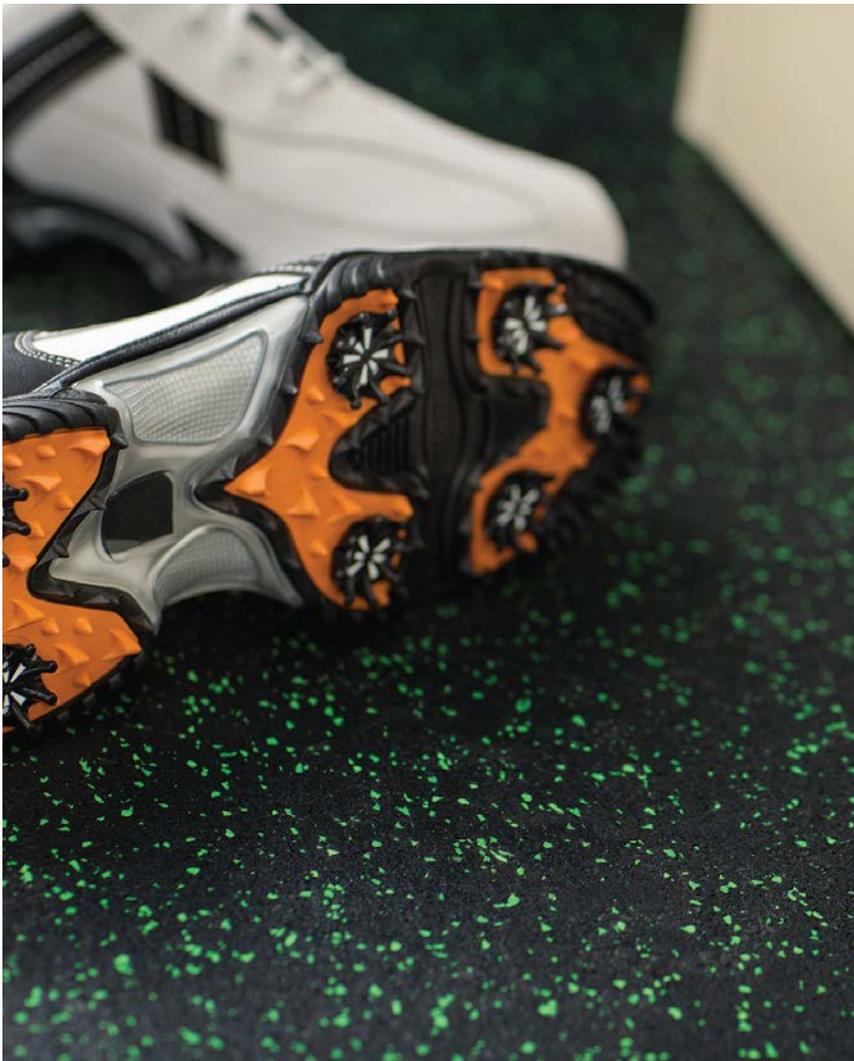


ENVIRONMENTAL PRODUCT DECLARATION

REPLAY™

MULTI-FUNCTIONAL AND SPORTS FLOORING



Replay's mission is to transform reclaimed waste into surfaces that aim to help improve people's lives via a wide range of flooring applications. Replay's rubber tile and rolled goods products, manufactured at facilities in Pennsylvania, contain recycled styrene butadiene (SBR) and ethylene propylene diene monomer (EPDM) rubber to reduce waste, and has earned third-party certifications for conformance with environmental standards



With more than 150 years of history, Tarkett is a world leader of innovative and sustainable flooring solutions. Available in hundreds of shades, patterns and designs, end users have the ability to seamlessly blend the world's largest array of flooring products, finishing borders and accessories.

Tarkett is fully committed to closed loop, circular design through the use of good materials, resource stewardship, creating products for people friendly spaces and recycling at the end of use. The company utilizes Cradle to Cradle principals to strategically design and manufacture its products and has fully implemented Life Cycle Analysis (LCA) as a means to continually improve its operations, products and their use. Developing products that can be reused within production cycles, at the end of their use or by other industries has been a part of Tarkett's sustainability strategy for many years. For more information visit www.tarkettna.com



ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025 and ISO 21930:2007

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.



PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	Tarkett
DECLARATION NUMBER	4787099337.101.1
DECLARED PRODUCT	Replay™ Multi-functional and Sports Flooring
REFERENCE PCR	Product Category Rule (PCR) for preparing an Environmental Product Declaration (EPD) for Flooring: Carpet, Resilient, Laminate, Ceramic, Wood. NSF International. Version 2. 2014.
DATE OF ISSUE	October 23, 2015
PERIOD OF VALIDITY	Five (5) years
CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications
The PCR review was conducted by:	Jack Geibig
	EcoForm
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	
	Anna Nicholson
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	
	Fjalar Kommonen, FFK Ltd.

This EPD conforms with ISO 21930:2007



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Product Definition

Product Classification and Description

Replay™ high quality recycled rubber flooring offers personalized designs for a multitude of markets. Replay flooring uses recycled material resources and is FloorScore® certified for use in high performance schools and office buildings. Replay fitness flooring is made from high quality recycled rubber, and colorful EPDM flecks. This product is meant for fitness areas, including weight rooms, cardio areas, etc.

Range of Applications

Replay is most often used in weight rooms, aerobic areas, workout areas, cardio areas, and recreation areas. It is used in commercial environments where aesthetics and durability are important. It is extremely flexible and easy to install.

Figure 1: Schematic of Replay



Product Performance

Tarkett's Replay™ Flooring is intended for heavy or severe traffic use in commercial buildings using test methods F3041-Standard Specification for Bonded Rubber Crumb Floor Coverings.

Characteristic	ASTM Test Method	Test Results
Abrasion Resistance	D3389	Pass
Flexibility	F137	Pass
Static Load Limit	F970	less than 0.020 in, Pass
Dimensional Stability	F2199	Pass
Resistance to Heat	F1514	Pass
Chemical Resistance	F925	No change
Roll Thickness	F386	Pass
Tile Thickness	F386	Pass
Tile Size	F2055	Pass
Tile Squareness	F2055	Pass
Other characteristics		
Ball Rebound	EN12235	Pass
Force Reduction	ASTM F2569 / EN14808	Class 1
Sound Transmission Coefficient	ASTM 413	45 min
Impact Insulation Class	ASTM E492	45 min
Coefficient of Friction	ASTM 2047	≥0.9
Ambient Noise Reduction	ASTM C423	0.10 sabin/ft2
Tensile Strength	ASTM D412	200 lb/in2

ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Material Content Origin and Availability

Component	Materials	Origin of Raw Materials	Availability		
			Renewable	Non-Renewable	Recycled
Stabilizer	Antioxidant	Global		Fossil resource, limited	
Filler	Calcium carbonate	Global		Mineral resource, abundant	
	Clay	Global		Mineral resource, abundant	
Coloring	Pigment	Global		Mineral resource, abundant	
Modifier	Process Oil	Global		Fossil resource, limited	
Adhesive	Hot Melt Adhesive	Global		Fossil resource, limited	
Adhesive	Polymer Binder	Global		Fossil resource, limited	
Layer	Rubber, EPDM	Global		Fossil resource, limited	
Layer	Rubber, SBR, Crumb	US			Fossil resource, limited
Layer	Rubber, SBR, Recycled	US			Fossil resource, limited
Additive	Water	US	Region dependent		

Material Content

Component	Materials	Percentage of product on basis of mass
Filler	Calcium Carbonate	0.0 – 29 %
	Clay	0.0 – 9.6 %
Coloring	Pigment	0.0 – 0.82 %
Modifier	Process Oil	0.0 – 6.3 %
Adhesive	Hot Melt Adhesive	0.0 %
Adhesive	Polymer Binder	7.8 – 8.8 %
Layer	Rubber, EPDM	0.0 – 12 %
Layer	Rubber, SBR, Crumb	32 – 90 %
Layer	Rubber, SBR, Recycled	0.0 %
Additive	Water	0.78 – 0.79 %

ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Hazardous Chemicals

The following regulated hazardous chemicals may be present based on a review of Material Safety Data Sheets for the product component materials:

- 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane (000078-6307)
- 4,4'-Diphenylmethane Diisocyanate (MDI) (101-68-8)
- Aluminum hydroxide (13463-67-7)
- Antimony Nickel Titanium oxide (8007-18-9)
- Black pigment (1317-61-9)
- Calcium carbonate (000471-34-1)
- Calcium silicate (1344-95-2)
- Carbon Black (1333-86-4)
- Chrome (III) oxide (1308-38-9)
- Di(tert-butylperoxyisopropyl)benzene (025155-25-3)
- Diisocyanates (9016-87-9; 26447-40-5)
- Ethylbenzene (100-41-4)
- Iron (III) oxide (1309-37-1)
- Magnesium silicate (14807-96-8)
- Manganese (7439-96-5)
- Methylene Bisphenyl Isocyanate (101-68-8)
- Polyisocyanate pre-polymer (proprietary)
- Silica (amorphous) (112926-00-8; 7631-86-9)
- Silica (crystalline) (14808-60-8)
- Silicon dioxide (007631-86-9)
- Titanium dioxide (21645-51-2)
- Xylene (1330-20-7)

Production of Main Materials

Calcium Carbonate:

An abundant mineral found worldwide and is a common substance found in rocks.

It can be ground into varying particle sizes.

Clay:

A naturally occurring material composed primarily of fine-grained minerals and will harden when dried or fired. It is primarily made up of inorganic materials with

some organic materials that impart plasticity.

Pigment:

Powdered organic, inorganic, metal-based, or biological substance that is mixed with a liquid in which it is relatively insoluble and used to impart color to a substrate.

Hot Melt Adhesive:

Used to fuse the wear layer to the backing and derived from petrochemicals.

Polymer Binder:

A chemical compound derived from petrochemicals used to cross link polymers.



ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Process Oil:

Lube base stock that receives additional processing to impart a very specific hydrocarbon composition for use as a chemical component in the manufacturing of rubber, plastics, and other polymeric materials.

Rubber, EPDM:

A synthetic elastomer produced as a copolymer of ethylene and propylene, with small amounts of a cross-linking agent.

Rubber SBR, Crumb:

Derived from two monomers, styrene and butadiene, forming styrene-butadiene. Crumb is typically recovered from scrap tires and processed with a granulator, cracker mill, cryogenics, or other mechanical means to reduce the size.

Rubber SBR, Recycled:

Derived from two monomers, styrene and butadiene, forming styrene-butadiene. Re-grind is made from post-industrial Replay scrap.

Water:

The most widely used of all solvents. It is a natural resource that may be delivered from a public or private supplier, or be self-supplied.

Product Characteristics

Characteristics			Average Value	Unit	Maximum Value	Minimum Value
Product Thickness:			8 (0.32)	mm (in)	9 (0.35)	6 (0.24)
Wear Layer Thickness:			NA	mm (in)	NA	NA
Product Weight:			8,398 (28)	g/m ² (oz/ft ²)	9,521 (31)	6,298 (21)
Product Form:	Rolls	Width:	1,219 (48)	mm (in)	N/A	N/A
		Length:	Customer specified	mm (in)	NA	7.6 (25)
	Tiles	Length x Width:	584x584 (23x23)	mm (in)	609x609 (24x24)	584x583 (23x23)
VOC Emissions Test Method:			FloorScore®			
Sustainable Certifications:			FloorScore®			

Life Cycle Assessment and Functional Unit

A cradle to grave life cycle assessment (LCA) was completed for this product group in accordance with ISO 14040, ISO14044, and Product Category Rule for Environmental Product Declarations Flooring: Carpet, Resilient, Laminate, Ceramic, Wood (Version 2). The functional unit is according to the PCR the total impact for the expected life of the building (60 years). But the service life is depending on the product, varying between 10 and 60 years in this case. The PCR consequently requires separate reporting of LCA results: A) for 1 m² of floor covering- extraction/processing, manufacturing, delivery & installation and end of life; and B) the average 1-year use stage; and C) for the 60 year life of the building as combined using A) and B), calculated from the reference service life RSL of the product.

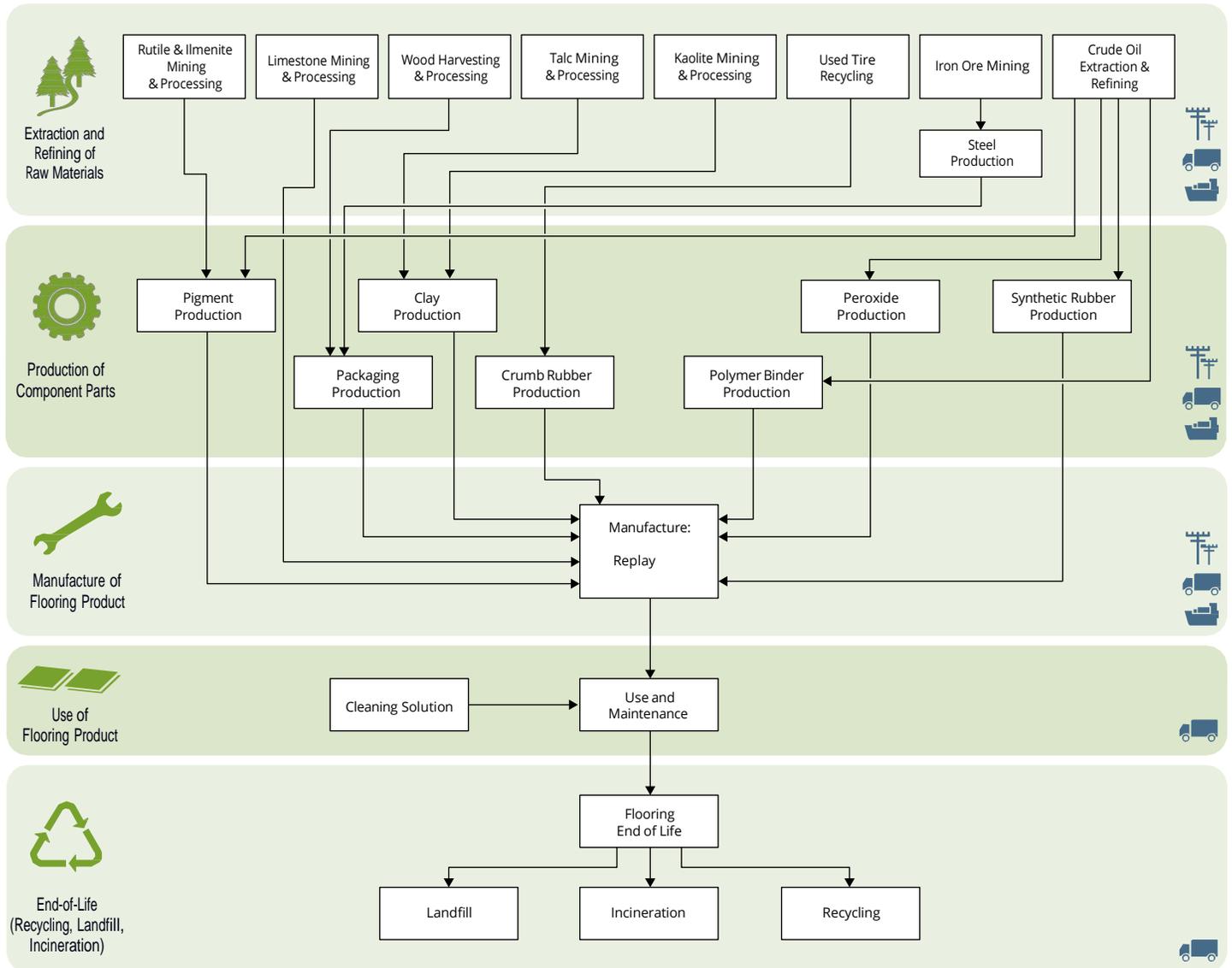
ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Product Life Cycle Flow Diagram for Replay:



Ship Transport
 Truck Transport
 Energy

ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Life Cycle Assessment Stages and Reported EPD Information

Raw Material Extraction and Processing Stage

This stage includes extraction of virgin materials and reclamation of non-virgin feedstock. This includes the extraction of all raw materials, including the transport to the manufacturing site. Resource use and emissions associated with both the extraction of the raw materials used in the products, as well as those associated with the processing of raw materials are included. Impacts associated with the transport of the materials to manufacturing facilities (upstream transport) are also included in this stage.

Manufacturing Stage

This stage includes all the relevant manufacturing processes and flows, excluding production of capital goods, infrastructure, production of manufacturing equipment, and personnel-related activities are not included. This stage includes the impacts from energy use and emissions associated with the processes occurring at the Lancaster and York, Pennsylvania facilities. This stage also includes the production and disposal (including transport) of the product packaging materials.

Delivery Stage

This stage includes the delivery of the flooring product to the point of installation. Modeling used in the life cycle assessment assumed product distribution as 2,700 miles (4,370 km) by diesel truck and 153 miles (246 km) by ocean freighter.

Installation Stage

The ECORE flooring products are available as rolls, straight- edge tiles, and interlocking tiles. Interlocking tiles may be installed without an adhesive, while rolls and straight-edge tiles are installed with an adhesive. The manufacturer recommends use of E-Grip III, a zero-VOC, low odor, one-component urethane adhesive. The recommended application rate is 0.011 gal/ft².

Waste

Waste generated during product installation can be disposed of in a landfill or incinerated.

Packaging

Packaging for Replay product

Material	lb per square meter (kg)
Cardboard	0.01 (0.02)
Plastic	0.03 (0.06)
Wood	0.01 (0.03)
Total	0.05 (0.11)

ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Use Stage

Cleaning and maintenance

Cleaning and maintenance for Replay product

Cleaning Process and Frequency	Recommended Cleaner	Dilution	Coverage (diluted)
Initial Cleaning	Replay's E-Cleaner (1-5% detergent blend) • Use with damp mopping, scrubbing, spray and wipe cleaning, or with a hand bucket and cloth.	10 oz/gal water	2,000 ft ² /gal.
Daily Cleaning	Replay's E-Cleaner (1-5% detergent blend) • First sweep, dust mop, or vacuum floor. Damp mop with a microfiber mop or auto scrub with a soft nylon brush or microfiber mop.	2-4 oz/gal water	6,000 ft ² /gal.
Heavy Soil and Restorative Cleaning (once per product lifetime)	Replay's E-Strip (1-5% amino alcohol) • First sweep, dust mop, or vacuum floor. Use a soft nylon brush, buffer, or auto scrubber. Finish with damp mop and wet vacuum.	16 oz/gal water	1,200 ft ² /gal.

End-of-Life Stage

Recycling, reuse, or repurpose

Data for estimation of recycling rates for the product and packaging are based on data prepared by the US Environmental Protection Agency's Municipal Solid Waste Report. These data provide statistics on US disposal, including recycling rates.

Disposal

For materials not recycled, it is assumed that 20% are incinerated, and 80% go to a landfill, based on the US EPA data. Transportation of waste materials at end of life assumes a 20 mile average distance to disposal, consistent with assumptions used in the US EPA WARM model.

Life Cycle Inventory

In accordance with ISO 21930, the following aggregated inventory flows are included in the EPD:

- Use of renewable material resources
- Consumption of freshwater
- Hazardous wastes
- Non-hazardous wastes

All results are calculated using the SimaPro 8.0 model using primary and secondary inventory data. Classification for Use of Renewable Material Resources is based on review of elementary flows and resources considered renewable on a human time scale. Elementary flows related to use of wood, minerals, and land occupation were not included. Water consumption is not included, as it is reported separately. Based on this classification process, the use of renewable material resources for the product system is considered to be negligible.

ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Per 1m² of Replay flooring tile maintained over a 60 year period

Parameter	Unit	Replay
Consumption of Freshwater	kg	36,000
Hazardous Waste	kg	1.0x10 ⁻³
Non-hazardous Waste	kg.	27

Life Cycle Impact Assessment

Life cycle impact assessment is the process of converting the life cycle inventory results into a representation of environmental and human health impacts. For example, emissions such as carbon dioxide, methane, and nitrous oxide (inventory) together contribute to climate change (impact assessment). The impact assessment for the EPD is conducted in accordance with requirements of the PCR. Impact category indicators were estimated using the CML 2001 (Oct 2013) characterization method. Aggregated inventory flows for energy use and wastes were also calculated. The LCIA and inventory flow results were calculated using SimaPro 8.0.2 software.

The Replay product is available in a range of thicknesses and colors. At least two versions of the product, representing an upper and lower extreme for the product line, were included in the LCA model. The Tables below show the range in life cycle impact assessment results, results for 1 m² of flooring, including extraction of raw materials through installation and end of life, average use stage impacts for 1 m² of flooring over 1 year, assumptions used for product maintenance, and the life cycle impact assessment results for 1 m² of flooring over a 60 year period.

Range in life cycle impact assessment results for 1 m² of Replay flooring covering maintained for 60 years.

Impact Category		Replay
Global warming 100a (kg CO ₂ eq)	Min	110
	Max	140
Acidification (kg SO ₂ eq)	Min	0.59
	Max	0.9
Ozone depletion potential (kg CFC-11 eq)	Min	3.2x10 ⁻⁷
	Max	3.1x10 ⁻⁶
Photochemical oxidation (kg C ₂ H ₄)	Min	3.0x10 ⁻²
	Max	4.4x10 ⁻²
Eutrophication (kg PO ₄ --- eq)	Min	0.11
	Max	0.14
Abiotic depletion, elements (kg Sb eq)	Min	0.68
	Max	1.1
Abiotic depletion, fossil fuels (MJ)	Min	1,300
	Max	2,100

ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Cradle to install and end of life potential impacts for an average 1 m² Replay (Table A of the PCR)

Impact Category	Sourcing & Extraction	Manufacturing	Delivery & Installation	Disposal	Total
Global warming 100a (kg CO ₂ eq)	5.9	12	6.4	6.1	31
Acidification (kg SO ₂ eq)	0.030	0.10	0.030	2.4x10 ⁻³	0.17
Ozone depletion potential (kg CFC-11 eq)	3.5x10 ⁻⁷	1.9x10 ⁻⁸	3.8x10 ⁻⁹	2.8x10 ⁻⁸	4.0x10 ⁻⁷
Photochemical oxidation (kg C ₂ H ₄)	1.6x10 ⁻³	4.3x10 ⁻³	1.4x10 ⁻³	8.4x10 ⁻⁴	0.010
Eutrophication (kg PO ₄ eq)	4.1x10 ⁻³	0.010	4.3x10 ⁻³	0.020	0.030
Abiotic depletion, elements (kg Sb eq)	0.070	0.080	0.050	1.4x10 ⁻³	0.20
Abiotic depletion, fossil fuels (MJ)	130	160	99	2.9	390
Renewable Energy (MJ eq)	2.1	2.4	0.58	0.15	5.2
Non-renewable Energy (MJ eq)	150	170	110	3.8	430

Average 1 year use stage potential impacts for an average 1 m² flooring. (Table B of the PCR)

Impact Category	Replay Use and Maintenance
Global warming 100a (kg CO ₂ eq)	0.060
Acidification (kg SO ₂ eq)	1.2x10 ⁻³
Ozone depletion potential (kg CFC-11 eq)	1.8 x 10 ⁻⁹
Photochemical oxidation (kg C ₂ H ₄)	6.8x10 ⁻⁵
Eutrophication (kg PO ₄ eq)	1.1x10 ⁻⁴
Abiotic depletion, elements (kg Sb eq)	1.3x10 ⁻³
Abiotic depletion, fossil fuels (MJ)	2.4
Renewable Energy (MJ eq)	0.34
Non-renewable Energy (MJ eq)	2.7

List of maintenance activities and frequency.

Maintenance Activity	Frequency over Reference Service Life (RSL) of Replay
Reference Service Life (RSL)	15 years
Initial Cleaning	Once over 15 year RSL
Daily Cleaning	Up to a maximum of 5,475 times over 10 year RSL
Heavy Soil and Restorative Cleaning	Once over 15 year RSL

ENVIRONMENTAL PRODUCT DECLARATION



Replay™
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According to ISO 14025

Replay: Potential impacts by life cycle stage for a 60 year period. The Reference Service Life is 15 years. (Table C of the PCR)

Impact Category	Sourcing & Extraction	Manufacturing	Delivery & Installation	Use	End of Life	Total
Global warming 100a (kg CO ₂ eq)	24	49	26	3.8	24	130
Acidification (kg SO ₂ eq)	0.14	0.40	0.12	0.070	0.010	0.74
Ozone depletion potential (kg CFC-11 eq)	1.4x10 ⁻⁶	7.6x10 ⁻⁸	1.5x10 ⁻⁸	1.1x10 ⁻⁷	1.1x10 ⁻⁷	1.7x10 ⁻⁶
Photochemical oxidation (kg C ₂ H ₄)	0.010	0.020	0.010	4.1x10 ⁻³	3.4x10 ⁻³	0.040
Eutrophication (kg PO ₄ ⁻⁻⁻ eq)	0.020	0.020	0.020	0.010	0.070	0.13
Abiotic depletion, elements (kg Sb eq)	0.26	0.33	0.20	0.080	0.010	0.87
Abiotic depletion, fossil fuels (MJ)	530	640	400	150	12	1,700
Renewable Energy (MJ eq)	8.5	9.6	2.3	20	0.62	41
Non-renewable Energy (MJ eq)	600	670	450	160	15	1,900

Supporting Technical Information

Data Sources

Unit processes were developed with SimaPro 8.0.2 software, drawing upon data from multiple sources. Primary data were provided by the manufacturer of Replay and some of its suppliers for their manufacturing processes. The primary source of secondary LCI data was from Ecoinvent.

Data sources used for the LCA.

Material	Data Source	Flow Name	Date
Antioxidant	Ecoinvent data v2.2	Chemicals organic, at plant/kg/GLO	2010; 2003
Calcium Carbonate	Ecoinvent data v2.2	Limestone, milled, packed, at plant/kg/CH	2010; 2003
Clay	Ecoinvent data v2.2	Clay, at mine/kg/CH	2013; 2003
Talc	Ecoinvent data v2.2	Talc, in ground	2013
Pigment	Ecoinvent data v2.2	Titanium dioxide, production mix, at plant/kg/RER	2010; 2003
Process Oil	US LCI	White mineral oil, at plant/kg/RNA	2012; 2008
Peroxides	Ecoinvent data v2.2	Chemicals organic, at plant/kg/GLO	2010; 2003
Hot Melt Adhesive	Ecoinvent data v2.2	Nylon 6, at plant/RER	2010
Polymer Binder	Ecoinvent data v2.2	Methylene diphenyl diisocyanate, at plant/kg/RER	2010
Rubber, EPDM	Ecoinvent data v2.2	Synthetic rubber, at plant/kg/RER	2010; 2003
Rubber, SBR, Crumb	Replay plant	SBR – Crumb, recycled	2013
Rubber, SBR, Recycled	Replay plant	SBR – Re grind/Scrap, recycled	2013
Truck	US LCI	Transport, combination truck, diesel powered/US	2008
Ship	US LCI	Transport, transoceanic freight ship/OCE	2008



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Data Quality

Data quality assessment of Life Cycle Inventory

Data Quality Parameter	Data Quality Discussion
Time-Related Coverage: Age of data and the minimum length of time over which data is collected.	The most recent available data are used, based on other considerations such as data quality and similarity to the actual operations. Typically, these data are less than 10 years old (typically 2003 or more recent). All of the data used represented an average of at least one year's worth of data collection, and up to three years in some cases. Manufacturer-supplied data (primary data) are based on 2013 annual production.
Geographical Coverage: Geographical area from which data for unit processes is collected.	The data used in the analysis provide the best possible representation available with current data. Actual processes for upstream operations are primarily North American. Surrogate data used in the assessment are representative of North American or European operations. Data representative of European operations are considered sufficiently similar to actual processes. Data representing product disposal are based on US statistics.
Technology Coverage: Specific technology or technology mix.	For the most part, data are representative of the actual technologies used for processing, transportation, and manufacturing operations. Representative fabrication datasets, specific to the type of material, are used to represent the actual processes, as appropriate.
Precision: Measure of the variability of the data values for each data expressed.	Precision of results are not quantified due to a lack of data. Data collected for operations were typically averaged for one or more years and over multiple operations, which is expected to reduce the variability of results.
Completeness: Percentage of flow that is measured or estimated.	The LCA model included all known mass and energy flows for production of the rubber flooring products. In some instances, surrogate data used to represent upstream and downstream operations may be missing some data which is propagated in the model. No known processes or activities contributing to more than 1% of the total environmental impact for each indicator are excluded. In total, these missing data represent less than 5% of the mass or energy flows.
Representativeness: Qualitative assessment of the degree to which the data set reflects the true population of interest.	Data used in the assessment represent typical or average processes as currently reported from multiple data sources, and are therefore generally representative of the range of actual processes and technologies for production of these materials. Considerable deviation may exist among actual processes on a site-specific basis; however, such a determination would require detailed data collection throughout the supply chain back to resource extraction.
Consistency: Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis.	The consistency of the assessment is considered to be high. Data sources of similar quality and age are used; with a bias towards Ecoinvent data where available. Different portions of the product life cycle are equally considered; however, it must be noted that final disposition of the product is based on assumptions of current average practices in the United States.
Reproducibility: Qualitative assessment of the extent to which information about the methodology and data values would allow an independent practitioner to reproduce the results reported in the study.	Based on the description of data and assumptions used, this assessment would be reproducible by other practitioners. All assumptions, models, and data sources are documented in the LCA report.
Sources of the data: Description of primary and secondary data sources.	Data representing energy use at the ECORE Pennsylvania manufacturing facilities represent an annual average and are considered of high quality due to the length of time over which these data are collected, as compared to a snapshot that may not accurately reflect fluctuations in production. For secondary LCI datasets, both Ecoinvent and the US LCI data are used, with a bias towards Ecoinvent data.
Uncertainty of the information: E.g. data, models, and assumptions.	Uncertainty related to the product materials and packaging is low. Actual supplier data for upstream operations was sought but not available for all suppliers and the study relied upon use of existing representative datasets. These datasets contained relatively recent data (<10 years), but in some instances lacked geographical representativeness. Uncertainty related to the impact assessment methods used in the study are high. The impact assessment method required by the PCR includes impact potentials, which lack characterization of providing and receiving environments and does not consider exceedances of threshold (e.g., tipping points).

ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

Allocation

The Replay™ products are available in a range of thicknesses and colors – multiple versions of each product were modeled in the LCA to calculate a range of results.

Resource use at the York and Lancaster, Pennsylvania facilities (e.g., water and energy) is allocated to the product based on the unit price as a fraction of the total facility sales. Sales price data for each of the products considered in the assessment were provided by the manufacturer in addition to total annual sales and are used to allocate resource use and emissions to each of the assessed products.

The Replay™ flooring product system includes recycled materials, which are allocated using the recycled content allocation method (also known as the 100-0 cut off method). Using the recycled content allocation approach, system inputs with recycled content do not receive any burden from the previous life cycle other than reprocessing of the waste material. At end of life, materials which are recycled leave the system boundaries with no additional burden.

Impacts from transportation, including product distribution to point of sale, are allocated based on the mass of material and distance transported.

System boundaries

The system boundaries of the life cycle assessment for ECORE's rubber flooring products was cradle to grave. A description of the system boundaries for the LCA are as follows:

Raw material extraction and processing stage – This stage includes extraction of virgin materials and reclamation of non-virgin feedstock. This includes the extraction and processing of all raw materials, including the transport to the manufacturing site.

Manufacturing stage – This stage includes all the relevant manufacturing processes and flows, including packaging. Production of capital goods, infrastructure, production of manufacturing equipment, and personnel-related activities are not included.

Delivery and installation stage – This stage includes the delivery of the rubber tile and rolled goods to the point of installation.

Use stage – The use stage includes the cleaning and maintenance of the floor covered during its lifetime, as well as extraction, manufacturing and transport of all sundry material for maintenance and cleaning.

End of life stage – The end of life stage includes the transport of the floor covering to end of life processes including landfill, incineration, and recycling.

Cut-off criteria

According to the PCR, processes contributing greater than 1% of the total environmental impact indicator for each impact must be included in the inventory. In the present study, except as noted, all known materials and processes were included in the life cycle inventory.

ENVIRONMENTAL PRODUCT DECLARATION



Replay™
Multi-functional and Sports Flooring

According to ISO 14025

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