

**Building Code E3/AS1: Internal Moisture
2nd Edition, Amendment 7
Alternative Solution Compliance Statement**

Building Code Clause E3 requires floor surfaces of any space containing sanitary fixtures or sanitary appliances in wet areas to be impervious and, easily cleaned, and have ventilation to meet conditions for health and safety. It requires buildings to be constructed to avoid fungal growth and excessive moisture. Its provisions relate to habitable spaces, bathrooms, laundries and other spaces where moisture may be generated or accumulate. Its requirements include provisions for:

- adequate thermal resistance;
- space temperature; ventilation;
- disposal of overflow water; and
- surfaces to be impervious and easily cleaned.

The accepted solutions for flooring finishes in water-splash areas, including kitchen, laundries, bathroom and toilet areas are (i) slab-on-grade concrete that is steel trowel or polished finished, (ii) ceramic or stone tiles having 6% maximum water absorption or (iii) an integrally waterproof sheet material (e.g. vinyl) with sealed joints and edges sealed or coved.

The finish must be impervious and easily cleaned. The area extends to the doorway and all walls of the room, or at least 1.5 meters from all sanitary fixtures or appliances in open plan spaces.

Laminates and vinyl planks may still be used, however, these flooring finish types will now need to be specified and approved as an Alternative solution.

This document provides guidance in regards to the comment under section 3.1.1 Floors (under section 3.0 Watersplash) that states “*other floor finishes may also be capable of satisfying the performance for impervious and easily cleaned, if installed in a manner that prevents gaps or cracks within the finish and at any parts of its perimeter that are exposed to watersplash, and/or if the surface is sealed with a suitable durable coating*”.

When our products are installed in accordance with our Installation Manuals and, where applicable, Installation/Use Manuals of accessories, adhesives, moisture barriers and underlays, the product and systems meet the requirements of the E3 Building Code based on expert opinion obtained in this regard:

- In-Service History;
- Expert opinion or Producer Statement.

i. Impervious Surface

All our products are water and moisture resistant, featuring a durable, hygienic and waterproof surface that is easy to clean. Our products also feature locking systems that provide resistance to water penetration where watersplash may occur.

Our products utilize a I4F click technology, which is engineered to provide an extremely tight joint that inhibits regress of moisture.

ii. Perimeters Exposed to Watersplash

For all our products (incl. Glue-down LVT, Rigid Hybrid Vinyl, Water-resistant Laminate and Engineered Stone products) the perimeters of the room should be installed with a compressible PE foam and covered with a

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flexible silicone sealant (not acrylic sealant) at the floor to wall junction to all perimeters extending to the doorway, or at least 1.5 meters from any sanitary fixtures of wet rooms or watersplash zone areas of open plan rooms to prevent gaps in the perimeter of the finish to prevent water ingress. In order to achieve the maximum allowed installation area, the main installation area should be separated from the wet room or splash zone area via joints at doorways and/or thresholds as required. Outside of water splash areas, standard installation guidelines must be applied as per our Installation Manuals.

iii. Service History

Our products have been distributed and installed by our partners in New Zealand for over 10 years. We have a proven track record of performance and service history in the New Zealand market for our products which were properly installed in accordance with our installation manuals and, where applicable, to the specifications as required under the Building Code.

iv. Additional Information

Apart from our long-standing history and experience in conducting business in the New Zealand market and the extensive testing performed internally by us, we are also currently working on having our flooring solutions independently appraised by BRANZ (www.branz.co.nz).

Please contact your Sales representative or our Technical Support team for further information, discussion or clarification of this statement or supporting documentation.

Konstantin Mishagin
Product Management and Compliance

Neptune Flooring

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INSTALLATION GUIDE

Thank you for choosing our flooring. When properly installed and cared for, your new flooring will be easy to maintain and will keep its great look for years. Please read all the instructions before you begin the installation. Improper installation will void the warranty.

I. GENERAL PREPARATIONS

TOOLS REQUIRED: Spacers, rubber mallet, ruler, pencil, tape measure, utility knife, tapping block, Wedges

- Prior to installation, inspect material in daylight for visible faults/damage, including defects or discrepancies in color or shine; check the edges of the flooring for straightness and any damage. No claims on surface defects will be accepted after installation.
- It is preferable to lay boards perpendicular to the window, following the direction of the main source of light. For the best result, make sure to always work from 3 to 4 cartons at a time, mixing the planks during the installation.
- Check if subfloor/site conditions comply with the specifications described in these instructions. If you are not satisfied, do not install, and contact your supplier.
- Flooring products can be damaged by rough handling before installation. Exercise care when handling and transporting these products. Store, transport and handle the cartons in a manner to prevent any damage. Store cartons flat, never on edge.
- Flooring products can be heavy and bulky. Always use proper lifting techniques when handling these products. Whenever possible, make use of material-handling equipment such as dollies or material carts. Never lift more than you can safely handle; get assistance.
- Calculate the room surface prior to installation and plan an extra 5-10% of flooring for cutting waste.
- The environment where the flooring is to be installed is critically important with regard to successful installation and continued performance of the flooring products. The flooring is intended to be installed in interior locations only. These interior locations must meet climatic and structural requirements as well.
- In most cases, this product does not need to be acclimated. However, if the boxes of flooring were exposed over 2 hours to extreme temperatures under 15°C or over 35°C within the 12 hours before the installation, acclimation is required. In this case, keep the boards in room temperature for at least 12 hours in unopened package before you start the installation. The room temperature must be maintained consistent between 15-30°C before and during the installation.
- Flooring should only be installed in temperature ranges between 15-30°C, it is necessary to maintain a constant temperature before and during the installation. Portable heaters are not recommended as they may not heat the room and subfloor sufficiently. Kerosene heaters should never be used.
- After installation, make sure that the flooring is not be exposed to temperatures less than 10°C or greater than 50°C.
- For floor surfaces exceeding 400 m² and/or lengths exceeding 20 m, use expansion moldings.

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II. SUBFLOOR INFORMATION

- The flooring can be installed over most existing hard surface floor coverings, provided that the existing floor surface is clean, flat, dry, securely fastened, structurally sound and level to 3/16" / 5 mm within 10 ft / 3 m.
- The substrate should not slope more than 1" / 25 mm per 6 ft / 2 m in any direction.
- Depressions, deep grooves, expansion joints and other subfloor imperfections must be filled with patching & leveling compound.
- Substrates must be free from excessive moisture or alkali. Remove dirt, paint, varnish, wax, oils, solvents, any foreign matter and contaminants.
- Do not use products containing petroleum, solvents or citrus oils to prepare substrates as they can cause staining and expansion of the new flooring.
- Although this floor is waterproof, it is not aimed to be used as a moisture barrier. The concrete moisture vapor emissions should not exceed 8 lb / 3.63 kg (ASTM F1869) / 90 % RH (ASTM F2170) with a PH limit of 9 / max 2.5 % moisture content (CM method).
- This product is also not to be installed in areas that have a risk of flooding such as saunas or outdoor areas.
- Existing sheet vinyl floors should not be heavily cushioned and not exceed more than one layer in thickness. Soft underlayment and soft substrates will diminish the products inherent strength in resisting indentations.

WARNING: Sanding, sweeping, grinding, dry scraping or drilling existing gypsum topping or concrete may expose you to asbestos dust and/or crystalline silica. Inhalation of such dust is a potential cancer and respiratory tract hazard. For your safety, wear personal protective equipment, utilize dust collection devices, and ensure sufficient ventilation at your workplace.

WOOD SUBFLOORS

- If this flooring is intended to be installed over an existing wood floor, it is recommended to repair any loose boards or squeaks before you begin the installation.
- Nail or screw every 6" / 15 cm along joints to avoid squeaking.
- Basements and crawl spaces must be dry. Use of a 6 mil / 0.15 mm poly-film is required to cover 100 % of the crawl space earth.
- We recommend laying the flooring crossways to the existing floorboards.
- All other subfloors - Plywood, OSB, particleboard, chipboard, wafer board, etc. must be structurally sound and must be installed following their manufacturer's recommendations.

CONCRETE SUBFLOORS

- Existing concrete subfloors must be fully cured, at least 60 days old, smooth, permanently dry, clean, and free of all foreign material such as dust, wax, solvents, paint, grease, oils, and old adhesive residue. Curing agents and hardeners could cause bonding failure and should not be used.

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- We recommend using a minimum 6 mil / 0.15 mm poly-film as a moisture barrier between the concrete subfloor and the flooring.

DO NOT INSTALL OVER

- Any type of carpet.
- Existing cushion-backed vinyl flooring.
- Floating floor of any type, loose lay, and perimeter fastened sheet vinyl.
- Hardwood flooring / wood subfloors that lay directly on concrete or over dimensional lumber or plywood used over concrete.

IMPORTANT NOTICE

In-floor Radiant Heat: Flooring can be installed over 1/2" / 12 mm embedded radiant heat using the floating method. Maximum operating temperature should never exceed 30°C. Use of an in-floor temperature sensor is recommended to avoid overheating.

- Turn the heat off for 24 hours before, during and 24 hours after installation when installing over radiant heated subfloors.
- Before installing over newly constructed radiant heat systems, operate the system at maximum capacity to force any residual moisture from the cementitious topping of the radiant heat system.
- Make sure that the temperature in the room is maintained consistent between 15-30°C before and during the installation.
- Floor temperature must not exceed 30°C.
- Once the installation has been completed, the heating system should be turned on and increased gradually (5-degree increments) until returning to normal operating conditions.
- Refer to the radiant heat system's manufacturer recommendations for additional guidance.

Warning: Electric heating mats that are not embedded into the subfloor are not recommended for use underneath the floors. Using electric heating mats that are not embedded and applied directly underneath the floors could void the warranty for your floor in case of failure. It is best to install the flooring over embedded radiant floor heating systems and adhere to the guidelines listed above.

III. INSTALLATION

- Remove baseboard, quarter-round moldings, wall base, appliances and furniture from room. For best results, door trim should be under-cut to allow flooring to move freely without being pinched. After preparation work, sweep and vacuum the entire work area to remove all dust and debris.
- With a floating floor you must always ensure you leave a 1/4" / 6 mm gap between walls and fixtures such as pillars, stairs, etc. These gaps will be covered with trim moldings after the floor is installed.

Important notice: When installing in areas that are exposed to temperature over 40°C and to significant temperature fluctuations the expansion joint may be increased to 10 mm to secure the installation on the entire periphery and from all fixtures in the room.

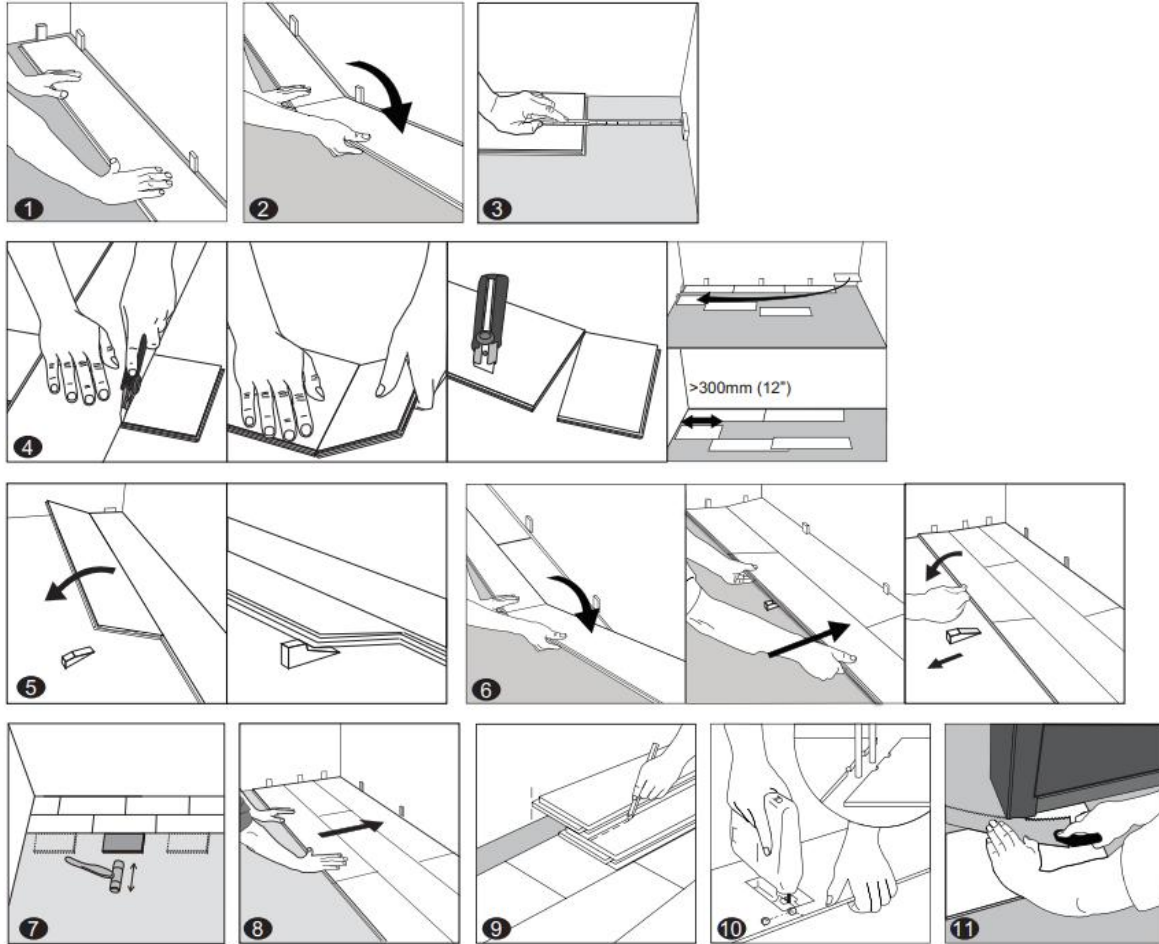
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- Whenever possible, plan the layout so that the joints in the planks do not fall on top of joints or seams in the existing substrate. The end joints of the planks should be staggered a minimum of 8" / 20 cm apart. Do not install over expansion joints. Avoid installing pieces shorter than 12" / 30 cm at beginning or end of rows.
- Do not install your kitchen cabinets directly over your floor. The floor's quality can only be guaranteed as long as the floor is allowed move freely.
- Decide the installation direction. It is recommended to install the boards perpendicular to the window following the direction of the main source of light.
- Measure the area to be installed: The board width of the last row shall not be less than 2" / 50 mm. If so, adjust the width of the first row to be installed. In narrow hallways, it is recommended to install the floor parallel to the length of the hall.
- **UNDERLAY:** If the floor does not have a pre-attached underlayment, an additional underlayment is recommended in order to improve acoustic performance and absorb some irregularities on the substrate. Best results can be expected with an underlayment of 0.04" / 1 mm to max 0.06" / 1.5 mm thickness with a high density (>11.2 lb / ft³ / >180 kg / m³) and high compressive strength (>200 kPa) that supports the click system during daily use. Underlayments with a low density and an inadequate compressive strength could damage the locking mechanism and will void warranty.
If the floor has a pre-attached underlayment, the use of an additional underlayment could damage the locking mechanism and will void warranty.

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1. **First row, first plank:** After thoroughly cleaning the subfloor, you should begin laying from left to right. Position the first plank so that grooved edge is facing you. Place the floorboard 1/4" / 6 mm from the left wall. Use spacers between the wall and the floorboard.
2. **First row, second plank:** Insert the end section of the next plank at an angle. Make sure both planks are perfectly aligned.

IMPORTANT: If you notice both planks aren't at the same height or are not well locked together, please follow the disassembling instructions at the bottom of the page, disassemble and check if any debris stuck inside the lock is obstructing.

3. **First row, last plank:** At the end of the first row, leave an expansion gap of 1/4" / 6mm to the wall to avoid any damage while installing your floor, and measure the length of the last plank to fit.
4. **To cut the plank:** Use a simple utility knife and ruler, and with the top side facing up, cut heavily and several times on the same axis. The knife will not go through the surface but make a deep cut. You can then lift one half of the plank using your other hand to hold down the second placing it very close to the cut. The plank will split naturally.
5. **Second row, first plank:** Start the second row with the leftover cut part of the last plank of the previous row. This small plank should measure at least 12" / 30 cm. Otherwise, cut a new plank

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in half and use it to begin the second row. The end joints of each adjoining row should not be closer than 8" / 20 cm to each other. Whenever practical, use the piece cut from the preceding row to start the next row.

Click the long side of the plank into the previous row and place an installation wedge under the board.

6. **Second row, second plank:** Place the short end of the plank at an angle against the short side of the previously installed floorboard and fold down. Slide down the long side of the board into the locking groove of the adjacent floorboard in the previous row. When the whole row is complete, remove the wedge and fold the row down.
7. **After finishing the installation of every row:** Use tapping block and a rubber mallet to gently tap the planks into the click of the previous row to make sure they are tightly clicked together and make sure there is no gap between the long side of the planks installed. Any gapping can compromise the whole installation.
8. **Tip:** After the first 2-3 rows of planks are installed; they should be checked with a string line to ensure that rows are still running straight. If they are not, it could be that the starting wall has some irregularities that caused bowing in the installation. If so, the starting row of planks may have to be scribed and re-trimmed to account for any unevenness in the wall. This can be done without having to disassemble the beginning rows.
9. **To lay the last row:** Position a loose board exactly on top of the last row laid. Place another board on top, with the tongue side touching the wall. Draw a line along the edge of this boards, to mark the first board. Cut along the edge of this board to mark the first board. Cut along this line to obtain the required width. Insert this cut board against the wall. The last row should be at least 2" / 50 mm wide. The spacers can then be removed.
10. **Holes for pipes:** Measure the diameter of the pipe and drill a hole that is 1/2" / 12 mm larger. Saw off a piece as shown in the figure and lay the board in place on the floor. Then lay the sawed-off piece in place.
11. **Door molding and skirting:** Lay a board (with the decorative side down) next to the door molding and saw as shown in the figure. Then slide the floorboard under molding.

IV. FINISHING THE INSTALLATION

Replace molding or wall base, allowing slight clearance between the molding and the planks. Nail the molding to the wall surface, not through the flooring. At doorways and at other areas where the flooring planks may meet other flooring surfaces, the use of a transition molding is required to cover the exposed edge but do not pinch the planks. Leave a small gap between the planks and the adjoining surface.

V. DISASSEMBLING

- To disassemble, simply lift the planks one by one following the opposite sequence as the installation.

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MAINTENANCE GUIDELINES AND REPAIR INSTRUCTIONS

1. CLEANING

- All vinyl floors benefit from regular maintenance; accumulated soil may lead to scratching. Sweep or vacuum daily using soft bristle attachments, vacuum cleaner with correct hard floor surface attachment - beater bars, hard plastics, floor scrubbers, jet mops, buffers or similar products must not be used. Clean up spills and excessive liquids immediately.
- Damp mop as needed and use neutral cleaners recommended for vinyl flooring. Soap, oil cleaners and restorative products must never be used. Change rinse water often and never flood the floor with water.
- The use of residential steam mops on this product is allowed. Use at lowest power with a suitable soft pad, and do not hold a steam mop on one spot for an extended period of time (longer than 5 minutes). Refer to the steam mop's manufacturer instructions for proper usage.
- Do not use abrasive cleaners, bleach, wax, high % non-diluted vinegar, acetone, or harsh chemicals to maintain the floor.
- After washing allow your floor the time to dry.

2. SPOT REMOVAL

- Spots must be removed immediately using a well-wrung, slightly damp cloth. To reduce spotting, do not allow liquids to stand or remain on the surface of the flooring.
- Nail polish, tar, markers, crayon, lipstick and ink can be removed using nail polish remover or denatured alcohol. Soak a clean rag in cool water and rinse the surface completely to remove residual denatured alcohol or nail polish remover.
- For stubborn spots use low odor mineral spirits or denatured alcohol applied to a clean cloth. Never pour chemicals directly on floor.
- For chocolate, grease, juice and wine stains, use lukewarm water and a non-abrasive cleaner.
- For candle wax and chewing gum, scrape carefully with a blunt plastic scraper.
- Pet stains (including urine, feces and vomit from domestic cats or dogs) need to be cleaned within 24 hours.

3. PROTECTING

- Avoid bringing dirt, sand, grit and substances such as oil or asphalt indoors, use non staining mat at entrances (inside and out). A walk-off mat at outside entrances to reduce the amount of dirt brought into your home.
- Do not use mats with a latex or rubber backing since these backings can cause permanent discoloration.
- For areas with rolling chairs (e.g. desk area) apply freely rotating, non-rubber wheels to chairs with castors and/or use a protective mat under the chair.
- Do not allow cigarettes, matches or other very hot items to get in contact with the floor as this may cause permanent damage.
- Do not drag or slide heavy objects across the floor. When moving appliances or heavy furniture it is always wise to lay a plywood panel, or similar, on your floor and “walk” the

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item across it. This protects your floor from scuffing, gouging and tears.

- Use proper floor protection devices such as non-staining felt protectors and furniture cups under. Felt pads should be timely maintained. Do not use colored floor protectors.
- Please bear in mind that pets with sharp nails can leave deep scratches on the floor, keep pet nails trimmed to minimize scratches.

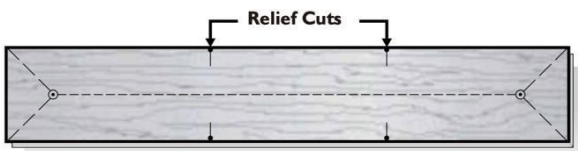
FLOORING REPAIR INSTRUCTIONS

A damaged board in the middle of the floor doesn't require disassembling the whole floor. You can fix it by cutting that single damaged board out and replacing it with a new one.

Things you'll need: pencil, straightedge, plunge saw, cutting blade for soft surfaces, chisel, utility blade/concave knife, premium vinyl adhesive (a high-grab high-shear hard-setting adhesive), weights (approximately 90lbs / 40kg).

Instructions:

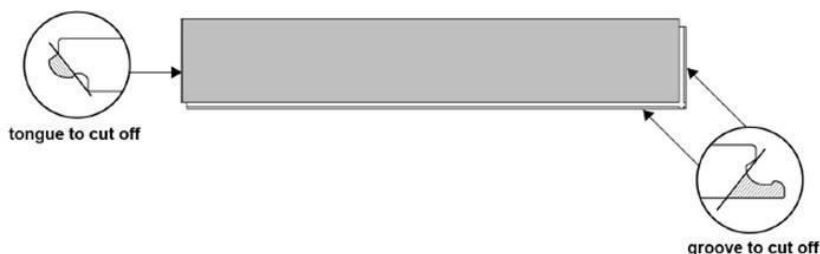
1. Mark damaged board 1-1/2" / 3.81cm from ends and sides. Drill 3/16" / 4.76mm holes in corners and at relief cuts.



2. Using a concave knife / a utility blade knife / a saw (set saw depth to board thickness) cut along lines and remove center section. Make relief cuts using drilled holes as visible stop.

Pro tip: Warming the product with a heat gun will help when using a utility knife.

3. Carefully lift and pull center length cut first, then work into corners to remove end pieces last.
4. Vacuum the area from any debris and dust.
5. Using a concave knife / a utility blade knife / a saw, prepare replacement board by removing the bottom groove on both ends (see drawing below) as well as the tongue on the short end. (See drawing below).



6. Apply a thin bead of glue to the edges of the remaining planks on the floor surrounding the plank being replaced.
7. Hold the board at a 45-degree angle. Slip the tongue that is still present into the

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- groove at one end of the hole. Gently lower the board into place in the hole.
8. Use a rubber mallet and a tapping block to tap the replacement plank into place.
 9. Make sure that any adhesive that squeezes to the surface is removed immediately.
 10. Weigh the board down and allow the glue to dry for at least 48 hours.

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TEST REPORT

No. : XMIN2206006781CM

Date : Jul 05, 2022

Page: 1 of 4



CUSTOMER NAME: CFL FLOORING (CHINA) CO., LTD.
ADDRESS: NO.111 CHANGJIANG ROAD, JIASHAN DEVELOPMENT AREA,
JIAXING, P.R. CHINA

Sample Name : SPC
Product Specification : 4+1mm IXPE

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

Date of Receipt : Jun 27, 2022
Testing Start Date : Jun 27, 2022
Testing End Date : Jul 05, 2022
Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for
SGS-CSTC Standards Technical
Services Co., Ltd Xiamen Branch
Testing Center



Civi Huang
Authorized signatory



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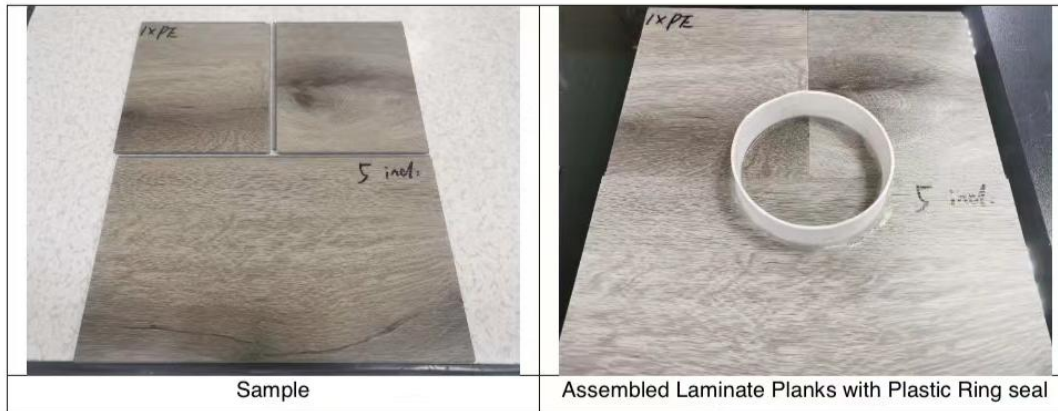
Date : Jul 05, 2022

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Summary of Results:

No.	Test Item	Test Method	Result
1	Laminate Surface Swell Test – Assembled Joint	Refer to NALFA Surface Water Test_Final_08-01-2019 and client's requirement	See results

Original Sample Photo:



Sample

Assembled Laminate Planks with Plastic Ring seal



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TEST REPORT

No. : XMIN2206006781CM

Date : Jul 05, 2022

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Test Item: Laminate Surface Swell Test – Assembled Joint

Sample Description: See photo

Test Method: Refer to NALFA Surface Water Test_Final_08-01-2019 and client's requirement

Test Condition:

Specimen: 2pcs samples of 150mm×178mm×5mm and 1pc sample of 300mm×178mm×5mm form a specimen, total 2pcs specimens, see photo(s)

Exposure time: 24h

Recovery time: 24h

Test Result:

Specimen No.		1	2	Average
Quantitative calculation (see note 2)	The inverted "T" Joint Wet swell value (mm)	0.004	0.007	0.006
	Wet swell (mm)	0.002	0.004	0.003
	The inverted "T" Joint Recovery swell value (mm)	0.003	0.005	0.004
	Recovery swell (mm)	0.003	0.003	0.003
Remaining water after 24h exposure time (%)		83	83	/
Qualitative rating (see note 3)		Grade 1	Grade 1	/

Note: 1. All test specimens were cut from the samples, see the photograph.

2. For Quantitative calculation as below:

Wet swell = Wet height – initial height, Recovery swell = Recovery height – initial height.

3. For Qualitative rating, Evaluate the joints for apparent differences, in visual and feel (light touch can be helpful in discerning differences) within the circle compared to unexposed portions of the specimen and grade the test assembly per the criteria listed below:

Grade:
1 = No change – No noticeable change in edge swell or panel surface lift.
2 = Slight swelling – Slight swelling, small ridge along one or more joints, very little if any panel surface lift.
3 = Significant – Noticeable edge swelling and some panel surface lift extending in away from joint.
4 = Objectional – Severely raised edge and swelling extending noticeably under the panel surface.
5 = Invalid Test – Water leaked out of the ring, leaving no continuous film of water inside the ring (this grade is given even if there is no swell of the edge joint).



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 Xiamen Branch Testing Lab for Construction Material Laboratory

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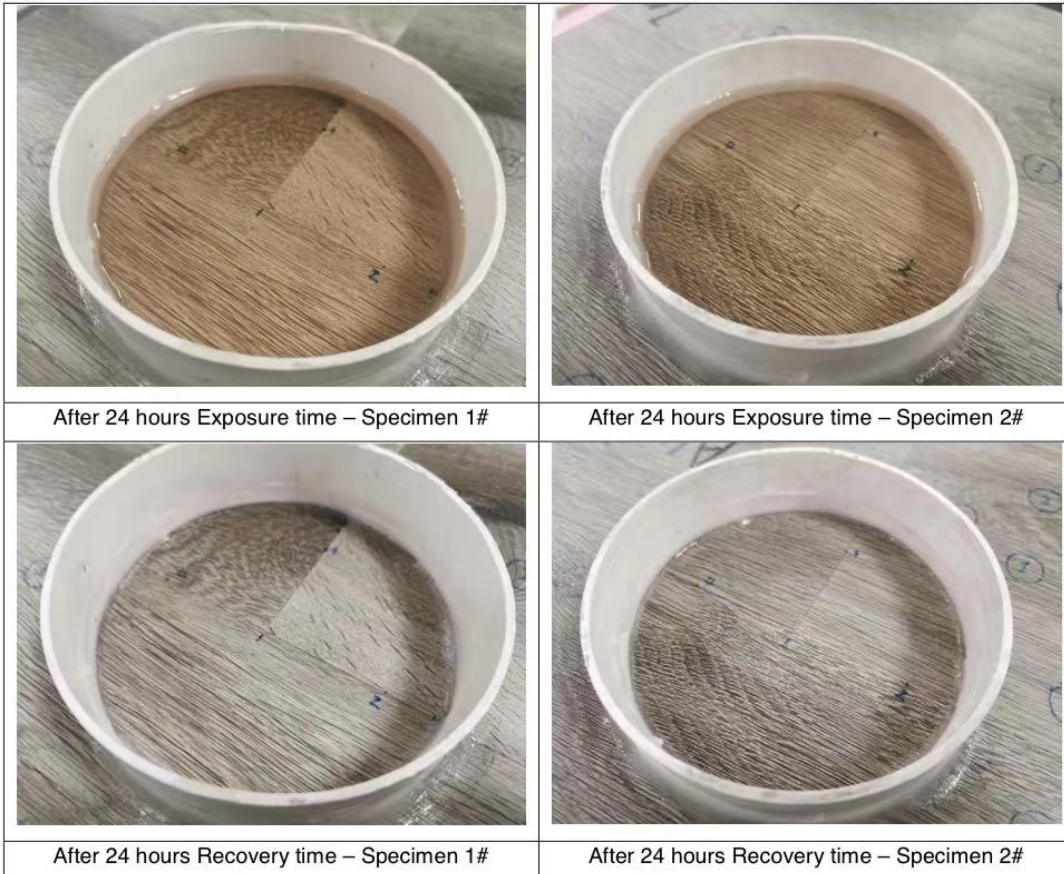
TEST REPORT

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