

# Product Declaration

## Health and Environmental

### Linoleum Sheet Flooring

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### Product Declaration



### Committed to Sustainability.

Armstrong® is committed to delivering solutions that reduce the environmental impact of the buildings you create from product design and raw material selection, to how our products are produced and delivered.

This Product Declaration documents the following:

- Product ingredients
- Ingredient screening
- Life Cycle Assessment (LCA) Summary
- VOC Emissions and VOC content information
- Environmental certifications
- Performance attributes

Armstrong Linoleum delivers a superior combination of performance attributes – making it a great product for commercial applications.

Linoleum  
Martha Jefferson Hospital, Charlottesville, VA  
Kahler Slater, Inc.

### Linoleum

Functional Unit – 1 m<sup>2</sup> of 2.5 mm Linoleum 1 year service life


LCA IMPACT* MEASURES	TOTAL
<b>Primary Energy</b> (MJ)	170.0
<b>Global Warming Potential</b> (kg CO <sub>2</sub> equivalent)	5.97
<b>Acidification Potential</b> (kg SO <sub>2</sub> equivalent)	5.43E-02
<b>Eutrophication Potential</b> (kg PO <sub>4</sub> <sup>3-</sup> equivalent)	1.21E-02
<b>Ozone Depletion Potential</b> (kg R11 equivalent)	3.83E-08
<b>Photochem Ozone Creation Potential</b> (kg Ethene equivalent)	3.90E-03
PERFORMANCE ATTRIBUTES	
<b>Acoustics NRC</b> (Absorption)	0.05
<b>Static Load</b> (psi)	125 – 450
<b>Light Reflectance</b>	up to 54%
<b>ASTM F2034</b>	Meets
<b>Flooring Ingredients:</b> Linseed Oil, Wood/Cork Dust, Limestone, Jute (backing), Aluminum Hydroxide, Tree Resins, Titanium Dioxide, Color Pigments	

\* Based on CML2010 Impact Factors

Visit [armstrong.com/transparency](http://armstrong.com/transparency) for further information.

**Linoleum Sheet Flooring**  
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This Product Declaration (1) discloses the known ingredients in their raw material form and (2) provides building industry professionals and other third parties with a summary of environmental and ingredient information about this product. This Product Declaration includes summary life cycle assessment (LCA) information, VOC emissions information, environmental certifications, and key performance attributes for the product.

<b>Declaration Number:</b>	APD-0002	
<b>Declaration Holder:</b>	Armstrong World Industries	
<b>Product</b>	Marmorette™, Linorette™, Colorette™, Granette™, Uni Walton™	
<b>CSI Master Format</b>	09 65 16 (Resilient Sheet Flooring) or 09 65 16 13 (Linoleum Flooring)	
<b>Product Website</b>	<a href="http://www.armstrong.com/commflooringna/products/linoleum">http://www.armstrong.com/commflooringna/products/linoleum</a>	
<b>Product Application</b>	Floor covering choice in commercial spaces: <ul style="list-style-type: none"> <li>• Hospitality</li> <li>• Classrooms</li> <li>• Healthcare</li> <li>• Retail</li> <li>• Assisted Living</li> </ul>	
<b>Disclosure</b>	All product ingredients known or reported (by a supplier) to be present in a concentration of at least 0.1% (1,000 ppm) or lower concentrations if required by OSHA hazard communications are set forth in the product ingredient table. The CASRN (Chemical Abstract Services Registration Number) is listed for reference. Proprietary ingredients are screened as indicated above, but the name and CASRN are not listed to protect proprietary information. All ingredients are screened against the regulatory and non-regulatory references set forth in the reference section.	
<b>APD Date of Issue:</b>	October 2014	

**Sustainability Information**

- **Certifications for this product:**
  - FloorScore® Certification – Indoor air quality emissions certification
  - NSF 332 Gold Level Certification – Sustainable Product Certification
  - USDA BioPreferred® – 100% Biobased Certification (sheet)  
94% Biobased Certification (tile)

For details visit [www.biopreferred.gov](http://www.biopreferred.gov).
- **Recycled Content: Typical recycled content in this product (% by weight):**  
Pre-Consumer Recycled Materials 35% sheet, 32% tile
- **Rapidly Renewable Content:** 36%



**Product VOC Emissions**

**VOC Emissions (Volatile Organic Compounds):** Building material is tested and determined compliant in accordance with following VOC emissions standards:

**California Department of Public Health (CDPH) V 1.1-2010**

Yes     No     Not Applicable

**Total Volatile Organic Compound (TVOC) Emission Levels:**

In accordance with CDPH V1.1-2010

- <0.5 mg/m<sup>3</sup>
- 0.5-5.0 mg/m<sup>3</sup>
- >5.0 mg/m<sup>3</sup>

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**Product Ingredients**

The following table represents the ingredients that are in this product. Each ingredient was screened against the regulatory and non-regulatory references set forth below. When an ingredient is listed on a regulatory or non-regulatory reference, it is noted below with an (X). The results are based on the individual ingredient reviewed in its raw material state, and their inclusion on a reference list does not necessarily pertain to, or represent the form of the ingredient in the final finished product. The following table represents the ingredients that are in this product at concentrations of at least 1,000 ppm (0.1%).

ROLE	INGREDIENT Listed in descending order based on % by weight.	CASRN	(X) NOTED IF INGREDIENT IS ON THE LIST								NOTES
			IARC <sup>1</sup>	REACH <sup>2</sup>	NTP <sup>3</sup>	OSHA <sup>4</sup>	PROP <sup>5</sup> 65	TRI <sup>6</sup> PBT	LIVING <sup>7</sup> BUILDING CHALLENGE	GREEN <sup>8</sup> SCREEN BM1	
	<b>Ingredient Name</b>										
Binder	Linseed Oil	8001-26-1									Also, known as linseed oil
	Tree Resins	8050-09-7									
Pigment	Titanium Dioxide	13463-67-7				X				X	Titanium dioxide is listed as a hazard in respirable form. Titanium dioxide is not in a respirable form in the final product.
Filler	Limestone	1317-65-3									
	Wood Dust	n/a*									
	Cork Powder	n/a*									
Backing	Jute	9004-34-6									Only on Sheet
	PET / Glass Scrim	25038-59-9 65997-17-3									Only on Tile
Fire Retardant	Aluminum Hydroxide	21645-51-2									
Pigment	Colored Mineral Pigments	Various									Pigments vary based on pattern (<0.5%)
Stabilizer	Proprietary Ingredient	Proprietary									

\*Chemical Abstracts Service (CAS) Registry Number is not available for this material.

**References**

**The regulatory references include:**

- IARC – International Agency on the Research of Cancer Terminology  
Group 1 – Carcinogenic to Humans  
Group 2 – Probably Carcinogenic to Humans  
Group 3 – Possibly Carcinogenic to Humans  
Source: <http://monographs.iarc.fr/ENG/Classification/index.php>
- REACH – Registration, Evaluation, Authorization and Restriction of Chemicals  
Substance of Very High Concern (SVHC) Authorization or Candidate List (as of the date of this declaration)  
Source: <http://echa.europa.eu/addressing-chemicals-of-concern/>
- NTP – National Toxicology Program – Known Human Carcinogen and Reasonably Anticipated Carcinogen  
Source: <http://ntp.niehs.nih.gov/?objectid=03C9AF75-E1BF-FF40-DBA9EC0928DF8B15>
- OSHA – Occupational Safety and Health Administration Carcinogen list.  
Source: <https://www.osha.gov/SLTC/carcinogens/index.html>
- Prop 65 – California Proposition 65 – Known to the state of California to cause cancer or reproductive toxicity  
Source: [http://oehha.ca.gov/prop65/prop65\\_list/Newlist.html](http://oehha.ca.gov/prop65/prop65_list/Newlist.html)
- USEPA TRI – Toxic Release Inventory – Persistent, bioaccumulative and toxic (PBT) chemicals – Known persistent, bioaccumulative and toxic chemicals and compounds.  
Source: [http://www.epa.gov/tri/trichemicals/pbt%20chemicals/pbt\\_chem\\_list.htm](http://www.epa.gov/tri/trichemicals/pbt%20chemicals/pbt_chem_list.htm)
- Living Building Challenge™ Red List - was developed by the Cascadia Region Green Building Council and International Living Building Institute.  
Source: <http://living-future.org/living-building-challenge/materials>
- GreenScreen® - is a Chemical Hazard Assessment method developed by the Cleaner Production Action. The Pharos GreenScreen List Translator (LT) was used to screen and identify any Chemical of High Concern (LT-1). An LT-1 chemical may be considered equivalent to a Benchmark 1 (BM1) chemical using the full GreenScreen method.  
Source: <http://www.cleanproduction.org/Greenscreen.v1-2.php>

**LEED®v4 Contribution**

**MRCredit:  
Building Disclosure and Optimization –  
Material Ingredients – Option 1**

This Manufacturer Inventory meets the guidelines for this credit.

**MRCredit:  
Building Disclosure and Optimization –  
Material Ingredients – Option 2**

This product meets the guidelines for International Alternative Compliance Path – REACH Optimization. The end use product and materials do not contain substances that meet REACH criteria for substances of very high concern. The product does not contain ingredients listed on the REACH Authorization or Candidate list.

NOTE: Per the LEED Reference Guide, projects in the U.S. may also use this alternative compliance path.