may cause bending; therefore, maintain the same processing condition.
9. During secondary processing, the thickness may be reduced by excessive pressure and heat; therefore, maintain appropriate processing condition.
10. Do not apply excessive load considering the products.
11. For the physical property data of the products, inquire with a distributor of FORESCO CO., Ltd.

Precautions while handling FORESCOLOR

- Lift properly not to drag edges while moving the boards (Beware of scratches on surface)
- Do not touch boards with polluted gloves or wet hand directly.(Change gloves when handling multiple colors)
- Do not throw or step remaining boards after cut-to-sized processing.
- Do not let adhesives to stain on the surface.
- Clean immediately in case of adhesive reveal on the surface with dry towel (do not rub)
- Do not use water towel or oily product to clean boards without coating.
- Use vacuum cleaner or dry towel to clean boards without coating.
- Always move boards by 2 persons.
- Always perform coating after dust is completely removed.

Techniques appliable to the product

Due to its high density and mechanical performance, FORESCOLOR is suitable for several techniques such as:

- CNC Routing; Laser cutting; Sandblasting; Digital printing.
- Lamination;Veneering
- Wood joinery techniques.

Execution

- All tools suitable for wood-based panels are adequate to use in FORESCOLOR for cutting, drilling and routing. Drill all necessary holes before installation.
  The holes shall not be closer than 15mm of the edges.
- It is recommended to sand the surface before the gluing process. Start by using a 120 grit, then a 180 and move up to a 280 grit. When processing the panel surface, differences of moisture and expansion rates between the opposite surface may cause bending. Process both sides similarly to prevent it.
- For wall cladding, FORESCOLOR can be fixed using screws, nails, or bonding elements to a support structure in metal or wood frame placed at least every 600mm.
  The support structure can be metal or wood frame.

TECHNICAL DATA

FINISHING

It is recommended to finish FORESCOLOR boards to protect the surface and increase color durability. The panels shall not be left on the raw surface due to porosity and consequent stain absorption. FORESCOLOR comes already colored throughout, making the finishing process quite simple. The surface is more compact than standard MDF panels which causes less absorption, being much easier and faster to finish.

FORESCOLOR accepts any kind of wood finishing(clear varnishes, oils, wax). It is possible to combine different finishes to achieve an even wider array of aesthetics and tones.

Before finishing, the panel surface shall be homogeneously sanded. The surfaces should be sanded gradually, increasing the sandpaper grit size by 50% in each phase. Repeat the process at least twice with two different sandpaper grit sizes. Before applying the finishing, the board must be cleaned with a dry cloth to remove any dust and then air-dried.

Clear lacquers and varnishes require a sealant before the final coating. The board shall be sanded between both coats. The type of lacquer used depends on the product application and the needed resistance. Polyurethane lacquers may provide a more resistant solution for a higher demanding application while water-based lacquers are suitable for a more ecological result. There are several varnishing solutions with higher UV protection to prevent color fading in more exposed applications.

Oils and Waxes usually only need to be applied once(one coat). This solution is better for spaces with more moisture in the air.

FINISHING

- A finish should be applied to FS panels to protect the surface, keeping its natural look. Varnishes, waxes, or oils can be used for the finish.
- When applied in humid environments, panels should be varnished to maintain their appearance throughout their lifespan and to make it easy to clean them.
- Fungus and mold stains are more likely to appear in unvarnished panels when placed in humid environments.
- These stains can be cleaned by sanding the affected surfaces mechanically, but complete removal is not always possible depending on the depth of the stain.
- Before applying any type of finish, the surfaces of the panels must be properly prepared, removing all dirt, dust, and grease.
- Waxes and oils are usually applied in a single coat or several coats on the previously prepared surfaces.
- These types of finishing should not be applied to panels that may be installed in humid environments, such as kitchens and bathrooms.

COLOUR TONALITY

The natural color features of the raw materials may cause slight variations in tonality. To minimize eventual color variations at the job site: use boards from a single batch for each job and select the boards before installation.

CLEANING AND MAINTENANCE

The boards should be properly finished. To clean the boards, softly spray with a non-abrasive domestic cleaning product. Then wipe down the panel with a soft cloth. Dry the panel using another soft cloth and do not leave residues on the panel. Alternatively use Methylated Spirit on a soft cloth, using a circular cleaning motion, and then dry it as mentioned previously.

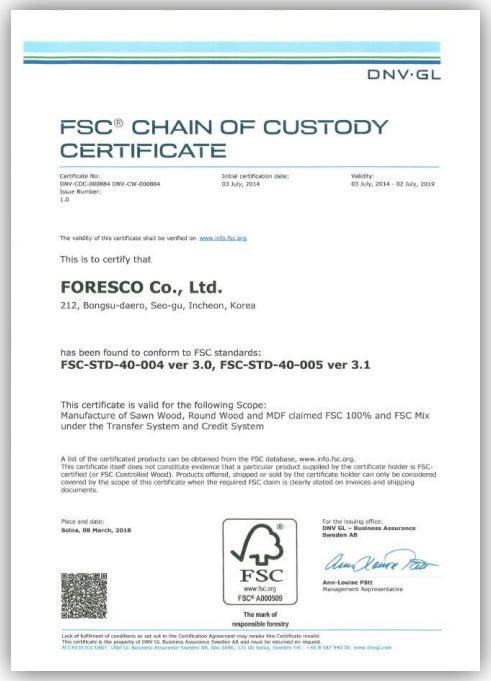
TECHNICAL DATA

Surface preparation

- Given the difference in shades between panels in the same batch, before starting a job the panels should be arranged side by side, arranging them to try to minimize the differences between adjacent panels.
- In general, any finish, be it varnish, wax, or oil, requires prior preparation of the surface.
- This preparation consists of sanding the surfaces and the tops with fine sandpaper before applying the finish.
- The process should be gradual, increasing the grain of the sandpaper by 50% with each new step.
- It is recommended to use at least 2 steps with 2 different grains of sandpaper.
- FS Panels come factory-sanded with 150 or 180-grain sandpaper, depending on the thickness, so the recommendation for surface preparation is to start with 220-grain sandpaper and finish with 320-grain sandpaper. The tops should also be treated.
- The panels may be sanded in the workshop or on the site using an orbital sander.
- Before applying the finish, the panels should be cleaned with a dry cloth, air blowing, or preferably air suction to remove all dust, which could otherwise damage the finish.

VARNISH

- Any varnish that is suitable for wood can be applied on FORESCOLOR.
- Acrylic and Aliphatic Polyurethane varnishes are widely used as they do not turn yellow over time.
- Aqueous-based varnishes change the natural color of the panel less than solvent-based varnishes.
- When the panel is varnished, the first coat applied is a primer.
- After the primer has dried, the surfaces are sanded with 320 grit sandpaper in order to remove any repellence and granulometry that may arise.
- A new coat of primer or finishing varnish is then applied, according to the manufacturer's instruction.
- Between coats, the surfaces are sanded with 320 grit sandpaper.
- There are finishing varnishes with different types of gloss, from glossy to matte.
- We recommend that the primer and varnish come from the same manufacturer so that there are no incompatibilities.



DNV·GL

FSC® CHAIN OF CUSTODY CERTIFICATE

Certificate No: DNV-COC-000884 DNV-CW-000884
Issue Number: 1.0
Initial certification date: 03 July, 2014
Validity: 03 July, 2014 - 02 July, 2019

The validity of this certificate shall be verified on www.info.fsc.org

This is to certify that

FORESCO Co., Ltd.
212, Bongsu-daero, Seo-gu, Incheon, Korea

has been found to conform to FSC standards:
FSC-STD-40-004 ver 3.0, FSC-STD-40-005 ver 3.1

This certificate is valid for the following Scope:
Manufacture of Sawn Wood, Round Wood and MDF claimed FSC 100% and FSC Mix under the Transfer System and Credit System

A list of the certificated products can be obtained from the FSC database, www.info.fsc.org.
This certificate itself does not constitute evidence that a particular product supplied by the certificate holder is FSC-certified (or FSC Controlled Wood). Products offered, shipped or sold by the certificate holder can only be considered covered by the scope of this certificate when the required FSC claim is clearly stated on invoices and shipping documents.

Place and date: Solna, 08 March, 2018

For the issuing office: DNV GL – Business Assurance Sweden AB

Ann-Louise Pilct
Management Representative

FSC® A000509
The mark of responsible forestry

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.
This certificate is the property of DNV GL Business Assurance Sweden AB and must be returned on request.

품질경영시스템인증서

(주)포레스코

인천광역시 서구 봉수대로 212

한국표준협회는 위 조직의 품질경영시스템이 아래의 표준과 인증범위에 적합함을 인증합니다.

인증번호 QMS-1888

표 준 KS Q ISO 9001:2009/ISO 9001:2008

인증범위 섬유판(M.D.F)에 대한 생산 및 판매

유효기간 2016년 07월 07일부터 2019년 07월 06일까지

ISO표준의 2015 년판으로 개정됨에 따라,
본 인증서는 2018 년 6 월 14 일까지 연장이 유효합니다.

최초인증일 : 2004년 07월 07일

2016년 05월 22일

KSA IAF

한국표준협회장

Certification Services International, LLC

CERTIFICATE OF APPROVAL

Certification Services International, LLC under executive order W-17-037A "TPC 37" has met the requirements for ARB approved third party certifiers as contained in section 93120.12, Appendix 3 and as defined in title 17, California Code of Regulations, section 93120.1 with a certification program that complies with Section 93120.3(b) and with compliance testing as specified in Section 93120.9(a) hereby certifies that:

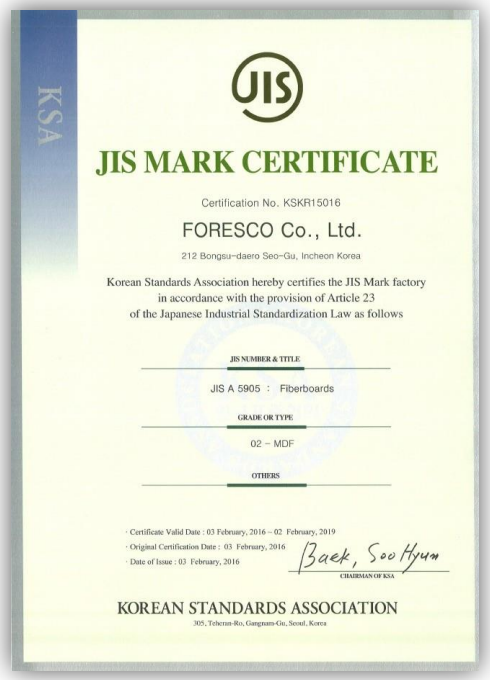
FORESCO CO., LTD.
212 BONGSU-DAERO SEO-GU
INCHEON
REPUBLIC OF KOREA

has demonstrated through inspection audit and testing, the capability in meeting the process requirements under the California Air Resources Board (CARB) as provided under sections 93120-93120.12, title 17, California Code of Regulations and the defined maximum emission requirements under Table 1, Section 93120.2 of the formaldehyde emission standards, to provide for acceptable formaldehyde emissions from the composite wood products sold, supplied, offered for sale, or manufactured for sale in California. This certificate expires one year from date of issue.

Scope of Certification
CARB 93120 Phase 2 : **Thin MDF 2.7mm - 8mm** and **MDF 8.1mm - 20mm**
Certificate Number: **CSi-13053C**
Issue Date: **6th December 2019**

Quality Control/Technical Manager
Certification Services International, LLC

President
Certification Services International, LLC



KSA

JIS MARK CERTIFICATE

Certification No. KSKR15016

FORESCO Co., Ltd.

212 Bongsu-daero Seo-Gu, Incheon Korea

Korean Standards Association hereby certifies the JIS Mark factory in accordance with the provision of Article 23 of the Japanese Industrial Standardization Law as follows

JIS NUMBER & TITLE
JIS A 5905 : Fiberboards

GRADE OR TYPE
02 – MDF

OTHERS

· Certificate Valid Date : 03 February, 2016 – 02 February, 2019
· Original Certification Date : 03 February, 2016
· Date of Issue : 03 February, 2016

Baek, Soo Hyun
CHAIRMAN OF KSA

KOREAN STANDARDS ASSOCIATION
305, Teheran-Ro, Gangnam-Gu, Seoul, Korea

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague, SOE

Notified Body 1020

CERTIFICATE OF CONFORMITY OF THE FACTORY PRODUCTION CONTROL

No. 1020-CPR-070053717

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

Fiberboards "Forescolor"
Dry-process fiberboards (MDF.HLS) intended for internal use as structural components, unfaced
Thickness (in mm): 5, 8, 9, 12, 15, 16, 18 and 19
Formaldehyde class: E1

placed on the market under the name of the producer
FORESCO Co., Ltd.
212, Bongsu-daero, Seo-gu
Incheon
Republic of Korea
tNo: 1378523393

and produced in the manufacturing plant:
212, Bongsu-daero, Seo-gu
Incheon
Republic of Korea

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard
EN 13986:2004+A1:2015
under system 2+ are applied and that
the factory production control is assessed to be in conformity with the applicable requirements.

This certificate was first issued on 12/04/2018 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified factory production control certification body.

The stamp of the Notified Body 1020
Ostrava, April 12, 2018

Vojtěch Šebek, M.Sc.
Deputy manager of the Notified Body

Certificates

KSA ISO 9001 CERTIFIED

KS F 3200

친환경 환경부

CARB ULEF COMPLIANT N-14-180

FSC www.fsc.org FSC® C121932 The mark of responsible forestry

JIS CE

FORESCOLOR