ENVIRONMENTAL PRODUCT DECLARATION

# HERO QUIETSOUND UNDERLAYMENT

MOHAWK GROUP
RUBBER UNDERLAYMENT



Hero QuietSound
Hero Rubber QuietSound Underlayment is a resilient rubber underlayment designed to support Hero Rubber made with Nike Grind when a project calls for added sound reduction and comfort.

Mohawk Group

Sustainability is a core value for Mohawk. In addition to being the largest flooring manufacturer in the world, 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 products, thus reducing our consumption of water, energy, and raw materials. Mohawk also has the most diverse recycling programs in the industry. At Mohawk Group, we believe in better. And better for our world means being part of the climate change solution through decarbonization of our products. So, we're taking used shoes and recycling them into rubber flooring, to build a regenerative, climate-positive future to create a better tomorrow for people and the planet. Through third-party verification, Mohawk embraces transparency for the benefit of both itself and its customer.

For more information visit:
Mohawkgroup.com

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# ENVIRONMENTAL PRODUCT DECLARATION

Hero QuietSound Underlayment
Rubber Underlayment

According to ISO 14025
and ISO 21930:2017

| | |
|---|---|
| EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE | UL Solutions<br>333 Pfingsten Rd, Northbrook, IL 60062<br>www.ul.com \| www.spot.ul.com |
| General Program Instructions and Version Number | UL Solutions Program Operator Rules v2.7, 2022 |
| Manufacturer Name and Address | Mohawk Industries, Inc.<br>160 Industrial Blvd., Calhoun, GA 30701 |
| Declaration Number | 4792383738.102.1 |
| Declared Product & Functional Unit or Declared Unit | QuietSound<br>Functional Unit = 1 $m^2$ |
| Reference PCR and Version Number | PCR for Building-Related Products and Services, Part A: Life Cycle Assessment Calculation Rules and Report Requirements, UL 10010, Version 4.0, March 2022; Part B: Flooring EPD Requirements, UL 10010-7, Version 2.0, September 2018 |
| Description of product application/use | Rubber Underlayment |
| Product RSL Description (if Appl.) | 30 Years |
| Markets of Applicability | North America |
| Date of Issue | November 9, 2026 |
| Period of Validity | 5 Years |
| EPD Type | Product-specific |
| Range of Dataset Variability | N/A |
| EPD Scope | Cradle to Grave |
| Year(s) of reported primary data | 2025 |
| LCA Software & Version Number | LCA FE 2026.1 |
| LCI Database(s) & Version Number | LCA FE 2026.1 |
| LCIA Methodology & Version Number | TRACI 2.2 |

| | |
|---|---|
| The PCR review was conducted by: | UL Solutions<br>PCR Review Panel<br>pcr@ul.com |
| This declaration was independently verified in accordance with ISO 14025: 2006.<br>☐ INTERNAL ☒ EXTERNAL | Cooper McCollum, UL Solutions |
| This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by: | Melissa North, Mohawk Industries |
| This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by: | Kun Chen, UL Solutions |

LIMITATIONS

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; the level of accuracy in estimation of effect differs for any particular product line and reported impact.

Comparability: EPDs from different programs may not be comparable. Full conformance with a PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to different results for upstream or downstream of the life cycle stages declared.

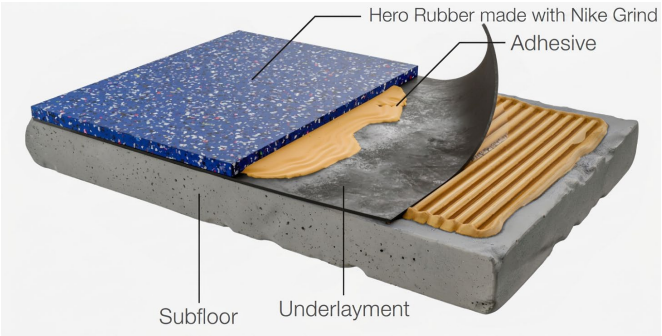
# 1. Product Definition and Information

## 1.1 Description of Company/Organization

Mohawk is the leading manufacturer of carpet, wood, laminate, and luxury vinyl flooring that began in 1878. Mohawk is committed to growing in ways that are environmentally sound, socially responsible, and make sense to their stakeholders. The Mohawk Group strives to design and manufacture innovative products with reduced environmental and social impacts. As part of the world's largest flooring manufacturer, Mohawk feels a profound sense of responsibility to advance their shared mission of a more sustainable future.

## 1.2 Product Description

**Product Identification**




Mohawk's Hero QuietSound is a resilient rubber underlayment engineered to work beneath Hero Rubber made with Nike Grind in commercial environments that demand sound reduction, comfort underfoot, minor subfloor correction, and high-impact durability. QuietSound supports rubber flooring from below and protects performance at every level.

This study covers the 8mm Hero QuietSound underlayment. Hero rubber flooring is designed for high-energy spaces such as workplaces, schools, healthcare, hospitality, retail, and fitness.

**Product Specification**

This product is covered by UNSPSC code 30161700 and CSI MasterFormat code 09 65 00 – Homogeneous Resilient Flooring.

Comparison of the environmental performance of construction works and construction products using EPD information shall be based on the product's use and impacts at the construction works level. In general, EPDs may not be used for comparability purposes when not considered in a construction works context. Given this PCR ensures products meet the same functional requirements, comparability is permissible provided the information given for such comparison is transparent and the limitations of comparability are explained.

## 1.3 Application

Hero Rubber QuietSound underlayment is ideal when a project calls for added support beneath Hero Rubber made with Nike Grind, especially in spaces where sound reduction, comfort, and impact absorption are key considerations. Hero rubber flooring is designed for high-energy spaces such as workplaces, schools, healthcare, hospitality, retail, and fitness. Key features are durability, maintenance, and appearance. The product covered in this study is very resistant to wear and tear due to the uniform structure.

## Declaration of Methodological Framework

This LCA is a cradle-to-grave study. This EPD covers the entire life cycle of the product from cradle to grave (modules A1-D) excluding modules for which there are no inputs/outputs. A summary of the life cycle stages can be found in Table 12.

The reference service life is 30 years and is only applicable if all manufacturing guidelines are followed regarding site selection, installation, and maintenance.

The cut-off criteria are described in Section 2.4 and allocation procedures are described in Section 2.8. No known flows are deliberately excluded from this EPD.

## 1.4 Technical Requirements

The following technical data describes the product undergoing life cycle assessment.

**Table 1: Technical data**

| NAME | | VALUE | UNIT |
|---|---|---|---|
| Product Thickness | | 8.0 | mm |
| Product Weight | | 6.01 | kg/m$^2$ |
| Product Form | Sheet | 4 x Varies | ft |

## 1.5 Properties of Declare Product as Delivered

The rolls are wrapped around a cardboard tube to prevent collapsing. Rolled goods then are stacked on pallets and secured with plastic film and metal straps for transport. Mohawk encourages installers to recycle the packaging in local recycling programs.

## 1.6 Material Composition

The materials that make up the product are indicated in Table 2.

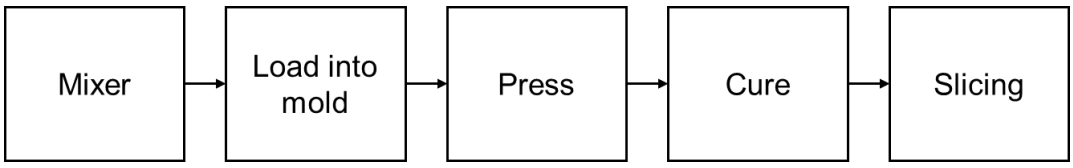
**Table 2: Material composition**

| COMPONENT | MASS % |
|---|---|
| Recycled styrene-butadiene rubber (SBR) | 84.1% |
| Ethylene propylene diene monomer (EPDM) | 7.5% |
| Polyurethane Binder | 8.0% |
| Water | 0.4% |

## 1.7 Manufacturing

Hero QuietSound products are produced in Colton, California. A mixture primarily composed of SBR, EPDM, and polyurethane binder is blended and loaded into a mold and pressed to form a cylinder. Following curing, sheets are sliced from the cylinder to the necessary length, packaged, and loaded into trucks for shipment to customers.

**Flow Diagram**




## 1.8 Packaging

Packaging utilized in the shipment of the product is described in Table 3.

**Table 3: Packaging**

| PACKAGING TYPE | MATERIAL | AMOUNT (KG/M$^2$) | DISPOSAL PATHWAY |
|---|---|---|---|
| Plastic Wrap | Polyethylene Film | 0.022 | Landfill |
| Wood Pallet | Wood | 0.472 | Landfill |
| Steel Strapping | Steel | 0.010 | Landfill |
| Cardboard Tube | Corrugate | 0.023 | Landfill |

## 1.9 Transportation

Transport of raw materials from the supplier to the manufacturing facility by truck, ship, or rail is included in the model.

An average shipping distance from the manufacturing location to the customer was assumed to be 500 miles (805 kilometers) by a Class 8 truck.

## 1.10 Product Installation

This study includes transportation to the construction site by truck and flooring installation in the building. Installation of this product primarily involves hand tools for measuring and cutting floor materials. All waste generated during installation, including packaging waste, is assumed to be disposed of in a landfill.

Detailed installation instructions can be found at: www.mohawkgroup.com/technical-resources/installation.

## 1.11 Use

Hero QuietSound is only intended to be installed as an underlayment, to be covered by Hero Rubber made with Nike Grind flooring. As such, the underlayment does not require any cleaning or maintenance during its use.

No health concerns are present during the normal use of the flooring.

## 1.12 Reference Service Life and Estimated Building Service Life

The service life of rubber sheet will vary depending on the amount of floor traffic and the type and frequency of maintenance. For this product, the Reference Service Life (RSL) is 30 years. This means that the product will meet its functional requirements for an average of 30 years before replacement. The estimated building service life is 75 years, as specified by the PCR.

### 1.13 Reuse, Recycling, and Energy Recovery

Mohawk will take back and recycle used rubber sheet via the ReCover program. Through this program, Mohawk works with a national network of recyclers to ensure used flooring stays out of the landfill. Learn more about the program at www.mohawkrecover.com/commercial.

### 1.14 Disposal

For this study, it is assumed that at the end of the useful life of the product, 100% is disposed through landfill, 0% is recycled, and 0% is incinerated.

### 1.16 Further Information

Additional information on this product can be found at www.mohawkgroup.com/.

## 2. Life Cycle Assessment Background Information

### 2.1 Functional or Declared Unit

Per the PCR, the functional unit is 1 $m^2$ of floor covering over the RSL of 30 years, as indicated in Table 4. The mass per 1 $m^2$ of flooring is located in Table 1.

**Table 4: Functional unit**

| NAME | VALUE | UNIT |
|---|---|---|
| Functional Unit | 1 $m^2$ | - |

### 2.2 System Boundary

This EPD is considered cradle-to-grave. The following modules are included and summarized in Table 5.

**Table 5: System boundary**

| MODULE NAME | DESCRIPTION | SUMMARY OF INCLUDED ELEMENTS |
|---|---|---|
| A1 | Product Stage: Raw Material Supply | Raw Material sourcing and processing as defined by secondary data |
| A2 | Product Stage: Transport | Shipping from supplier to manufacturing site. Fuel use requirements estimated based on product weights and estimated distance |
| A3 | Product Stage: Manufacturing | Energy, water, and material inputs required for manufacturing products from raw materials. Packaging materials and manufacturing waste are included as well |
| A4 | Construction Process Stage: Transport | Shipping from manufacturing site to project site. Fuel use requirements estimated based on product weights and mapped distance |
| A5 | Construction Process Stage: Installation | Installation adhesives, installation waste, and packaging material waste |
| B1 | Use Stage: Use | Use of the product |
| B2 | Use Stage: Maintenance | Cleaning energy, water, and materials, including refinishing the product |
| B3 | Use Stage: Repair | The product is not expected to require repair over its lifetime |
| B4 | Use Stage: Replacement | Total materials and energy required to manufacture a replacement. Includes EOL treatment for replacements. |
| B5 | Use Stage: Refurbishment | The product is not expected to require refurbishment over its lifetime |
| B6 | Use Stage: Operational Energy Use | There is no operational energy use associated with the use of this product |
| B7 | Use Stage: Operation Water Use | There is no operational water use associated with the use of this product |

| MODULE NAME | DESCRIPTION | SUMMARY OF INCLUDED ELEMENTS |
|---|---|---|
| C1 | EOL: De-construction Demolition | Demolition of the product is accomplished using hand tools with no associated emissions and negligible impacts |
| C2 | EOL: Transport | Shipping from project site to landfill. Fuel use requirements estimated based on product weight and mapped distance |
| C3 | EOL: Waste Processing | Waste processing not required. All waste can be processed as is |
| C4 | EOL: Disposal | Assumes all products are sent to landfill. Landfill impacts modeled based on secondary data |

## 2.3 Estimated and Assumptions

All estimates and assumptions are within the requirements of ISO 14040/44. The majority of the estimations are within the primary data. The primary data was collected as annual totals including all utility usage and production information. For the LCA, the utility usage information was divided by the production to create energy and water use per square meter. As there are different products produced at this facility, it is assumed all products are using the same amount of energy.

Transportation distances to installation and disposal were assumed to be 500 and 100 miles (805 and 161 kilometers), respectively.

## 2.4 Cut-off Criteria

All inputs in which data was available were included. Material inputs greater than 1% (based on the total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit.

## 2.5 Data Sources

Primary data were collected by facility personnel and from utility bills during the calendar year 2025. Whenever available, supplier data was used for raw materials used in the production process. When primary data did not exist, secondary data for raw material production was utilized from the LCA FE 2026.1 Database.

## 2.6 Data Quality

**Temporal Coverage**

The primary data provided by the manufacturer represent all information for calendar year 2025. Using this data meets the PCR requirements. Time coverage of this data is considered very good.

**Geographical Coverage**

The geographical scope of the manufacturing portion of the life cycle is Colton, California. All primary data were collected from the manufacturer. The geographic coverage of primary data is considered very good. Proxy datasets were used as needed for raw material inputs to address the lack of data for a specific material or geographic region.

### Technological Coverage

Primary data provided by the manufacturer is specific to the technology used in manufacturing their product. It is site-specific and considered of good quality.

### Completeness

The data included in this EPD is considered complete. No known flows above 1% were excluded and the sum of all excluded flows total less than 5%, whether evaluated by mass, energy, or potential environmental impact.

## 2.7 Period Under Review

The period under review is calendar year 2025.

## 2.8 Allocation

General principles of allocation were based on ISO 14040/44. No allocation was used in this EPD, all primary data is from the manufacturing facility and does not include allocation.

No co- or by-product allocation was necessary during the manufacturing, use or end of life. In the case of secondary raw materials (i.e., recycled SBR), only burdens from the point of recovery forward were considered (cut-off approach). The primary production of recycled materials was outside the system boundary.

# 3. Life Cycle Assessment Scenarios

**Table 6: Transport to building site (A4)**

| NAME | VALUE | UNIT |
|---|---|---|
| Fuel type | Diesel | - |
| Liters of fuel | 42 | l/100km |
| Vehicle type | Truck – Heavy, Heavy-duty Diesel/ 53,333 lb, (20.2 metric ton) payload | - |
| Transport distance | 800 | km |
| Capacity utilization (including empty runs, mass-based | 68 | % |
| Gross density of products transported | 800 | kg/m$^3$ |
| Capacity utilization volume factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaging products) | =1 | - |

**Table 7: Installation into the building (A5)**

| NAME | VALUE | UNIT |
|---|---|---|
| Ancillary materials (Adhesive) | 0.70 | kg/m$^2$ |
| Net freshwater consumption | 0 | m$^3$/m$^2$ |
| Electricity consumption | 0 | kWh |
| Other energy carriers | 0 | MJ |
| Product loss per functional unit | 0.07 | % |
| Waste materials at the construction site before waste processing, generated by product installation | 0.66 | kg/m$^2$ |
| Output materials resulting from on-site waste processing | 0 | kg |
| Mass of packaging waste to Landfill (Wood) | 0.472 | kg |

| NAME | VALUE | UNIT |
|---|---|---|
| Mass of packaging waste to Incineration (Wood) | 0 | kg |
| Mass of packaging waste to Recycling (Wood) | 0 | kg |
| Mass of packaging waste to Landfill (Cardboard) | 0.023 | kg |
| Mass of packaging waste to Incineration (Cardboard) | 0 | kg |
| Mass of packaging waste to Recycling (Cardboard) | 0 | kg |
| Mass of packaging waste to Landfill (Plastic) | 0.022 | kg |
| Mass of packaging waste to Incineration (Plastic) | 0 | kg |
| Mass of packaging waste to Recycling (Plastic) | 0 | kg |
| Mass of packaging waste to Landfill (Steel) | 0.01 | kg |
| Mass of packaging waste to Incineration (Steel) | 0 | kg |
| Mass of packaging waste to Recycling (Steel) | 0 | kg |
| Biogenic carbon contained in packaging (Cardboard) | 9.89E-03 | kg $CO_2$ |
| Biogenic carbon contained in packaging (Wood) | 1.22E-01 | kg $CO_2$ |
| Direct emissions to ambient air, soil, and water | 0 | kg |
| VOC content | N/A | µg/m$^3$ |

**Table 8: Reference Service Life**

| NAME | VALUE | UNIT |
|---|---|---|
| RSL | 30 | years |
| Declared product properties (at the gate) and finishes, etc. | Rubber underlayment | |
| Design application parameters (if instructed by the manufacturer, including references to the appropriate practices and application codes) | Interior use in commercial environments with high traffic level | |
| An assumed quality of work, when installed in accordance with the manufacturer's instructions | Install according to manufacturers' instructions found at www.mohawkgroup.com/technical-resources/installation. | |
| Outdoor environment, (if relevant for outdoor applications), e.g. weathering, pollutants, UV and wind exposure, building orientation, shading, temperature | Not applicable | |
| Indoor environment, (if relevant for indoor applications), e.g. temperature, moisture, chemical exposure. | Interior, climate controlled (typical commercial building conditions) | |
| Use conditions, e.g. frequency of use, mechanical exposure | Underlayment | |
| Maintenance, e.g. required frequency, type and quality of replacement components | Not applicable | |

**Table 9: Maintenance (B2)**

| NAME | VALUE | UNIT |
|---|---|---|
| Maintenance cycle | - | Cycles / RSL |
| Maintenance cycle | - | Cycles / ESL |
| Net freshwater consumption specified by water source and fate (disposed to sewer) | - | L/m$^2$ |
| Ancillary materials specified by type | - | kg/m² |
| Energy input, specified by type | - | kWh |
| Other energy carriers specified by type | - | kWh |
| Power output of equipment | - | kW |
| Waste materials from maintenance | - | kg |
| Direct emissions to ambient air, soil, and water | - | kg |
| Further assumptions for scenario development | - | |

**Table 10: Replacement (B4)**

| NAME | VALUE | UNIT |
|---|---|---|
| Reference Service Life | 30 | Years |
| Replacement Cycle | 1.5 | Years |
| Energy input | - | kWh |
| Net freshwater consumption | - | $m^3$ |
| Ancillary materials | - | kg |
| Replacement of wom parts | - | kg |
| Direct emissions to ambient air, soil, and water | 0 | kg |

**Table 11: End of life (C1-C4)**

| NAME | | VALUE | UNIT |
|---|---|---|---|
| Assumptions for scenario development | Product disposed of either with underlying floor or manually removed via scraping | | |
| Collection process | Collected separately | 0 | kg |
| | Collected with mixed construction waste | 6.01 | kg |
| Recovery | Reuse | 0 | kg |
| | Recycling | 0 | kg |
| | Landfill | 6.01 | kg |
| | Incineration | 0 | kg |
| | Incineration with energy recovery | 0 | kg |
| | Energy conversion efficiency rate | - | |
| Disposal | Product or material for final deposition | 6.01 | kg |
| Removals of biogenic carbon (excluding packaging) | | - | kg $CO_2$ |

## 4. Life Cycle Assessment Scenarios

The LCA scope is cradle-to-grave. Note that modules B1, B2, B3, B5-B7, C1, and C3 have no environmental impacts and are excluded from results tables to improve readability. Module D is excluded from this analysis.

**Table 12: Description of the system boundary modules. (X = Included; MND = Module Not Declared)**

| | PRODUCT STAGE | | | CONSTRUCT-ION PROCESS STAGE | | USE STAGE | | | | | | | END OF LIFE STAGE | | | | BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| | Raw material supply | Transport | Manufacturing | Transport from gate to site | Assembly/Install | Use | Maintenance | Repair | Replacement | Refurbishment | Building Operational Energy Use During Product Use | Building Operational Water Use During Product Use | Deconstruction | Transport | Waste processing | Disposal | Reuse, Recovery, Recycling Potential |
| **Cradle-to-Grave** | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | MND |

## 4.1 Life Cycle Impact Assessment Results: 75 Year Estimated Building Service Life

**Table 13: North American Impact Assessment Results**

| TRACI V2.2 | A1-A3 | A4 | A5 | B4 | C2 | C4 |
|---|---|---|---|---|---|---|
| GWP [kg $CO_2$ eq] | 1.29E+01 | 2.10E+00 | 8.18E+01 | 1.46E+02 | 1.56E-01 | 2.50E-01 |
| ODP [kg CFC-11 eq] | 5.95E-11 | 7.57E-13 | 3.18E-10 | 5.70E-10 | 5.51E-14 | 1.35E-12 |
| AP [kg $SO_2$ eq] | 2.54E-02 | 1.61E-02 | 2.25E-01 | 4.02E-01 | 4.34E-04 | 1.32E-03 |
| $EP_{freshwater}$ [kg P eq] | 2.39E-05 | 1.42E-06 | 7.41E-04 | 1.33E-03 | 1.07E-07 | 1.20E-04 |
| $EP_{marine}$ [kg N eq] | 1.21E-02 | 1.53E-02 | 1.46E-01 | 2.61E-01 | 3.92E-04 | 6.65E-04 |
| SFP [kg $O_3$ eq] | 1.08E+02 | 3.71E-01 | 5.41E+02 | 9.74E+02 | 9.73E-03 | 2.36E-02 |
| $ADP_{fossil}$ [MJ, LHV] | 2.53E+02 | 2.74E+01 | 1.51E+03 | 2.69E+03 | 2.00E+00 | 3.71E+00 |

GWP 100 = Global Warming Potential; ODP = Ozone Depletion Potential; AP = Acidification Potential; EP = Eutrophication Potential; SFP = Smog Formation Potential; $ADP_{fossil}$ = Abiotic Depletion Potential (Fossil)

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. These six impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined and LCA should continue making advances in their development. However, the EPD users shall not use additional measures for comparative purposes.

## 4.2 Life Cycle Inventory Results: 75 Year Estimated Building Service Life

**Table 14: Resource use**

| PARAMETER | A1-A3 | A4 | A5 | B4 | C2 | C4 |
|---|---|---|---|---|---|---|
| RPRE [MJ, LHV] | 3.98E+01 | 1.12E+00 | 2.13E+02 | 3.82E+02 | 8.12E-02 | 5.78E-01 |
| RPRM [MJ, LHV] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| NRPRE [MJ, LHV] | 2.68E+02 | 2.77E+01 | 1.59E+03 | 2.83E+03 | 2.02E+00 | 3.80E+00 |
| NRPRM [MJ, LHV] | 9.87E-01 | 0.00E+00 | 4.93E+00 | 8.88E+00 | 0.00E+00 | 0.00E+00 |
| SM [kg] | 0.00E+00 | 0.00E+00 | 4.44E+01 | 7.99E+01 | 0.00E+00 | 0.00E+00 |
| RSF [MJ, LHV] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| NRSF [MJ, LHV] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW [$m^3$] | 6.20E-02 | 8.58E-04 | 3.37E-01 | 6.01E-01 | 6.25E-05 | 4.12E-04 |

RPRE = Renewable primary resources used as energy carrier (fuel); RPRM = Renewable primary resources with energy content used as material; NRPRE = Non-renewable primary resources used as an energy carrier (fuel); NRPRM = Non-renewable primary resources with energy content used as material; SM = Secondary materials; RSF = Renewable secondary fuels; NRSF = Non-renewable secondary fuels; FW = Use of net freshwater resources

**Table 15: Output flows and waste categories**

| PARAMETER | A1-A3 | A4 | A5 | B4 | C2 | C4 |
|---|---|---|---|---|---|---|
| HWD [kg] | 6.46E-08 | 5.80E-09 | 3.77E-07 | 6.73E-07 | 4.22E-10 | 1.05E-09 |
| NHWD [kg] | 3.00E-01 | 3.25E-03 | 6.08E+01 | 1.09E+02 | 2.37E-04 | 1.17E+01 |
| HLRW [kg] | 6.08E-06 | 1.00E-07 | 3.29E-05 | 5.87E-05 | 7.30E-09 | 3.65E-08 |
| ILLRW [kg] | 5.53E-03 | 8.42E-05 | 2.98E-02 | 5.31E-02 | 6.13E-06 | 3.14E-05 |
| CRU [kg] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| MFR [kg] | 0.00E+00 | 0.00E+00 | 2.05E-02 | 3.08E-02 | 0.00E+00 | 0.00E+00 |
| MER [kg] | 0.00E+00 | 0.00E+00 | 4.88E-03 | 7.31E-03 | 0.00E+00 | 0.00E+00 |
| EEE [MJ, LHV] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| EET [MJ, LHV] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; HLRW = High-level radioactive waste; ILLRW = Intermediate- & low-level radioactive waste; CRU = Components for reuse; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electrical; EET = Exported energy, thermal

## 5. LCA Interpretation

The analysis results represent cradle-to-grave environmental performance of Hero QuietSound underlayment products. The top three contributors to each impact category are shown in Table 16.

**Table 16: Highest contributions by impact category**

| IMPACT CATEGORY | CONTRIBUTORS | | |
|---|---|---|---|
| | Largest | 2nd | 3rd |
| Global Warming Potential, GWP | B4 | A5 | A1-A3 |
| Ozone Depletion Potential, ODP | B4 | A5 | A1-A3 |
| Acidification Potential, AP | B4 | A5 | A1-A3 |
| Eutrophication Potential, EP | B4 | A5 | A1-A3 |
| Depletion of abiotic resources – fossil fuels, ADPf | B4 | A5 | A1-A3 |

Under the 75-year building service life assumption, the replacement stage (B4) was the largest contributor in impact categories considered. The installation stage (A5) represents a substantial fraction of the life cycle impacts for most impact categories, with production of raw materials (A1-A3) following. If the impacts of the product were considered for one product life, the installation stage (A5) would have the most significant impact.

Within the raw materials, the EPDM has the largest contribution to environmental impacts, followed by the polyurethane.

## 6. Additional Environmental Information

### 6.1 Environment and Health During Manufacturing

All substances with hazardous and toxic properties that can be of concern for human health and/or the environment have been identified, if present in the product, and declared according to normative requirements in standards or regulations applicable in the market for which the EPD is valid, even if the given process unit is under the cut-off criterion. More information on the manufacturer's sustainability and environmental programs, including a corporate sustainability report, can be found online at www.mohawkgroup.com/.

### 6.2 Environment and Health During Installation

All recommended personal protective equipment (PPE) should be utilized during installation, as indicated on the SDS and installation guidelines, found online at www.mohawkgroup.com/technical-resources/installation.

### 6.3 Extraordinary Effects

**Fire**

| NAME | VALUE |
|---|---|
| Radiant flux (ASTM E-648) | 0.40 Watts/sq cm |
| Smoke density (ASTM E-662) | Flaming: 361 Non-Flaming: 321 |

**Water**

This product is impervious to water, protecting the subfloor from leaks and spills. Exposure to flooding for long periods may result in damage to the product.

**Mechanical Destruction**

If the product is mechanically destroyed, it should be disposed of using standard procedures and replaced in a timely manner.

### 6.4 Environmental Activities and Certifications

All environmental activities and certificates can be found at www.mohawkgroup.com.

## 7. References


| | |
|---|---|
| GaBi 2022 | Sphera Solutions; GaBi: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Echterdingen, 1992-2021. |
| EN 15804 | CEN (2021). EN15804+A2/AC: Sustainability of construction works – Environmental Product Declarations – Core Rules for the product category of construction products. European Committee for Standardization. |
| ISO 14025 | ISO 14025:2011-10 Environmental labels and declarations – Type III environmental declarations – Principles and procedures |
| ISO 14040 | ISO 14040:2066/Amd.1:2020 Environmental management – Life cycle assessment – Principles and framework |
| ISO 14044 | ISO 14044:2006/Amd.1:2017/Amd.2:2020 Environmental management – Life cycle assessment – Requirements and guidelines |
| ISO 21930 | ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services |
| UL Environment | Program Operator Rules v2.7, March 2022 |
| UL Environment: Part A | PCR Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 4 |
| UL Environment: Part B | PCR Part B: Flooring EPD Requirements. Product Category Rule (PCR) Guidance for Building-Related Products and Services. Version 2.0, 09.2018 |
| US EPA (2012) TRACI 2.2 | Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts Version 2.2 – User Guide. |