

Environmental Product Declaration

Tufted Nylon Broadloom Carpet on Weldlok®

MOHAWK GROUP PREMIUM BROADLOOM CARPET



Sustainability is a core value for Mohawk. In addition to being the largest flooring company in the world originating back to the 1800s, Mohawk is unique among other flooring manufacturers in that we produce every component of the carpet: fiber, yarn, carpet cushion, and carpet backing. Our culture drives us to seek innovation and efficiency throughout the life cycle of our product, thus reducing our consumption of water, energy, and raw materials. Mohawk also has the most diverse recycling programs in the industry. Through our nation-wide network of partners, we recycle post-consumer carpet and fiber which is subsequently repurposed in the manufacture of other products. Additionally, Mohawk is the nation's largest recycler of plastic containers which are processed into carpet and backings at our own facilities. Through third party verification, Mohawk embraces transparency for the benefit of both itself and its customers.

For more information visit www.mohawkgroup.com.



BQ332 Base Camp





Tufted Nylon Broadloom Carpet on Weldlok® Backing
Premium Broadloom Carpet

According to ISO 14025



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	Mohawk
DECLARATION NUMBER	12CA57885.103.1
DECLARED PRODUCT	Tufted Nylon Broadloom Carpet on Weldlok® Backing
REFERENCE PCR	NSF PCR for Flooring (Carpet, Resilient, Laminate, Ceramic, and Wood)
DATE OF ISSUE	August 12, 2014
PERIOD OF VALIDITY	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:	NSF International
	Accepted by PCR Review Panel
	ncss@nsf.org
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	 Wade Stout, UL Environment
	 Brad McAllister, WAP Sustainability



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Product Description

Product Classification & Description



Research and development is the foundation of Mohawk Group’s achievements in sustainable design and innovation. To that end, one of Mohawk’s successes in creating sustainable products which perform to the needs and expectations of the commercial user is the product group “Tufted Nylon Broadloom Carpet on Weldlok® Backing”, the construction was specifically designed for commercial applications. The “Thermoset Adhesive Coating” is designed to encapsulate and penetrate the carpet back stitch while securing the secondary backing for a cost effective performance backing.

In combination with a pile fiber wear layer containing nylon Type 6, 6.6, or recycled type 6, the resulting products offer designers numerous style and pattern options. Additionally, with the availability of yarn dye or solution dye processes, color combinations are nearly endless.

The Life Cycle Analysis was conducted on an average face weight of 30 oz. per square yard, which was the average of the annual sales. The range of the nylon pile fiber wear layer is 16-50 (osy). Unless noted in the report, the average face weight of 30 (osy) is presented for the impacts.

Style: BQ333 Trail Mix





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Definitions

Nylon 6.6 - Nylon 6.6 (polyamide 6.6) is a thermoplastic polymer produced by polycondensation of hexamethylene diamine and adipic acid.

Nylon 6 - Nylon 6 (polyamide 6) is a polymer of caprolactam formed by ring opening polymerization.

Primary Backing – Woven tufting primary (a polypropylene fabric) into which the wear layer is tufted

Pre-Coat Polymer - A coating that bonds the pile yarn fiber into the primary backing

Nylon 6 Pre Consumer - Nylon 6 (Polyamide 6) fiber fluff from poor processing as repelletized and reintroduced with virgin pellets to the extrusion process.

Styrene Butadiene Rubber- A emulsion polymerization of synthetic latex, derived from styrene and butadiene.

Calcium Carbonate - Mineral filler from limestone deposits.

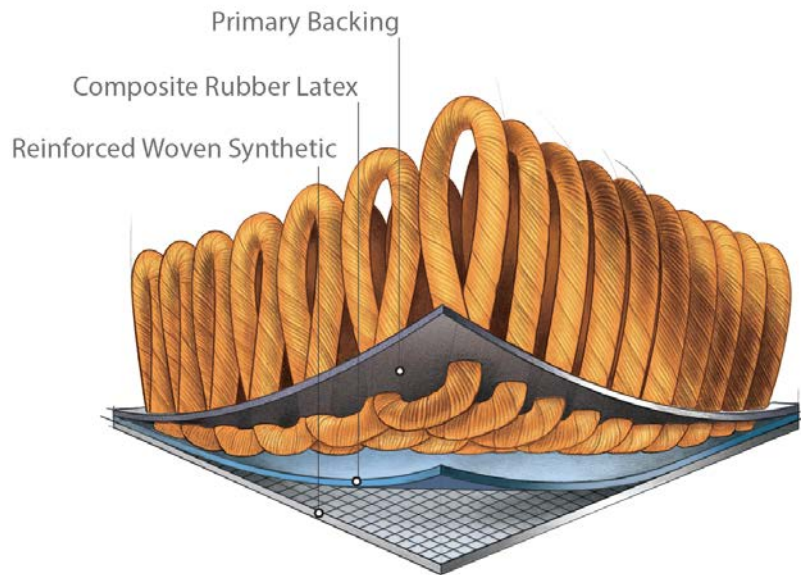
Polypropylene- A thermoplastic polymer made from a propylene monomer in a catalysis polymerization process and is commonly used in primary and secondary carpet backing.

Ethylene Vinyl Acetate- A copolymer of Ethylene and Vinyl Acetate



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Product Characteristics

Characteristics	Nominal Value	Unit
Total thickness	8.9 (.350)	mm (inch)
Product weight	2201 (64.91)	g/m ² (oz./yd ²)
Surface pile thickness	5.6 (.220)	mm (inch)
Surface pile weight	1034.1 (30)	g/m ² (oz./yd ²)
Pile fiber composition	Nylon	100%
Secondary backing	Weldlok® Backing	

Range of Applications

Broadloom textile floor coverings on Weldlok® Backing are intended for commercial applications.





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Product Standards and Approvals

Surface Flammability FF 1-70	Pass
ASTM E-648 Radiant Panel	Class I
ASTM E-662 Smoke Density	≤ 450
AATCC 134 Electrostatic Propensity	≤ 3.5 KV
AATCC 16 Option 3 Colorfastness to Light	≥4.0 @ 40 AFU's
ASTM D-5252 Hexapod & ASTM D-7330 Surface Appearance Change	≥ 3.0 Heavy Traffic
ASTM D-1335 Tuft Bind	≥ 10 lbs.
CRI Green Label Plus	GLP 1252
California Specification 01350	Meets Criteria

Accreditations

- Gold NSF 140 Sustainability Assessment for Carpet
- Recycled Content Certification of Colorstrand Type 6 Solution Dyed Nylon
- Carpet and Rug Institute (CRI) Green Label Plus Certification
- NVLAP Accreditation, NIST
- Certification of Mohawk’s Sustainability report by FIRA, Netherlands





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Material Content

Material Content of the Product

Layer	Component	Material	Availability	Mass %	Origin
Wear Layer	Pile Fiber	Nylon 6.6 or Nylon 6	Fossil resource, limited	44	US
Carrier	Primary Backing	Polypropylene	Fossil resource, limited	9	US
Precoat	Polymer	Styrene Budienne Rubber	Fossil resource, limited	5	US
Precoat	Filler	Calcium Carbonate	Mineral resource, limited	12	US
Backing	Weldlok® Backing	Weldlok® Backing	Fossil resource, limited	30.0	US
		Calcium Carbonate	Fossil resource, limited		
		Ethylene Vinyl Acetate	Fossil resource, Limited		

Production of Main Materials

Nylon 6.6 - Nylon 6.6 (polyamide 6.6) is a thermoplastic polymer produced by polycondensation of hexamethylene diamine and adipic acid.

Nylon 6 - Nylon 6 (polyamide 6) is a polymer of caprolactam formed by ring opening polymerization.

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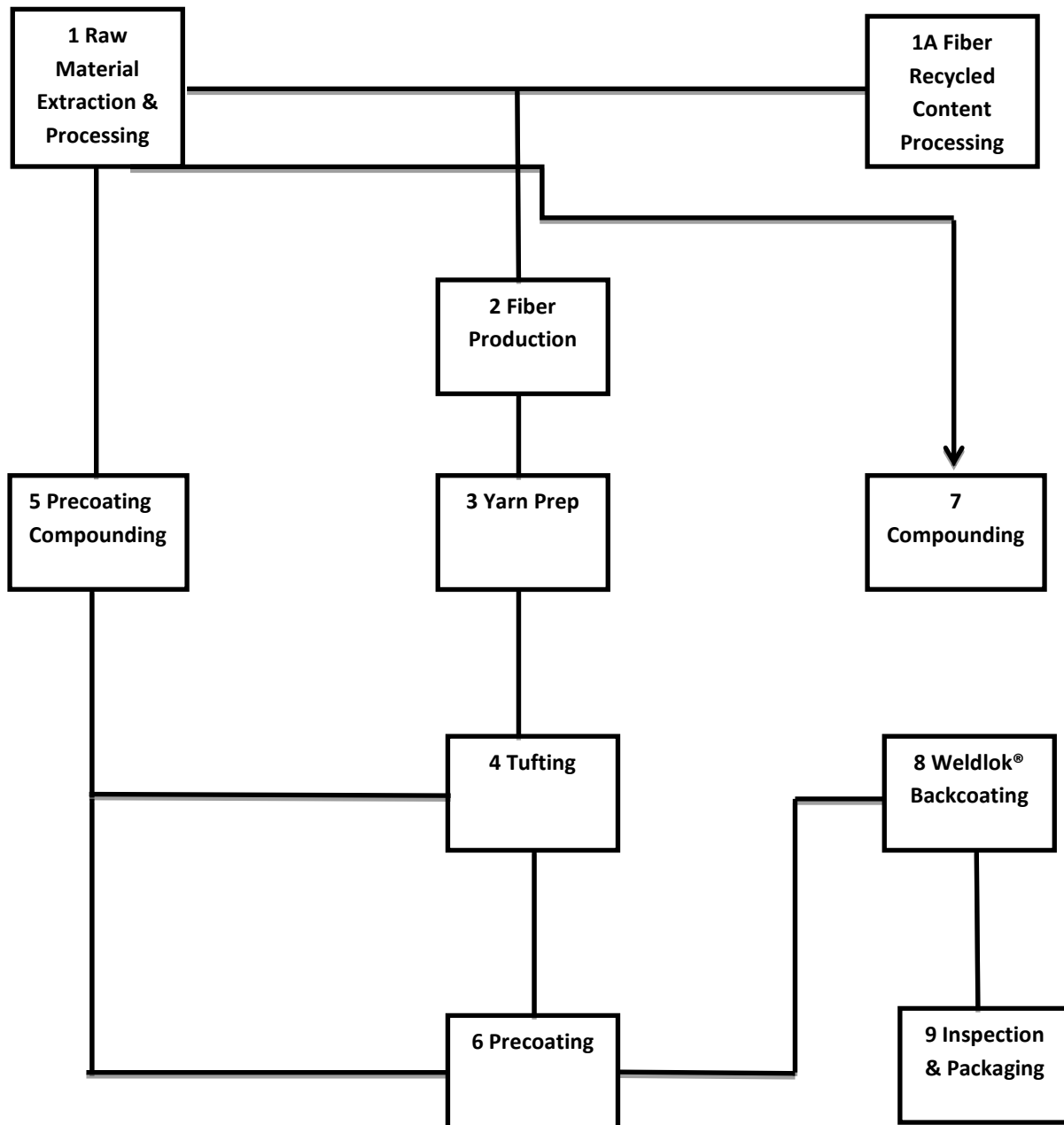


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Production of the Floor Covering

Tufted Broadloom on Weldlok® Backing Production Process





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Health, Safety, and Environmental Aspects During Production

- Supply chain and raw material management program
- Corporate Health and Safety programs focused on continual improvement of worker and contractor safety
- The Mohawk Group is in compliance with all local, state, federal and international regulations
- Social Responsibility measuring the social aspects of our manufacturing and the impacts to the communities where they are located
- Compliance with Public Health and Environment (PHE) requirements within NSF/ANSI 140 Sustainable Carpet Assessment Standard

Production Waste

The “Waste Management System” at Mohawk is a unique comprehensive system to help identify, evaluate, and reduce or eliminate waste streams throughout our manufacturing facilities. The Mohawk Corporate Waste Stream Management Team has identified more than 100 waste streams across manufacturing. The waste streams are tracked by an internal tracking system. The Corporate Waste Stream Management communicates with the facilities, to insure the most economical methods of recycling, reusing, or the repurpose of the waste into other systems are being utilized. Some examples include, converting backing waste into new primary and secondary carpet backing, incorporating yarn waste into synthetic carpet pad. In some cases fiber waste is converted to pellets and processed into useful products such as plastic waste containers or plastic parts for automobiles.

Delivery and Installation of the Floor Covering

Delivery

The life cycle assessment for product delivery was modeled with a shipping distance of 500 miles to U.S. customers. The international shipments were modeled as being transported via truck to an East Coast port, loaded on a container and placed on a ship. Once the ship arrives in the European port, the carpet is shipped by truck to the customer at a distance of 500 miles.

Installation

The floor must be prepared and the concrete must be prepared in accordance with Mohawk Group’s installation instructions, and the recommended adhesive must be used to maintain the warranty. Complete installation instructions can be found at www.mohawkgroup.com or by calling 800-833-6954.

Health, Safety and Environmental Aspects During Installation

Safety representatives are located at each of the manufacturing sites to train, monitor and improve safety in the workplace. Safety managers are ultimately responsible to the Chief Executive Officer for development, implementation, and review of Mohawk’s Health and Safety Policies. Meetings are held monthly at each work location to communicate safety requirements and expectations for the organization and team members. Mohawk uses a continuous improvement process for safety. The Material Safety Data Sheets are available to all team members electronically for all sites.



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Waste

Very often, the largest waste stream generated from a new carpet installation is the existing carpet that is to be replaced. Mohawk's ReCover program diverts millions of pounds of used commercial carpet from a variety of manufacturers from landfills by offering a venue through which the materials can be recycled into new carpet or other products. The Mohawk ReCover program is described in detail in the "Recycling or Reuse" section below

Packaging

The broadloom carpet is packaged in polyethylene wrapping for shipment. The Mohawk Group encourages installers to recycle the packaging in local recycling programs.

Use Stage

Use of the Floor Covering

The Broadloom carpet on Weldlok® is recommended for installations in commercial applications. The carpet is assumed to have a 15-year reference service life.

Cleaning and Maintenance

Mohawk Group's Care and Maintenance instructions, including vacuuming, interim and deep cleaning, can be found at www.themohawkgroup.com/sitefiles/PDFs/carpet_care.pdf. For vacuuming, Mohawk Group recommends the use of equipment certified by the Carpet and Rug Institute (CRI) Seal of Approval Program. The instructions recommend vacuuming three times a week, interim cleaning once a week and deep cleaning nine times a year. Additional assistance is available from Mohawk Field Services by calling 800-833-6954.

Structural Damage

The structural stability of the floor shall be verified prior to the installation; issues with the subfloor must be repaired to code compliant standards before proceeding. When installing over a concrete floor, the moisture content of the floor should not exceed 5lbs/1000sf. If the moisture content exceeds 5lbs, the floor must be sealed with Mohawk's Prime Coat Sealer prior to installation. Complete and comprehensive instructions can be found at www.themohawkgroup.com/sitefiles/PDFs/TMGModularInst or by calling Mohawk Field Services at 800-833-6954.



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End of Life Stage

Recycling or Reuse

Mohawk Group's ReCover Program diverts millions of pounds of commercial carpet each year from landfills. Participants in our ReCover program range from a major national retailer to one of the largest theater chains in North America. The ReCover program is recovering carpet from colleges, corporate headquarters, military bases, courts, government offices, etc. Our relationship with Delta Airlines means that we even reclaim postconsumer carpet from commercial aircraft. Mohawk operates a recycling facility, known as "Greenworks," where postconsumer fiber is recycled into engineered Nylon 6 and 6.6 resin pellets. In the past four years, ReCover and Greenworks have accounted for the landfill diversion of 99,859,266 lbs. of postconsumer carpet. For more information call 877-3RE-CYCL (877-373-2925), or email reclaim@mohawkind.com

Life Cycle Assessment

For this EPD, a "cradle-to-grave" life cycle assessment (LCA) was conducted. The analysis was done according to the NSF Product Category Rule (PCR) for flooring and followed LCA methodology guidelines laid out in the ISO 14040/14044 standards, as well as in the EN 15804 standard for construction products. As such, EPDs of construction products may not be comparable if they do not comply with the same PCR or ISO standards.

While the intent of the PCR is to limit variability among analyses, there may still be differences among EPDs that comply with the same PCR (e.g. due to differences in system boundaries, background data, etc.). Consequently, differences among EPDs are not guaranteed for comparative purposes.

Functional Unit

The functional unit is **coverage of 1 square meter of installed flooring for a building as defined by the Product Category Rules (PCR)**. Since the carpet is assumed to have a 15-year reference service life, it will have to be replaced *4 times* during the 60-year timeframe. Results are accordingly scaled to account for these replacements.

Cut-off Criteria

The cut-off criteria for including or excluding materials, energy and emission data of the study are as follows:

- ✓ Mass-If a flow is less than 1% of the cumulative mass of the model it may be excluded, providing the environmental relevance is not a concern
- ✓ Energy- If a flow is less than 1% of the cumulative energy of the model it may be excluded, providing the environmental relevance is not a concern.
- ✓ Environmental relevance-If a flow meets the above criteria for exclusion, yet it is thought to potentially have a significant environmental impact, it was included.
- ✓ Material which leaves the system (emissions) and whose environmental impact is greater than 1% of the impact category is included.
- ✓ Packaging of raw materials (pallets, totes, boxes etc) are excluded as they represent less than 1% of the cumulative mass and are not considered environmentally relevant.



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- ✓ The sum of the excluded material flows must not exceed 5% of mass, energy, or environmental relevance.

Allocation

Co-Product Allocation

No co-product allocation occurs in the product system.

Multi-Input Processes Allocation

No multi-input allocation occurs in the product system.

Reuse, Recycling, and Recovery Allocation

The cut-off allocation approach is adopted in the case of any post-consumer recycled content, it is assumed to enter the system burden-free. Only environmental impacts from the point of recovery and forward (e.g., collection, sorting, processing, etc.) are considered.

Product waste is modeled as being disposed in a landfill. Plastic and other construction waste is assumed to be inert in landfills so no allocation is necessary. Packaging waste at the point of installation is modeled as being recycled, so no allocation is necessary.

Background Data

As a general rule, specific data derived from specific production processes or average data derived from specific production processes shall be the first choice as a basis for calculating an EPD.

For life cycle modeling of the considered products, the Gabi 6 Software System for Life Cycle Engineering, developed by PE INTERNATIONAL AG, has been used to model the product systems considered in this assessment. All relevant background datasets are taken from the Gabi 2012 software database. The datasets from the Gabi database are documented in the online documentation <http://documentation.gabi-software.com/>. To ensure comparability of results in the LCA, the basic data of Gabi database were used for energy, transportation and auxiliary materials.

Data Quality

PE INTERNATIONAL performed a variety of tests and checks throughout the project to ensure high quality of the completed project. This includes an extensive review of project-specific LCA models as well as the background data used.

Temporal Coverage

Foreground data are based on 1 year averaged data from 2012. Background datasets are all based on data from the last 7 years (since 2006), with the majority of datasets based on data from 2009 or later.

Technological Coverage



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All primary and secondary data were modeled to be specific to the technologies or technology mixes under study. Primary data comes from Mohawk's internal software, annual purchases, and product specifications. Technological representativeness is considered to be good.

Waste, emissions and energy use are based on measured data during the reference year.

Geographical Coverage

In order to satisfy cut-off criteria, proxy datasets were used as needed for raw material inputs to address lack of data for a specific material or for a specific geographical region. These proxy datasets were chosen for their representativeness of the actual product. Additionally, European data or global data were used when North American data (for raw materials sourced in the US) were not available. Geographical representativeness is considered to be good.

System Boundaries

A cradle-to-grave life cycle analysis was conducted, from extraction of natural resources to final disposal. Within these boundaries the following stages were included:

Sourcing / Extraction Stage: Raw material supply, inbound transport of raw materials to manufacturing facility, manufacturing

Manufacturing Stage: Manufacturing energy, waste, and emissions

Installation Stage: Outbound transport of finished product to construction site, installation process

Use Stage: Use, maintenance, repair, replacement, and refurbishment

End-of-Life Stage: Deconstruction / demolition, transport to disposal facility, waste processing, disposal

Building operational energy and water used were not assessed, nor were the construction and maintenance of capital equipment (e.g., production equipment). Additionally, human labor and employee commute were not included in the analysis.

Period under Consideration

Primary data collected by Mohawk are based on 12 month averaged data for the calendar year 2012. The study was conducted in 2013.

Geographic Coverage

Company's manufacturing facilities are located in Georgia, South Carolina, and Virginia . As such, the geographical coverage for this study is based on North American (NA) system boundaries for all processes and products. Results are presented as production weighted averages of the different locations.



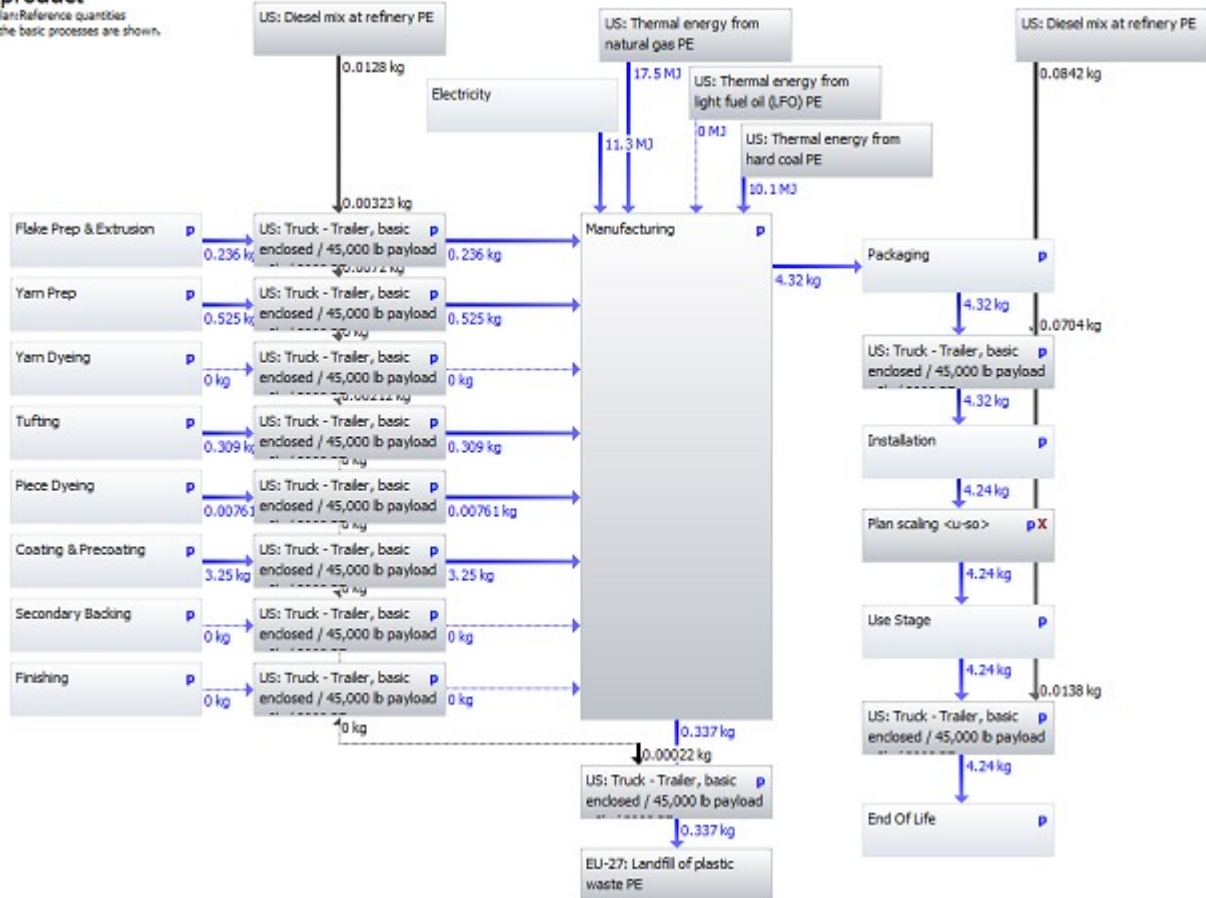
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System Diagram

Carpet product

GoBI process plan; Reference quantities
The names of the basic processes are shown.





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Life Cycle Inventory Analysis

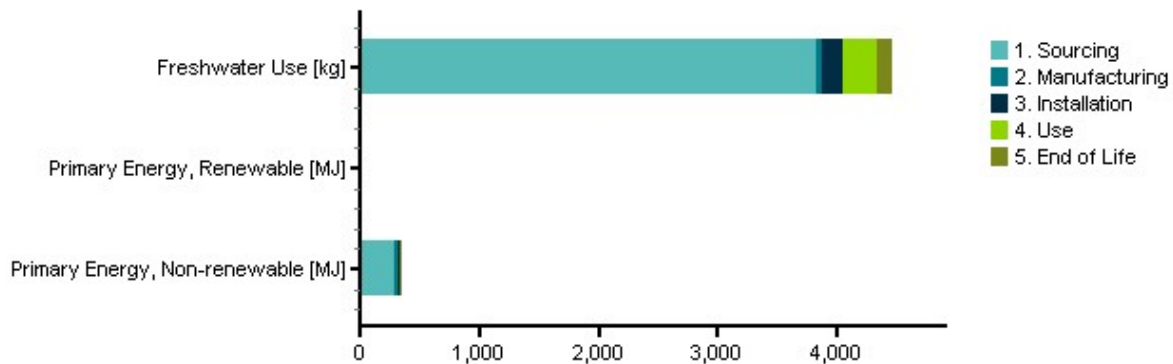
Energy and Material Resources

Primary energy resources and water use are presented below. Since no secondary fuels are associated with the production of carpets, this category is not shown.

	Min Faceweight (16 oz. yd ²)	Avg Faceweight (30 oz.yd ²)	Max Faceweight (50 oz. yd ²)
Primary Energy, Non-renewable [MJ]	1.34E003	1.7E003	4.54E003
Primary Energy, Renewable [MJ]	48	52.3	363
Freshwater Use [kg]	2.3E004	2.58E004	2.82E005

Primary Energy & Water for one square meter of carpet for one year (average face only)

	Total	1. Sourcing	2. Manufactu ring	3. Installation	4. Use	5. End of Life
Primary Energy, Non-renewable [MJ]	265	224	9.12	17.5	11.2	2.58
Primary Energy, Renewable [MJ]	5.48	3.11	1.39	0.29	0.565	0.129
Freshwater Use [kg]	2.79E003	2.14E003	98	175	282	89.5

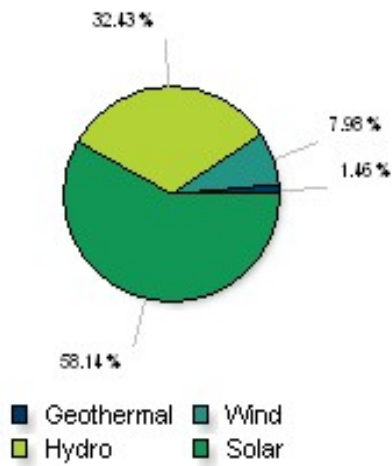




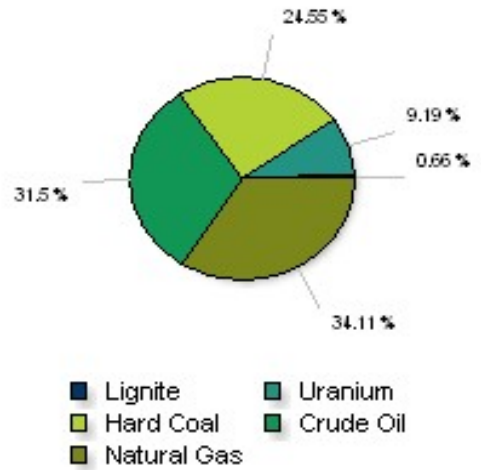
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Renewable Primary Energy



Non-Renewable Primary Energy





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Non-renewable materials for one square meter of carpet for one year

	Min Faceweight (16 oz. yd ²)	Avg Faceweight (30 oz. yd ²)	Max Faceweight (50 oz. yd ²)
Nonrenewable elements	0.0225	0.0326	0.0463
Nonrenewable resources	7.83	9.91	12.7

Non-renewable materials for one square meter of carpet for one year (30 oz. average face only)

	Total	1. Sourcing	2. Manufacturing	3. Installation	4. Use	5. End of Life
Nonrenewable elements	0.0326	0.026	0.000897	0.00198	0.000388	0.00341
Nonrenewable resources	9.91	6.88	0.595	0.667	1.1	0.674

Waste and Output Flows

Additional environmental information is shown below including hazardous, non-hazardous, and radioactive waste disposed.

Wastes for one square meter of carpet for one year

	Min Faceweight (16 oz. yd ²)	Avg Faceweight (30 oz. yd ²)	Max Faceweight (50 oz. yd ²)
Materials for Recovery [kg]	0.125	0.125	0.125
Non-Hazardous Waste [kg]	8.53	11.2	14.7
Radioactive Waste [kg]	0.00309	0.004	0.00521

Wastes for one square meter of carpet for one year (30 oz. average face only)

	Total	1. Sourcing	2. Manufacturing	3. Installation	4. Use	5. End of Life
Hazardous Waste [kg]	3.45E-008	3.45E-008				
Materials for Recovery [kg]	0.125	-9.66E-007	0.125			
Non-Hazardous Waste [kg]	20.5	13	2.51	0.573	1.09	3.34
Radioactive Waste [kg]	0.00555	0.00433	8.4E-005	0.00026	0.000818	5.89E-005





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Life Cycle Impact Assessment

Cradle-to-grave life cycle impact assessment results are shown for both TRACI 2.0 and CML characterization factors. These results are relative expressions and do not predict impacts on category endpoints such as Human Health or Ecosystem Quality, the exceeding of thresholds, safety margins, or risks.

With respect to global warming potential, no credit was given for the sequestration of biogenic carbon during the growth of plants used in plant-derived packaging materials. Any carbon temporarily sequestered during the use of bio-based materials is assumed to be re-released to the atmosphere upon their decomposition. Since the lifetime of plant-derived packaging materials is shorter than the 100 year time horizon of this impact category (GWP 100), biogenic carbon was excluded from the global warming potential calculations.

Life Cycle Impact Assessment: TRACI - 1 year results

	Min Faceweight (16 oz. yd ²)	Avg Faceweight (30 yd ²)	Max Faceweight (50 oz. yd ²)
ADP elements [kg Sb-Equiv.]	1.74E-006	4.29E-006	7.7E-006
ADP fossil [MJ]	124	210	326
AP [kg SO2-Equiv.]	0.0357	0.0483	0.0652
EP [kg N-Equiv.]	0.0191	0.0288	0.0418
GWP [kg CO2-Equiv.]	12.4	17.7	24.8
ODP [kg CFC 11-Equiv.]	1.33E-007	1.33E-007	1.33E-007
POCP [kg O3-Equiv.]	0.479	0.691	0.975

Life Cycle Impact Assessment: TRACI - 60 year results

	Total	1. Sourcing	2. Manufacturing	3. Installation	4. Use	5. End of Life
ADP elements [kg Sb-Equiv.]	4.7E-005	2.9E-005	7.22E-007	9.17E-006	7.9E-006	1.39E-007
ADP fossil [MJ]	1.54E003	881	32.1	67.4	549	10.1
AP [kg SO2-Equiv.]	0.304	0.116	0.00663	0.00962	0.169	0.00273
EP [kg N-Equiv.]	0.127	0.091	0.000797	0.014	0.0203	0.00129
GWP [kg CO2-Equiv.]	104	50.5	2.58	3.76	46.8	0.794
ODP [kg CFC 11-Equiv.]	7.46E-008	2.33E-009	5.69E-008	2.92E-010	1.5E-008	2.89E-011
POCP [kg O3-Equiv.]	3.48	1.95	0.075	0.194	1.21	0.0523





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* The Abiotic Depletion impacts are calculated using CML since they do not exist in TRACI.

TRACI 2.0 impact assessment results for 1 m² of carpet for 1 year use (30 oz. Average face only)

	Total	1. Sourcing	2. Manufacturing	3. Installation	4. Use	5. End of Life
ADP elements [kg Sb-Equiv.]	4.29E-006	1.65E-006	1.81E-007	2.29E-006	1.32E-007	3.41E-008
ADP fossil [MJ]	210	174	8.02	16.8	9.15	2.46
AP [kg SO2-Equiv.]	0.0483	0.0408	0.00166	0.00239	0.00282	0.000667
EP [kg N-Equiv.]	0.0288	0.0245	0.000199	0.00349	0.000339	0.000315
GWP [kg CO2-Equiv.]	17.7	15.1	0.645	0.936	0.78	0.194
ODP [kg CFC 11-Equiv.]	1.33E-007	1.18E-007	1.42E-008	7.3E-011	2.51E-010	7.07E-012
POCP [kg O3-Equiv.]	0.691	0.592	0.0188	0.0479	0.0201	0.0128

TRACI 2.0 impact assessment results for 1 m² of carpet for 60 year use (30 oz. Average face only)

	Total	1. Sourcing	2. Manufacturing	3. Installation	4. Use	5. End of Life
ADP elements [kg Sb-Equiv.]	4.7E-005	2.9E-005	7.22E-007	9.17E-006	7.9E-006	1.39E-007
ADP fossil [MJ]	1.54E003	881	32.1	67.4	549	10.1
AP [kg SO2-Equiv.]	0.304	0.116	0.00663	0.00962	0.169	0.00273
EP [kg N-Equiv.]	0.127	0.091	0.000797	0.014	0.0203	0.00129
GWP [kg CO2-Equiv.]	104	50.5	2.58	3.76	46.8	0.794
ODP [kg CFC 11-Equiv.]	7.46E-008	2.33E-009	5.69E-008	2.92E-010	1.5E-008	2.89E-011
POCP [kg O3-Equiv.]	3.48	1.95	0.075	0.194	1.21	0.0523

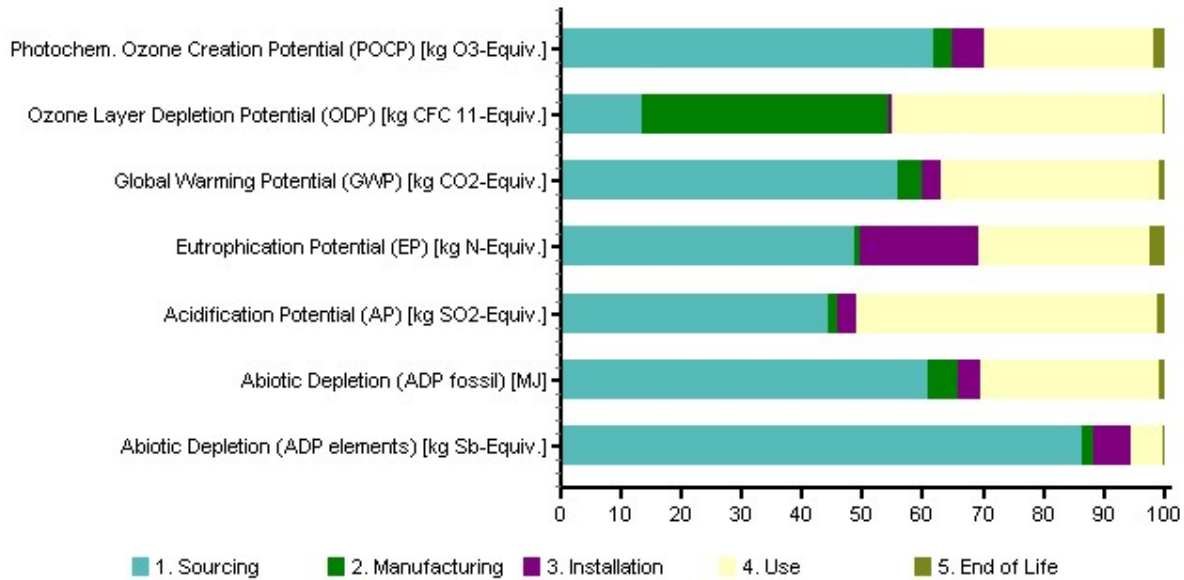




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According to ISO 14025

TRACI impact assessment results for one square meter - 60 year result





Tufted Nylon Broadloom Carpet on Weldlok® Backing
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Life Cycle Impact Assessment: CML 2001 - 1 year results

	Min Faceweight (16 oz. yd ²)	Avg Faceweight (30 oz. yd ²)	Max Faceweight (50 oz. yd ²)
ADP elements [kg Sb-Equiv.]	1.74E-006	4.29E-006	7.7E-006
ADP fossil [MJ]	124	210	326
AP [kg SO2-Equiv.]	0.0348	0.046	0.061
EP [kg Phosphate-Equiv.]	0.00525	0.00711	0.00961
GWP [kg CO2-Equiv.]	12.4	17.7	24.8
ODP [kg R11-Equiv.]	6.65E-006	6.65E-006	6.65E-006
POCP [kg Ethene-Equiv.]	0.0033	0.00471	0.00659

Life Cycle Impact Assessment: CML 2001 - 60 year results Average Weight (30 oz. average face only)

	Total	1. Sourcing	2. Manufacturing	3. Installation	4. Use	5. End of Life
ADP elements [kg Sb-Equiv.]	4.7E-005	2.9E-005	7.22E-007	9.17E-006	7.9E-006	1.39E-007
ADP fossil [MJ]	1.54E003	881	32.1	67.4	549	10.1
AP [kg SO2-Equiv.]	0.303	0.103	0.00674	0.00859	0.182	0.00251
EP [kg Phosphate-Equiv.]	0.0335	0.0157	0.000765	0.00158	0.0127	0.00269
GWP [kg CO2-Equiv.]	104	50.5	2.58	3.76	46.8	0.794
ODP [kg R11-Equiv.]	6.34E-008	2.19E-009	4.68E-008	2.75E-010	1.41E-008	2.72E-011
POCP [kg Ethene-Equiv.]	0.0275	0.0136	0.000579	0.00129	0.0117	0.000306





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CML 2001 – Nov. 2010 impact assessment results for 1 m² of carpet for 1 year use (30 oz. average face only)

	Total	1. Sourcing	2. Manufacturing	3. Installation	4. Use	5. End of Life
ADP elements [kg Sb-Equiv.]	4.29E-006	1.65E-006	1.81E-007	2.29E-006	1.32E-007	3.41E-008
ADP fossil [MJ]	210	174	8.02	16.8	9.15	2.46
AP [kg SO2-Equiv.]	0.046	0.0385	0.00168	0.00213	0.00304	0.000613
EP [kg Phosphate-Equiv.]	0.00711	0.00566	0.000191	0.000392	0.000212	0.000657
GWP [kg CO2-Equiv.]	17.7	15.1	0.645	0.936	0.78	0.194
ODP [kg R11-Equiv.]	6.65E-006	6.64E-006	1.17E-008	6.86E-011	2.36E-010	6.65E-012
POCP [kg Ethene-Equiv.]	0.00471	0.00397	0.000145	0.000322	0.000196	7.49E-005

CML 2001 – Nov. 2010 impact assessment results for 1 m² of carpet for 60 year use (30.oz. average face only)

	Total	1. Sourcing	2. Manufacturing	3. Installation	4. Use	5. End of Life
ADP elements [kg Sb-Equiv.]	4.7E-005	2.9E-005	7.22E-007	9.17E-006	7.9E-006	1.39E-007
ADP fossil [MJ]	1.54E003	881	32.1	67.4	549	10.1
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EP [kg Phosphate-Equiv.]	0.0335	0.0157	0.000765	0.00158	0.0127	0.00269
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POCP [kg Ethene-Equiv.]	0.0275	0.0136	0.000579	0.00129	0.0117	0.000306

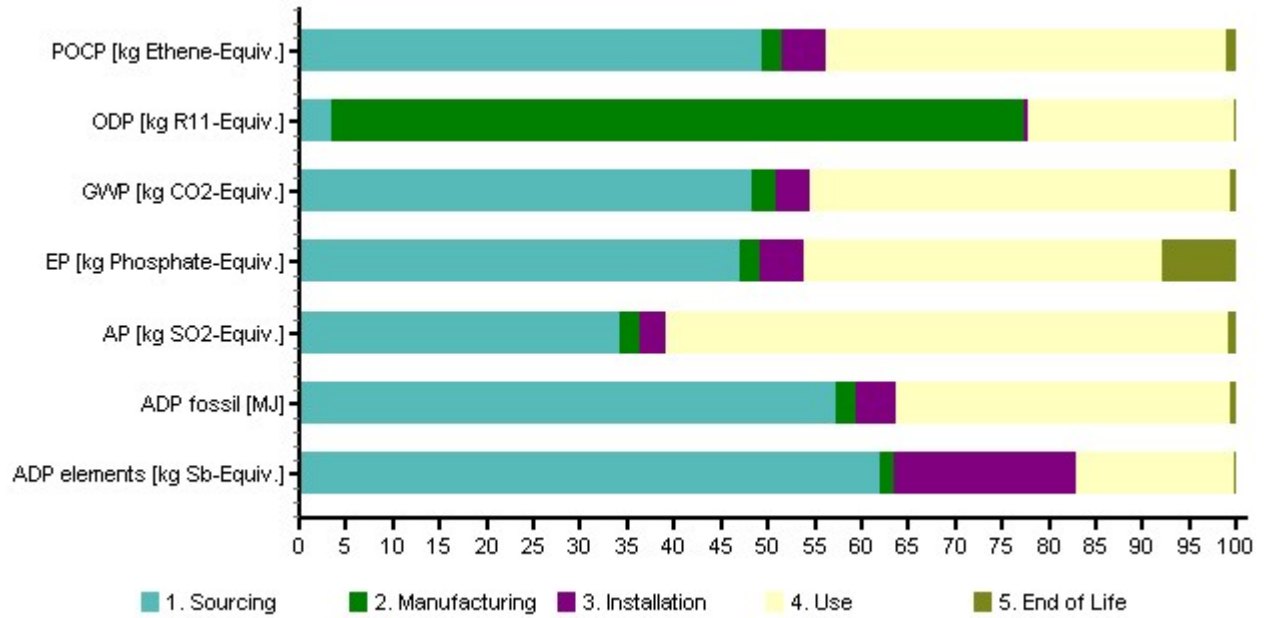




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CML 2001 impact assessment results for 60-year use (30 oz. average face only)





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Interpretation

When considering a 60 year product life, raw materials production and recommended maintenance are the two largest contributors in each impact category considered. The production of raw materials represents a substantial fraction of the life cycle impacts, even over the life of a building. Within the raw materials, nylon face fiber has the largest contribution to the environmental impacts, even in the low face weight scenario. In all categories considered, nylon has greater impact than all the other materials combined. Manufacturing is a smaller contributor but represents at least 10% of the total life cycle in five of the seven impact categories evaluated.

Inventory data quality is judged by its precision (measured, calculated or estimated), completeness (e.g., unreported emissions), consistency (degree of uniformity of the methodology applied on a study serving as a data source) and representativeness (geographical, temporal, and technological).

To cover these requirements and to ensure reliable results, first-hand industry data in combination with literature and background LCA information from the GaBi 2013 database were used. The LCI data sets from the GaBi 2013 database are widely distributed and used with the GaBi 6 Software. The datasets have been used in LCA models worldwide in industrial and scientific applications in internal as well as in many critically reviewed and published studies. In the process of providing these datasets they are cross-checked with other databases and values from industry and science.

Additional Information

Sustainability is a core value for Mohawk Industries. Our culture drives us to seek innovation and efficiency throughout the life cycle of our product, thus reducing our consumption of water, energy and raw materials, which allows us to reduce the environmental impacts on both our local community and the globe. Mohawk also has the most diverse recycling program in the industry, and more than 3 billion pounds of recycled materials are used in our manufacturing operations annually. Mohawk is a vertically integrated company and manufactures carpet backing, fiber and cushion. Our backing division incorporated 3.3 million lbs. of soda bottle caps into our primary and secondary carpet backings in 2012. This process diverted the postconsumer bottle caps from landfills, which reduced the demand on irreplaceable raw materials. Mohawk also diverted 23 million lbs. of used tires from the landfill by incorporating the rubber into door mats in 2012. Mohawk carpet cushions contain 90% or more recycled content. Mohawk has over 500 products that contain recycled content and over 300 products that are NSF 140 certified.

Emissions

The emissions of all of our carpets, cushions and adhesives are tested at UL Environment and are certified by the Carpet and Rug Institute's Green Label Plus Program. The cushion is certified by the Carpet and Rug Institute's Green Label Program. The testing protocol complies with California Department of Public Health Version 1.1 2010 and California 01350. Adhesives meet the requirement of the South Coast Air Quality Management District - Rule 1168.



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GaBI 6 software for Life Cycle Analysis

ISO 14001:2004, the International Standard of the International Standardization Organization, Environmental Management Systems-Requirements with Guidance

ISO 14025:2006, the International organization for Standardization, Environmental Labels and Declarations-Type III Environmental Declarations- Principles and Procedures, Edition 1

ISO 14040:2006, the International Standard of the International Standardization Organization, Environmental Management- Life Cycle Assessment-Principles and Framework

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Mohawk Group Website: www.mohawkgroup.com

NSF/ANSI 140 Sustainability Assessment for Carpet

PCR-Floor Coverings, Environmental Product Declarations, *Harmonized Rules for Textiles, Laminate and Resilient Floor Coverings*, IBU Institut fur Bauen and Umwelt 2008

Product Category Rules for Environmental Product Declarations, *Flooring: Carpet, Resilient, Laminate, Ceramic, Wood*, NSF International, National Center for Sustainability Standards, valid through May 22, 2017

South Coast Air Quality Management District, Rule 1168, Adhesives and Sealants Applications

Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers 1.1, Indoor Air Quality Section, Environmental Health Laboratory Branch, Division of Environmental and Occupational Disease Control, California Department of Public Health February 2010 also known as California 01350

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