

## TECHNICAL SPECIFICATIONS

<b>Bevel Lock</b>	Pre-grouted bevel Tight lock	<b>UFH Installation</b>	See IM Floating
<b>Layer</b>	<b>Thickness (mm)</b>	<b>Thickness (mil)</b>	<b>Type</b>
Top Layer	0.5		Wear layer with an anti-microbial ceramic bead enhanced UV finish
Grouted wear layer	0.5		
Core	3.5		Waterproof thermoplastic composite
Backing Layer	1.0		EVA
<b>Total</b>	<b>5.5</b>		

## CERTIFICATIONS & CHEMICAL PROPERTIES

Norm	Item	Test method	Requirement	Result
EN 14041	Emissions	EN 717-1	≤ 0.124 mg/m <sup>3</sup>	E1
Decret No2011-321	Emissions	ISO 16000	TVOC<1000µg/m <sup>3</sup>	VOC A+
GreenGuard Gold	Emissions	Spectrometry, chromatography	TVOC≤220µg	Certified, request private label application
Prop 65	Orthophthalates	Spectrometry	ND	Compliant
CPSIA	Lead	CPSC-ChE-1002-08	≤ 90ppm	Compliant
EU REACH Regulation	PAHs	Spectrometry, chromatography	<1mg/kg	Compliant
	SVHC	Spectrometry, chromatography	≤ 0.1% (w/w)	Compliant
EN 14041	CE Certification	Multiple	Multiple	Compliant



## PHYSICAL PROPERTIES

Norm	Item	Test Method	Requirement	Result
ASTM F3261	Surface integrity	ASTM F1914	No puncture	Compliant
	Dimensional stability	ASTM F2199/ISO 23999	≤ 0.2% (commercial)	Compliant
	Curling	ASTM F2199/ISO 23999	≤2mm	Compliant
	Length tolerance	ISO 24337	+/- 2 mm	Compliant
	Width tolerance	ISO 24337	+/- 0.4mm	Compliant
	Thickness tolerance	ASTM F387	+/- 0.13mm (no backing); +/- 0.20mm (with)	Compliant
	Squareness	ISO 24337	0.25mm	Compliant
	Flatness	ISO 24337	Length: ≤ 0.50% (concave) ≤ 1.0% (convex) Width: ≤ 0.10%(concave) ≤ 0.15% (convex)	Compliant
	Residual indentation	ASTM F1914	≤0.18mm (70lbs/34kg)	Compliant
	Static load	ASTM F970/ASTM F387	≤0.13mm	Compliant
ASTM F1700*	Resistance to chemicals	ASTM F925	Slight change only	Compliant
	Resistance to heat	ASTM F1515	ΔE ≤8	Compliant
	Resistance to light	ASTM F1514	ΔE ≤8	Compliant
ISO 10582	Thickness swelling	ASTM F3261	max 2 % swell – no attached back max 5 % swell – with attached back	Compliant
	Residual indentation	ASTM F1914	≤ 8% (140 lbs/63.5kg)	Compliant
NALFA LF 01-2011	Dimensional stability	ASTM F2199	≤ 0.16%	Compliant
	Residual indentation	ISO 24343-1	≤ 0.1mm	Compliant
EN 14041	Resistance to light	ISO 105-802:2014	≥ Grade 6	Compliant
	Locking strength	ISO 10582 Appendix D	1.5kN/m	Compliant
	Castor chair	ISO 4918	Only slight change	Compliant
	Resistance to chemicals	NALFA LF 01-2011	Slight change only	Class 4, meets commercial requirements
	Impact resistance	NALFA LF 01-2011 3.5	≥ 1400mm	Class 4, meets commercial requirements
	Impact resistance	NALFA LF 01-2011 3.6	≥ 500mm	Class 4, meets commercial requirements
	Thermal resistance (R)	EN 12667/ASTM C518	NA	Suitable for underfloor heating systems
	Slip resistance	EN 13893	≥ 0.3	Compliant
	Reaction to fire	EN 13501-1	NA	Class Bfl-s1
	Density	ISO 23996	NA	Around 1650kg/m <sup>3</sup>
Others	Airborne sound transmission	ASTM E413-16	≥50	68
	Impact sound transmission	ASTM E989-6	≥50	66
	Reducing impact sound transmission	ASTM E2190-16	NA	22
	Slip resistance	DIN 51130	NA	R9
	Fire resistance (CHF)	ASTM E648/NFPA 253	≥0.45	Class 1

\*Note: Only tests specific to ASTM F1700 are listed here; for tests and requirements similar to ASTM F3261, please refer to the tests under that standard

## LEED SCORECARD

LEED was developed to address all buildings everywhere, regardless of where they are in their life cycle. From hospitals to data centers, from historical buildings to those still in the design phase, there is a LEED certification program for every building. Our products will contribute value to a building's LEED v4 Scorecard in the following LEED certification program categories recognized by the USGBC as per following

LEED Programme Certification	Category	Credit Title	LEED Points Attainable	Credit Description	How our product contributes to obtaining LEED points
 Building Design and Construction	Indoor Environmental Quality	Credit 1: Enhanced Indoor Air Quality Strategies – Option 2 Additional Enhanced IAQ Strategie - option D	1 point ID&C, 2 points Retail CI	To reduce concentrations of chemical that can damage air quality, human health, productivity, and the environment.	1. Formaldehyde emission are less than 0.05mg/m <sup>3</sup> , TVOCs are less than 0.5mg/m <sup>3</sup> . 2. The product is GreenGuard Gold certified.
		Credit 2: Low-Emitting Materials – Option1 Flooring	1 point		1. VOC emission are less than 0.5mg/m <sup>3</sup> . 2. The products are GreenGuard Gold certified.
		Credit 4: Indoor Air Quality Assessment - Option 2 Air Testing	2 points	To establish better quality indoor air in the building	1. Formaldehyde emission are less than 0.05mg/m <sup>3</sup> , TVOCs are less than 0.5mg/m <sup>3</sup> . 2. The product is GreenGuard Gold certified.
	Material & Resource	Credit 9: Acoustic Performance	2 points	To provide effective acoustic design	The product has a high acoustic performance. IIC and STC test report are available on request
Credit 4: Material ingredient– Option 2		1 point	Minimize the use and generation of harmful substances	The product is 100% REACH compliant	
Credit 6 – PBT source reduction: lead, cadmium and copper		1 point	To reduce the release of persistent, bioaccumulative, and toxic chemicals	The product is free of lead, cadmium and copper.	
 Building Operations and Maintenance	Material & Resource	Credit 3: Purchasing - Facility maintenance and renovation	1 point	To reduce the environmental harm from materials used in building renovations	1. The product is 100% REACH compliant 2. Formaldehyde emission are less than 0.05mg/m <sup>3</sup> , TVOCs are less than 0.5mg/m <sup>3</sup> . 3. Test report according to ISO 16000 is available on request. 3. The product is GreenGuard Gold certified.



**Indoor Environmental Quality**

Credit 2: Contaminant Control – Option 4 Air Testing

1 point

Demonstrate that contaminants do not exceed concentration levels listed

The products is GreenGuard Gold certified.

Homes

Credit 7: Low-Emitting Materials

0.5 point

To reduce occupants' exposure to airborne chemical contaminants

The product is GreenGuard Gold certified and meet the requirements of CA Section 01350. The product is made with ULEF or non-added formaldehyde material

**Material & Resource**

Prerequisite – Durability management

0 point (Prerequisite)

To promote durability and performance of the building

The product is water resistant



**Indoor Environmental Quality**

Credit 1: Enhanced Indoor Air Quality Strategies – Option 2 Additional Enhanced IAQ Strategies - option D

1 point ID&C, 2 points Retail CI

To reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the

1. Formaldehyde emission are less than 0.05mg/m3, TVOCs are less than 0.5mg/m3. 2. The product is GreenGuard Gold certified.

Credit 2: Low-Emitting Materials – Option1 Flooring

1 point

To reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the

1. VOC emission are less than 0.5mg/m3. 2. The products is GreenGuard Gold certified.

Credit 4: Indoor Air Quality Assessment - Option 2 Air Testing

2 points

To establish better quality indoor air in the building

1. Formaldehyde emission are less than 0.05mg/m3, TVOCs are less than 0.5mg/m3. 2. The product is GreenGuard Gold certified.

Credit 9: Acoustic Performance

2 points

To provide workspaces and classrooms effective acoustic design

The product has a high acoustic performance. IIC and STC test report are available on request

**Material & Resource**

Credit 4: Material ingredient – Option 2

1 point

Minimize the use and generation of harmful substances

The product is 100% REACH compliant

**WELL SCORECARD**

The WELL Building Standard is founded on the understanding that facets of our environment interact with personal, genetic and behavioral factors to shape our overall health and well-being. By compiling leading practices in building design and management and referencing existing standards and best practice guidelines set by governmental and professional organizations, WELL works to harmonize and clarify existing thresholds and requirements.

Facet	Feature	Part	Requirements	Concept score	How our product contribute to obtain WELL level certification	
<b>AIR</b>	<b>01. Air quality standards</b>	<b>1. Standards For Volatile Substances</b>	The following conditions are met: a. Formaldehyde levels less than 27ppb (0.027ppm)  b. Total volatile organic compounds less than 500ug/m3 (0.5mg/m3)	PRECONDITION	a. Formaldehyde emission are less than 0.05mg/m3.  b. The total volatile organic compounds are less than 0.5mg/m3.	
			<b>04. VOC Reduction</b>	<b>1. Interior Paints and Coatings</b>	The VOC limits of newly applied paints and coating meet one of the following requirements:  a. 100% of installed products meet California Air Resources Board (CARB) 2007, Suggested Control Measure (SCM) for Architectural Coatings, or South Coast Air Quality Management District (SCAQMD) Rule 1113, effective June 3, 2011 for VOC content.  b. At minimum 90%, by volume, meet the California Department of Public Health (CDPH) Standard Method v1.1-2010 for VOC emissions	PRECONDITION
			<b>3. Flooring</b>	The VOC emissions of all newly installed flooring must meet all limits set by the following, as applicable:  a. California Department of Public Health (CDPH) Standard Method v1.1-2010. All newly-installed building materials meet the following materials composition requirements: a. No asbestos. b. Not more than 100 ppm (by weight) added lead.	PRECONDITION	Conforms to the CDPH/EHLB Standard Method v1.1-2010 (California Section 01350), effective January 1, 2012, for the school classroom and private office parameters when modeled as Flooring.  The product is GreenGuard Gold certified
		<b>11. Fundamental Material Safety</b>	<b>1. Asbestos and Lead Restriction</b>	All newly-installed building materials meet the following requirements: a. No asbestos. b. Not more than 100 ppm (by weight) added lead.	PRECONDITION	a. No asbestos b. The product contain less than 100 ppm.
			<b>2. Lead Abatement</b>	For repair, renovation or painting on buildings constructed prior to any applicable laws banning or restricting lead paint, lead evaluation and abatement.	PRECONDITION	The product contain less than 90 ppm.
			<b>3. Asbestos Abatement</b>	To reduce hazards in buildings constructed prior to any applicable laws banning or restricting asbestos, the following testing, evaluation and abatement.	PRECONDITION	The product contain less than 90 ppm.
		<b>25. Toxic Material Reduction</b>	<b>2. Flame Retardant Limitation</b>	Halogenated flame retardants are limited in the following components to 0.01% (100 ppm) to the extent allowable by local code: a. Window and waterproofing membranes, door and window frames and siding. b. Flooring, ceiling tiles and wall coverings. c. Piping and electrical cables, conduits and junction boxes. d. Sound and thermal insulation. e. Upholstered furniture and furnishings, textiles and fabrics.	OPTIMIZATION	The product don't contain halogenated flame retardants
			<b>3. Phthalate (Plasticizers) Limitation</b>	DEHP, DBP, BBP, DINP, DIDP or DNOP (often found in polyvinyl chloride [PVC]) are limited in the following components to 0.01% (100 ppm): a. Flooring, including resilient and hard surface flooring and carpet. b. Wall coverings, window blinds and shades, shower curtains, furniture and upholstery. c. Plumbing pipes and moisture barriers.	OPTIMIZATION	In accordance with US Consumer Product Safety Improvement Act 2008 (CPSIA) (H.R. 4040) Title I, Section 108 & California Proposition 65 & Annex XV II item 518&52 of the REACH Regulation (EC) No. 1907/2006 and amendment No. 552/2009, the product contains less than 100ppm.

<b>Comfort</b>	<b>5. Urea-Formaldehyde Restriction</b>	Urea-formaldehyde presence is limited in the following components to 100 ppm: a. Furniture or any composite wood products. b. Laminating adhesives and resins. c. Thermal insulation.	OPTIMIZATION	The product contains urea-formaldehyde less than 100ppm.
	<b>74. Exterior Noise Intrusion Part 1. Sound Pressure Level</b>	Each regularly occupied space meets the following sound pressure level as measured when the space and adjacent spaces are unoccupied, but within 1 hour of normal business hours: a. Average sound pressure level from outside noise intrusion does not exceed 50 dBA.	PRECONDITION	1. The product has IIC = 66 according to the standard ASTM E492-09 2. The product has STC = 68 according to the standard ASTM E90-09
	<b>79. Internally Generated Noise Part 1. Sound Masking Limits</b>	If sound masking systems are used, sound levels fall within the following range, when measured from the nearest workspace: a. Open workspaces: 45 - 48 dBA. b. Enclosed offices: 40 - 42 dBA	OPTIMIZATION	1. The product has IIC = 66 according to the standard ASTM E492-09 2. The product has STC = 68 according to the standard ASTM E90-09

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