XPR
STANDARDS WIDE

20MIL
WEAR LAYER


Braga Gray


Porto Brown


Aveiro Natural

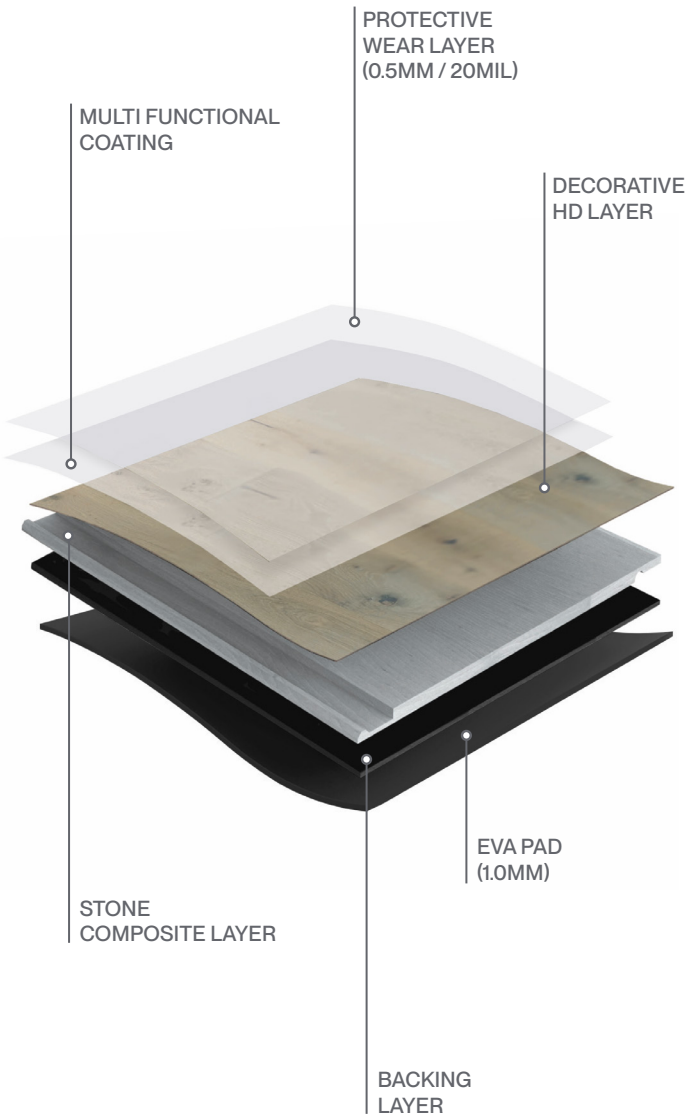

Lisbon White


Almada Oak

PARKAYFLOORS®

SCAN » INFO & LIVE
parkayfloors.com

XPR STANDARDS WIDE



XPR + PAD

100% Waterproof

20 MIL (0.5mm) Wear Layer

Phthalates Free

Angle Click

1mm Pad Attached

5D EIR

Micro Bevel

25 Years Resid. Limited Wrry

7 Years Comm. Limited Warranty

XPR **STANDARDS**WIDE

TECHNICAL DATA	VALUES
PRODUCT	RIGID CORE VINYL
COLLECTION	PARKAY STANDARDS WIDE
FINISH	EIR
EDGE TYPE	MICRO BEVEL
INSTALLATION TYPE	FLOATING
THICK	4 / 0.5 + 1 MM BLACK EVA
WIDTH	230 MM
LENGTH	1524 MM
WEAR LAYER	0.5 MM
UNIQUE PLANKS	4
PLANKS/BOX	8
SQFT/BOX	30.18
BOX/PALLET	48
BOX/WEIGTH	24.835
WEIGHT/PALLET LB	2694.26
PALLET SIZE	1540*970*670MM
PALL/20' FCL	21
EXPANSION AFTER EXPOSURE TO HEAT (50°C)	≤ 0.15MM/M
IMPACT TO SOUND REDUCTION (IIC)	66
STC RATING	68
RESISTANCE TO LIGHT	ΔE ≤ 8
RESIDUAL INDENTATION	RESIDUAL INDENTATION ≤ 8%
FORMALDEHYDE EMISSION	NOT DETECTED
RESIDUAL INDENTATION STATIC LOAD	250 PSI, ≤ 0.005 INCH
WEAR RESISTANCE	WEAR INDEX < 50.6 (1000* MG / CYCLE) WEAR INDEX<50.6 (1000*MG/CYCLE)
DIMENSIONAL STABILITY AND CURLING	AVERAGE MD 0.6MM/M - CD: 0.5MM/M - CURLING: 0.4MM
CLASSIFICATION OF SMOKE DEVELOPMENT (FLAMMABILITY TEST)	CLASS I
VERTICAL BURNING	V-0
SLIP RESISTANCE	DRY: 0.86 WET: 0.65
PEEL RESISTANCE	X DIRECTION: 130N/50MM, Y DIRECTION 115N/50MM
RESISTANCE TO CHEMICALS	RATING 0: NO CHANGE
SOLUBLE HEAVY METAL	NOT DETECTED (≤ 60 PPM)
VOC	PASS
DIMENSIONAL STABILITY OF RESILIENT FLOOR TILE AFTER EXPOSURE TO HEAT	≤ 0.010 IN/LIN FT ≤0.08%
PHTHALATE	NOT DETECTED (≤60PPM)

INSTALLATION INSTRUCTIONS

1. Read Parkay Floors® installation instructions before beginning.

2. Product cannot be used for exterior applications.

3. PARKAY XPR FLOORING has a patented locking system making it ideal for a floating installation. This product must be glued down using a pressure sensitive adhesive, when used for light traffic commercial applications.

4. Avoid constant exposure to excessive temperatures or direct sunlight for extended periods of time, as this might cause planks to peak, separate or decolorate. Please consider these exposures when choosing your product. Parkay Floors® recommends the use of windows shades, to protect your floor from direct sunlight for long periods.

5. PARKAY XPR FLOORING does not need to be acclimated if stored and installed in a temperate-controlled environment, maintained between 60ºF and 85ºF. Additional acclimation must be considered when temperatures mentioned above are not met. Store flat and fully supported during shipping and storage. It is not necessary to remove material from packaging while acclimating. Allow the product to condition in the room where installation is to take place if not maintained at a constant temperature between 60ºF and 85ºF or 18ºC – 29ºC, for a period of 48 hours prior to installation.

6. Slight variations in color and grain patterns are designed to enhance the natural appearance of the product. Mixing the planks creates a more uniform appearance. Make sure to shuffle planks from different cartons prior to installation.

7. Check PARKAY XPR FLOORING for possible defects prior to the installation. Complaints can only be accepted prior to installation. Parkay Floors® will not be responsible, or will compensate for any installation, if the floor was installed having an obvious or even a minor visual defect. Double check that the selected color coordinates with your initial sample and that the color name corresponds with the agreed order.

8. Unless PARKAY XPR is installed by using a Glue down installation method, performing a floating installation for the following use cases may present stress and compromise the locking system:

A. Areas where walkers, wheelchairs (i.e.), residential and or with extended care use.

B. Facilities with movement of heavy displays, racks, office chairs, dentist chairs, etc.

9. Parkay Floors® strongly recommends the final customer verify the chosen product in person prior to installation, since claims can not be brought up in regards to color, product name or design after the material has been installed.

10. Entryways must always be covered with walk off mats and rolling chairs with chair mats.

11. Moisture content on the subfloor must not exceed 5 lbs./1000ft2/24-hr (ASTMF2170), for this product to be installed.

12. Always cover furniture feet/legs with proper materials, such felt pads or similar fabric products.

13. Fixed cabinets or heavy objects cannot be installed over the floor when performing a floating installation.

14. Do not install this product over carpet.

15. Underlayment is not necessary for collections carrying an attached underlayment.

16. Transition moldings are required to separate any area exceeding 2,500 square feet or 50 lineal feet.

THE SUBFLOOR

1. Although PARKAY XPR FLOORING planks are water/moisture proof, they are not to be used as a moisture barrier. Your subfloor should be completely dry prior to installation. Keep in mind that constant moisture coming from the subfloor or topically, will cause mold and mildew to be trapped underneath the product, contributing to an unhealthy environment. Parkay Floors® will not warrant any product based on damages caused by excessive moisture. Subfloors presenting vapor emissions between 2.5% to 5% (CM-Method), must install a 6mil Poly-plastic block before laying the cushioned underlayment or flooring planks. All concrete subfloors must use poly-plastic block for extra moisture protection. Parkay Floors® recommends Polyguard 6 as an ideal poly-plastic block for extra moisture protection.

2. Subfloors must be structurally sound, solid, stable, level, plumb, and true to a tolerance in plane of 3/16" in 10 feet (4.7mm in 4m). Cracks, holes, grout lines must be filled with a fast-drying setting cement-based polymer modified patching compound or equivalent. Any unevenness over 3/16" (4.7mm) must be sanded down, leveled or ramped to a 0º. The surface must be totally clean of dirt, oil, glue residue, etc. Carpet tackles, staples or adhesive residue should be removed prior to installation. Voids or humps in the subfloor will prevent the planks from locking properly.

3. PARKAY XPR FLOORING can be installed on existing firm floors (Linoleum, PVC), but all floating or textile floors must be removed. When laying the floor over existing ceramic tiles, first level with fast setting cement-based polymer modified patching compound.

4. The installer has the final responsibility to determine if the subfloor is dry and leveled enough to begin with the installation. The proffesional must also make sure the product ready to be installed, corresponds with the chosen sample and the name on the boxes matches with the agreed order.

This product has an attached underlayment. Additional underlayment may not be used. For commercial applications, this product must be glued down using a pressure sensitive adhesive.

5. An expansion gap must be left around the perimeter. The ideal expansion gap must be equal to the total thickness of the product installed.

MEASUREMENTS

1. Agree with the client on which direction the floorboards should run since this influences the visual size ratio of the space. Installation parallel to the longest wall or the main light-source is recommended for the best visual effect.

2. Pre-plan the floor by measuring the room first. If the width of the last row is less than 2" (5cm) saw the first and the last plank in equal width.

3. Snap the lines on the substrate to identify the layout reference points. Planks should be set using this reference to ensure boards are aligned and will lock together correctly.

4. In large areas where flooring will span more than 50' long, an expansion gap should be used, place expansion space by using a transition molding in all narrow spaces bellow 3 ft and around the door jambs.

5. An expansion gap must be left around the perimeter. The ideal expansion gap must be equal to the total thickness of the product installed.

DIFFERENT PRODUCTION RUNS

PARKAY XPR FLOORING can have slight color variations in between production runs. Before starting the installation, it is best to check the production run # which is indicated on the label on the carton. If you find that you have cartons from different production runs, it is highly recommended to open a few cartons and install a mix of planks from each different production run on your floor. This will result in a more natural looking floor.

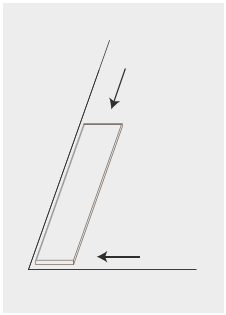
Do NOT install your Parkay Flooring over soft subfloors such as carpet, floating floors, or additional underlayment. This will automatically void your manufacturing warranty.

Although the use of pull bar and tapping block is recommended to ensure a successful install, make sure to not brake or damage the edges of the plank, since will compromise the locking system.

PARKAY XPR FLOORING provides a very tight fit. Proper care must be used to ensure all seams are tight at end of install. An unprofessional installation or use of improper tools can result in damage to the Click profiles.How to shorten doorframes: Position a lose plank face down, close to the doorframe, and cut with a jamb saw.

People can walk on the flooring immediately after the installation. Remove the wedges. Nail or screw the transition or baseboard moldings to the wall or subfloor, never to the floor.

FLOOR INSTALATION



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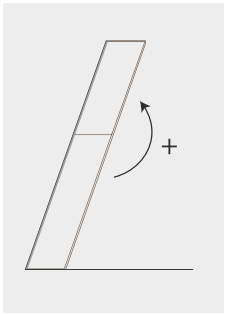

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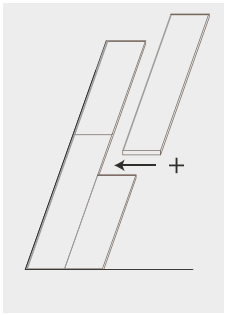

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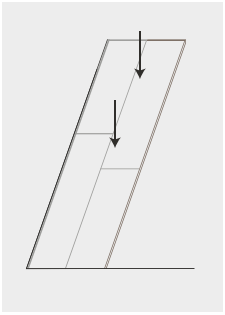

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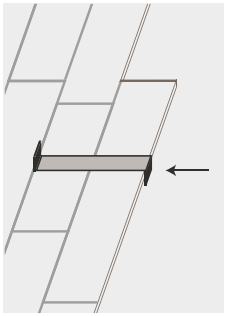

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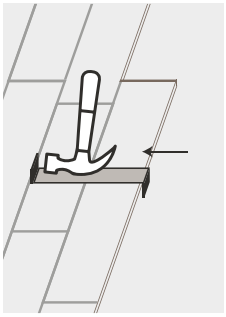

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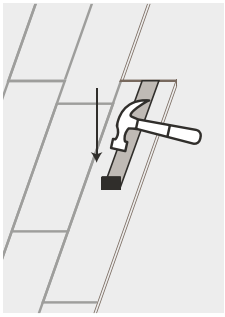

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FLOOR INSTALATION

→ First row:

Diagram 1: Start with the first plank in the left corner of the room, tongue-side facing out from the wall to the length and to the right on the width. Work from left to right.

Diagram 2: Position the following planks as an exact extension of the first one.

Cut to fit the last plank of the row. To do this you can use a utility knife to score the surface at the appropriate point and then break the title over an edge. A laminate cutter or miter saw can be used as well.

→ Following rows:

Diagram 3: Begin the second row with the cut-off end to start the next and subsequent rows. Allow at least an 8" stagger for the end seams. For positioning the planks together, starting with the first tile in the row, raise the plank at a 45-degree angle, insert the lengthways tongue into the lengthways groove and lower the plank while holding the two together until they are flat and tightly together. Close the join using hand pressure, tapping block or pull bar.

Diagram 4: Lever the next sheet in place from the front side so that only a very short distance remains for it to be pushed into the lengthways connection.

Diagram 5, 6 and 7: Raise the plank slightly and push it into the lengthways tongue, first close to the front connection, then the rest. Make sure seams are tight on ends and sides using pull bar or tapping block before proceeding. Continue the installation to the last row of sheets, as described.

How to shorten doorframes: Position a lose plank face down, close to the doorframe, and cut with a jamb saw.

People can walk on the flooring immediately after the installation. Remove the wedges. Nail or screw the transition or baseboard moldings to the wall or subfloor, never to the floor.

INSTALLATION OVER RADIANT HEATED SUBFLOORS

PARKAY XPR FLOORING is not recommended to be installed over any electrical radiant heating systems. Only radiant heated system using water are recommended. Max heating temperate must not exceed 85ºF. These Instructions must be followed:

Before installing, make sure to test the heating system at its maximum capacity to force out any residual moisture and to make sure it's working properly.

Moisture content on screed must not exceed 1.5%.

Shut down the heating system at least 48 hours prior to installation.

Keep room temperate between 60ºF and 85ºF during the installation.

After flooring is install, turn on the heating system gradually, from minimum to maximum within 1-hour period.

MAINTENANCE

Clean regularly with a damp mop with a vinyl floor cleaner such as Bona Pro Series Vinyl Cleaner. Do not use excessive water. Remember to clean up spills as soon as possible. Always use chair protectors under furniture and on chair legs. Felt pad protectors are best. Always add floor mats on area where rolling chairs are being used.

25 YEARS RESIDENTIAL
7 YEARS LIGHT COMMERCIAL WARRANTY

Our 7 years limited light commercial warranty is for seven years from the date of purchase and from the original owner, and first installation of the product. When complied with the aforementioned your floor will be free from manufacturing defects, and will not wear through when installed and maintained according to instructions supplied with each carton. This warranty applies only to the original end user with a proof of purchase. Warranty is non transferable. Floors must have been installed by a licensed and insured professional to be able to process any claim. This warranty covers the replacement or refund of the material only, no labor. Claims for wear must show a minimum dime size area. High-heeled shoes, rolling carts, furniture and chairs without protective pads can damage the floor and such areas will not be covered by this warranty.

Warranty covers against: Staining, Wear, Fading as a result or natural or artificial light, damage by moisture from everyday household spills and manufacturing defects. Floor will only be replaced for one of the same monetary value.

If more than 5% of the product pulled out of the cartons is showing defects, stop the installation immediately and contact your Parkay Floors R representative. Transition moldings are not covered under this warranty. Scratches and loss of gloss are not considered a wear-through issue. Up to 10% gloss variance is considered completely normal between planks.

This warranty excludes damage by natural disasters. This warranty excludes floors in contact with moisture trapped beneath the floor. The general warranty is pro rata (25 years for flooring). A pro rata warranty is one that provides for a refund or credit that decreases according to a set formula as the warranty period progresses. A claim process takes up to 90 days to process, from the date Parkay Floors® is contacted. We require a detailed description with images of the issue that clearly show the problem. Contact Parkay Floors® dealer no later than 15 days after the discovery of the defect. Your dealer will arrange for proper inspection and coordinate a resolution of your claim.

Parkay Floors® reserves the right to modify the contents of this warranty at any and without previous notice. Please refer to our website to obtain the latest version of our warranty.

For service under this warranty or technical questions, please go to www.parkayfloors.com or contact your local retailer.

Describe the problem and in many cases, the retailer can provide you with a solution.

XPR **STANDARDS** WIDE

TESTS & CERTIFICATIONS

TEST REPORT

for

Parkay Floors
10360 NW 53 St.
Sunrise, FL 33351
Alberto Garcia / 954-726-4515

Sound Transmission Loss Test

ASTM E 90 – 09 (2016) / E 413 – 16

On

6 Inch (152 mm) Concrete Slab Floor- Ceiling Assembly Overlaid with XPR - Parweabro Flooring

Report Number: NGC 5019077

Assignment Number: G-1628

Test Date: 09/25/2019

Report Approval Date: 10/02/2019

Submitted by: _____
Anthony J. Rivers
Test Technician

Reviewed by: _____
Robert J. Menchetti
Director

Revision Summary:

Date	SUMMARY
Approval Date: 10/02/2019	Original issue date. 10/02/2019 Original NGCTS report: NGC 5019077

Report Number: NGC 5019078

Test Method: This test method conforms explicitly with the American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements – Designation: E 90 – 09 (2016) / E 413 - 16.

Specimen Description: 6 inch concrete slab floor ceiling assembly overlaid with, according to client, XPR – Parweabro Flooring.

The test specimen was a floor assembly and was observed to consist of the following:
All weights and dimension are averaged:

- 1 layer of, according to the client, XPR – Parweabro Flooring. The flooring was adhered to the concrete slab using Locbond 500 adhesive. The adhesive was applied using a 4.76 mm x 4.76 mm x 3.97 mm (3/16 in. x 3/16 in. x 5/32 in.) V notch trowel. Measured thickness: 5.59 mm (0.22 in.), Measured weight: 8.74 kg/m^2 (1.79 PSF)
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.2 kg/m^2 (75.00 PSF)

The overall weight of the test assembly is: 374.89 kg/m^2 (76.79 PSF)

The perimeter of the test frame was sealed with a rubber gasket and a sand filled trough.

The test frame was structurally isolated from the receiving room.

Specimen size: 3657.6 mm x 4876.8 mm (12 ft. x 16 ft.)

Conditioning: Concrete slab cured for a minimum of 28 days. Adhesive cured a minimum of 24 hours.

Test Results: The results of the tests are given on pages 4 and 5 of the report.

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Acoustical Testing Laboratory

NVLAP TESTING
NVLAP LAB CODE 200291-0

Accredited by the National Voluntary Laboratory Accreditation Program for the specific scope of accreditation.

Sound Transmission Loss Test Data

Test: ASTM E 90 - 09 (2016) / ASTM E 413 - 16

Test Report: NGC 5019077 Date: 9/25/2019
Specimen Size [m²]: 17.8

Source room		Receiving room	
Volume [m³]:	86	Volume [m³]:	127
Rm Temp [°C]:	25	Rm Temp [°C]:	22
Humidity [%]:	55	Humidity [%]:	57

Sound Transmission Class STC [dB]: 50

Sum of Unfavorable Deviations [dB]: 26
Max. Unfavorable Deviation [dB]: 5 at 400 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
80	37	102.2	68.7	22.6	3.5		1.90
100	35	104.0	72.2	25.0	3.2		4.40
125	31	104.0	77.8	18.9	4.7	3	2.36
160	33	105.7	77.7	15.7	5.1	4	1.72
200	39	106.6	73.2	15.5	5.6	1	0.85
250	42	103.9	67.3	16.8	5.4	1	0.78
315	43	101.3	63.1	16.3	4.8	3	0.86
400	44	100.2	61.1	17.7	4.9	5	0.87
500	47	101.4	59.4	18.2	5.0	3	1.02
630	47	101.7	58.7	18.7	4.0	4	0.88
800	50	100.0	53.9	19.3	3.9	2	0.62
1000	55	98.3	48.0	19.0	4.7		0.37
1250	57	97.3	44.2	20.2	3.9		0.43
1600	61	97.5	40.8	21.6	4.3		0.77
2000	65	99.8	38.0	24.3	3.3		0.62
2500	68	101.2	36.2	26.8	2.9		1.17
3150	71	100.4	32.0	29.0	2.6		1.17
4000	73	97.8	27.2	33.2	2.4		1.61
5000	76	90.9	16.3	38.7	1.4		1.58

STL = Sound Transmission Loss, dB
L1 = Source Room Level, dB
L2 = Receiving Room Level, dB
d = Decay Rate dB/second
Δ STL = Uncertainty for 95% Confidence Level

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(716) 873-9750 • Fax (716) 873-9753 • www.ngctestingservices.com

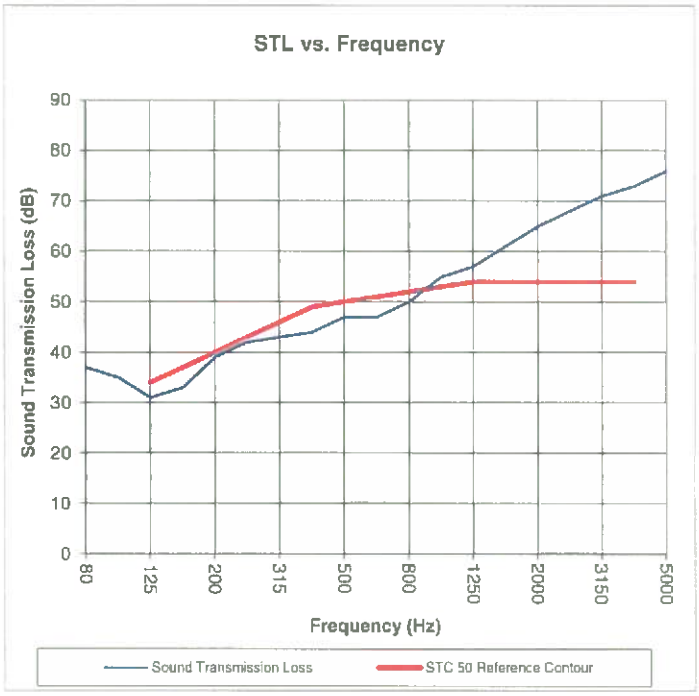
Sound Transmission Loss Test Data

Test: ASTM E 90 - 09 (2016) / ASTM E 413 - 16

Test Report: NGC 5019077
Test Date: 9/25/2019
Specimen Size [m²]: 17.8

Sound Transmission Class STC = 50 dB

Frequency [Hz]	STL [dB]	ΔSTL
80	37	1.90
100	35	4.40
125	31	2.36
160	33	1.72
200	39	0.85
250	42	0.78
315	43	0.86
400	44	0.87
500	47	1.02
630	47	0.88
800	50	0.62
1000	55	0.37
1250	57	0.43
1600	61	0.77
2000	65	0.62
2500	68	1.17
3150	71	1.17
4000	73	1.61
5000	76	1.58



* Due to high insulating value of specimen, background levels limit results at these frequencies.

STL = Sound Transmission Loss, dB
Δ STL = Uncertainty for 95% Confidence Level

TEST REPORT

for

Parkay Floors
10360 NW 53 St.
Sunrise, FL 33351
Alberto Garcia / 954-726-4515

Sound Transmission Loss Test

ASTM E 90 – 09 (2016) / E 413 – 16

On

6 Inch (152 mm) Concrete Slab Floor- Ceiling Assembly
Overlaid with XPR - Parweabro Flooring
With a Suspended Gypsum Board Ceiling
With 3-1/2 Inch Fiberglass Insulation

Report Number: NGC 5019078

Assignment Number: G-1628

Test Date: 09/27/2019

Report Approval Date: 10/02/2019

Submitted by: _____
Anthony J. Rivers
Test Technician

Reviewed by: _____
Robert J. Menchetti
Director

Revision Summary:

Date	SUMMARY
Approval Date: 10/02/2019	Original issue date. 10/02/2019 Original NGCTS report: NGC 5019078

Report Number: NGC 5019078

Test Method: This test method conforms explicitly with the American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements – Designation: E 90 – 09 (2016) / E 413 - 16.

Specimen Description: 6 inch concrete slab floor suspended ceiling assembly overlaid with, according to client, XPR – Parweabro Flooring, with 3-1/2 inches of fiberglass insulation.

The test specimen was a floor assembly and was observed to consist of the following:
All weights and dimension are averaged:

- 1 layer of, according to the client, XPR – Parweabro Flooring. The flooring was adhered to the concrete slab using Locbond 500 adhesive. The adhesive was applied using a 4.76 mm x 4.76 mm x 3.97 mm (3/16 in. x 3/16 in. x 5/32 in.) V notch trowel. Measured thickness: 5.59 mm (0.22 in.), Measured weight: 8.74 kg/m^2 (1.79 PSF)
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.2 kg/m^2 (75.00 PSF)
- 1 layer of, 88.9 mm (3-1/2 in.) unfaced fiberglass batt insulation, Sample weight: 0.78 kg/m^2 (0.16 PSF)
- Gypsum wallboard ceiling grid suspension system. System is comprised of main tees and cross tees. The main tees were placed 1219.2 mm (48 in.) o.c. and the cross tees were placed 609.6 mm (24 in.) o.c. 16 gauge galvanized tie wire was used to attach the main tees to concrete anchors, located 1219.2 mm (48 in.) o.c. along the longitudinal axis, suspending the grid 304.8 mm (12 in.) below the concrete slab.
- 1 layer of, 15.9 mm (5/8 in.) Type X gypsum wallboard. The wallboard was attached parallel to the suspended grid suspension system mains, using 31.8 mm (1-1/4 in.) Type S drywall screws spaced 304.8 mm (12 in.) o.c. The wallboard joints were taped. Suspended gypsum wallboard grid ceiling weighed: 11.23 kg/m^2 (2.30 PSF)

The overall weight of the test assembly is: 386.90 kg/m^2 (79.25 PSF)

The perimeter of the test frame was sealed with a rubber gasket and a sand filled trough.

The test frame was structurally isolated from the receiving room.

Specimen size: 3657.6 mm x 4876.8 mm (12 ft. x 16 ft.)

Conditioning: Concrete slab cured for a minimum of 28 days. Adhesive cured a minimum of 24 hours.

Test Results: The results of the tests are given on pages 4 and 5 of the report.

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NVLAP LAB CODE 200291-0

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Sound Transmission Loss Test Data

Test: ASTM E 90 - 09 (2016) / ASTM E 413 - 16

Test Report: NGC 5019078 Date: 9/27/2019
Specimen Size [m²]: 17.8

Source room		Receiving room	
Volume [m³]:	86	Volume [m³]:	127
Rm Temp [°C]:	25	Rm Temp [°C]:	23
Humidity [%]:	55	Humidity [%]:	58

Sound Transmission Class STC [dB]: 61

Sum of Unfavorable Deviations [dB]: 32
Max. Unfavorable Deviation [dB]: 7 at 125 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
80	40	102.5	65.0	27.2	2.4		2.87
100	45	104.1	62.5	25.9	3.4		4.42
125	38	103.6	70.3	18.5	4.8	7	2.32
160	43	106.1	68.3	17.0	5.1	5	1.90
200	50	106.7	62.4	15.0	5.7	1	0.92
250	50	103.1	58.6	15.6	5.4	4	0.87
315	51	101.1	55.7	15.0	5.6	6	1.06
400	54	100.0	50.6	16.9	4.5	6	0.56
500	59	101.1	46.6	17.7	4.4	2	0.65
630	61	101.4	45.2	18.6	4.8	1	0.59
800	64	100.0	40.9	18.8	4.9		0.48
1000	68	97.9	34.9	18.3	5.0		0.35
1250	73	97.5	29.3	19.3	4.7		0.65
1600	74	97.2	27.2	20.8	4.0		0.46
2000	75	99.2	27.1	24.3	2.9		0.68
2500	77	101.1	27.0	27.0	2.9		0.89
3150	79	100.1	24.0	28.7	2.9		1.04
4000	81	97.9	18.6	32.6	1.7		1.47
5000	82	91.0	10.4	37.1	1.5		1.70

STL = Sound Transmission Loss, dB
L1 = Source Room Level, dB
L2 = Receiving Room Level, dB
d = Decay Rate dB/second
Δ STL = Uncertainty for 95% Confidence Level

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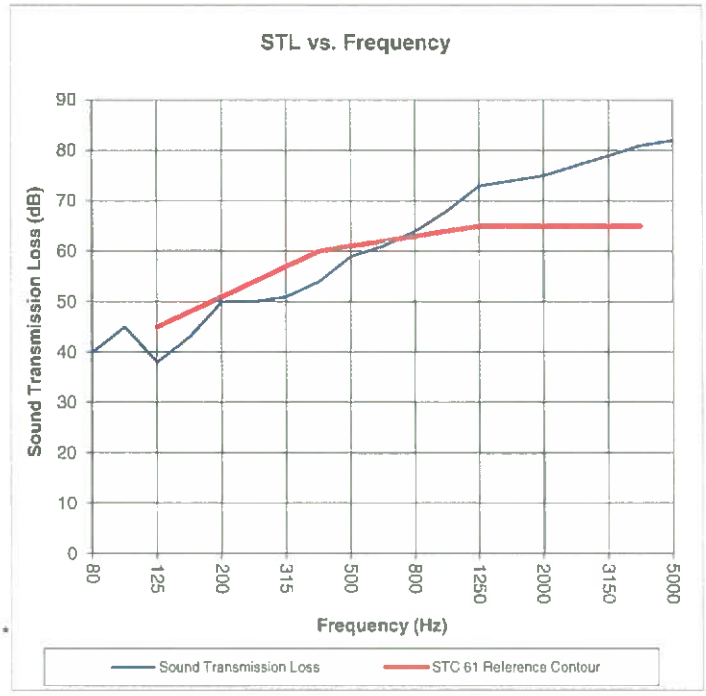
Sound Transmission Loss Test Data

Test: ASTM E 90 - 09 (2016) / ASTM E 413 - 16

Test Report: NGC 5019078
Test Date: 9/27/2019
Specimen Size [m²]: 17.8

Sound Transmission Class STC = 61 dB

Frequency [Hz]	STL [dB]	ΔSTL
80	40	2.87
100	45	4.42
125	38	2.32
160	43	1.90
200	50	0.92
250	50	0.87
315	51	1.06
400	54	0.56
500	59	0.65
630	61	0.59
800	64	0.48
1000	68	0.35
1250	73	0.65
1600	74	0.46
2000	75	0.68
2500	77	0.89
3150	79	1.04
4000	81	1.47
5000	82	1.70



* Due to high insulating value of specimen, background levels limit results at these frequencies.

STL = Sound Transmission Loss, dB
Δ STL = Uncertainty for 95% Confidence Level

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TEST REPORT

for

Parkay Floors
10360 NW 53 St.
Sunrise, FL 33351
Alberto Garcia / 954-726-4515

Impact Sound Transmission Test

ASTM E 492 – 09 (2016) / ASTM E 989 – 18

On

6 Inch (152 mm) Concrete Slab Floor- Ceiling Assembly Overlaid with XPR - Parweabro Flooring

Report Number: NGC 7019102

Assignment Number: G-1628

Test Date: 09/25/2019

Report Date: 10/02/2019

Submitted by: _____
Anthony J. Rivers
Test Technician

Reviewed by: _____
Robert J. Menchetti
Director

Revision Summary:

Date	SUMMARY
Approval Date: 10/02/2019	Original issue date: 10/02/2019 Original NGCTS report: NGC 7019102

Report Number: NGC 7019103 Page 3 of 5

Test Method: This test method is in accordance with American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine - Designation: E 492-09 (2016) / E 989-18.

The uncertainty limits of each tapping machine location met the precision requirements of section A1.4 of ASTM E 492-09.

Specimen Description: 6 inch concrete slab floor ceiling assembly overlaid with, according to client, XPR – Parweabro Flooring.

The test specimen was a floor assembly and was observed to consist of the following:
All weights and dimension are averaged:

- 1 layer of, according to the client, XPR – Parweabro Flooring. The flooring was adhered to the concrete slab using Locbond 500 adhesive. The adhesive was applied using a 4.76 mm x 4.76 mm x 3.97 mm (3/16 in. x 3/16 in. x 5/32 in.) V notch trowel. Measured thickness: 5.59 mm (0.22 in.), Measured weight: 8.74 kg/m^2 (1.79 PSF)
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.2 kg/m^2 (75.00 PSF)

The overall weight of the test assembly is: 374.89 kg/m^2 (76.79 PSF)

The perimeter of the test frame was sealed with a rubber gasket and a sand filled trough.

The test frame was structurally isolated from the receiving room.

Specimen size: 3657.6 mm x 4876.8 mm (12 ft. x 16 ft.)

Conditioning: Concrete slab cured for a minimum of 28 days. Adhesive cured a minimum of 24 hours.

Test Results: The results of the tests are given on pages 4 and 5 of the report.

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Normalized impact sound pressure level

Test: ASTM E 492 - 09 (2016) / ASTM E 989 - 18

Test Report: NGC7019102 Date: 9/25/2019
Specimen Size [m²]: 17.8

Source room
Rm Temp [°C]: 25
Humidity [%]: 55

Receiving room
Volume [m³]: 127
Rm Temp [°C]: 22
Humidity [%]: 57

Impact Insulation Class IIC [dB]: 50
Sum of Unfavorable Deviations [dB]: 29
Max. Unfavorable Deviation [dB]: 8 at 125 Hz

Frequency [Hz]	L_n [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL_n
80	59	60.4	23.26	-1.4		1.48
100	57	58.3	21.53	-1.3		1.98
125	70	71.7	18.26	-1.7	8	2.02
160	67	69.6	15.71	-2.6	5	1.62
200	68	70.7	15.02	-2.7	6	0.65
250	69	71.6	16.03	-2.6	7	1.41
315	63	65.6	16.25	-2.6	1	0.48
400	63	65.0	17.74	-2.0	2	0.33
500	56	57.9	18.16	-1.9		0.41
630	52	53.5	18.71	-1.5		0.45
800	52	54.1	18.97	-2.1		0.42
1000	47	48.6	18.81	-1.6		0.53
1250	42	43.9	20.08	-1.9		0.58
1600	39	40.0	21.61	-1.0		0.78
2000	34	34.5	24.41	-0.5		0.71
2500	27	28.4	26.69	-1.4		0.82
3150	22	23.0	29.34	-1.0		0.96
4000	21	20.6	33.93	0.4		1.02
5000	19	18.2	38.12	0.8		1.12

L_n = Normalized Sound Pressure Level, dB
L2 = Receiving Room Level, dB
d = Decay Rate, dB/second
ΔL_n = Uncertainty for 95% Confidence Level

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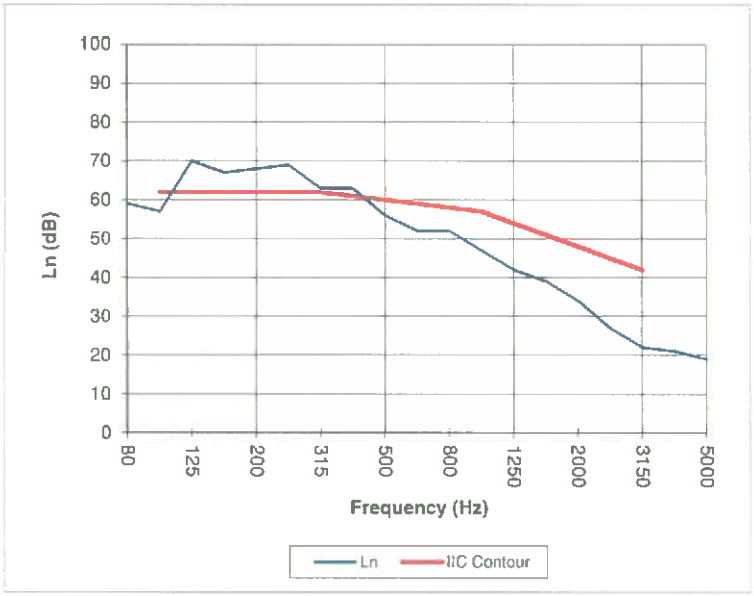
Normalized impact sound pressure level

Test: ASTM E 492 - 09 (2016) / ASTM E 989 - 18

Test Report: NGC7019102
Test Date: 9/25/2019
Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 50

Frequency [Hz]	L_n [dB]
80	59
100	57
125	70
160	67
200	68
250	69
315	63
400	63
500	56
630	52
800	52
1000	47
1250	42
1600	39
2000	34
2500	27
3150	22
4000	21
5000	19



* Due to high insulating value of specimen, background levels limit results at these frequencies.

L_n = Normalized Sound Pressure Level, dB

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TEST REPORT

for

Parkay Floors
10360 NW 53 St.
Sunrise, FL 33351
Alberto Garcia / 954-726-4515

Impact Sound Transmission Test

ASTM E 492 – 09 (2016) / ASTM E 989 – 18

On

6 Inch (152 mm) Concrete Slab Floor- Ceiling Assembly
Overlaid with XPR - Parweabro Flooring
With a Suspended-Gypsum Board Ceiling
With 3-1/2 Inch Fiberglass Insulation

Report Number: NGC 7019103

Assignment Number: G-1628

Test Date: 09/27/2019

Report Date: 10/02/2019

Submitted by: _____
Anthony J. Rivers
Test Technician

Reviewed by: _____
Robert J. Menichetti
Director

Revision Summary:

Date	SUMMARY
Approval Date: 10/02/2019	Original issue date: 10/02/2019 Original NGCTS report: NGC 7019103

Report Number: NGC 7019103

Test Method: This test method is in accordance with American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine - Designation: E 492-09 (2016) / E 989-18.

The uncertainty limits of each tapping machine location met the precision requirements of section A1.4 of ASTM E 492-09.

Specimen Description: 6 inch concrete slab floor suspended ceiling assembly overlaid with, according to client, XPR – Parweabro Flooring, with 3-1/2 inches of fiberglass insulation.

The test specimen was a floor assembly and was observed to consist of the following:
All weights and dimension are averaged:

- 1 layer of, according to the client, XPR – Parweabro Flooring. The flooring was adhered to the concrete slab using Locbond 500 adhesive. The adhesive was applied using a 4.76 mm x 4.76 mm x 3.97 mm (3/16 in. x 3/16 in. x 5/32 in.) V notch trowel. Measured thickness: 5.59 mm (0.22 in.), Measured weight: 8.74 kg/m^2 (1.79 PSF)
- 152.4 mm (6 in.) thick reinforced concrete slab, weighing: 366.2 kg/m^2 (75.00 PSF)
- 1 layer of, 88.9 mm (3-1/2 in.) unfaced fiberglass batt insulation, Sample weight: 0.78 kg/m^2 (0.16 PSF)
- Gypsum wallboard ceiling grid suspension system. System is comprised of main tees and cross tees. The main tees were placed 1219.2 mm (48 in.) o.c. and the cross tees were placed 609.6 mm (24 in.) o.c. 16 gauge galvanized tie wire was used to attach the main tees to concrete anchors, located 1219.2 mm (48 in.) o.c. along the longitudinal axis, suspending the grid 304.8 mm (12 in.) below the concrete slab.
- 1 layer of, 15.9 mm (5/8 in.) Type X gypsum wallboard. The wallboard was attached parallel to the suspended grid suspension system mains, using 31.8 mm (1-1/4 in.) Type S drywall screws spaced 304.8 mm (12 in.) o.c. The wallboard joints were taped. Suspended gypsum wallboard grid ceiling weighed: 11.23 kg/m^2 (2.30 PSF)

The overall weight of the test assembly is: 386.90 kg/m^2 (79.25 PSF)

The perimeter of the test frame was sealed with a rubber gasket and a sand filled trough.

The test frame was structurally isolated from the receiving room.

Specimen size: 3657.6 mm x 4876.8 mm (12 ft. x 16 ft.)

Conditioning: Concrete slab cured for a minimum of 28 days. Adhesive cured a minimum of 24 hours.

Test Results: The results of the tests are given on pages 4 and 5 of the report.

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Normalized impact sound pressure level

Test: ASTM E 492 - 09 (2016) / ASTM E 989 - 18

Test Report: NGC7019103 Date: 9/27/2019
Specimen Size [m²]: 17.8

Source room
Rm Temp [°C]: 25
Humidity [%]: 55

Receiving room
Volume [m³]: 127
Rm Temp [°C]: 23
Humidity [%]: 58

Impact Insulation Class IIC [dB]: 69
Sum of Unfavorable Deviations [dB]: 30
Max. Unfavorable Deviation [dB]: 8 at 125 Hz

Frequency [Hz]	L_n [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔL_n
80	55	55.3	28.82	-0.3		2.43
100	50	50.3	25.81	-0.3	7	3.25
125	51	55.3	19.08	-4.3	8	0.90
160	50	52.3	17.87	-2.3	7	0.50
200	49	51.4	15.62	-2.4	6	0.75
250	45	47.8	15.61	-2.8	2	0.59
315	41	44.2	15.57	-3.2		0.47
400	37	40.4	16.50	-3.4		0.34
500	30	33.8	17.84	-3.8		0.36
630	27	31.3	18.10	-4.3		0.31
800	24	27.7	19.02	-3.7		0.45
1000	19	23.0	18.60	-4.0		0.63
1250	16	20.1	19.26	-4.1		1.23
1600	15	18.6	21.05	-3.6		2.27
2000	13	16.2	24.42	-3.2		2.18
2500	11	13.2	26.82	-2.2		1.41
3150	10	11.8	28.64	-1.8		1.22
4000	11	12.5	32.21	-1.5		1.70
5000	10	10.7	36.31	-0.7		1.20

L_n = Normalized Sound Pressure Level, dB
L2 = Receiving Room Level, dB
d = Decay Rate, dB/second
ΔL_n = Uncertainty for 95% Confidence Level

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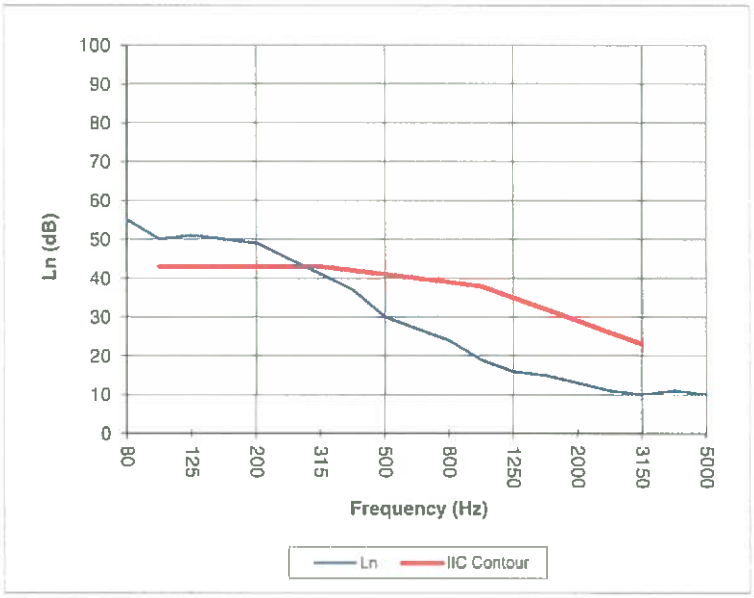
Normalized impact sound pressure level

Test: ASTM E 492 - 09 (2016) / ASTM E 989 - 18

Test Report: NGC7019103
Test Date: 9/27/2019
Specimen Size [m²]: 17.8

Impact Insulation Class IIC [dB]: 69

Frequency [Hz]	L_n [dB]	
80	55	
100	50	
125	51	*
160	50	
200	49	
250	45	
315	41	
400	37	
500	30	*
630	27	*
800	24	*
1000	19	*
1250	16	*
1600	15	*
2000	13	*
2500	11	*
3150	10	*
4000	11	*
5000	10	*



* Due to high insulating value of specimen, background levels limit results at these frequencies.

L_n = Normalized Sound Pressure Level, dB

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Graphical Results:

Sample 1

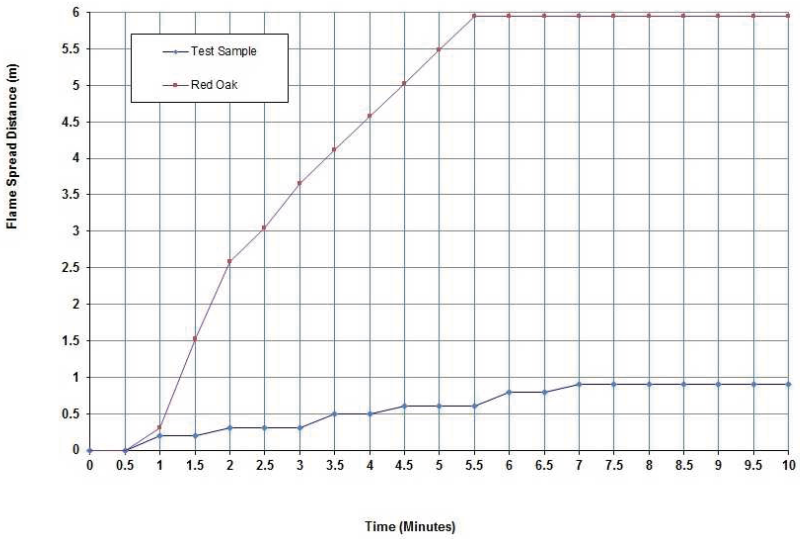

Figure 1. Flame Spread Chart

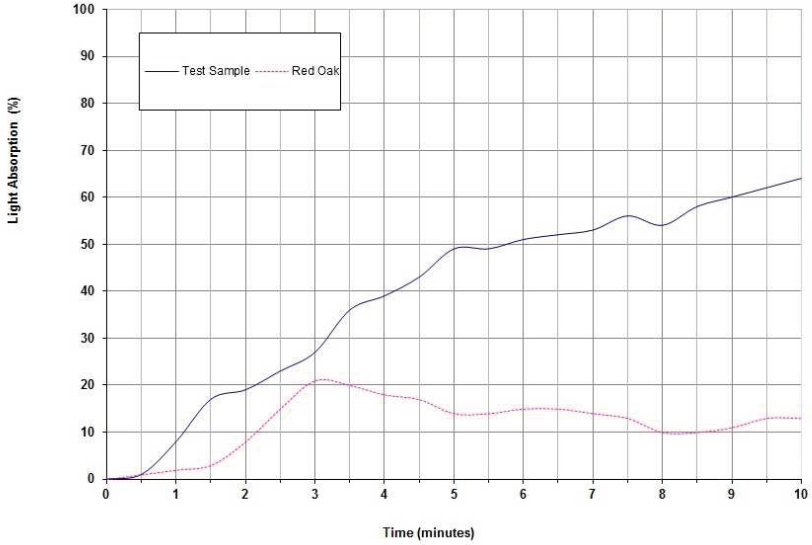

Figure 2. Smoke Developed Chart

******** To be continued********

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Graphical Results:

Sample 2

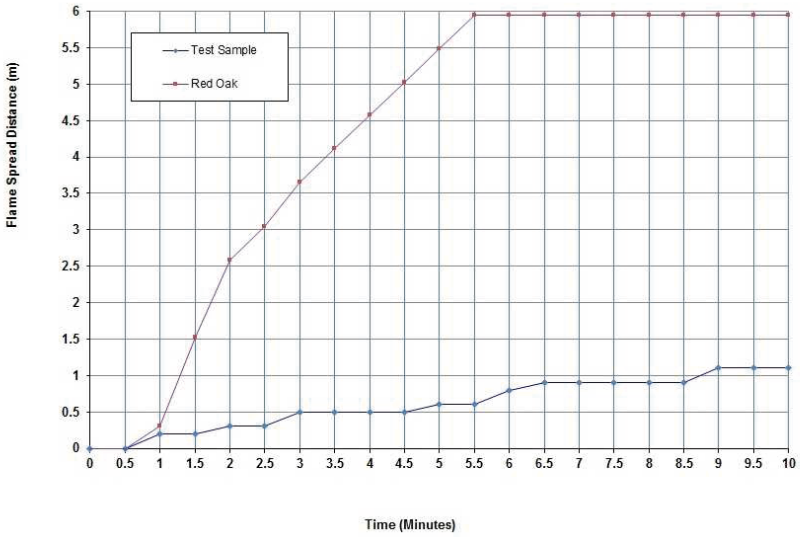

Figure 3. Flame Spread Chart

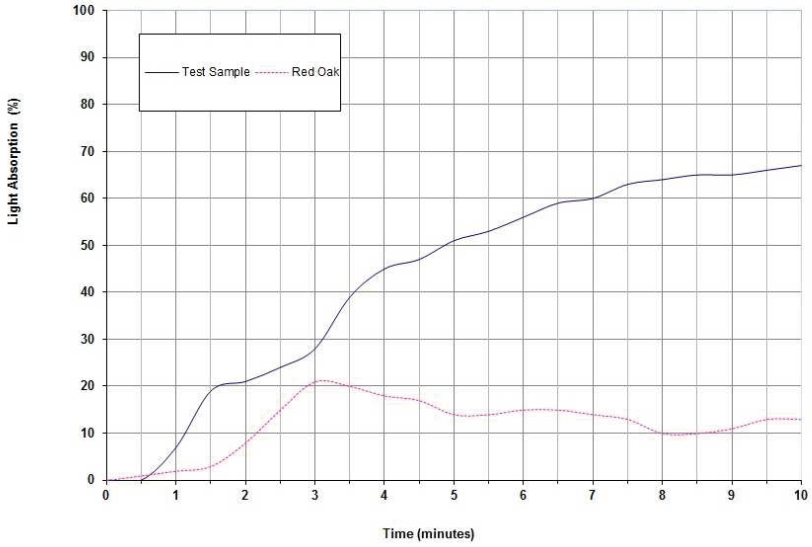

Figure 4. Smoke Developed Chart

******** To be continued********

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Graphical Results:

Sample 3

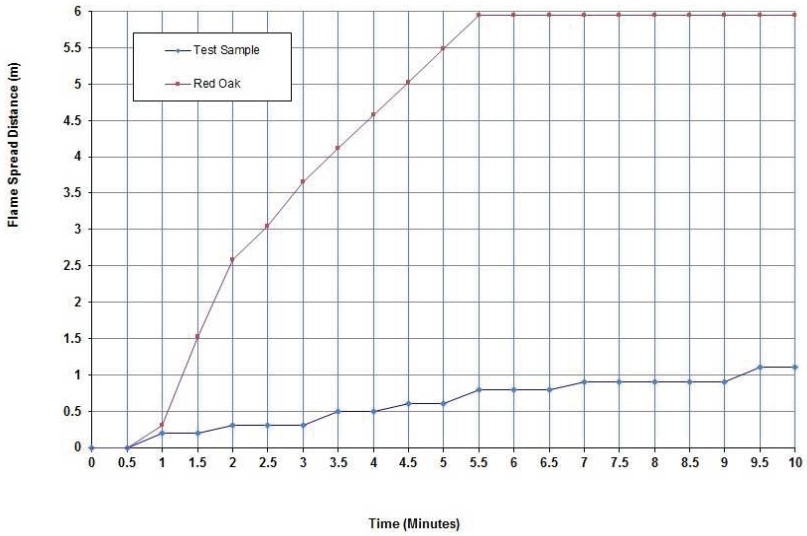

Figure 5. Flame Spread Chart

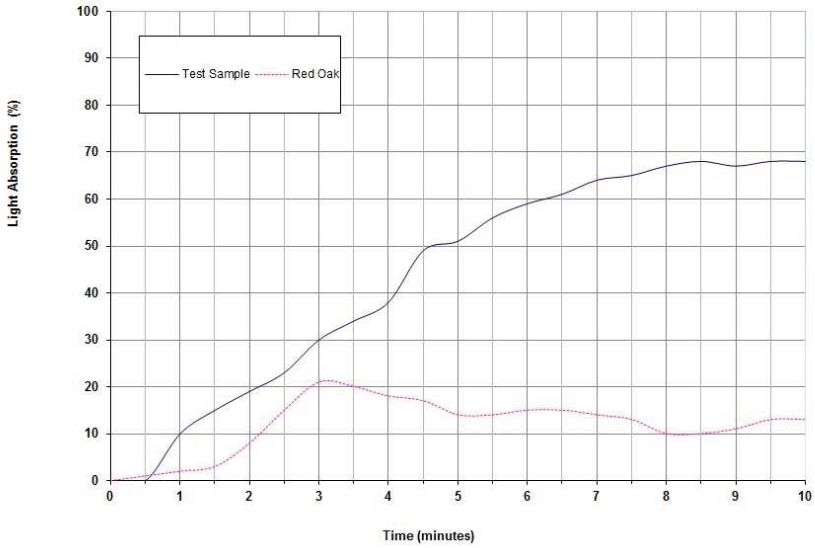

Figure 6. Smoke Developed Chart

Remark: The above test was carried out by SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch.

******** To be continued********

TEST REPORT

No. : XMIN180100115CCM
Date : Feb.14, 2018

SAMPLE INFORMATION AND PICTURES

Thickness: About 5mm
Test face: Sample face

Specimen photographs:

Sample face

Sample back

SGS authenticate the photos on original report only
*******End of report*******

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TEST REPORT

No. : XMIN190200283CCM
Date : Mar.11, 2019
Page : 1 of 3

CUSTOMER NAME:		MASTER BUILDING PRODUCTS COMPANY
ADDRESS:		10380 NW 53RD STREET, SUNRISE, FL 33351
Sample Name	:	SPC FLOOR
Material	:	Vinyl
Spec.	:	PARKAY XPR COLLECTION

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.

****

Test Required	:	Selected test(s) as requested by applicant
SGS Ref. No.	:	GZIN1902006577CM
Date of Receipt	:	Feb.20, 2019
Testing Start Date	:	Feb.20, 2019
Testing End Date	:	Mar.01, 2019
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)

******** To be continued********

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

Civi Huang
Authorized signatory

SGS-CSTC Standards Technical Services Co.,Ltd. Xiamen Branch Testing Center Commercial Construction Material Laboratory

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TEST REPORT

No. : XMIN190200283CCM
Date : Mar.11, 2019

Summary of Results:

No.	Test Item	Test Method	Result
1	Assessment of static electrical propensity	EN 1815:2016 Method A	Voltage: 0.2kV

Original Sample Photo:

Sample

******** To be continued********

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TEST REPORT

Test item: Assessment of static electrical propensity

Sample description: See the photo

Test method: EN 1815:2016 Method A

Test condition:

Condition the test piece and the sandals at a temperature of 23±2℃ and relative humidity of 25±2% for 7days, and maintain these conditions during testing.

With the hand electrode in the hand, walk on the test piece with regular paces at a rate of two steps per second, forwards and backwards but always with the body facing the same direction. At each step, lift the sandals approximately between 50 mm and 80 mm above the test piece. Lift and lower the sandal sole in a plane parallel to the test piece. Cover as much of the test piece as possible and continue walking until the peak voltage ceases to rise, but for not more than 60 s. Take off the sandals while still on the test piece. Perform the test three times.

Test result:

The following body voltages were determined:

Sample No.	1	2	3	Mean value
Voltage, kV (Rubber sole)	0.2	0.2	0.2	0.2

Remark: The above test was carried out by SGS-CSTC Standards Technical Services Co., Ltd. GuangZhou Branch.

******** End of report********

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TEST REPORT

No. : XMIN180300374CCM
Date : Mar.26, 2018

CUSTOMER NAME: PARKAY FLOORS

ADDRESS: 10360 NW 53RD STREET, SUNRISE, FL 33351

Sample Name : RIGID LVT PLANK

Spec. : PARKAY XPR COLLECTION

Sample Information : 26/02/2018

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.

****

Test Required : Selected test(s) as requested by applicant

Date of Receipt : Mar.01, 2018

Testing Start Date : Mar.01, 2018

Testing End Date : Mar.15, 2018

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)

******** To be continued********

Signed for
SGS-CSTC Standards Technical
Services Co., Ltd. XM Branch

Civi Huang Authorized Signatory

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TEST REPORT

Test Conducted:

Refer to ASTM E492-09(2016)$^{\varepsilon 1}$ Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine

ASTM E989-06(2012) Standard Classification for Determination of Impact Insulation Class (IIC)

Test Condition:

Sample Description	:	RIGID LVT PLANK (see the photo) Total Thickness:6.0mm, surface density: about 9.7kg/m^2
Project description	:	No decoration of sample surface, sample installation was assembled directly. The test specimen was covered on a 150mm concrete floor with a drop ceiling, testing area 11.3m^2, the drop ceiling construction showed in appendix2 Drop ceiling: 288mm cavity filled with 50mm glass wool, 12mm gypsum board.
Test method	:	Two adjacent rooms, one the source room directly above the other the receiving room. A standard tapping machine is placed in operation on the flooring system in source room. The average spectrum of the sound pressure levels produced by the tapping machine is measured in the receiving room.
Test Equipment	:	RTA840 system
Test Environment	:	Source room volume 125m^3, receiving room volume 100m^3, air temperature 17.5℃, air humidity 30.8%

Test Result

Test Item	Test Standard	Result
Determination of Impact Sound Insulation Class	ASTM E492-09(2016)$^{\varepsilon 1}$ ASTM E989-06(2012)	**IIC = 66**

******** To be continued********

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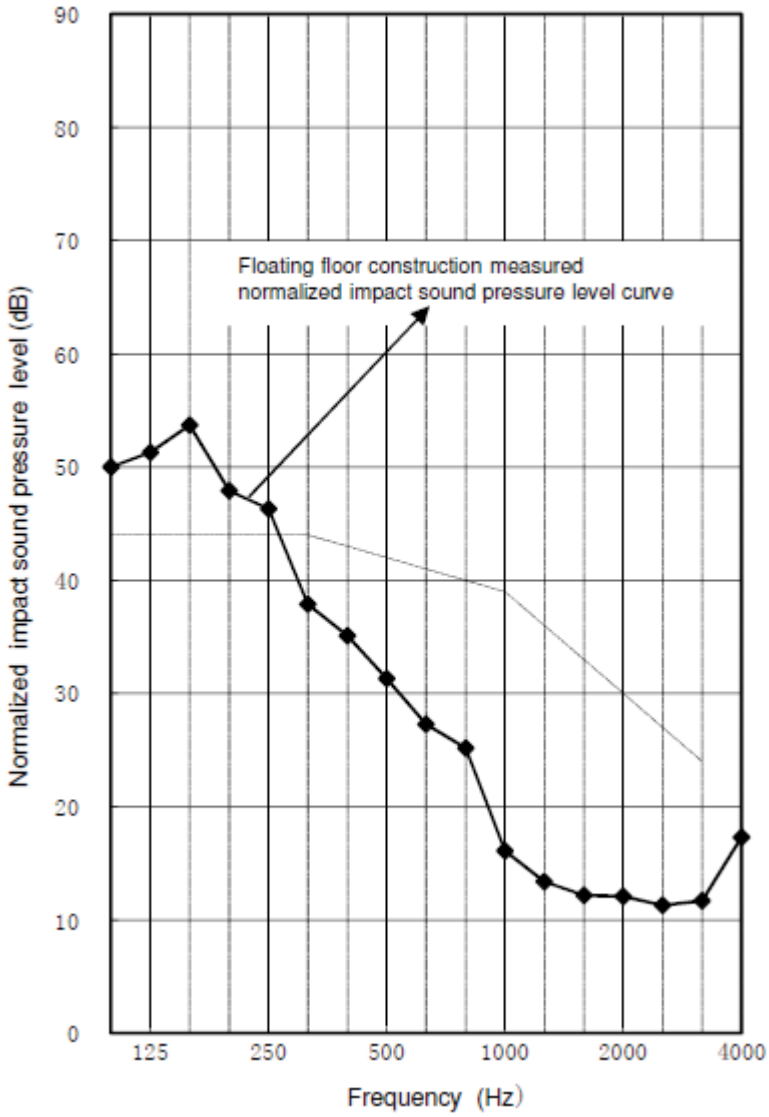
Appendix 1:

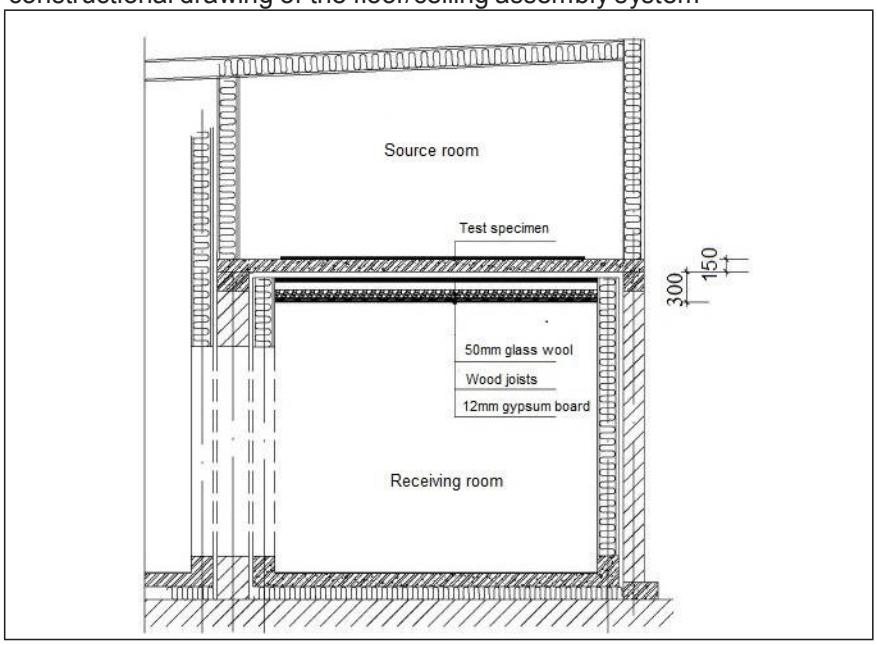
f Hz	Ln dB
100 125 160	50.0 51.3 53.7
200 250 315	47.9 46.3 37.9
400 500 630	35.1 31.3 27.3
800 1000 1250	25.2 16.1 13.4
1600 2000 2500	12.2 12.1 11.3
3150 4000	11.7 17.3
IIC	**66**



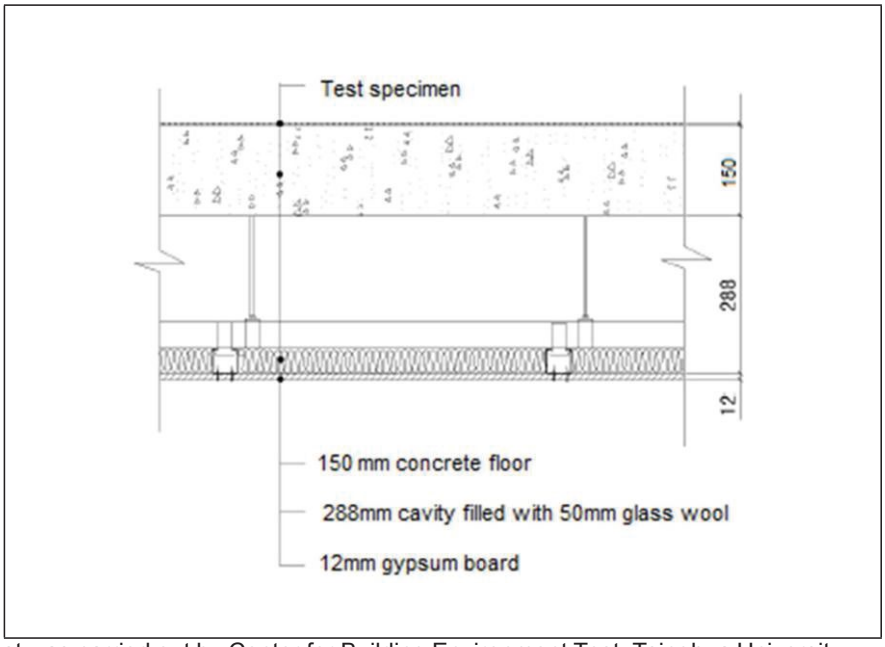
Remark: L_n as the weighted normalized impact sound pressure level

******** To be continued********

Appendix 2: The constructional drawing of the floor/ceiling assembly system



Schematic diagram:



Note: The above test was carried out by Center for Building Environment Test, Tsinghua University.

******** To be continued********

TEST REPORT

No. : XMIN180300374CCM

Date : Mar.26, 2018

Photo Appendix:

SGS authenticate the photo on original report only

*******End of report********

SGS-CSTC Standards Technical Services Co.,Ltd. Xiamen Branch Testing Center Commercial Construction Material Laboratory

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TEST REPORT

No. : XMIN180300375CCM
Date : Mar.26, 2018
Page: 1 of 5

CUSTOMER NAME: PARKAY FLOORS
ADDRESS: 10360 NW 53RD STREET, SUNRISE, FL 33351

Sample Name : RIGID LVT PLANK
Spec. : PARKAY XPR COLLECTION
Sample Information : 26/02/2018

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.

****

Test Required : Selected test(s) as requested by applicant
Date of Receipt : Mar.01, 2018
Testing Start Date : Mar.01, 2018
Testing End Date : Mar.15, 2018
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)

******** To be continued********

Signed for
SGS-CSTC Standards Technical
Services Co., Ltd. XM Branch

Civi Huang Authorized Signatory

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TEST REPORT

Test Conducted:

Refer to ASTM E90-09(2016) Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

ASTM E413-16 Classification for Rating Sound Insulation

Test Condition:

Sample Description	:	RIGID LVT PLANK (see the photo) Total Thickness:6.0mm, surface density: about 9.7kg/m^2
Project description	:	No decoration of sample surface, sample installation was assembled directly. The test specimen was covered on a 150mm concrete floor with a drop ceiling, testing area 11.3m^2, the drop ceiling construction showed in appendix2 Drop ceiling: 288mm cavity filled with 50mm glass wool, 12mm gypsum board.
Test method	:	Two adjacent rooms, one the source room directly above the other the receiving room. Taken the only significant sound transmission path between rooms is by way of the test partition. An approximately diffuse sound field is produced in the source room. Sound incident on the test partition causes it to vibrate and create a sound field in the receiving room.
Test Equipment	:	RTA840 system
Test Environment	:	Source room volume 125m^3, receiving room volume 100m^3, air temperature 17.5℃, air humidity 30.8%

Test Result

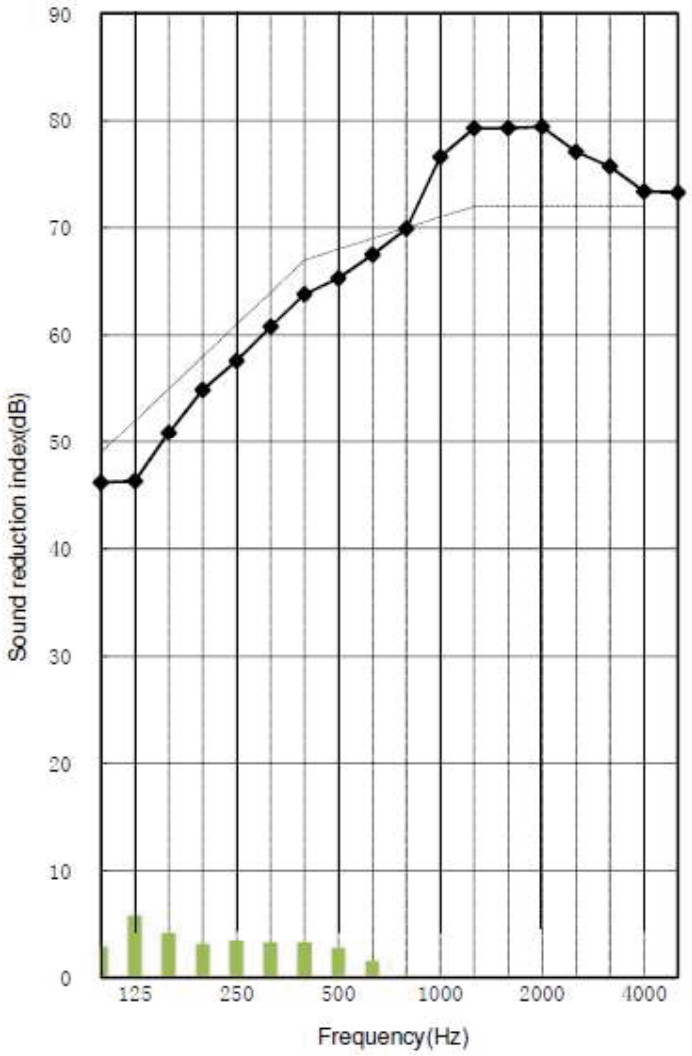
Test Item	Test Standard	Result
Airborne sound transmission loss test and class	ASTM E90-09(2016) ASTM E413-16	**STC = 68**

******** To be continued********

TEST REPORT

Appendix 1:

f Hz	TL dB
100 125 160	46.2 46.3 50.9
200 250 315	54.9 57.6 60.8
400 500 630	63.8 65.3 67.5
800 1000 1250	69.9 76.6 79.3
1600 2000 2500	79.3 79.4 77.1
3150 4000 5000	75.7 73.4 73.3
STC	**68**



Remark: TL is the transmission loss.

******** To be continued********

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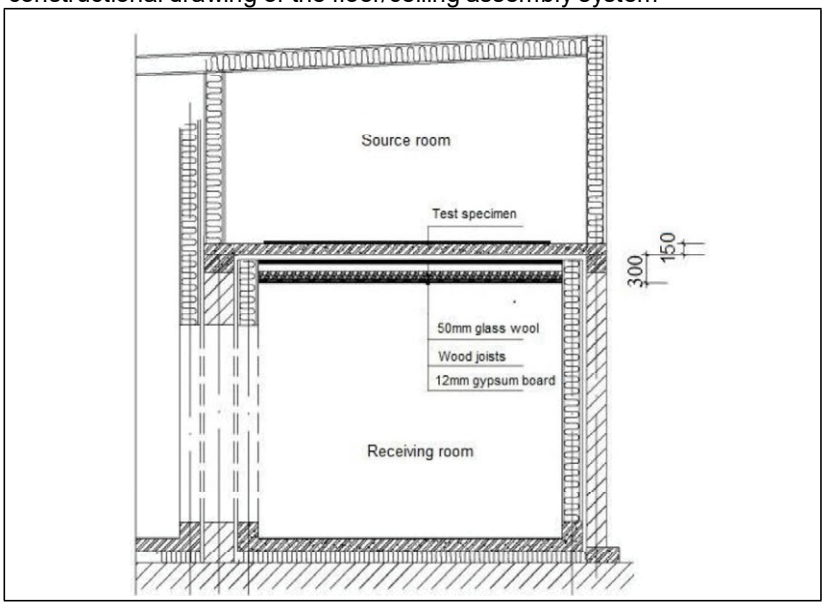
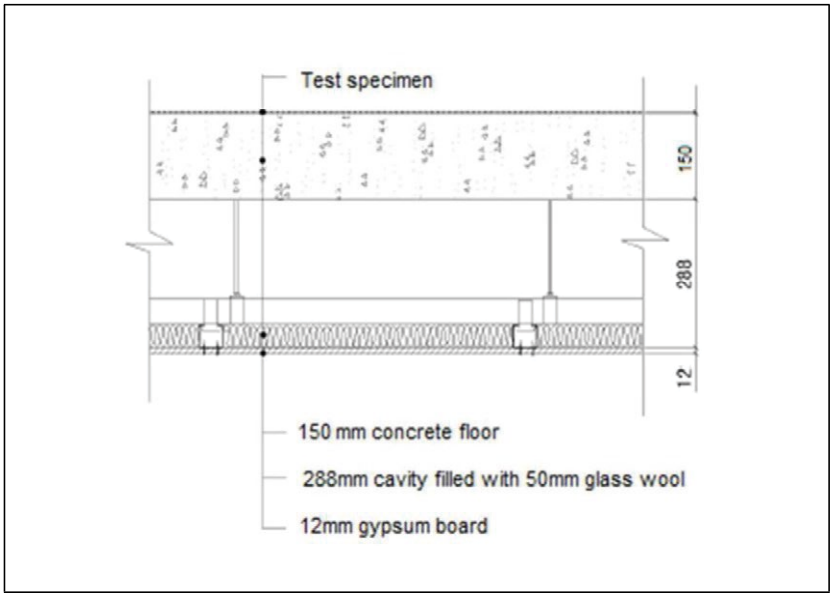
Appendix 2: The constructional drawing of the floor/ceiling assembly system



Schematic diagram:



Note: The above test was carried out by Center for Building Environment Test, Tsinghua University.

******** To be continued********

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TEST REPORT

No. : XMIN180300375CCM

Date : Mar.26, 2018

Photo Appendix:

SGS authenticate the photo on original report only

*******End of report********

SGS-CSTC Standards Technical Services Co.,Ltd. Xiamen Branch Testing Center Commercial Construction Material Laboratory

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TEST REPORT
EN 14041+AC
Resilient, textile and laminate floor covering — Essential Characteristics

Report Reference No..... :	170510110GZU-001
Tested by (name and signature)..... :	Kelming Wang
Approved by (name and signature).. :	Jeff Deng
Date of issue..... :	July 14, 2017
Contents..... :	Total test report 14 pages including:
	Report text: 5 pages.
	Appendix A for copy of test report (Issued by: NB 1023): 6 pages.
	Appendix B for ISO 9001 certificate: 1 page
	Appendix C for Product photos: 1 page
	Appendix D for Revision page: 1 page
Testing Laboratory name ..... :	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Address..... :	No. 9 Nan Xiang San Road, GETDD, Guangzhou, China
Testing location..... :	Same as above and Notified Body No. 1023
Applicant's name..... :	
Address..... :	
Test specification:	
Standard..... :	EN 14041: 2004+AC: 2006
Non-standard test method..... :	N/A
Test Report Form No..... :	TTRF EN 14041: 2004 C
TTRF Originator..... :	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Master TTRF..... :	Dated 2013-01
Test item description..... :	PVC floor covering-Diamond, Rigid LVT
Model and/or type reference..... :	Diamond, Rigid LVT 5.0mm
Manufacturer..... :	
Rating(s)..... :	Reaction to fire: Class $B_{fl\text{-}s1}$
	Release of formaldehyde: Class E1

Copy of marking plate:

Marking on accompanied document :

CE

17
XXXXX-CPR-2017/07/14

EN 14041:2004 +AC:2006
PVC floor covering-Diamond,Rigid LVT
Reaction to fire: Class B_{fl} -$_{S1}$
Nominal size: 1220x180x5.0mm
Formaldehyde: Class E1
Slipperiness: Class DS

Note:
1. If the CE marking is reduced or enlarged the proportions given in the above graduated drawing must be respected.
2. The various components of the CE marking must have substantially the same vertical dimension, which may not be less than 5 mm.
3. CE marking and label shall be affixed visibly, legibly and indelibly.
4. “XXXXX-CPR-2017/07/14” should be the reference number of the DoP.

Summary of testing:

The submitted samples were tested and found to comply with applicable requirements of EN 14041: 2004+AC: 2006.

Test item particulars	
Classification of installation and use ..... :	Floated (no adhesive)
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement ..... :	P(Pass)
- test object does not meet the requirement ..... :	F(Fail)
Testing	
Date of receipt of test item ..... :	May 10, 2017
Date (s) of performance of tests ..... :	May 10, 2017 to July 14, 2017

General remarks:

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

"(See remark #)" refers to a remark appended to the report.
"(See Appendix #)" refers to an appendix appended to the report.
Throughout this report a comma (point) is used as the decimal separator.

When determining the test result, measurement uncertainty has been considered.

The clause which indicated with * is the subcontract test item.

General product information:

Submitted samples are PVC floor covering-Diamond,Rigid LVT, thickness: 5mm, refer to below product information:

Model no.: Diamond, Rigid LVT 5.0mm
Top film(wear layer):0.5mm PVC
Base layer:3.85mm PVC
Balance layer:0.65mm PVC
Compound: Calcium carbonate, PVC powder, colorant(carbon black),stabilizing agent
Form of floor covering: tile; work size: 1220*180*5.0 mm
Way of the product laying: floated (no adhesive)

Release of formaldehyde, Reaction to fire (Class B_{fl}) test conducted by Notified Body Lab No.1023. INSTITUTE FOR TESTING AND CERTIFICATION, Inc. Refer to report No. 75 35 01489/2017 for detail.
See Appendix C for products' appearance.

EN 14041+AC			
Clause	Requirement - Test	Result - Remark	Verdict
4	REQUIREMENTS		—
4.1	*Reaction to fire When declared, the floor covering shall be tested and classified according to the requirement of EN 13501-1 and resulting class and subclass shall be declared …. …….: If it is decided to make no claim for reaction for fire performance, which marked Class F, no testing is required ……..: If the product listed in Table 1, 2 or 3, in the end uses identified in the tables, are classified without further testing in the classes shown and do not require testing in respect of these end uses and classes ……..:	Class B_{fl} -$_{S1}$ Refer to report No. 75 35 01489/2017 for detail	P
4.2	Content of pentachlorophenol (PCP) Resilient, textile and laminate floor coverings shall not contain PCP or derivative thereof as a component in the production process of the product or of its raw materials ……..:	PVC floor covering Not applicable.	N/A
4.3	*Formaldehyde emission When formaldehyde-containing materials have been added to the product as a part of the production process, the product shall be tested and classified in to one of two classes: E1 or E2 ……..:	Class E1 Refer to report No. 75 35 01489/2017 for detail.	P
4.4	Water-tightness Where required, resilient floor coverings shall meet the requirement of EN 13553……..:	Not claimed	—
4.5	Slip resistance When declared, the floor covering intended to be used in dry and non-contaminated conditions shall have a dynamic coefficient of friction of ≥ 0,30 when tested ex-factory under dry conditions per EN 13893 and shall be declared as technical class DS……. ….:	Dynamic coefficient of friction: 0.36 Class DS	P
4.6	Electrical behaviour (static electricity) When declared, antistatic floor coverings body voltage shall not exceed 2,0 kV per EN 1815 ……..: When declared, static dissipative floor coverings vertical resistance shall not exceed $10^9\Omega$ per EN 1081……: When declared, conductive floor coverings vertical resistance shall not exceed $10^6\Omega$ per EN 1081…. ….:	Not claimed	—

EN 14041+AC			
Clause	Requirement - Test	Result - Remark	Verdict
4.7	*Thermal conductivity If required, the thermal conductivity values shall be verify per EN 12524 or EN 12667……..:	0.151 W/m•K by test	—
5	EVALUATION OF CONFORMITY		—
5.1	General ……..:	Refer to 5.3	P
5.2	Type testing ……..:	Refer to Clause 4.1 to 4.7	P
5.3	Factory production control ……..:	The manufacturer claimed compliance with the FPC requirements by operating an ISO 9001 system and holds valid ISO9001 certificate.	P
6	MARKING		—
	Product which conform to the requirements of this document shall be clearly and indelibly marked by the manufacturer either on their package or on an adhesive label with following information: a) the number and the year of this European Standard b) the manufacturer's or supplier's identification c) the product name and batch number	See 'Copy of marking plate'.	P

**********End of page**********

Appendix A
Copy of Test Report (Issued by: NB 1023)

Reference No. 75 35 01489
Page 1 of 6

INSTITUTE FOR TESTING AND CERTIFICATION
třída Tomáše Bati 299, Louky, 763 02 Zlín, Czech Republic

TEST REPORT

Reference No. 75 35 01489/ 2017

Product: **Heterogeneous PVC floor covering, type: Diamond 5.0**

Elaborated by: Milan Kovář

Issued on: 22nd June 2017

RNDr. Radomir Čevelík
Representative of Notified Body No. 1023

Tax & VAT Id No.: CZ47910381 Company Id No.: 47910381 Phone: +420 577 601 238 +420 577 601 623 Fax: +420 577 104 855 +420 577 601 702 e-mail:itc@itczlin.cz www.itczlin.cz

**********End of Page**********

Appendix A (continued)
Copy of Test Report (Issued by: NB 1023)

INSTITUTE FOR TESTING AND CERTIFICATION
Notified Body 1023
763 02 Zlín, Czech Republic

Notified Body No. 1023 * State Authorized Body No. 224 * Product and Management Systems Certification Bodies * Accredited Laboratory

Reference No. 75 35 01489
Page 2 of 6

1. Introduction

This report was elaborated on the basis of the application *No. 753501489, registered on 12/05/2017* and tests results carried out by the notified testing laboratory in accordance with the procedure mentioned in the article 1.4 of the Annex V to the Regulation (EU) No. 305/2011 of the European Parliament and of the Council of 9 March 2011, as amended, laying down harmonised conditions for the marketing of construction products („CPR").

2. Assessment and verification of constancy of performance according to Regulation (EU) No 305/2011 of the European Parliament and of the Council, as amended

Floor coverings as construction products are assessed on the basis of relevant clauses of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9th March 2011 laying down harmonised conditions for marketing of construction products and repealing Council Directive 89/106/EEC as amended (called „CPR")

2.1 System of assessment and verification of constancy of performance (AVCP)

The submitted product is assessed pursuant to system of AVCP 3 of the CPR (Annex V).

The type testing was carried out according to Annex ZA of the standard ČSN EN 14041 (EN 14041:2004/AC:2006).

2.2 Indicators specifying basic requirements for construction works

The initial type testing was carried out by the notified body (the notified test laboratory) in the following range of relevant properties according to Table ZA.4 (of the ČSN EN 14041):

- Reaction to fire
  - ignitability – surface exposure according to ČSN EN ISO 11925-2 (exposure time: 15s)
  - burning behaviour using a radiant heat source according to ČSN EN ISO 9239-1 /test samples were not glued to the standard substrate/
  - classification according to ČSN EN 13501-1+A1
- Formaldehyde emission according to ČSN EN 717-1

**********End of Page**********

Appendix A (continued)
Copy of Test Report (Issued by: NB 1023)

INSTITUTE FOR TESTING AND CERTIFICATION
Notified Body 1023
763 02 Zlín, Czech Republic

Notified Body No. 1023 * State Authorized Body No. 224 * Product and Management Systems Certification Bodies * Accredited Laboratory

Reference No. 75 35 01489
Page 3 of 6

2.3 Product specification

PVC heterogeneous floor covering tiles.
Dimensions: 1220 mm x 180 mm x 5.0 mm
Composition:

- Wear layer: 0.5 mm (PVC)
- Base layer: 3.85 mm (PVC)
- Balance layer: 0.65 mm (PVC)

Total thickness (wear layer thickness): 5.0 mm (0.5 mm)
Laying way: click, loose (no adhesive)

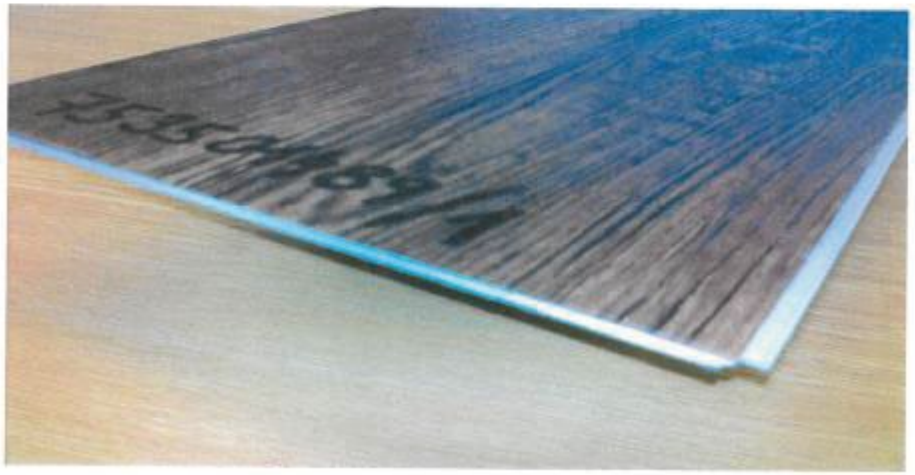
2.4 Sampling place and number of samples taken

The test samples were sent by the manufacturer. The number of the test samples sent was as follows:

- PVC heterogeneous floor covering tiles, type: Diamond 5.0 mm in the amount of 56 pcs tiles, 1 pc (approx. 0.5 x 0.5) m, packed into foil, 1 pc of (approx.185 x 1000) mm

The test samples were registered under the registration number 75 35 01489/1 on 23/05/2017.

Sample photo:



**********End of Page**********

Appendix A (continued)
Copy of Test Report (Issued by: NB 1023)

INSTITUTE FOR TESTING AND CERTIFICATION
Notified Body 1023
763 02 Zlín, Czech Republic

Notified Body No. 1023 * State Authorized Body No. 224 * Product and Management Systems Certification Bodies * Accredited Laboratory

2.5 Place and date of testing

- Institut pro testování a certifikaci (ITC), a.s., NB 1023, accredited laboratory No. 1004 Zlín (June 2017)
- Centrum stavebního inženýrství (CSI), a.s. Prague, Fire Technical Laboratory, Accredited test laboratory No.1007.4, NB 1390 (June 2017)
- Výzkumný a vývojový ústav dřevařský, Praha, s.p., NB 1393, accredited laboratory No. 1031, Prague (May 2017)

2.6 Test results

2.6.1 Ignitability results

Table 1 – Ignitability test results

Characteristic	Surface exposure test – lengthwise direction (characteristic for individual test specimens)	Surface exposure test – crosswise direction (characteristic for individual test specimens)
Ignition of the test specimen Yes/No	No, No, No, No, No	No, No, No, No, No
Flame reaching of a mark in distance of 150 mm Yes/No	No, No, No, No, No	No, No, No, No, No
Burning time to reach 150 mm (s)	-, -, -, -, -	-, -, -, -, -
Ignition of the filter paper	No, No, No, No, No	No, No, No, No, No

**********End of Page**********

Appendix A (continued)
Copy of Test Report (Issued by: NB 1023)

INSTITUTE FOR TESTING AND CERTIFICATION
Notified Body 1023
763 02 Zlín, Czech Republic

Notified Body No. 1023 * State Authorized Body No. 224 * Product and Management Systems Certification Bodies * Accredited Laboratory

Reference No. 75 35 01489
Page 5 of 6

2.6.2 Results of burning behaviour using a radiant heat source

Table 2 - Results of burning behaviour using a radiant heat source

Characteristic	Measuring unit	Crosswise direction measurement	Lengthwise direction measurement (mean value)
Maximum distance of flame spread	mm	190	206.7
Critical heat flux (CHF)	kW/m^2	9.3	**9.0**
Distance of flame spread at 10th min.	mm	180	206.7
HF-10	kW/m^2	9.5	9.0
Distance of flame spread at 20th min.	mm	(-)	(-)
HF-20	kW/m^2	(-)	(-)
Distance of flame spread at 30th min.	mm	(-)	(-)
HF-30	kW/m^2	(-)	(-)
Maximum light attenuation	%	56.9	60.3
Integrated smoke value	% x min	213.7	**243.4**

2.6.3 Results of the reaction to fire classification

Table 3 – Reaction to fire classification

Product	Reaction to fire class	Additional class for smoke production	Final class
Heterogeneous PVC floor covering, type: Diamond 5.0	B_{fl}	s1	**B_{fl} – s1**

**********End of Page**********

Appendix A (continued)
Copy of Test Report (Issued by: NB 1023)

INSTITUTE FOR TESTING AND CERTIFICATION
Notified Body 1023
763 02 Zlín, Czech Republic

Notified Body No. 1023 * State Authorized Body No. 224 * Product and Management Systems Certification Bodies * Accredited Laboratory

2.6.4 Formaldehyde emission result

Table 4 – Results of the formaldehyde emission

Product	Measuring unit	Test result (class)
Heterogeneous PVC floor covering, type: Diamond 5.0	$mg.m^{-3}$	0.005 (E1)

Notified Body NB 1023 has carried out the testing in accordance with the paragraph 1.4 of Annex V to the Regulation (EU) No 305/2011, as amended for the product specified in the Art. 2.3 of this Report **and concluded that**
all requirements of this paragraph of the above Regulation and the relevant harmonized standard have been met and this report may be issued as a basis for affixing CE marking to these products.

This Report is applicable only to products identically marked and named, such as those which were the subject to testing, provided that the products characteristics have not been changed or no significant changes in their production (materials, technology, manufacturing equipment, etc.) have been done.

3. List of documents used to elaborate the Test Report

- Application No. 753501489 for assessment of CE-marked construction products
- ČSN EN 14041 (91 7883): Pružné textilní a laminátové podlahové krytiny – Podstatné vlastnosti (Resilient, textile and laminate floor coverings – Essential characteristics)
- Test Report of accredited laboratory, reference No. 753501489/01, elaborated by ITC a.s., accredited laboratory No. 1004, in Zlín, on 12/06/2017
- Test Report, reference No. 17/440/P341, elaborated by Centrum stavebního inženýrství a.s., Fire Technical Laboratory, Prague, on 22/06/2017
- Test Report, reference No. MVZ-A-2017-000111, elaborated by Výzkumný a vývojový ústav dřevařský, Praha, s.p., accredited laboratory No. 1031, Prague, on 05/06/2017
- Classification Report using Results of Reaction to Fire No. 75 35 01489K/2017, elaborated by ITC, a.s. Zlín, on 22/06/2017

**********End of Page**********

Appendix B

ISO 9001 certificate

CQC

QUALITY MANAGEMENT SYSTEM

CERTIFICATE

Certificate No.: 00116Q29995R3M/3200

We hereby certify that

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Unified Social Credit Code/ Organization Code certificate: 91320412779661071 6

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

by reason of its

Quality Management System

has been awarded this certificate for compliance with the standard

ISO9001: 2008 GB/T 19001-2008

The Quality Management System Applies in the following area:

Production of Laminate Flooring, Vinyl Flooring

Certified since: November 5, 2007 Valid from: October 27, 2016 Valid until: October 31, 2019

After a surveillance cycle, the certificate is valid only when used together with an Acceptance Notice of Surveillance Audit issued by CQC.
Please access www.cqc.com.cn for checking validity of the certificate
This certificate and its relevant information can query in the website of Certification and Accreditation Administration of the People's Republic of China (www.cnca.gov.cn).
(The validity of the ISO9001:2008 certificates expires on 15/09/2018. Please transfer to new edition certificates before that time.)

IAF CNAS 中国认可 国际互认 管理体系 MANAGEMENT SYSTEM CNAS C001-M Signed by: Wang Kejiao IQNet CHINA QUALITY CERTIFICATION CENTRE

CHINA QUALITY CERTIFICATION CENTRE

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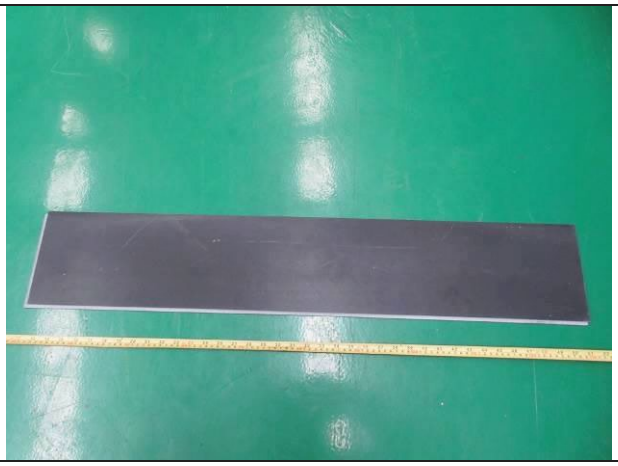
Appendix C

Products photos

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>C.1 Surface view of sample</td><td>C.2 Back view of sample</td></tr>
<tr><td>  </td><td rowspan="2">Blank</td></tr>
<tr><td>C.3 Section view of sample</td></tr>
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Appendix D

Revision page

Revision No.	Date	Changes	Author	Reviewer
0	July 14, 2017	First issue	Kelming Wang	Jeff Deng

**********End of report**********

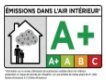
VOC TEST REPORT
Indoor Air Comfort GOLD®

5 May 2017

1 Sample Information

Sample name	Diamond Floor
Batch no.	VFS17-113
Production date	13/03/2017
Product type	PVC flooring
Sample reception	21/03/2017

2 Brief Evaluation of the Results

Regulation or protocol	Conclusion	Version of regulation or protocol
French VOC Regulation		Regulation of March and April 2011 (DEVL1101903D and DEVL1104875A)
French CMR components	Pass	Regulation of March and April 2011 (DEVL1101903D and DEVL1104875A)
AgBB	Pass	AgBB of February 2015. DIBt of October 2010
Belgian Regulation	Pass	Royal decree of May 2015 (C-2014/24239)
Indoor Air Comfort®	Pass	Indoor Air Comfort 5.3a of March 2015
Indoor Air Comfort GOLD®	Pass	Indoor Air Comfort GOLD 5.3a of March 2015
EN 717-1§	E1	2004
Blue Angel (RAL UZ 120)	Pass	Resilient Floor Covering, February 2011
BREEAM International	Compliant	GN22: BREEAM Recognised Schemes for VOC Emissions from Building Products
LEED v4 (outside U.S.)	Compliant	LEED v4 for Building Design and Construction (April, 2015)

Full details based on the testing and direct comparison with limit values are available in the following pages

Maria Pelle
Chemist

Janne R. Norup
Chemist

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3 Applied Test Methods

3.1 General Test References

Regulation, protocol or standard	Version	Reporting limit VOC [µg/m³]	Calculation of TVOC	Combined uncertainty¤ [RSD(%)]
CEN/TS 16516	October 2013	5	Toluene equivalents	22%
ISO 16000 -3 -6 -9 -11	2006-2011 depending on part	2	Toluene equivalents	22%
ASTM D5116	2010	-	-	-
Specifications Indoor Air Comfort Gold	5.3a of March 2015	5	Toluene equivalents	22%
French VOC	Regulation of March and April 2011 (DEVL1101903D and DEVL1104875A)	2	Toluene equivalents	22%
AgBB/DIBt	February 2015/October 2010	5	Compound Specific	22%
Belgian VOC	Royal decree of May 2015 (C - 2014 / 24239)	5	Toluene equivalents	22%
EN 717-1§	2004	-	(Formaldehyde only)	22%
Blue Angel (RAL UZ 120)	February 2011	5	Compound Specific	22%

3.2 Specific Laboratory Sampling and Analyses

Procedure	External Method	Internal SOP	Quantification limit / sampling volume	Analytical principle	Uncertainty¤ [RSD(%)]
Sample preparation	ISO 16000-11:2006, EN16402:2013, CDPH, AgBB/DIBt, EMICODE	71M549810	-	-	-
VOC emission chamber testing	ISO 16000-9:2006, CEN/TS 16516:2013	71M549811	-	Chamber and air control	-
Sampling of VOC	ISO 16000-6:2011, CEN/TS 16516:2013	71M549812	5 L	Tenax TA	-
Analysis of VOC	ISO 16000-6:2011, CEN/TS 16516:2013	71M542808B	1 µg/m³	ATD-GC/MS	10%
Sampling of aldehydes	ISO 16000-3:2011, CEN/TS 16516:2013	71M549812	35 L	DNPH	-
Analysis of aldehydes	ISO 16000-3:2011, EN 717-1, CEN/TS 16516:2013	71M548400	3-6 µg/m³	HPLC-UV	10%
Sampling of phthalates	ISO 16200-1, MEL-09, OSHA CSI	71M549812	60 L	XAD-2	-
Analysis of phthalates*	CPSC-CH-C1001-09.3 (2010)	71M546060	0.6 µg/m³	GC/MS	10%

4 Test Parameters, Sample Preparation and Deviations

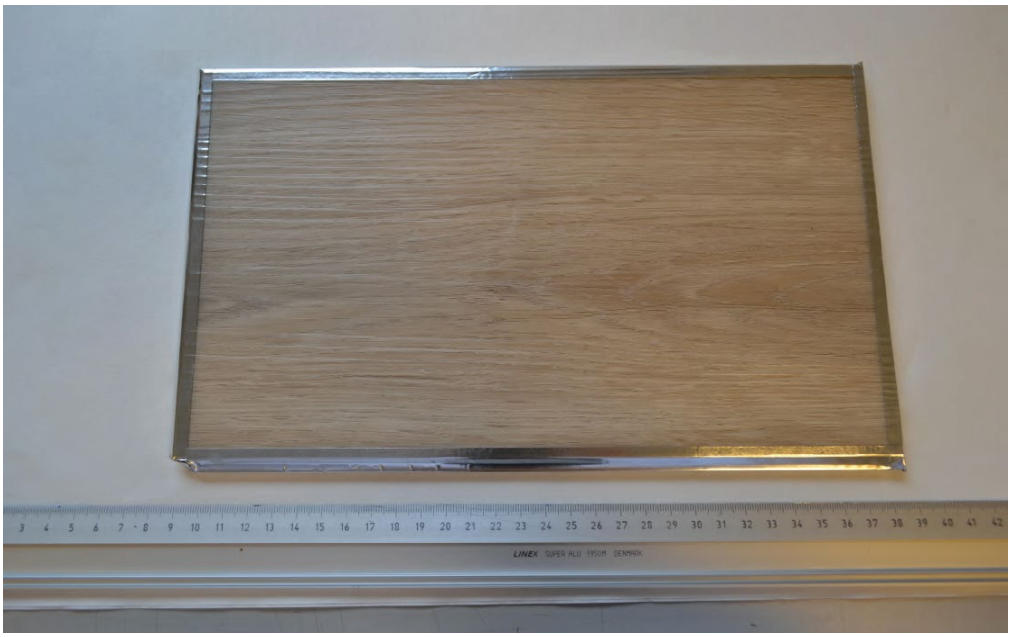
4.1 VOC Emission Chamber Test Parameters

Parameter	Value	Parameter	Value
Chamber volume, V[L]	119	Preconditioning period	-
Air Change rate, n[h^{-1}]	0.5	Test period	30/03/2017 - 27/04/2017
Relative humidity of supply air, RH [%]	50 ± 3	Area specific ventilation rate, q [m/h or $m^3/m^2/h$]	1.25
Temperature of supply air, T [°C]	23 ± 1	Loading factor [m^2/m^3]	0.4
		Test scenario	Flooring or ceiling

4.2 Preparation of the Test Specimen

Edges and back were covered with aluminium foil and aluminium tape.

4.3 Picture of Sample



4.4 Deviations from Referenced Protocols and Regulations

No deviations from the referenced test methods were observed except the general deviations.

4.4.1 General Deviations

Method	Deviation details	Impact on results or correction
EN 717-1[§]	Sampling flow on DNPH was 300 mL/min. The RH% in the supply air to the chamber was 50 ± 3% and not 45 ± 3% during the test. The temperature was 23 ± 1°C and not 23 ± 0.5°C. The air change rate was 0.5/h and not 1/h. The sample was tested without open edges unless elsewise stated under sample preparation.	Formaldehyde concentration can be expected to be slightly overestimated compared to EN 717-1 due to the higher RH% and lower air change rate in ISO 16000-9. The E1 limit value of 120 $\mu g/m^3$ has been recalculated to SER_A of 120 $\mu g/m^2/h$ and compared with the detected SER_A (in accordance with conclusion presented in CEN TC351 WG2 N174).

5 Results

5.1 VOC Emission Test Results after 3 Days

	CAS No.	Retention time [min]	ID-Cat	Specific Conc. [µg/m³]	Toluene eq. [µg/m³]	Specific SER [µg/(m²*h)]	R_D	R_B
VOC with NIK								
None determined								
VOC without NIK								
None determined								
Sum of VOC without NIK				< 5	< 5	< 7		
TVOC				< 5	< 5	< 7		
VVOC compounds								
None determined								
TVVOC				< 5	< 5	< 7		
SVOC compounds								
None determined								
TSVOC				< 5	< 5	< 7		
Carcinogens								
Total carcinogens				< 1	< 1	< 2		
Aldehydes								
Formaldehyde	50-00-0		1	3.7	-	4.6		
Acetaldehyde	75-07-0		1	< 3	-	< 4		
Propionaldehyde	123-38-6		1	< 3	-	< 4		
Butyraldehyde	123-72-8		1	< 3	-	< 4		
R-values							0	0

5.2 VOC Emission Test Results after 28 Days

	CAS No.	Retention time [min]	ID-Cat	Specific Conc. [µg/m³]	Toluene eq. [µg/m³]	Specific SER [µg/(m²*h)]	R_D	R_B
VOC with NIK								
None determined								
VOC without NIK								
None determined								
Sum of VOC without NIK				< 5	< 5	< 7		
TVOC				< 5	< 5	< 7		
VVOC compounds								
None determined								
TVVOC				< 5	< 5	< 7		
SVOC compounds								
None determined								
TSVOC				< 5	< 5	< 7		
Carcinogens								
Total carcinogens				< 1	< 1	< 2		
CMR substances								
Benzene	71-43-2		1	< 1	-	< 2		
Trichloroethylene	79-01-6		1	< 1	-	< 2		
Dibutylphthalate (DBP)*	84-74-2		1	< 1	-	< 2		
Diethylhexylphthalate (DEHP)*	117-81-7		1	< 1	-	< 2		
Aldehydes								
Formaldehyde	50-00-0		1	< 3	-	< 4		
Acetaldehyde	75-07-0		1	< 3	-	< 4		
Propionaldehyde	123-38-6		1	< 3	-	< 4		
Butyraldehyde	123-72-8		1	< 3	-	< 4		
R-values							0	0
TVOC (French label)					< 2			
Toluene	108-88-3			< 2	< 2	< 3		
Tetrachloroethylene	127-18-4			< 2	< 2	< 3		
Ethylbenzene	100-41-4			< 2	< 2	< 3		
Xylene	1330-20-7			< 2	< 2	< 3		

	CAS No.	Retention time [min]	ID-Cat	Specific Conc. [µg/m³]	Toluene eq. [µg/m³]	Specific SER [µg/(m²*h)]	R_D	R_B
Styrene	100-42-5			< 2	< 2	< 3		
2-Butoxyethanol	111-76-2			< 2	< 2	< 3		
1,2,4-Trimethylbenzene	95-63-6			< 2	< 2	< 3		
1,4-Dichlorobenzene	106-46-7			< 2	< 2	< 3		

6 Summary and Evaluation of the Results

6.1 Comparison with Limit Values of the French VOC Regulation

	CAS No.	Conc. 28 days µg/m³	C µg/m³	B µg/m³	A µg/m³	A+ µg/m³
TVOC	-	< 2	>2000	<2000	<1500	<1000
Formaldehyde	50-00-0	< 3	>120	<120	<60	<10
Acetaldehyde	75-07-0	< 3	>400	<400	<300	<200
Toluene	108-88-3	< 2	>600	<600	<450	<300
Tetrachloroethylene	127-18-4	< 2	>500	<500	<350	<250
Ethylbenzene	100-41-4	< 2	>1500	<1500	<1000	<750
Xylene	1330-20-7	< 2	>400	<400	<300	<200
Styrene	100-42-5	< 2	>500	<500	<350	<250
2-Butoxyethanol	111-76-2	< 2	>2000	<2000	<1500	<1000
1,2,4-Trimethylbenzene	95-63-6	< 2	>2000	<2000	<1500	<1000
1,4-Dichlorobenzene	106-46-7	< 2	>120	<120	<90	<60

The product was assigned a VOC emission class without taking into account the measurement uncertainty associated with the result. As specified in French Decree no. 2011-321 of March 23 2011, correct assignment of the VOC emission class is the sole responsibility of the party responsible for distribution of the product in the French market.

6.2 Comparison with Limit Values of the CMR Components

CMR substances	CAS No.	Conc. 28 days µg/m³	Max. allowed air concentration µg/m³
Benzene	71-43-2	< 1	< 1
Trichloroethylene	79-01-6	< 1	< 1
Dibutylphthalate (DBP)*	84-74-2	< 1	< 1
Diethylhexylphthalate (DEHP)*	117-81-7	< 1	< 1

6.3 Comparison with Limit Values of AgBB

Parameter	Test after 3 days		Test after 28 days	
	Concentration mg/m³	Limit Value mg/m³	Concentration mg/m³	Limit Value mg/m³
TVOC	< 0.005	≤ 10	< 0.005	≤ 1.0
TSVOC	< 0.005	-	< 0.005	≤ 0.1
R-value (dimensionless)	0	-	0	≤ 1
Sum without NIK	< 0.005	-	< 0.005	≤ 0.1
Formaldehyde	-	-	< 0.003	≤ 0.1
Total carcinogens	< 0.001	≤ 0.01	< 0.001	≤ 0.001

Compliance with the limits alone does not entitle to use the AgBB requirements in conjunction with approval by DIBt. This requires an application, site inspection, and approval. See www.eurofins.com/dibt-procedures.

6.4 Comparison with Limit Values of the Belgian Regulation

Parameter	Test after 28 days	
	Concentration µg/m³	Limit Value µg/m³
TVOC (CEN/TS 16516)	< 5	≤ 1000
TSVOC	< 5	≤ 100
R-value (dimensionless)	0	≤ 1
Total carcinogens	< 1	≤ 1
Toluene	< 5	≤ 300
Formaldehyde	< 3	≤ 100
Acetaldehyde	< 3	≤ 200

6.5 Comparison with Limit Values of EN 717-1[§]

Parameter	Concentration mg/m³	E2 mg/m³	E1 mg/m³
Formaldehyde 28 days	< 0.003	> 0.10	≤ 0.10

The formaldehyde result is based on chamber testing and DNPH sampling according to ISO 16000. The result is therefore not directly according to the EN 717-1, and there are a few small deviations from EN 717-1 (see section on general deviations). The testing is in accordance with conclusions presented in CEN TC351 WG2 N174 where the difference and compatibility between EN 717-1 and ISO 16000 are empirically and theoretically analysed. For results close to the limit value it is recommended to perform an EN 717-1 test for verification.

6.6 Comparison with Limit Values of Indoor Air Comfort®

	Test after 3 days		Test after 28 days	
	Concentration µg/m³	**Limit Value** µg/m³	**Concentration** µg/m³	**Limit Value** µg/m³
TVOC (CEN/TS 16516)	< 5	≤ 10000	< 5	≤ 1000
TSVOC	< 5	-	< 5	≤ 100
R_D-value (NIK) (dimensionless)	0	-	0	≤ 1
R_B-value (LCI) (dimensionless)	0	-	0	≤ 1
TVOC without NIK or LCI	< 5	-	< 5	≤ 100
Total carcinogens	< 1	≤ 10	-	-
Any individual carcinogens	-	-	< 1	≤ 1
CMR substances	-	-	< 1	≤ 1
Formaldehyde	3.7	-	< 3	≤ 60
Acetaldehyde	< 3	-	< 3	≤ 200
French A+/A	-	-	Complies	

Compliance with the limits alone does not entitle to use the Indoor Air Comfort label. This requires an application, site inspection, and approval. See www.eurofins.com/iac-procedures.

6.7 Comparison with Limit Values of Indoor Air Comfort Gold®

	Test after 3 days		Test after 28 days	
	Concentration µg/m³	**Limit Value** µg/m³	**Concentration** µg/m³	**Limit Value** µg/m³
TVOC (CEN/TS 16516)	< 5	≤ 1000	< 5	≤ 160
TSVOC	< 5	-	< 5	≤ 30
R_D-value (NIK) (dimensionless)	0	-	0	≤ 1
R_B-value (LCI) (dimensionless)	0	-	0	≤ 1
TVOC without NIK or LCI	< 5	-	< 5	≤ 100
Total carcinogens	< 1	≤ 10	-	-
Any individual carcinogens	-	-	< 1	≤ 1
CMR substances	-	-	< 1	≤ 1
Formaldehyde	3.7	-	< 3	≤ 10
Acetaldehyde	< 3	-	< 3	≤ 200
French A+	-	-	Complies	

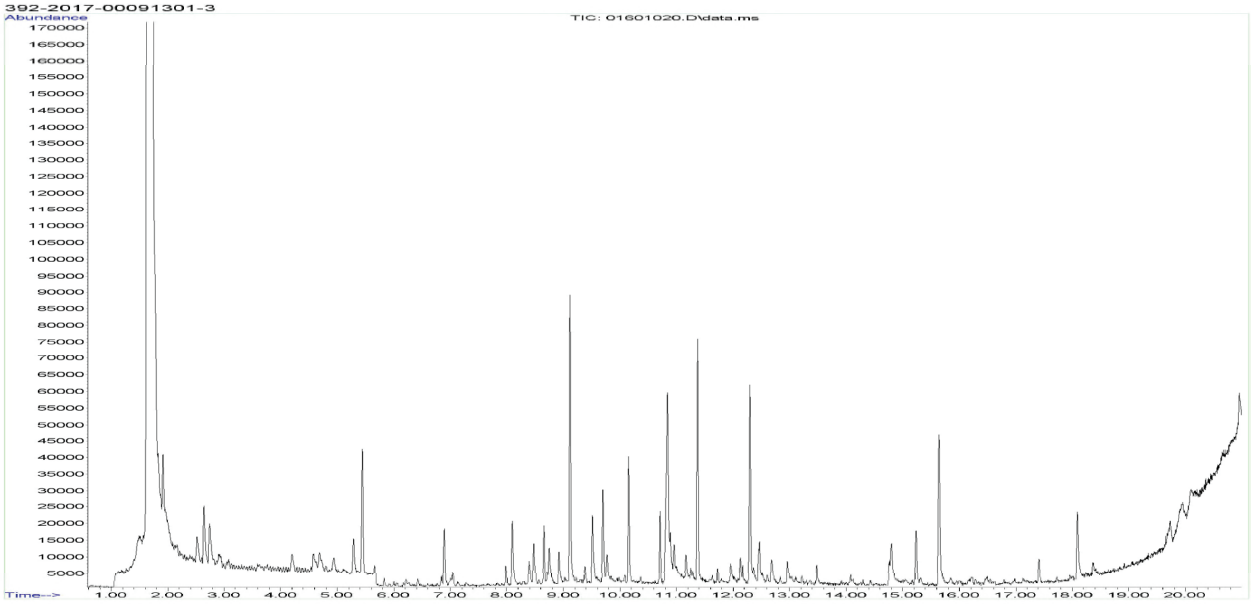
Compliance with the limits alone does not entitle to use the Indoor Air Comfort GOLD label. This requires an application, site inspection, and approval. See www.eurofins.com/iac-procedures.

6.8 Comparison with Limit Values of Blue Angel (RAL UZ 120)

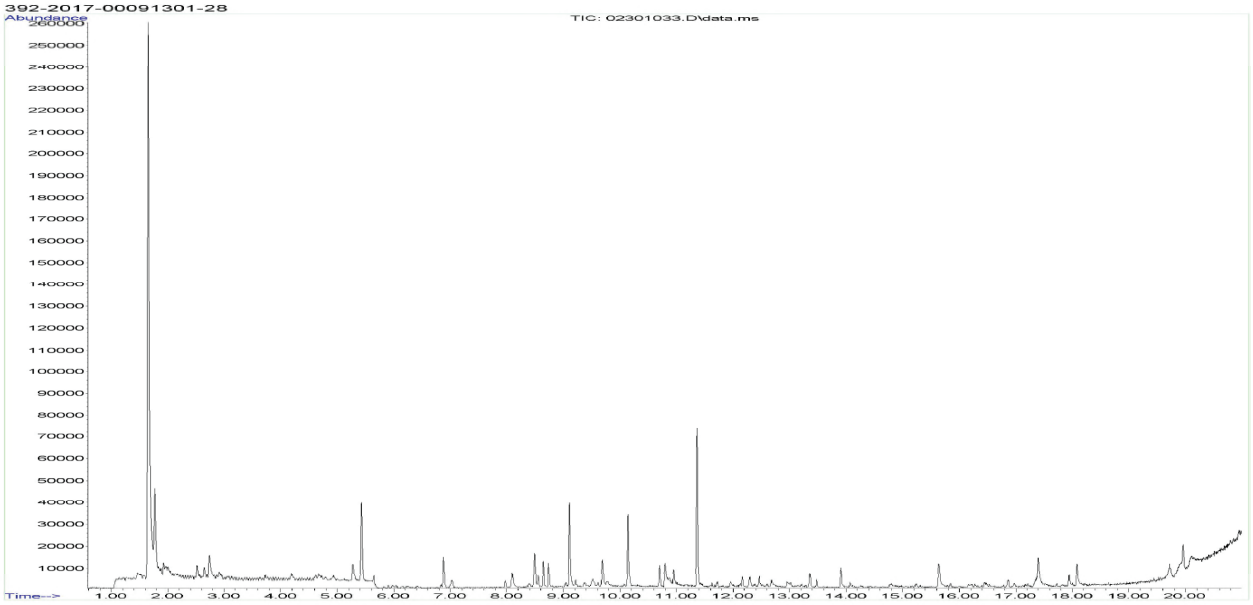
	Test after 3 days		Test after 28 days	
	Concentration µg/m³	**Limit Value** µg/m³	**Concentration** µg/m³	**Limit Value** µg/m³
TVOC	< 5	≤ 1000	< 5	≤ 300
TSVOC	< 5	-	< 5	≤ 30
R-value (dimensionless)	0	-	0	≤ 1
TVOC without NIK	< 5	-	< 5	≤ 100
Total carcinogens	< 1	≤ 10	-	-
Any individual carcinogens	-	-	< 1	≤ 1
Formaldehyde	-	-	< 3	≤ 60

7 Appendices

7.1 Chromatogram of VOC Emissions after 3 Days



7.2 Chromatogram of VOC Emissions after 28 Days



Please consider the different scales.

7.3 How to Understand the Results

7.3.1 Acronyms Used in the Report

< Means less than

> Means bigger than

* Not a part of our accreditation

¤ Please see section regarding uncertainty in the Appendices.

§ Deviation from method. Please see deviation section

a The method is not optimal for very volatile compounds. For these substances smaller results and a higher measurement uncertainty cannot be ruled out.

b The component originates from the wooden panels and is thus removed.

c The results have been corrected by the emission from wooden panels.

d Very polar organic compounds are not suitable for reliable quantification using tenax TA adsorbent and HP-5 GC column. A high degree of uncertainty must be expected.

SER Specific emission rate.

7.3.2 Explanation of ID Category

Categories of Identity:

1: Identified and specifically calibrated

2: Identified by comparison with a mass spectrum obtained from library and supported by other information. Calibrated as toluene equivalent.

3: Identified by comparison with a mass spectrum obtained from a library. Calibrated as toluene equivalent.

4: Not identified, calibrated as toluene equivalent.

7.4 Applied LCI and NIK Values

7.4.1 LCI/NIK Values for Compounds found after 3 Day Measurements

Compound	CAS No.	AgBB 2015 NIK [µg/m³]	Belgian NIK [µg/m³]
None determined	-	-	-
Formaldehyde	50-00-0	100	100

7.4.2 LCI/NIK Values for Compounds found after 28 Day Measurements

Compound	CAS No.	AgBB 2015 NIK [µg/m³]	Belgian NIK [µg/m³]
None determined	-	-	-

7.5 Description of VOC Emission Test

7.5.1 Test Chamber

The test chamber is made of stainless steel. A multi-step air clean-up is performed before loading the chamber, and a blank check of the empty chamber is performed.
The chamber operation parameters are as described in the test method section. (CEN/TS 16516, ISO 16000-9, internal method no.: 71M549811).

7.5.2 Expression of the Test Results

All test results are calculated as specific emission rate, and as extrapolated air concentration in the European Reference Room (CEN/TS 16516, AgBB, EMICODE, M1 and Indoor Air Comfort).

7.5.3 Testing of Carcinogenic VOCs

The emission of carcinogens (EU Categories C1A and C1B, as per European law) is tested by drawing sample air from the test chamber outlet through Tenax TA tubes after the specified duration of storage in the ventilated test chamber. Analysis is performed by ATD-GC/MS (automated thermal desorption coupled with gas chromatography and mass spectroscopy using 30 m HP-5 (slightly polar) column with 0.25 mm ID and 0.25 μm film, Agilent) (CEN/TS 16516, ISO 16000-6, internal methods no.: 71M549812 / 71M542808B).

All identified carcinogenic VOCs are listed; if a carcinogenic VOC is not listed then it has not been detected. Quantification is performed using the TIC signal and authentic response factors, or the relative response factors relative to toluene for the individual compounds.

This test only covers substances that can be adsorbed on Tenax TA and can be thermally desorbed. If other emissions occur, then these substances cannot be detected (or with limited reliability only).

7.5.4 Testing of VOC, SVOC and VVOC

The emissions of volatile organic compounds are tested by drawing sample air from the test chamber outlet through Tenax TA tubes after the specified duration of storage in the ventilated test chamber. Analysis is performed by ATD-GC/MS using HP-5 column (30 m, 0.25mm ID, 0.25μm film) (CEN/TS 16516, ISO 16000-6, internal methods no.: 71M549812 / 71M542808B).

All single substances that are listed with a LCI/NIK value in the latest publications (hereafter referred to as target compounds) are identified if present. All other appearing VOCs are identified as far as possible. Quantification of target compounds is done using the TIC signal and authentic response factors, or the relative response factors relative to toluene. For certain compound groups, which differ significantly in chemistry from toluene, quantification is performed relative to a representative member of the group for more accurate and precise results. This can include quantification of for example glycols and acids. In addition to that, all results are also expressed in toluene equivalents. All non-target compounds, as well as all non-identified substances, are quantified in toluene equivalents.

The results of the individual substances are calculated in three groups depending on their retention time when analyzing using a non-polar column (HP-1):

- Volatile Organic Compounds (VOC) are defined as: All substances eluting between and including n-hexane (n-C6) and n-hexadecane (n-C16)
- Semi-Volatile Organic Compounds (SVOC) are defined as: All substances eluting after n-hexadecane (n-C16) and before and including n-docosane (n-C22)
- Very Volatile Organic Compounds (VVOC) are defined as: All substances eluting before n-hexane (n-C6).

Total Volatile Organic Compounds (TVOC) is calculated by summation of all individual VOCs with a concentration ≥ 5 µg/m³. The TVOC can be expressed either in toluene equivalents as defined in CEN/TS 16516 and similar to ISO 16000-6, or as the sum of concentrations using specific or relative response factors. In the case of summation of concentrations using authentic or relative response factors, the toluene equivalent is applied to all non-target and non-identified VOCs before summing up. Compounds regarded as VOC in line with the above definition but elute before n-C6 or after n-C16 on the HP-5 column are treated as VOC, and are thus added to the TVOC.

Total Semi-Volatile Organic Compounds (TSVOC) is calculated by the summation of all individual SVOCs expressed in toluene equivalents with a concentration ≥ 5 µg/m³, as defined in CEN/TS 16516. VOCs that are regarded as VOC in line with the above definition, but elute after n-C16 in this test, are not added to the TSVOC.

Total Very Volatile Organic Compounds (TVVOC) is calculated by the summation of all individual VVOCs with a concentration ≥ 5 µg/m³ and expressed in toluene equivalents. VOCs that are regarded as VOC in line with the above definition, but elute before n-C6 in this test, are not added to the TVVOC.

This test only covers substances which can be adsorbed on Tenax TA and can be thermally desorbed. If emissions of substances outside these specifications occur then these substances cannot be detected (or with limited reliability only).

7.5.5 Calculation of R Values with LCI Lists

The concentrations of detected compounds ≥ 5 µg/m³ are divided by their respective LCI/NIK value (if defined in the given publication). The sum of the quotients gives the R value, which can be mathematically expressed:

$$R = \sum_{i}^{n} \left({}^{c_i}\!/\!_{NIK_i} + \ldots + {}^{c_n}\!/\!_{NIK_n} \right)$$

This R value is calculated, depending on the purpose of this test, for the European LCI list, for the German LCI/NIK list (R_D), and/or for the Belgian LCI list (R_B).

All VOCs without published LCI/NIK value and concentration ≥ 5 µg/m³ are summed up as sum of VOCs without LCI/NIK if required by the standard or protocol.

7.5.6 Testing of Aldehydes

The presence of aldehydes is tested by drawing air samples from the test chamber outlet through DNPH-coated silicagel tubes after the specified duration of storage in the ventilated test chamber. Analysis is performed by solvent desorption and subsequently by HPLC and UV-/diode array detection.

The absence of formaldehyde and other aldehydes is stated if UV detector response at the specific wavelength is lacking at the specific retention time in the chromatogram. Otherwise it is checked whether the reporting limit is exceeded. In this case the identity is finally checked by comparing full scan sample UV spectra with full scan standard UV spectra.

7.5.7 Testing of Phthalates

The presence of phthalates is tested by drawing air samples from the test chamber outlet through tube with XAD-II adsorbent after the specified duration of storage in the ventilated test chamber. Analysis is performed by solvent desorption and subsequently by GC/MS. Analysis of phthalates is not currently covered by the accreditation (Internal methods no.: 71M549812 / 71M546060).

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