

ENVIRONMENTAL PRODUCT DECLARATION

SOLUTION DYED NYLON TYPE 6 AQUAFIL ECONYL® CARPET TILE

B2 BACKING



Milliken™

“At Milliken, sustainability is core to our culture. We believe a healthy enterprise and healthy earth are vitally linked. We care about and respect each other, our customers, and the world we share. While we hold ourselves accountable to the highest ethical standards, we derive our greatest satisfaction from creating innovations that help solve the world’s problems at a human level – adding value to people’s lives, improving health and safety, and making this world sustainable.”

Our products are scrutinized using Life Cycle Analysis before they make it past the drawing board. All Milliken products, globally, are third party certified carbon neutral using the Leonardo Academy’s “Cleaner and Greener” certification.

Four decades of worldwide site based environmental management systems guarantee that we remain beyond compliance for safety and environmental impacts. All U.S. manufacturing facilities are certified as OSHA VPP STAR and ISO-14001 compliant.

For more information visit
www.milliken.com



ENVIRONMENTAL PRODUCT DECLARATION



Milliken Carpet MTZ

Aquafil Econyl® Solution Dyed, Nylon Type 6, B2 Backed Carpet Tile

According to ISO 14025

This declaration is an environmental product declaration in accordance with ISO 14025 that describes the environmental characteristics of the aforementioned product. It promotes the development and use of sustainable products. This is a certified declaration and all relevant environmental information is disclosed.



PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	Milliken
DECLARATION NUMBER	4786677553.103.1
DECLARED PRODUCT	Solution Dyed Nylon Type 6 B2 Backed Carpet Tile, manufactured by Milliken in Milliken textile(Zhangjiagang) Co., Ltd(MTZ)
REFERENCE PCR	IBU PCR Environmental Product Declarations Harmonised Rules for Textile, Laminate and Resilient Floor Coverings
DATE OF ISSUE	April 1, 2016
PERIOD OF VALIDITY	5 Years

CONTENTS OF THE DECLARATION	<ul style="list-style-type: none"> 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:	Insitut Bauen und Umwelt e.V
	Accepted by the Advisory board
	Rheinufer 108 53639 Königswinter Germany info@bau-umwelt.com

This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	
	Wade Stout

This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	
	Thomas Gloria, Ph.D., Industrial Ecology Consultants LCACP ID: 2008-03





Milliken Carpet MTZ
 Aquafil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Product Description

Product Classification and Description

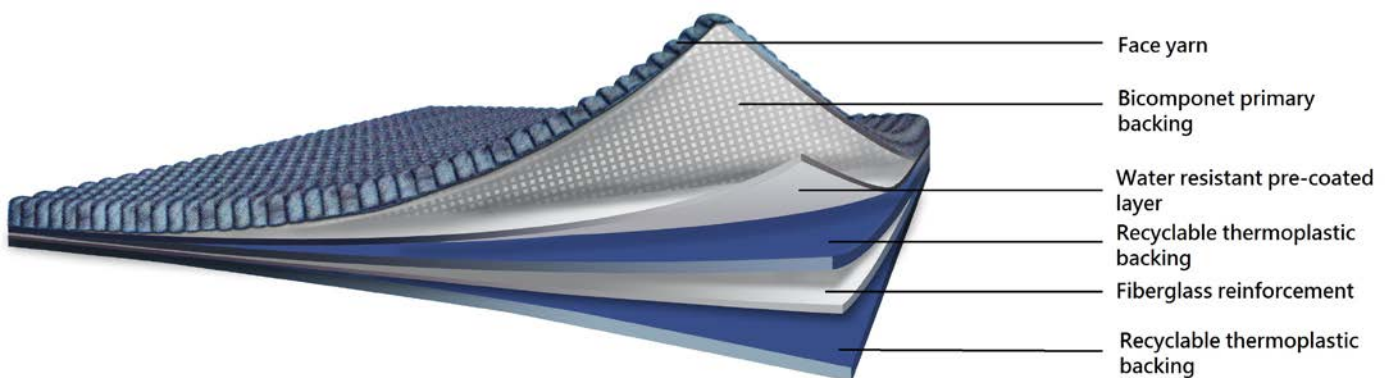
Aquafil Econyl® Solution Dyed Nylon 6 B2 Backed Carpet Tile is the family of carpet tiles included in this Environmental Product Declaration (EPD). This carpet tile family includes a Aquafil Econyl® solution dyed nylon 6 tufted face fiber. Backing of B2 is primarily polypropylene. The weight range of this carpet family is ±1%. This EPD represents an average performance.

This EPD includes a broad range of face fiber colors and patterns all with Aquafil Econyl® Nylon 6 yarn and similar backing. The variation within this product group is in the face yarn style.

Layer	Component	Material	Weight (oz. / yd ²)	Weight (kg / m ²)
Face yarn	Yarn	Aquafil Econyl® Solution Dyed Nylon 6 fibers	20.0	0.68
Primary backing	Non-woven Layer	Non-woven polypropylene and post-industrial recycled PET	3.69	0.12
Water resistant pre-coated layer	Precoat	Polyolefin, hydrocarbon resin and Calcium Carbonate	24.99	0.85
Fiberglass Layer	Stabilization Layer	Non-woven fiberglass mat with acrylic binder	1.03	0.03
Recyclable thermoplastic backing	backing	Hardback consisting of polypropylene homopolymer and Calcium Carbonate	60.19	2.04

Table 1: Product Construction details

Figure 1: Product Construction image





Milliken Carpet MTZ
 Aquafil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Range of Applications

Milliken B2 Back Carpet Tile is intended for heavy or severe traffic use in commercial buildings using test method ASTM D5252 and ASTM D7330.

Name	Value	Unit
Type of manufacture	Tufted loop, tufted cut and loop, tufted tip sheared or tufted cut pile	-
Yarn type	Aquafil Econyl® Nylon 6	-
Pile fibre composition	100	%
Total thickness	6.9 – 10.7	mm
Total carpet weight	3021 – 4205	g/m ²
Surface pile weight	336 – 1120	g/m ²
Secondary backing	136	g/m ²

Table 2: Constructional Data

Product Standards and Approvals

Fire/ Static

Radiant Panel:	ASTM-E-648	>= 0.45 (Class 1)
Smoke Density:	ASTM-E-662	<= 450
Methenamine Pill Test:	ASTM-D-2859	Self-Extinguishing
Static Electricity:	AATCC-134	<= 3.5KW, Permanent Conductive Fibers

Appearance

Atmospheric Fading	AATCC 129 & 164	>= 4.5
Light Fastness:	AATCC 16 E	>= 4.0 at 80 hrs.
Crocking:	AATCC 165	>= 4.0 wet or dry
Dimensional Stability:	DIN Std 54318/ ASTM 7570/ISO 2551	<= 0.2%

Installed Water Resistance

Milliken warrants that the modular carpet will resist moisture penetration during the lifetime of the modular carpet. This warranty does not include moisture penetration at the seams of modular carpet.

Mechanical Resistance

This family of carpets is designed for commercial buildings similar to CRI Test Method 101 (Assessment of Carpet Surface Appearance Change). All of Milliken carpet on B2 has either a Heavy or Severe Use Rating.





Milliken Carpet MTZ
 Aquafil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Accreditations

- ISO 14001 Environmental Management System
- ISO 9001 Quality Management System
- OSHA VPP STAR Certified
- Carpet and Rug Institute (CRI) Green Label Plus Certification



Delivery Status

Delivery Status	
Type of construction	Tufted textured loop, tufted cut and loop, tufted tip sheared, or tufted cut pile
Pile fiber	Aquafil Econyl® solution dyed nylon 6
Primary backing	Polypropylene and post-industrial polyethylene terephthalate
Precoat	Polyolefin, calcium carbonate and fiberglass
Face fiber weight	20oz/sy or 0.70 kg/m ²
Total carpet weight	109.9oz/sy or 3.73 kg/m ²

Table 3: Delivery Status

Material Content

Material Content of the Product

Material Content of Product					
Layers	Component	Material	Availability	Percent of total carpet mass, %	Origin
Face fiber	Yarn	Recycled Econyl® Nylon 6	Fossil resource, limited	19%	China
Primary layer	Nonwoven layer	Polypropylene	Fossil resource, limited	3%	US
		Polyethylene terephthalate	Post-industrial recycled source, abundant	1%	Taiwan
Primary coating	Precoat	Predominantly amorphous polyolefin	Fossil resource, limited	11.2%	Germany
		Calcium carbonate	Mineral ore, abundant	11.5%	China
Stabilization Layer	Fiberglass	Glass/mineral fiber	Fossil resource, limited	1%	US
Secondary layer	Hardback	Polypropylene	Fossil resource, limited	15.8%	US
		Calcium carbonate	Mineral ore, abundant	38.9%	China

Table 4: Product Content





Milliken Carpet MTZ
 Aquafil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Production of Main Materials

Description	Primary Materials	Production
Face Fabric	Aquafil Econyl® Nylon Type 6 (Post-industrial/PostConsumer content)	Synthetic fiber material which is a polymerization of the Caprolactam monomer to Nylon 6, this synthetic material is extruded into fiber and twisted into bundles of fibers to form yarns.. Post-consumer and post-industrial material is shaved from the face of used carpet, depolymerized and made back into Nylon 6 fiber.
Primary Backing/Substrate	Polyethylene terephthalate	Also known as Polyester, this is a synthetic fiber made of a copolymer of ethylene and terephthalic acid. The recycled fiber is often extruded from post-consumer plastic bottles. This fiber is made into a fabric form and might be woven, spun bonded, or needle punched.
Primary Backing/Substrate	Recycled polyethylene terephthalate	Post-industrial collection and processing for use in extrusion of fibers
Primary and Backing Adhesive	Polypropylene	Adhesive component or synthetic fiber material made of a polymer from propylene monomer supplied from a refinery, this material is made into a fabric form and might be woven, spun bonded, or needle punched
Fiberglass	Silica	Mineral resource produced by fusion of sand and other silicate fillers.
Backing Component	Calcium carbonate	Mined and prepared for use directly from limestone deposits

Table 5: Production of main materials details

Production of the Floor Covering

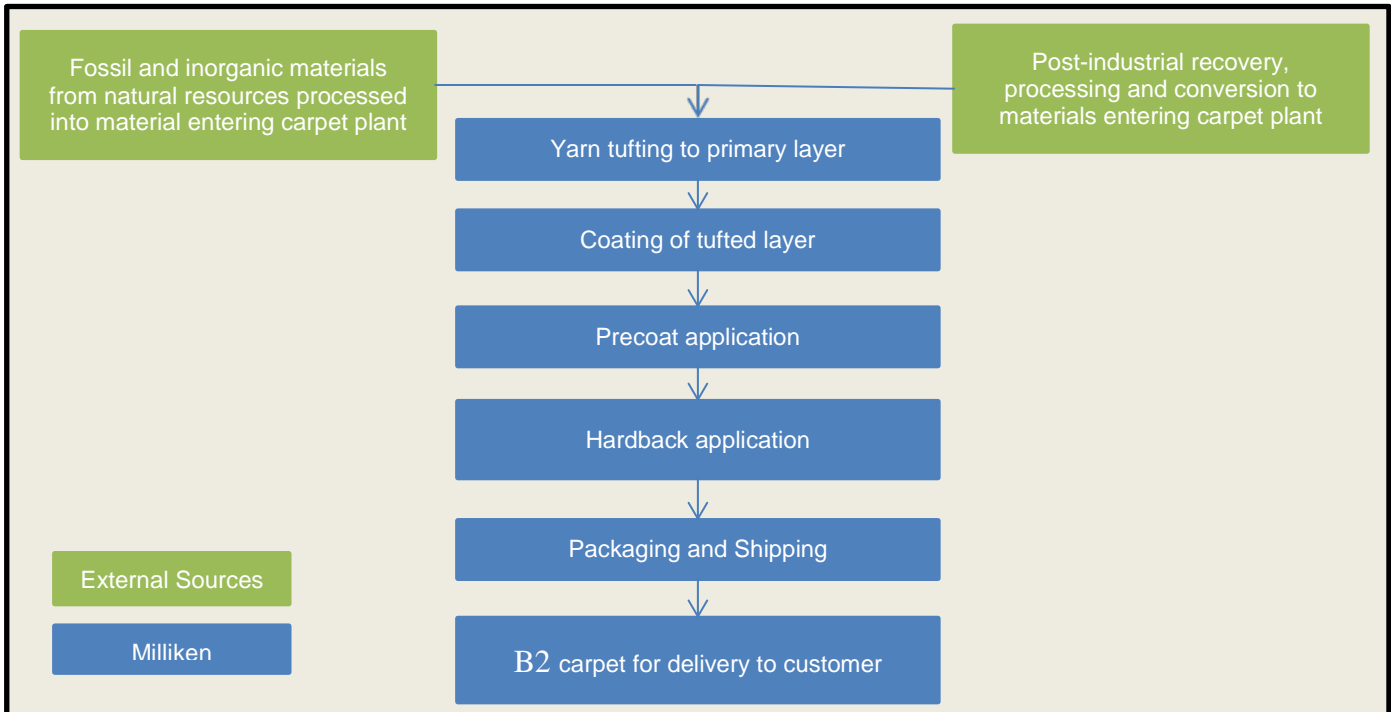


Figure 2: Production Process





Milliken Carpet MTZ
Aquafile Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Health, Safety, and Environmental Aspects during Production

- ISO 14001 Certified
- Milliken Safety Way™ Compliant

Milliken has recycling programs set up for all recyclable waste streams and zero waste is sent to the landfill during our manufacturing process. The waste that cannot be recycled is used to make energy in certified Energy from Waste facilities. These certified facilities help reduce greenhouse gas emissions that would otherwise be created by landfills.

We minimize waste in our processes everywhere possible. We have reduced packaging waste by minimizing the amount of carpet we ship in individual boxes. We are able to reduce our manufacturing waste by monitoring our waste streams using six sigma statistical process control methodologies.

Delivery and Installation of the Floor Covering

Delivery

Ocean freight and truck transport of the carpet is the dominant means of delivery. For the life cycle inventory, a truck is used with 50% utilization of payload.

Installation

Except where exceed or modified by Milliken Carpet Installation Instructions, Milliken recognizes the CRI Carpet Installation Standard 2011 as the minimum acceptable standard for the installation of its carpet products, for more information, visit our website, www.millikencarpet.com.

Adhesive: Milliken modular carpet is designed for installation without permanent adhesives. This allows easy removal and reinstallation. Milliken recommends TractionBack® for all carpet tiles adhesive. If TractionBack® is not available; Milliken recommends Milliken Modular Carpet Adhesive 100V and Milliken Modular Carpet Spray Adhesive.

Health, Safety and Environmental Aspects during Installation

As a first preference, Milliken strongly recommends the use of a Milliken Certified installation Contractor to install our products. As an alternative source, Floor Covering Installation Board (FCIB) certified contractors as well as companies that document they employ installers certified at the C-2 level or higher by the International Certified Floor Covering Installers Associations (CFI) are also recognized as viable sources of quality installations.

Installation Waste

Excess carpet from installation is preferred to be recycled through Milliken Landfill Diversion Program. This program is accessed from our website. (www.millikencarpet.com/LandfillDiversion).

Packaging

Carpet tiles are in industrial cardboard boxes. Cardboard can be recycled at high rates and so no life cycle inventory values are used herein as the credit for this goes to the recycled product, as standard life cycle practice.



Milliken Carpet MTZ
Aquaflil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Use Stage

This is built to serve as a viable floor covering for the warranty life of the lifetime of the carpet. "Lifetime" is defined as the period of time that the original purchaser of the carpet chooses to keep the carpet on the floor at the original installation site. To include the use phase, one year of service life is used. The user may scale up the service life to meet their requirements.

Cleaning and Maintenance

The maintenance of carpet is evaluated for commercial buildings in which three representative use intensity segments of the building are established; low, medium, and high.

1. Low Use – individual offices and low traffic corridors, etc.
2. Medium Use – conference rooms, secondary corridors and
3. High Use - entry areas, lobbies, elevator cabs and high traffic corridors

Cleaning is more frequent in areas with greater use. The cleaning includes both routine vacuuming and deep cleaning with different annual frequencies assigned to both. Deep cleaning is less frequent and more intense. The use of chemicals/water and the energies for vacuuming and deep cleaning were developed from the typical equipment used. This was done for a) hot water extraction (HWE) cleaning and b) low moisture encapsulation (LM).

Prevention of Structural Damage

Milliken recognizes the CRI Carpet Installation Standard 2011 as the minimum acceptable standard for the installation of its carpet products. Milliken flooring products should not be installed until any and all structural damage has been adequately repaired and determined to be code compliant.

For more information on floor preparation and installation instruction, visit our website, www.millikencarpet.com.

Health Aspects During Usage

Conforms to CRI Green Label Plus indoor air quality testing program.

<http://www.carpet-rug.org/commercialcustomers/green-building-and-the-environment/green-label-plus/carpet-and-adhesive>

End-of-Life

Recycling or Reuse

Landfill Diversion Program: The B2 families of carpets are designed to achieve Milliken's commitment to enhance recycle and reuse. After removal from a commercial building, the carpet should be entered into the Milliken Landfill Diversion program (www.millikencarpet.com/LandfillDiversion). If landfill diversion is not a feasible option, then disposal in municipal landfill should follow local regulations. Similar regulations governing incineration facilities should be followed if this technology is selected.

Disposal

Milliken recommends the use of our Landfill Diversion Program as the proper disposal method for all carpet products.



Milliken Carpet MTZ
 Aquafil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Life Cycle Assessment

The following environmental data are the result of an ISO14040 compliant cradle-to-grave life cycle assessment (LCA). As is required for public disclosure, the LCA was peer reviewed by external third parties.

Description of the Declared or Functional Unit

To serve as an effective unit for users of the B2 Back carpet tile, the basis of the life cycle information is one square meter of carpet in a commercial building. To include the use phase, one year of reference service life(RSL) is used. The user may scale up the service life to meet their requirements.

Name	Value	Unit
Declare Unit	1	m ²
Conversion factor to 1 kg (B2)	3.61	kg/m ²

Table 6: Declared unit conversion

Cut-off Criteria

Excluded materials met the following criteria:

- Less than 1% of total mass of the final product
- Less than 1% of total energy flows
- Total excluded materials must not exceed 5% of final product.

Materials that fell below the stated 1% thresholds were also evaluated to ensure they did not contribute disproportionately high environmental impacts.

Allocation

Background data used in the LCA model may contain some allocation. Gate-to-gate Primary manufacturing data for Milliken carpet production was not allocated.

Assumptions include:

1. Energy and material inputs imbedded in GaBi datasets are assumed to be representative of Milliken & Company/MTZ suppliers.
2. All carpet at End of life is assumed to be disposed of in landfill.
3. Where Chinese specific data was not available best available geographical substitution was used. Model assumes that best available geographical substitution is an appropriate substitution.

Background Data

The LCA was modeled using the GaBi 6 software platform. Life cycle inventory background data was typically sourced from PE International datasets, although some data from Plastics Europe and the USLCI databases were utilized when the PE datasets were either not available or less representative of actual conditions.





Milliken Carpet MTZ
 Aquafil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Data Quality

Time Related Coverage: All gate-to-gate manufacturing data was sourced from Milliken’s most recent fiscal year. The time coverage of background data is adopted from the specific datasets utilized in the model. No background data is more than 10 years old.

Geographical Coverage: All gate-to-gate manufacturing data are specific to Milliken locations within the US and/or China. For background data, domestic data was preferred. In absence of domestic specific data required some international data was utilized.

Technology coverage: Gate-to-gate data represents Milliken specific processes and technologies. Technological coverage related to cradle-to-gate processes is specific to the GaBi datasets. These datasets were evaluated and found to be representative of the technology used within Milliken’s supply chain.

System Boundaries

The LCA of 1 m² of Milliken carpet includes:

In Table 7 "Description of the system boundary", all declared modules shall be indicated with an "X"; all modules that are not declared shall be indicated with "MND".

Modules A1-A3 have been aggregated as allowed in section 6.2 of EN15804. These modules include the energy supply and production of the basic material, processing of secondary material, transport of the material to the manufacturing site, manufacturing wastewater treatment, packaging material and waste processing up to the landfill.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)																				
PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS				
supply	Transport	Manufacturing	the gate to the site	Assembly	Use	Maintenance	Repair	Replacement ¹⁾	Refurbishment ¹⁾	Operational energy use	Operational water use	De-construction	demolition	Transport	waste processing	Disposal	Reuse-	Recovery-	Recycling-	potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D				
X	X	X	X	X	MND	X	MND	MND	MND	MND	MND	MND	MND	X	MND	X				

Table 7: Description of the system boundary

Notes on use stage

Carpet manufactured by Milliken carries a limited lifetime warranty. While the actual life time of the carpet is related to several factors, including changing style preference and building traffic, Milliken has adopted a 15-year service life in the LCA model. Results are presented for a single year of use.





Milliken Carpet MTZ
 Aquafil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Results of the Assessment

In the multi stage system for the life cycle of the family of B2 tile carpets, the natural resource energy is given in Table 8.

	Value	Unit
Liters of fuel	.001	l/100 km
Transport distance	937	km
Capacity utilization (including empty runs)	.85	%
Gross density of products transported	3.61	kg/m ³
Capacity utilization volume factor	100	%

Table 8: Transport to the construction site (A4)

LCA Scenarios and Additional Technical Information

The following technical information in Table 9 and Table 10, is a basis for the declared modules.

Name	Value	Unit
Auxiliary	0.1	Kg/m ²
Water consumption	0	m ³ /m ²
Electricity consumption	0	kWh/m ²
Other energy carriers	0	MJ/m ²
Material loss	0.05	m ² /m ²
Output substances following waste treatment on site	0.05	Kg/m ²
Dust in the air	0	Kg/m ²

Table 9: Installation in the building (A5)

Name	Value	Unit
Information on maintenance		-
Maintenance cycle (Vacuum)	208	Per Year
Maintenance Cycle (Extraction Cleaning)	1.5	Per Year
Water consumption	0.003	m ³ /m ²
Auxiliary	0.06	Kg/m ²
Electricity consumption	0.312	KWh/yr
Other energy carriers	0	MJ/m ²
Material loss	0	Kg/m ²

Table 10: Maintenance (B2)





Milliken Carpet MTZ
 Aquafil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Name	Value	Unit
Reference Service Life	1 year	a

Table 11: Reference Service Life

Life Cycle Inventory Analysis

Results are uniformly provided in units of natural resource energy (MJ/m² carpet). The natural resource energy is calculated from the process energy of each manufacturing plant by first including the high heat value (HHV) of fuel combusted per unit of energy transferred to the process (efficiency) plus secondly the energy used to deliver fuel to the point of use in the energy production plant (often known as pre-combustion or delivered energy).

Life Cycle Impact Assessment

Translating the life cycle inventory data into life cycle impact categories provides additional information for the family of B2 carpet tiles. As found with the life cycle inventory, the substantial majority of these environmental impacts are attributable to the supply chain and manufacturing of these carpets.

The following tables 12, 13 and 14 represents the LCIA results from 1m² of product.

Results of the LCA – Environmental Impact - Medium Weight Product (20oz)									
	Impact category	Units	Total	Product Stage (A1-A3)	Construction Stage (A4)	Installation (A5)	Maintenance (B2)	End of Life Stage (C2)	End of Life Stage (C4)
ADPE	Abiotic depletion potential for non-fossil resources	kg Sb Eq.	8.92E-06	8.19E-06	7.83E-09	6.51E-07	8.84E-09	8.35E-10	6.64E-08
ADPF	Abiotic depletion potential for fossil resources	MJ	1.67E+02	1.33E+02	2.97E+00	2.48E+01	3.14E+00	3.17E-01	2.59E+00
AP	Acidification potential of land and water	kg SO ₂ -Eq.	5.31E-02	4.50E-02	1.34E-03	1.58E-03	2.08E-03	1.43E-04	2.96E-03
EP	Eutrophication Potential	Kg (PO ₄) ₃ -Eq.	8.13E-03	5.94E-03	3.13E-04	2.20E-04	2.42E-04	3.34E-05	1.38E-03
GWP	Global Warming Potential	Kg CO ₂ -Eq.	9.14E+00	7.41E+00	2.15E-01	1.02E+00	3.03E-01	2.30E-02	1.69E-01
ODP	Depletion potential of the Stratospheric Ozone Layer	Kg CFC11-Eq.	2.65E-08	2.65E-08	2.21E-14	3.80E-11	2.11E-13	2.36E-15	3.54E-12
POCP	Formation potential of Tropospheric Ozone Photochemical Oxidants	Kg Ethene Eq.	5.35E-03	4.04E-03	-5.49E-04	2.97E-04	1.66E-04	-5.86E-05	1.45E-03

Table 12: Life cycle impact category results for Econyl® Solution Dyed Nylon 6 B2 Backing Carpet Tile, 20oz





Milliken Carpet MTZ
Aquafile Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Results of the LCA – Resource Use -Medium Weight Product (20oz)									
	Impact category	Units	Total	Product Stage (A1-A3)	Construction Stage (A4)	Installation (A5)	Maintenance (B2)	End of Life Stage (C2)	End of Life Stage (C4)
PERE	Renewable primary energy as energy carrier	MJ	6.65E+00	6.01E+00	5.45E-03	2.21E-01	2.94E-01	5.82E-04	1.24E-01
PERM	Renewable primary resources as material utilization	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	Total use of renewable primary energy resources	MJ	6.65E+00	6.01E+00	5.45E-03	2.21E-01	2.94E-01	5.82E-04	1.24E-01
PENRE	Non-renewable primary energy as energy carrier	MJ	1.71E+02	1.37E+02	2.98E+00	2.52E+01	3.21E+00	3.17E-01	2.68E+00
PENRM	Non-renewable primary energy as material utilization	MJ	3.75E-05	3.75E-05	2.04E-14	1.59E-11	9.49E-13	2.18E-15	6.39E-12
PENRT	Total use of non-renewable primary energy resources	MJ	1.71E+02	1.37E+02	2.98E+00	2.52E+01	3.21E+00	3.17E-01	2.68E+00
SM	Use of secondary material	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of net fresh water	MJ	2.78E+00	2.39E+00	4.26E-03	1.05E-01	1.95E-01	4.55E-04	8.04E-02

Table 13: Results of the LCA-Resource use

Results of the LCA – Output Flows and Waste Categories - Medium Weight Product (20oz)									
	Impact category	Units	Total	Product Stage (A1-A3)	Construction Stage (A4)	Installation (A5)	Maintenance (B2)	End of Life Stage (C2)	End of Life Stage (C4)
HWD	Hazardous waste disposed	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NHWD	Non-hazardous waste disposed	Kg	1.00E+01	5.56E+00	4.91E-03	3.67E-01	2.28E-01	5.24E-04	3.93E+00
RWD	Radioactive waste disposed	Kg	1.61E-03	1.41E-03	5.55E-07	1.45E-04	2.48E-05	5.92E-08	3.32E-05
CRI	Components for reuse	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	Materials for recycling	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	Materials for energy recovery	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	Exported electrical Energy	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	Exported Thermal Energy	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 14: Results of the LCA – Output Flows and Waste Categories





Milliken Carpet MTZ

Aquafil Econyl® Solution Dyed, Nylon Type 6 B2 Backed Carpet Tile

According to ISO 14025

Interpretation

The use of energy in the supply chain and the carpet manufacturing plant to produce the B2 family of floor coverings is the dominant contributor to the life cycle energy and impacts. Generally, the supply chain and manufacture phase comprise about 98% of the environmental footprint of these carpets. The use phase is the second largest impact stage and is evaluated for a one year period, since the actual frequency of replacement is unknown. Because of the polymeric nature of the carpet composition, the end-of-life impact is negligible, except for the consumption of landfill volume. As recycling of carpet grows (based on the Milliken Landfill Diversion Program), the contribution to landfill volume will decrease even further.

The information in the EPD is provided to demonstrate that Milliken has a commitment to understand the complete life cycle of the B2 family of products for our customers. That understanding is the mechanism by which Milliken will continue to improve the sustainability of these products for our customers.

Additional Information, Evidence, and Test Results

- Carbon Neutral Certified – Leonardo Academy
- Carpet and Rug Institute (CRI) Green Label Plus & Green Label Certified

References

ISO 14025 Environmental labels and declarations-Type III Environmental Declarations –Principals and Procedures

ISO 14040 Life Cycle Assessment- Principles and Framework

ISO 14044 Life Cycle Assessment- Requirements and Guidelines

ISO 21930 Sustainability in Building Construction-Environmental Declaration of Building Products

This study and the results were directed by the ISO14044, EN15804 and the PCR Guidance-Texts for Building-Related Products, Part A: Calculation Rules for the LCA and Requirements Project Report, Part B: Requirements on the EPD for Floor Coverings and Services from the Institute Construction and Environment e.V (IBU) .

This study represents a full cradle to grave study as defined by EN15804 and is a declaration of a specific product from a manufacturer's plant.