

# FloorScore®

## 2019 Initial Certification Assessment

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*SCS Environmental Certification Services*

Prepared for:

**Sunyoung Co. Ltd.**

**Vinyl Tile Flooring**

*Manufactured in Cheonan, Korea*

**Project Work Order: #FS-19-01**

**August 14, 2019**



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## FloorScore® Initial Certification Assessment

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SCS Global Services, Environmental Certification Services completed an initial FloorScore® certification assessment of Sunyoung's Vinyl Tile Flooring products manufactured in Cheonan, Korea. The lead auditor has completed a full assessment of the quality management assessment of each manufacturing site and product emissions review to determine conformance to SCS EC 10.3–2014 V3.0 Indoor Air Quality Performance Standard and CDPH/EHLB Standard Method v1.2 (effective January 1, 2017). The results of the assessment are included within this assessment report.

This certification assessment has been completed in accordance with SCS' quality management system, ISO 19011 standard auditing practices, ISO/IEC 17065 and has been approved by the program manager. If there is a disagreement with the certification decision, please contact the program manager directly.



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## EXECUTIVE SUMMARY

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### ASSESSMENT SCOPE

Sunyoung's Vinyl Tile Flooring assessment scope is detailed in the work order FS-19-01. No changes have been made to the scope of the original work order.

### INDOOR AIR QUALITY CERTIFICATION SUMMARY

The following table details the conformance for products that have met FloorScore® product certification requirements. Products that have met FloorScore® certification also comply with the following criteria: USGBC LEED 2008, 2009 and v4 for Low-Emitting Materials (Flooring); Collaborative for High Performance Schools (CHPS) 2009 Criteria, EQ2.2.3; ANSI/ASHRAE/USGBC/IES Standard 189.1-2014, Section 8.4.2.3: Floor Covering Materials; BREEAM International and BREEAM UK; Green Guide for Health Care 2.2 EP 3.3 and EQ 4.3; and WELL Building Standard 4.3.a: Air.

PRODUCT CATEGORY	PRODUCT LINE(S)	QUALIFICATIONS	CERTIFICATE NUMBER	CERTIFICATION PERIOD
Vinyl Tile Flooring	Art Deco	TVOC Range: 0.5 mg/m <sup>3</sup> or less	SCS-FS-05654	August 14, 2019 – August 31, 2020

### PRODUCT CONFORMANCE SUMMARY

Non- Conformance Report (NCR) / Opportunity for Improvement (OFI) /New Information Request (NIR) were not issued as a result of this assessment.

### MANUFACTURING SITE ASSESSMENT SUMMARY

The table below indicates the entire scope of applicable site audits, the status of site audits completed, conformance status, and rationale for site audit selection for initial and renewal years.

MANUFACTURING SITE	DATE OF ONSITE AUDIT	STATUS OF NCR/NIR	AUDITOR RATIONALE
Cheonan, Korea	June 4, 2019	None Issued	This is Sunyoung's initial assessment and requires an onsite audit. The details of the onsite audit findings are included in the 2019 FloorScore Initial Onsite Audit Report. The site will undergo a full quality review again during the 2023 renewal assessment.

## 1.0 Product Assessment

The following tables provide a progressive review on how products were selected to represent the emission profile for the product category, actual emissions results, and overall product certification results.

### 1.1 PRODUCT TESTING SAMPLE SELECTION

The following product sample selection is based on the product formulations, ingredients/materials, production processes and known production variability.

PRODUCT CATEGORY	MANUFACTURING SITE	PRODUCT LINE	PRODUCT MODEL/SKU NO.	SUPPORTING DOCUMENTATION	AUDITOR RATIONALE
Vinyl Tile Flooring	Cheonan, Korea	Artdeco LVT Tile	SAC-111	Chain of Custody Form	This is the thickest of this type of product the company produces.

### 1.2 PRODUCT EMISSIONS RESULTS

The table below summarizes the product emissions results for the individual volatile organic compounds (VOCs) tested for compliance to California Specification 01350 (Standard Method v1.2, effective January 1, 2017) private office and school classroom parameters when modeled as flooring.

### 1.2.1 PRODUCT CATEGORY

MANUFACTURING SITE	PRODUCT LINE	LAB REPORT NUMBER AND DATE	CREL VOCs	EF ( $\mu\text{g}/\text{m}^2$ ) at 96hrs	PRIVATE OFFICE* RESULTS	SCHOOL CLASSROOM** RESULTS	TVOC RANGE
Cheonan Korea	ArtDeco	A000937366-7/16/19	Phenol	5.50	PASS	PASS	-
Cheonan Korea	ArtDeco	A000937366-7/16/19	Toluene	70.95	PASS	PASS	-
Cheonan Korea	ArtDeco	A000937366-7/16/19	TVOC	76.45	-	-	0.5mg/m <sup>3</sup> or less

\*Key modeling parameters for the private office scenario include an air flow rate of 20.7 m<sup>3</sup>/hr and flooring surface area of 11.15m<sup>2</sup>.

\*\*Key modeling parameters for the school classroom scenario include an air flow rate of 191 m<sup>3</sup>/hr and a flooring surface area of 89.2m<sup>2</sup>.

The results for Sunyoung's Vinyl Tile Flooring products manufactured in Cheonan, Korea demonstrate that all 35 targeted CREL VOCs listed in CDPH/EHLB Standard Method V1.2 are below 70% of the maximum allowable limits. Therefore, these products are considered **Low Priority**. Low Priority products require renewal testing every two years after initial certification. The TVOC results also demonstrate a TVOC range of 0.5 mg/m<sup>3</sup> or less.

### 1.3 STANDARD PRODUCT SAMPLING, PACKAGING, TESTING REQUIREMENTS

The table below is a checklist of the standard requirements for product testing and report results according to CDPH/EHLB Standard Method V1.1 and SCS EC10.3-2014 V3.0.

REQUIREMENT	SUPPORTING DOCUMENTATION	AUDITOR KEY FINDINGS	ASSESSMENT RESULT
Laboratory is a qualified ISO 17025 certified laboratory. [Reference: SCS-EC10.3-2014 V4.0-Section 6.3.2]	See lab report	The sample was tested by TUV Rhineland an ISO 17025 certified lab.	<input checked="" type="checkbox"/> No Issues <input type="checkbox"/> NCR <input type="checkbox"/> NIR <input type="checkbox"/> OFI
The manufacturer has submitted results in accordance with CDPH/EHLB Standard Method V1.2. [Reference: SCS-EC10.3-2014 V4.0-Section 6.3]	See COC form	Results have been submitted in accordance with CDPH/EHLB Standard Method V1.2.	<input checked="" type="checkbox"/> No Issues <input type="checkbox"/> NCR <input type="checkbox"/> NIR <input type="checkbox"/> OFI
Samples for testing are selected by a SCS auditor or a person authorized by SCS. [Reference: SCS-EC10.3-2014 V4.0-Section 6.2]	See OSA report	The sample was selected by collected by Todd Frank and Brian Park, an authorized representative for Sunyoung.	<input checked="" type="checkbox"/> No Issues <input type="checkbox"/> NCR <input type="checkbox"/> NIR <input type="checkbox"/> OFI
The samples are selected from a production lot that is representative of the processes and quality the manufacturer intends to present to the market. [Reference: SCS-EC10.3-2014 V4.0-Section 6.2.4]		The sample selected is representative of the finished product intended for the market.	<input checked="" type="checkbox"/> No Issues <input type="checkbox"/> NCR <input type="checkbox"/> NIR <input type="checkbox"/> OFI
Manufacturer has submitted their nominations for test groups and worst case models accompanied by supportive data in the form of calculations, test results, formulations, and written explanation. [Reference: SCS-EC10.3-2014 V4.0-Section 6.2]	See lab report	This is the thickest of the product in this product category	<input checked="" type="checkbox"/> No Issues <input type="checkbox"/> NCR <input type="checkbox"/> NIR <input type="checkbox"/> OFI
Samples submitted to the laboratory are in conformance with CDPH/EHLB Standard Method V1.2. [Reference: SCS-EC10.3-2014 V4.0-Section 6.2]	See lab report and COC form	The sample was submitted in conformance with CDPH/EHLB Standard Method V1.2.	<input checked="" type="checkbox"/> No Issues <input type="checkbox"/> NCR <input type="checkbox"/> NIR <input type="checkbox"/> OFI

## 2.0 QUALITY MANAGEMENT SYSTEM

Please refer to Sunyoung's 2019 Initial FloorScore Onsite Audit Report conducted on June 4, 2019 for detailed findings of the onsite audits conducted.

## APPENDIX

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### A.1 Renewal Audit Recommendations

#### A.1.1 Sample Selection

The following table represents suggested sample selections for renewal emissions testing for the certified products. The frequency and required number of samples is dependent on the quality management systems review per manufacturing site and emissions history review completed during each renewal assessment by the auditor.

PRODUCT CATEGORY	MANUFACTURING SITE	PRODUCT LINE	PRODUCT MODEL/ SKU NUMBER	RENEWAL YEAR	AUDITOR RATIONALE
Vinyl Tile Flooring	Cheonan, Korea	Artdeco LVT	SAC-111	2021	Only one type of product produced for FloorScore