Godfrey Hirst

Feltex

Mohawk Group

COMMERCIAL

SDN Broadloom Carpet with Action Bac®

EPD

ENVIRONMENTAL PRODUCT DECLARATION IN ACCORDANCE WITH ISO 14025 AND EN 15804+A2

Program:
Institut Bauen und Umwelt e.V. (IBU)

EPD Registration number:
EPD-GOD-20250524-IBI1-EN

Publication date:
25 November 2025

Valid until:
24 November 2030

Version:
1.0 ([1125])

GH Commercial's Climate Action.

SUSTAINABILITY IS A CORE VALUE FOR GH COMMERCIAL.

In addition to being a house of market leading brands GH Commercial is privileged to draw on over 160 years manufacturing experience in Australia and New Zealand giving us a unique understanding of our products and their impacts.

As a key pillar of our Believe in Better® approach to sustainability, we are committed to a climate-positive future through our decarbonisation strategy.

GH Commercial is committed to contributing to its group SBTi 2030 greenhouse gas emissions reductions targets against a 2020 baseline.

CURRENT:

Since 2020, we have made significant progress in reducing our scope 1 and 2 greenhouse gas emissions. At the end of 2024, we had achieved a 34% reduction putting us well on track to meet our 2030 target. We are also committed to reducing our scope 3 emissions and the embodied carbon in our products, which is one of the reasons why we have undertaken life cycle assessments and are publishing this EPD.

OUR TARGETS:

We recognise that Life Cycle Assessments, and this LCA-based Environmental Product Declaration, are important tools for ensuring our clients and specifiers have the transparent product information they need to make informed and more sustainable decisions.

We are proud to be able to provide you with this level of transparent product information, in addition to our other certifications.

Benefits of this EPD.

This EPD can contribute to the achievement of credit points under leading green building rating schemes, including Green Star.

This EPD may help to contribute up to 5 points of Responsible Product Value.

Green Building Council Australia
Member

EPD

Declared Unit.

The declaration applies to broadloom carpets made with solution-dyed nylon yarn, the carpets' piles range from 18 to 75 oz. The carpets are manufactured in Auckland, New Zealand, and distributed to New Zealand's market.

The LCA results are presented for a representative broadloom SDN carpet, the 36 oz pile carpet. The representative carpet is a typical product, has the second highest sales volumes, and has a pile weight in the middle ground of manufactured products. LCA results for carpets with the lowest and highest pile weights, 18 oz and 75 oz, can be found in the annex, as well as the LCA results for the SDN carpet for healthcare applications, which also has a pile weight of 36 oz.

Embodied carbon in our SDN Carpet Tile with Enviro Bac® products.

Pile Weight		GWP (kg CO_{2eq})
Oz	Grams per m^2	
18	610	7.18
36	1,220	13.1
75	2,543	26.2

ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Godfrey Hirst New Zealand Pty ltd
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-GOD-20250524-IBI1-EN
Issue date	25.11.2025
Valid to	24.11.2030

SDN broadloom carpet with action back

Godfrey Hirst

www.ibu-epd.com | https://epd-online.com

1. General Information

Godfrey Hirst

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-GOD-20250524-IBI1-EN

This declaration is based on the product category rules:

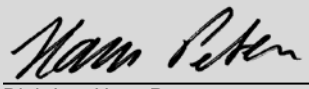
Floor coverings, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

25.11.2025

Valid to

24.11.2030



Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

SDN broadloom carpet with action back

Owner of the declaration

Godfrey Hirst New Zealand Pty ltd
Kerrs Road 142
2241 Manukau, Auckland
New Zealand

Declared product / declared unit

1 m^2 of broadloom carpet made of solution-dyed nylon pile

Scope:

The declaration applies to broadloom carpets made with solution-dyed nylon yarn, the carpets' piles range from 18 to 75 oz.
The carpets are manufactured in Auckland, New Zealand, and distributed to New Zealand's market.

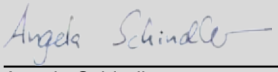
The LCA results are presented for a representative broadloom SDN carpet, the 36 oz pile carpet. The representative carpet is a typical product, has the second highest sales volumes, and has a pile weight in the middle ground of manufactured products. LCA results for carpets with the lowest and highest pile weights, 18 oz and 75 oz, can be found in the annex, as well as the LCA results for the SDN carpet for healthcare applications, which also has a pile weight of 36 oz.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally



Angela Schindler,
(Independent verifier)

2. Product

2.1 Product description/Product definition

The SDN broadloom carpets consist of yarn piling made of SDN attached to polypropylene and polyethylene terephthalate backings and coated. The carpets are woven on a 3.66- metre-wide loom and sold on rolls.
This declaration is for a representative solution dyed nylon (SDN) broadloom carpet with pile weight of 36 oz, which is a typical SDN broadloom carpet manufactured by Godfrey Hirst in Auckland, New Zealand. The representative carpet has the second-highest sales volumes and is in the middle ground of the range of pile weights (from 18 to 75 oz). For the application and use the respective national provisions apply. There are no mandatory regional requirements to place a carpet on the market in New Zealand. The product will not be distributed in the EU.

2.2 Application

The SDN broadloom carpets are floor coverings.
The declared SDN broadloom carpets are mostly for residential applications in New Zealand, except for one SDN broadloom carpet, which is for healthcare application in New Zealand.

2.3 Technical Data

Constructional data

Name	Value	Unit
Product thickness	11	mm
Product Form	Broadloom carpet	-
Type of manufacture	Tufted carpet	-
Yarn type	Solution Dyed Nylon	-
Primary backing	Woven polypropylene	
Secondary backing	Polypropylene and polyethylene terephthalate	-
Total carpet weight	2307	g/m^2
Layer thickness (Top layer)	8.5	mm

Performance data of the product with respect to its characteristics in accordance with the relevant technical provision (no CE-marking).

2.4 Delivery status

The carpets are woven on a 3.66-metre-wide loom and sold on rolls.

2.5 Base materials/Ancillary materials

Name	Value	Unit
Polyamide 6	53	%
Polypropylene	5	%
Polypropylene and polyethylene terephthalate	3	%
SBR latex	8	%
Calcium carbonate	30	%
Additives	1	%

This product contains substances listed in the candidate list (date: 22.05.2025) exceeding 0.1 percentage by mass: no.

This product/article/at least one partial article contains other carcinogenic, mutagenic, reprotoxic, CMR substances in categories 1A or 1B which are not on the *candidate list*, exceeding 0.1 percentage by mass: no

Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) *Ordinance on Biocide Products No. 528/2012*): yes

The biocide additive used is triclosan emulsion, which is an anti-microbial for textiles. The containing active ingredients are isotridecanol ethoxylate, 5-Chloro-2-(2,4-dichlorophenoxy)phenol, and sodium xylene sulphonate.

2.6 Manufacture

The SDN broadloom carpets are co-produced in the manufacturing site in Auckland. The major steps of carpet manufacturing are:

- Beaming: SDN yarn is rewound into larger beams.
- Tufting: SDN yarns are sewn into a primary backing fabric made of woven polypropylene to create loops.
- Coating: latex-based glues (CSBR latex) are applied to the tufted carpet and the secondary backing (polypropylene and polyethylene terephthalate). The two backings are then glued together.
- Finishing: a razor removes any protruding material. The carpet then undergoes a final inspection before it is rolled up and packaged.

2.7 Environment and health during manufacturing

All substances are disclosed via a public Health Product Declaration (HPD) and screened for health impacts beyond national regulations. Waste, water, and emissions are managed using best-practice strategies exceeding local requirements, including recycling, reuse, and water conservation. An *ISO 14001*-aligned EMS is implemented to monitor and improve environmental performance.

2.8 Product processing/Installation

In the installation of broadloom SDN carpets, no energy or additional parts are required, except staples and treatment of packaging waste. Staples are estimated to be insignificant; hence this stage's model includes only the packaging end-of-life. Preparing of the floor and auxiliary materials (adhesives, fixing agents, PET connectors) are beyond the system boundaries and not taken into account.

2.9 Packaging

Cardboard paper boxes and plastic films are used for packaging. The product requires 0.040 kg of cardboard per m^2 of produced carpet, and 0.004 kg of plastic films.
Cardboard materials are recycled in New Zealand with a recycling rate of 73 % (APCO, 2024), the remaining 27 % is landfilled. All plastic film materials are landfilled.

2.10 Condition of use

No significant change in material composition expected under normal use. Wear, UV exposure and cleaning may affect surface properties but not core composition.

2.11 Environment and health during use

Assessed via indoor air quality, acoustic comfort, and thermal insulation. Limits on VOC emissions (13 specific chemicals + total VOCs ≤ 500 µg/h·m²). Healthy Interior Performance requires compliance with the *California Department of Public Health (CDPH)* Standard Method v1.1-2010 (or international equivalent) products that have the potential to emit Volatile Organic Compounds (VOCs). The Declare label confirms a product's compliance with CDPH or an equivalent emissions standard.

2.12 Reference service life

A calculation of the reference service life according to *ISO 15686* is not possible.
The service life of textile floor coverings strongly depends on the correct installation taking into account the declared use classification and the adherence to cleaning and maintenance instructions.
A minimum service life of 10 years can be assumed; technical service life can be considerably longer.

Depending on the application based on *EN ISO 10874*, the technical service life recommended by the manufacturer and the anticipated strain on the floor by customers, the case-specific useful life can be established. The effects of Module B2 need to be calculated on the basis of this useful life in order to obtain the overall environmental impacts.

Godfrey Hirst grants an additional warranty for the declared product. In order to increase the life duration of the floor covering, the manufacturer's instructions concerning warranty and care must be observed, available for download at https://www.godfreyhirst.com/na/news/warranties.

2.13 Extraordinary effects

Fire
Compliance with state and territory Building Code standards in Australia and New Zealand (*ISO 9239-1* (Reaction to fire tests for flooring – Part 1 Determination of the burning behavior using a radiant heat source)

Fire protection

Name	Value
Smoke density (ISO 9239-1)	<750

Water
Should the product be flooded, the water should be removed through means of extraction and drying and the product should behave as originally intended. There are no environmental impacts associated with the product being flooded.

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

2.14 Re-use phase

A possibility of re-use of the carpet is in garden cover and mulch.

2.15 Disposal

The end-of-life scenario is defined as one scenario that describes a 100 % landfilling. Incineration is not an available option in New Zealand.

2.16 Further information

https://www.godfreyhirst.com/nz

3. LCA: Calculation rules

3.1 Declared Unit

1m² of floor covering made by broadloom SDN carpet.

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	m^2
Grammage	2.3	kg/m^2
Layer thickness	0.0085	m
Thickness	11	mm
Gross density	209	kg/m^3

3.2 System boundary

The type of the EPD is c) cradle to grave and module D (A + B + C + D)

A1-A3 Product stage:
Energy supply and production of the basic material, processing of secondary material, auxiliary material, transport of the material to the manufacturing site, emissions, wastewater treatment, packaging material and waste processing up to the landfill disposal of residual waste.
Biogenic carbon that is stored in cardboard packaging is taken into account as well as the associated carbon dioxide uptake from the air from which this biogenic carbon comes.

A4 Transport from gate to site:
Transport of the packed textile floor covering from factory gate to the place of installation.

A5 Installation:
Installation of the carpet includes the production of the amount of carpet that occurs as installation waste. Processing of waste generated during installation, including packaging waste is accounted for.
Biogenic carbon stored in cardboard packaging is released into the air as carbon dioxide emissions at the end of the life cycle in module A5. Preparation of the floor and auxiliary materials (adhesives, fixing agents, PET connectors) are beyond the system boundaries and not taken into account.

B2 Maintenance:
Cleaning of the textile floor covering for 1 m^2 of carpet per year by vacuum and wet cleaning.
Vacuum cleaning requires electricity supply.
Wet cleaning requires electricity, water consumption, production of cleaning agent, and wastewater treatment.
The declared values in this module have to be multiplied by the assumed service life of the floor covering in the building in question.

Modules B3 - B7:
The modules are not relevant and therefore not declared.

C1 De-construction:
The floor covering is de-constructed manually and no additional environmental impact is caused.

C2 End of life transport:
Carpet waste is transported to a landfill by truck, assuming a distance of 100 km.

C3 End of life treatment:
The use of carpet waste as alternative fuel in cement kilns is not an established practice in New Zealand.

C4 Disposal:
Landfill disposal, with no further waste processing. Incineration is not an available option in New Zealand.

3.3 Estimates and assumptions

The regional reference is New Zealand, and region-specific data is used for primary data. Specific data is used for Godfrey Hirst's manufacturing site in New Zealand.

Electricity data for the foreground system was regionalised for New Zealand. The residual electricity data for the foreground system was regionalised for New Zealand. The residual electricity mix on the market is used for the A3 processes that Godfrey Hirst has control over.
Purchased electricity from the grid accounts for approximately 68 % of electricity use at Godfrey Hirst manufacturing, the remaining 32 % of electricity consumed is locally generated by a solar photovoltaic system on site.

The emission factor for the New Zealand residual grid mix for the GWP-total indicator is 0.151 kg CO_2e/kWh (based on EF3.1).

Water data was regionalised to country level for the manufacturing facility site in New Zealand.

3.4 Cut-off criteria

In compliance with *EN15804*, a mass cut-off criterion was applied during data collection. Upstream packaging, packaging used for raw materials, contributed less than 1 % of the cumulative mass of all the inputs and outputs of the LCI, and it was excluded, as its environmental relevance is not a concern. For all the other processes within the system boundary, all available energy and material flow data have been included in the model. In cases where no matching life cycle inventories are available to represent a flow, proxy data have been applied based on conservative assumptions regarding environmental impacts.

3.5 Background data

The LCA model was created using the *Life Cycle for Experts* (LCA FE) (formerly known as GaBi) Software for life cycle engineering, developed by *Sphera Solutions, Inc*.

Background datasets were obtained from the the *Managed LCA Content (MLC) Database v2024.2*, and documentation can be found at: https://lcadatabase.sphera.com/

3.6 Data quality

Temporal, geographical, and technological representativeness are considered to be high.
As the majority of the relevant foreground data are measured data or calculated based on primary information sources of the owner of the technology, precision is considered to be high. Foreground process was checked for mass balance and completeness of the emission inventory. No data were knowingly omitted. Completeness of foreground unit process data is considered to be high.

3.7 Period under review

Calendar year of 2024, from 01-01-2024 to 31-12-2024.

3.8 Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: New Zealand

3.9 Allocation

Allocation was applied to site level, following guidelines from *IBU PCR part A v1.4* and *EN 15804+A2*, and respecting the physical relationship between different produced carpets at the manufacturing site. Godfrey Hirst manufactures broadloom carpets made by different yarn materials, although the current study is only for the SDN range. The manufacturing process is similar for carpets made of different yarns; thus, it is allocated according to the carpet area.

Data for energy consumption, consumables, and ancillary materials in the manufacturing site were allocated by physical criteria of area of manufactured carpets, in m2, and total broadloom carpets (using different yarns, including SDN yarn), in m2.

SDN yarn is only used in the SDN carpets, and no other yarn types are used. As such, the input of SDN yarn has not been allocated, and other yarn types are excluded from the study.

3.10 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

The used background database was MLC Database v2024.2

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	0.0173	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Transport to the construction site (A4)

Name	Value	Unit
Litres of fuel	0.0025	l/100km
Transport distance	435.6	km
Capacity utilisation (including empty runs)	61	%
Gross density of products transported	209	kg/m^3

Installation in the building (A5)

Name	Value	Unit
Material loss	0.208	kg

Maintenance (B2)

The values for cleaning refer to 1 m^2 floor covering per year. Depending on the application based on *ISO 10874*, the technical service life recommended by the manufacturer and the anticipated strain on the floor by customers, the case-specific useful life can be established. Based on this useful life, the effects of Module B2 need to be calculated in order to obtain the overall environmental impacts.

Name	Value	Unit
Maintenance cycle , vacuum cleaning	104	cycles/year
Electricity consumption , vacuum cleaning	0.533	kWh
Maintenance cycle , wet cleaning	2	cycles/year
Water consumption , wet cleaning	0.012	m^3
Auxiliary , wet cleaning	0.18	kg

Reference service life

Name	Value	Unit
Life Span (according to BBSR)	10	a
An assumed quality of work, when installed in accordance with the manufacturer’s instructions	Conforms to the manufacturer's instructions	-
Usage conditions, e.g. frequency of use, mechanical exposure	Use in areas definde by use class	-
Maintenance e.g. required frequency, type and quality and replacement of components	According to manufacturer's instructions	-

Life span is based on the BBSR table "Service lives of components for life cycle assessment according to BNB" (www.nachhaltigesbauen.de/baustoff-undgebaeudedaten/ nutzungsdauern-von-bauteilen.html).

End of Life (C1-C4)

Name	Value	Unit
Collected as mixed construction waste	2.3	kg
Landfilling	2.3	kg

5. LCA: Results

The LCA results refer to the declared product.

The declared result figures in module B2 have to be multiplied by the assumed service life (in years) of the floor covering in the building under consideration.
Information on non-relevant modules (Modules B1, B3 - B7) are not relevant during the service life of the carpet. Version number of the characterisation factors used: EN 15804+A2 (based on EF 3.1)

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	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	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2:

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	1.31E+01	9.49E-02	1.2E+00	6.27E-01	0	3.13E-02	0	5.06E-02	0
GWP-fossil	kg CO_2 eq	1.31E+01	9.48E-02	1.09E+00	6.14E-01	0	3.13E-02	0	4.97E-02	0
GWP-biogenic	kg CO_2 eq	-3.21E-02	1.32E-05	1.08E-01	1.27E-02	0	5.16E-05	0	8.3E-04	0
GWP-luluc	kg CO_2 eq	5.94E-03	2.49E-06	4.91E-04	1.07E-04	0	8.22E-07	0	2.31E-05	0
ODP	kg CFC11 eq	4.52E-11	9.48E-15	3.73E-12	2.98E-12	0	3.14E-15	0	1.2E-13	0
AP	mol H^+ eq	7.7E-02	2.62E-04	6.44E-03	1.01E-03	0	6.36E-05	0	2.97E-04	0
EP-freshwater	kg P eq	2.65E-05	1.46E-08	2.78E-06	9.64E-06	0	4.81E-09	0	6.01E-05	0
EP-marine	kg N eq	1.48E-02	1.11E-04	1.24E-03	3.16E-04	0	2.85E-05	0	7.38E-05	0
EP-terrestrial	mol N eq	1.59E-01	1.22E-03	1.35E-02	3.46E-03	0	3.17E-04	0	8.09E-04	0
POCP	kg NMVOC eq	4.59E-02	2.7E-04	3.84E-03	1.75E-03	0	7.35E-05	0	2.26E-04	0
ADPE	kg Sb eq	3.72E-06	1.25E-09	3.07E-07	7.9E-07	0	4.12E-10	0	5.1E-09	0
ADPF	MJ	2.35E+02	1.25E+00	1.95E+01	1.39E+01	0	4.14E-01	0	7.56E-01	0
WDP	m^3 world eq deprived	1.86E+00	3.55E-04	1.53E-01	2.46E-01	0	1.18E-04	0	2.71E-03	0

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2:

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
PERE	MJ	2.61E+01	5.42E-03	2.79E+00	5.71E+00	0	1.79E-03	0	9.37E-02	0
PERM	MJ	5.87E-01	0	-5.87E-01	0	0	0	0	0	0
PERT	MJ	2.67E+01	5.42E-03	2.2E+00	5.71E+00	0	1.79E-03	0	9.37E-02	0
PENRE	MJ	1.89E+02	1.25E+00	1.57E+01	1.39E+01	0	4.14E-01	0	7.56E-01	0
PENRM	MJ	4.64E+01	0	3.83E+00	0	0	0	0	0	0
PENRT	MJ	2.35E+02	1.25E+00	1.95E+01	1.39E+01	0	4.14E-01	0	7.56E-01	0
SM	kg	2.02E-02	0	1.67E-03	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m^3	5.48E-02	7.25E-06	4.53E-03	2.09E-02	0	2.4E-06	0	9.77E-05	0

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2:

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
HWD	kg	4.44E-08	2.03E-11	3.67E-09	4.34E-09	0	6.66E-12	0	1.87E-10	0
NHWD	kg	1.08E+00	3.13E-05	1.17E-01	1.81E-02	0	1.02E-05	0	2.3E+00	0
RWD	kg	1.63E-03	2.52E-07	1.35E-04	1.25E-04	0	8.07E-08	0	8.04E-06	0
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	1.35E-02	0	0	0	0	0	0

MER	kg	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
PM	Disease incidence	1.24E-06	2.83E-09	1.03E-07	7.9E-09	0	7.26E-10	0	3.39E-09	0
IR	kBq U235 eq	2.05E-01	2.73E-05	1.7E-02	1.36E-02	0	8.66E-06	0	7.73E-04	0
ETP-fw	CTUe	9.86E+01	5.61E-01	8.37E+00	1.21E+01	0	1.85E-01	0	3.36E+00	0
HTP-c	CTUh	2.59E-09	9.24E-12	2.17E-10	2.03E-10	0	3.04E-12	0	1E-11	0
HTP-nc	CTUh	9.59E-08	2.04E-10	7.99E-09	9.16E-09	0	6.66E-11	0	6.28E-10	0
SQP	SQP	2.11E+01	2.56E-03	1.75E+00	1.45E+00	0	8.43E-04	0	6.78E-02	0

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

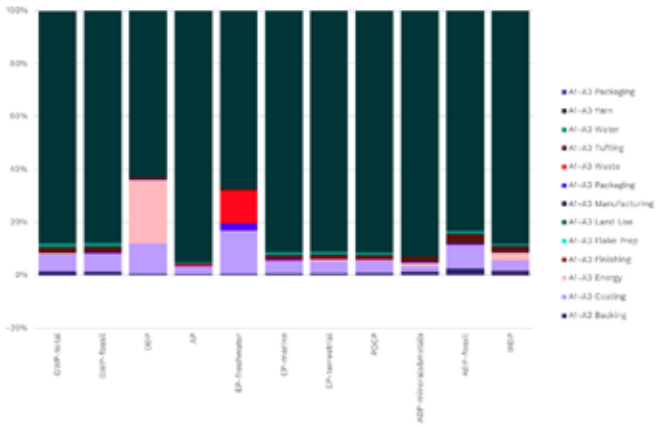
Disclaimer 1 – for the indicator 'Potential Human exposure efficiency relative to U235'. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators 'abiotic depletion potential for non-fossil resources', 'abiotic depletion potential for fossil resources', 'water (user) deprivation potential, deprivation-weighted water consumption', 'potential comparative toxic unit for ecosystems', 'potential comparative toxic unit for humans – cancerogenic', 'Potential comparative toxic unit for humans - not cancerogenic', 'potential soil quality index'. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

6. LCA: Interpretation

The LCIA results show that the product stage (Modules A1-A3) contributes the most for most impact indicators. It accounts for over 80 % of climate change-total for all SDN broadloom carpets, as shown in the figure below.

The graph below shows the hotspot analysis for core indicators during the product stage; the consumption of yarn is the main hotspot for indicators. Impacts related to yarn processing are related to upstream impacts of Nylon (PA 6 yarn) manufacturing. Nylon (PA 6 yarn) manufacturing happens in Italy, China, and India, and was modelled using most suitable dataset based on location. The use of caprolactam is a hotspot at Nylon (PA 6) manufacturing.
GWP-fossil represents 99 % of GWP-total impacts, and GWP-biogenic and GWP-luluc have almost no contribution to GWP-total. Coating has significant impacts for most indicators.



7. Requisite evidence

VOC emissions

Godfrey Hirst is compliant with Green Building Council Australia for indoor VOC emissions rate limits.

Godfrey Hirst has provided results for VOC tests performed by BELL Laboratories Pty Ltd (test report J 2207181), showing emission rates lower than 0.000067 mg/h for all VOCs, following the US EPA TO-17 model.

8. References

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COMMERCIAL

Godfrey Hirst

Feltex

Mohawk Group

Global & Local Capabilities

Our team have been drawing on over 150 years of manufacturing, backed by a strong heritage, we proudly operate four carpet manufacturing facilities, three yarn processing facilities, 10 distribution centres, and 14 sales offices across New Zealand and Australia.

NEW ZEALAND MADE

AUSTRALIAN MADE

Carbon Responsible

Both our Australian and New Zealand organisations are now carbon neutral.[1] Committed to minimising our environmental impact, we manage resources responsibly and invest in innovative technology. Our Auckland carpet facility now runs on 1,560 solar panels, covering 60% of daytime power and cutting 70 tonnes of carbon annually. Meanwhile, our Dannevirke wool yarn plant offsets 74% of its daytime energy with 750 panels.

[1] Godfrey Hirst Australia Pty Ltd and Godfrey Hirst NZ Ltd are 'carbon neutral' organisations. This means that those entities purchase and voluntarily retire carbon offsets equivalent to their annual carbon dioxide equivalent greenhouse gas (GHG) emissions from sources within their organisational boundary. For New Zealand, organisational GHG emissions are accounted for in accordance with ISO14064-3:2018. For Australia, organisational GHG emissions are accounted for, and carbon neutral status is certified, in accordance with the requirements of Climate Active.

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