NORTON®
SAINT-GOBAIN

ENVIRONMENTAL PRODUCT DECLARATION

OF MULTIPLE PRODUCTS, BASED ON A REPRESENTATIVE PRODUCT

IN ACCORDANCE WITH ISO 14025:2006 AND EN 15804:2012+A2:2019/AC:2021

Norton® Expert “Faster Pro”

Cutting Discs

Inox

EPD®
THE INTERNATIONAL EPD® SYSTEM

The International EPD®
Program operator: EPD international AB
System Registration number:
IES-0022285:001

Version: 1.0
Date of publication: 2025/06/11
Validity: 5 years
Valid until: 2030/06/10
Scope of the EPD®: Europe, Middle East, Africa

ECO PLATFORM
EPD
VERIFIED

List of products covered by the EPD®:

115 x **1,3** mm – 66252849389

125 x **1,3** mm – 66252849390

This EPD® is only valid for the new generation of products, which is clearly identifiable through the recycled content claim (ISO 14021) displayed on each product.

Products with similar article codes but **without** a recycled content claim on them are from the old generation and are **not** covered by this EPD®.

SAINT-GOBAIN

Programme operator and EPD® information

EPD® programme operator	**The International EPD® System** EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com
CEN standard EN 15804:2012+A2:2019/AC:2021 serves as the Core Product Category Rules (PCR)	
Product Category Rules (PCR)	**c-PCR-030 Abrasive Products – Version 2024-06-20 (c-PCR to PCR 2019:14 Construction Products)**
PCR review was conducted by	The Technical Committee of the International EPD® System. See www.environdec.com for a list of members. Chair of the PCR review: Diogo Aparecido Lopes Silva. The review panel may be contacted via the Secretariat www.environdec.com/contact Contact via info@environdec.com
Independent third-party verification of the declaration and data, according to ISO 14025:2006:	☐ EPD process certification ☒ **EPD verification**
Third party verifier	**Viktor HAKKARAINEN – CHM Analytics** Drottninggatan 69, 411 07 Gothenburg, Sweden viktor.hakkarainen@chm-analytics.com 
Approved by	The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier:	☐ Yes ☒ No
EPD® registration number	**IES-0022285:001**
EPD® prepared by	Ibrahim KHALID – Saint-Gobain Surface Solutions ibrahim.khalid@saint-gobain.com
Declaration issued	2025/06/11, **valid until:** 2030/06/10
Geographical scope of the EPD®	**Europe, Middle East, Africa**

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same version number up to the first two digits) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical DU/FU); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of Comparison. For further information about comparability, see EN 15804:2012+A2:2019/AC:2021 and ISO 14025:2006.

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

Product information

Company information

Manufacturer of the product and EPD® owner	**Saint-Gobain Surface Solutions**
Production site	Saint-Gobain Surface Solutions – Koło, Poland Norton, 62-600, Koło, Poland
Plant certifications and labels	ISO 50001 ISO 14001 ISO 9001 ISO 45001 ISO 45003

Product description and use

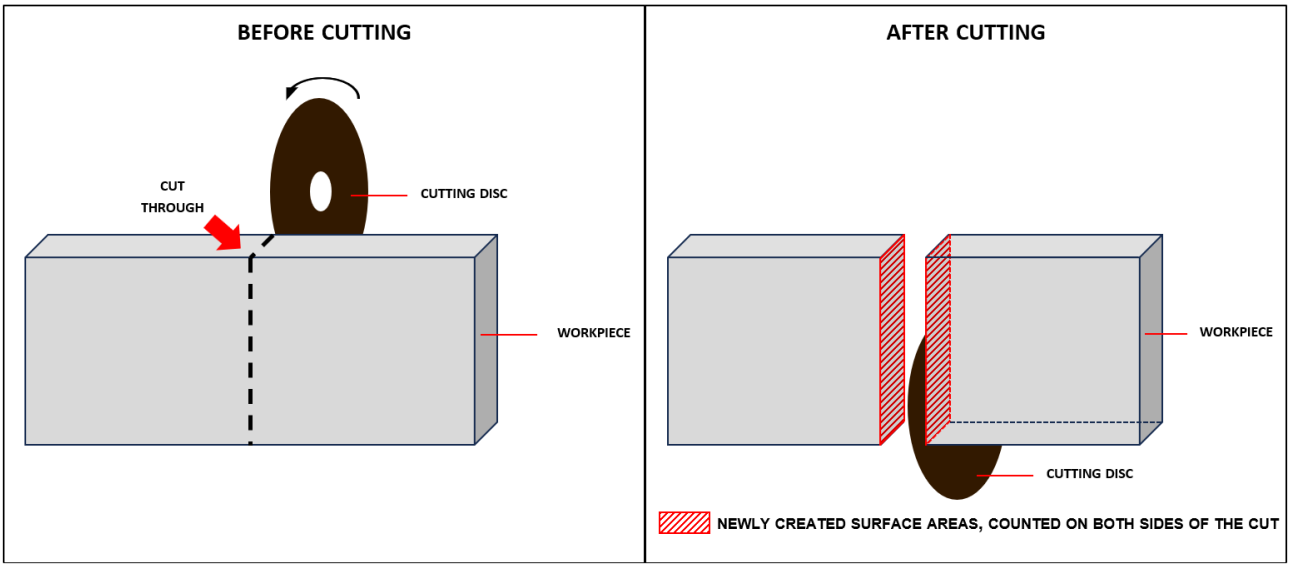
Product name	**Norton® Expert "Faster Pro"** **Cutting Discs Inox**
Declared product (representative product)	**125 x 1,3 mm – 66252849390**
UN CPC code	**37910** - Millstones, grindstones, grinding wheels and the like, without frameworks, for working stones, and parts thereof, of natural stone, of agglomerated natural or artificial abrasives, or of ceramics; natural or artificial abrasive powder or grain, on a base of textile, paper or other material
Product description	**Norton® Expert "Faster Pro"** are pro quality discs for fast and safe cutting of steel & stainless steel. With a profile of 1,3mm, these discs are thin enough to cut fast, but thick enough to give confidence to end users. The zirconia grain inside the disc enhances the cutting speed and life, especially on inox thanks to the self-sharpening nature constantly generating sharp cutting edges. These **cutting discs** are specially designed for steel & stainless steel.
Recommended product uses	**Cutting on:** • Steel • Stainless Steel • Other ferrous metals (cast iron, …)

Technical data

Specification	Value / Description
Main abrasive	Alumina Zirconia
Maximum operating speed and rotational frequency (safety)	Max Peripheral Speed: 80 m/s Max Rotational Frequency 115 mm = 13 300 rpm 125 mm = 12 250 rpm

Function of the product – Cutting

The products covered by this EPD® are cutting discs. Their function is to cut through a workpiece. Cutting as a service can be defined as the creation of a new surface on the workpiece (more precisely: two new surfaces on both sides of the cut) where the abrasive is applied to as the cutting edge.



The purpose of cutting is the creation of the new surface area and not the removal of material. The functional unit, which is the unit per which LCA results are given, is based on this definition of cutting (generation of a new surface on a workpiece).

Multiple products included in the EPD®

This Environmental Product Declaration (EPD®) describes the environmental impacts of cutting discs from the **Norton® Expert "Faster Pro" Inox** range. The declared product is the **125 x 1,3 mm disc (66252849390)**. The choice of this item as the representative product is based on sales volume.

This EPD® of multiple products also covers the item in 115x1,3 mm (66252849389).

Conversion factors are provided in the "Additional Environmental Information" section, allowing to calculate results for this other dimension.

Declaration of the main product components and/or materials

Description of the main components and/or materials for 1 unit disc **Norton® Expert "Faster Pro" Inox 125 x 1,3 mm** (66252849390), alongside the range of variation of weights for other products covered by the EPD®.

Product components	Weight, declared product [g / disc]	Range of weight for other included products [g / disc]	Post-consumer recycled material*, weight-% of product	Biogenic C [g C / disc]
Abrasive mix	**28,0**	24,0 – 28,0	0%	0
Glass cloth	**2,9**	2,5 – 2,9	0%	0
Paper blotter	**0,7**	0,6 – 0,7	0%	0,3
Steel ring	**0,9**	0,9	<1%	0
Sum	**32,5**	**27,9 – 32,5**	**<1%**	**0,3**
Packaging materials	**Weight, declared product [g / disc]**	**Range of weight for other included products [g / disc]**	**Weight-% versus the product**	**Biogenic C [g C / disc]**
-	-	-	-	-

*More information on recycled content in "Additional Environmental Information" section

At the date of issue of this declaration, there is no "Substance of Very High Concern" (SVHC) in concentration above 0.1% by weight, and neither do their packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

Assessment of the technical performance

As required by c-PCR 030 Abrasive Products, this section will describe the application setting and results considered for the use stage scenario.
This table relates to the testing of 66252849390 (125 x 1,3 mm). All other products covered by the EPD® were also tested.

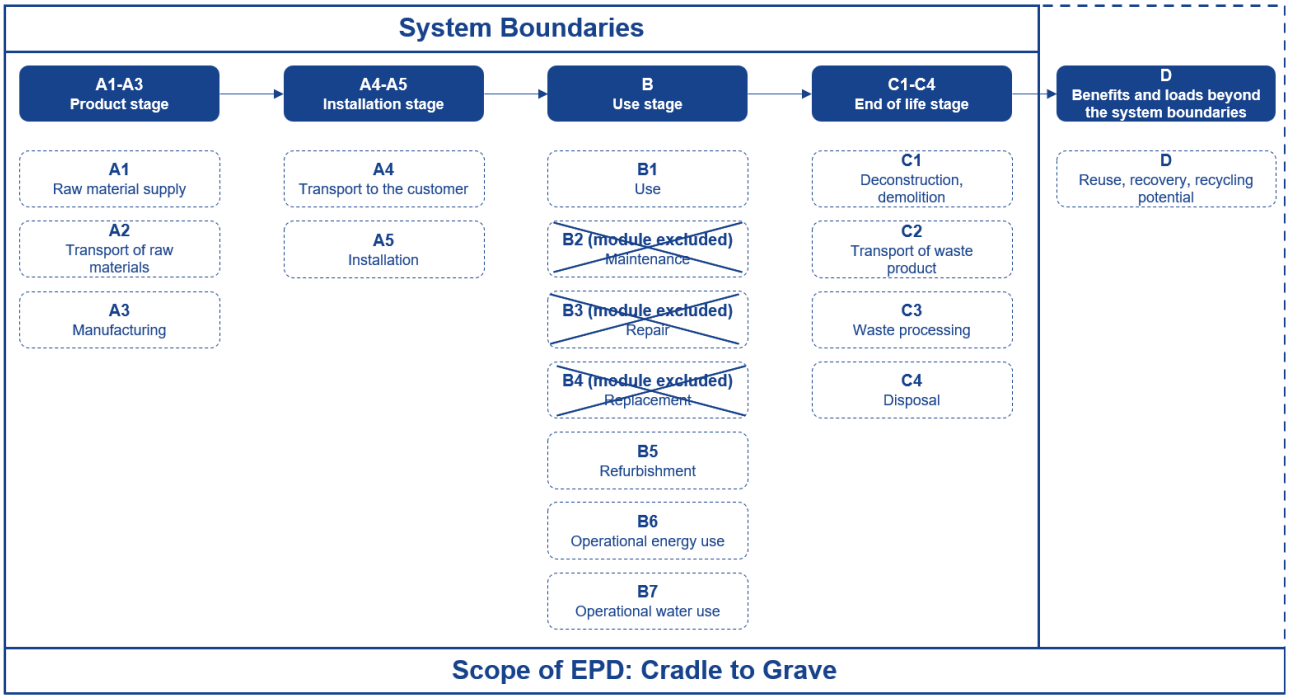
Workpiece material	**Stainless steel plates – Grade 304 L**
Workpiece dimensions	6 mm x 100 mm Section of cut = 0,0006 m² **Surface area generated = 0,0012 m² per cut (2 sides)**
Grinding machine type	**Bosch – Electrical corded**
Grinding machine power	**1700 W**
Angle	90° (always true for cutting applications)
Average number of cuts per disc	**21 cuts per disc**
Average time per cut	12,3 seconds per cut
Diameter of the product after testing	Around 70 mm (due to the protective cover on the machine)

LCA calculation information

Type of EPD®	**Type "c" EPD® – Cradle to Grave and module D.**
Functional unit	**Create 1m² of new surface area on a workpiece by removal of material, considering both newly created areas.**
System boundaries	Mandatory stages = A1-A3; A4-A5; B1; B5-B7; C1-C4 and D. The polluter pays, as well the modularity principles have been followed.
Technical Service Life (TSL)	Abrasive products do not have a time-based Reference Service Life (RSL), but a Technical Service Life (TSL), which expresses how much abrasive was necessary to provide the service described by the Functional Unit (FU). **TSL 125 x 1,3 mm = 39,7 discs/FU.**
Cut-off rules	In case there is not enough information, process energy and materials representing less than 1% of the whole energy and mass used can be excluded (if they do not cause significant impacts). The addition of all the inputs and outputs excluded cannot be bigger than the 5% of the whole mass and energy used, as well as total emissions. Flows related to human activities such as employee transport are excluded. Capital goods are excluded since the related flows are supposed to be negligible compared to the products.
Allocation procedures	Allocation has been avoided when possible and when not possible an allocation by mass (kg) was applied.
Geographical coverage and time period	The geographical scope of the EPD® is Europe, Middle East, Africa. This EPD® is valid for products manufactured in the factory of Koło (Poland), and manufacturing data is representative of the year 2023.
Background data source	Databases: Sphera 2023.2, Ecoinvent v3.9.1
Software	"LCA For Experts" provided by Sphera, version 10.9.1.17

Declared modules

	PRODUCT STAGE			CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				RESOURCE RECOVERY STAGE
	Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal	Reuse-Recovery Recycling
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	X	MND			X	X	X	X	X	X	X	X
Geography	GLO	EU	PL	EU	EU	EU	MND			EU	EU	EU	EU	EU	EU	EU	EU
Specific data	34%			System boundaries (X=included, MND=module not declared)													
Variation-products	+65%																
Variation-sites	0% (only one site)																



A1-A3, Product stage

A1, Raw materials supply

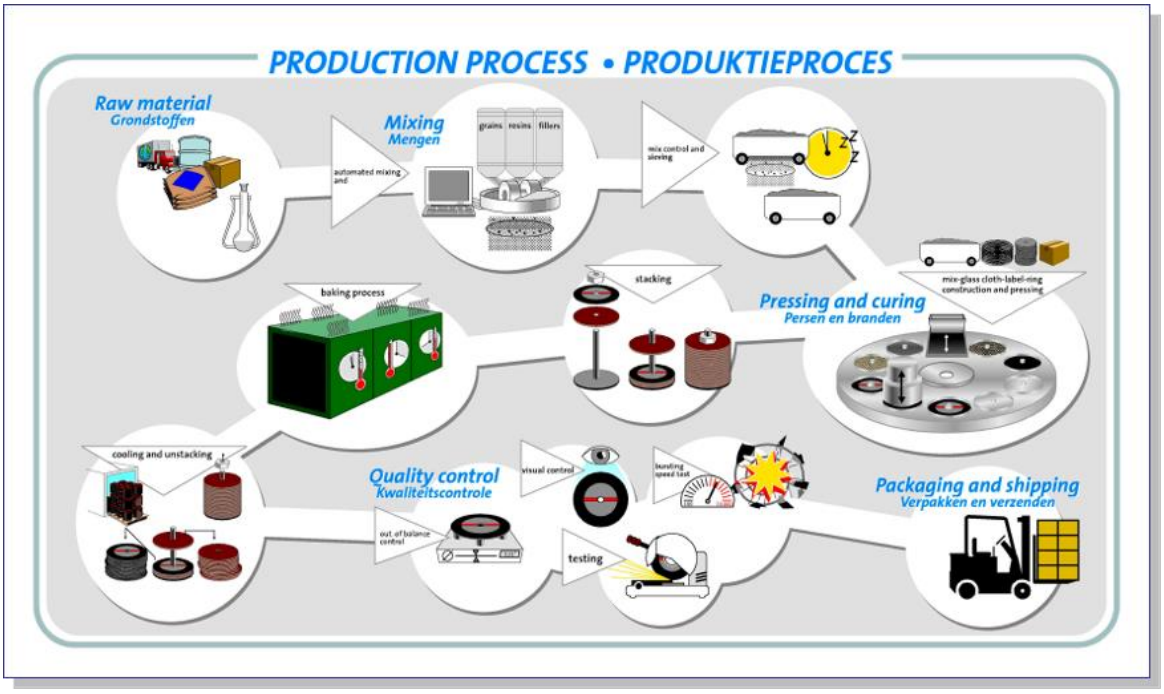
This module includes the extraction and transformation of raw materials such as abrasive grains, resins, fillers, etc.

A2, Transport to the manufacturer

This module includes boat and road transport of raw materials to the manufacturing site.

A3, Manufacturing

This module includes the manufacture of products. The processing of any waste arising from this stage is also included.
Electricity and natural gas consumptions for the manufacturing and curing processes are accounted in this module, as well as industrial water usage.



A4-A5, Installation process stage

A4, Transport to the customer's site: This module includes transport from the production gate to the customer. Transport is calculated based on a scenario with the parameters described in the following table.

PARAMETER	VALUE/DESCRIPTION
Fuel type and consumption of vehicle or vehicle type used for transport e.g., long distance truck, boat, etc.	Freight truck, load of 24 t and consumption of 0,38 litres per km. Container ship, load of 52 134 t, and consumption of 2,83e-6 kg HFO per km
Distance	1000 km by truck
Capacity utilization (including empty returns)	85% (30% empty returns)
Bulk density of transported products	2000 kg/m^3
Volume capacity utilization factor	1

A5, Installation of the product: This module includes packaging disposal. The declared product is not considered to require energy or ancillaries for installation (installed manually).
The following table quantifies the parameters for installing the product at the customer's site. All installation materials and their waste processing are included.

PARAMETER	VALUE/DESCRIPTION
Ancillaries and other resource use	None
Output materials as results of waste processing at the building site	None
Direct emissions to ambient air, soil, and water	None

B1-B7 Use Stage

B1, Use: Impacts related to the use of the product (lubricants for grinding machine, etc.). Not applicable in this case as the angle grinder considered are lubricated for their lifetime.

B2, Maintenance: Excluded, not applicable for abrasive products, as per c-PCR 030.

B3, Repair: Excluded, not applicable for abrasive products, as per c-PCR 030.

B4, Replacement: Excluded, not applicable for abrasive products, as per c-PCR 030.

B5, Refurbishment: This module accounts for any operation happening during the service life of product and aiming at restoring an abrasive to a functional state, from a non-functional state. Not applicable in this case.

B6, Operational energy use: This module accounts for energy consumptions during usage. In this case, it accounts for the electricity consumption of the grinding machine (angle grinder).

PARAMETER	VALUE/DESCRIPTION
Electricity consumption of angle grinder	4,8 kWh/FU

B7, Operational water use: This module accounts for water consumption and treatment during usage, such as wet cutting. Not applicable in this case.

C1-C4, End of Life Stage

C1: Deconstruction, demolition, dismantling: The dismantling of the product is manual and does not generate environmental impacts.

C2: Transport to waste processing site. The product is transported over 100 km by truck.

C3: Waste processing for reuse, recovery and/or recycling.

C4: Disposal, including provision and all transport, provision of all materials, products and related energy and water use. Product is assumed to be sent to landfill.

PARAMETER	VALUE/DESCRIPTION
Collection process specified by type	100% of waste collected and sent to landfill
Disposal specified by type	0,1 kg/FU to landfill – Organic matter (resins, etc.) 0,3 kg/FU to landfill – Inert matter (grains, steel ring, etc.)
Assumptions for scenario development (e.g. transportation)	Abrasive waste is transported over 100 km by truck from customer's site to landfill

D, Reuse/recovery/recycling potential

100**%** of the waste is assumed to be landfilled, without accounting for any energy recovery through landfill gas valorisation.

There is no reuse nor recovery nor recycling considered for this product.

Hence, no recycling benefits or charges are reported on stage D.

LCA results

As specified in EN 15804:2012+A2:2019/AC:2021 and the Product-Category Rules, the environmental impacts are declared and reported using the baseline characterization factors from the “EN15804+A2 (based on EF 3.1)” characterization method. Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant.

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

All emissions to air, water, and soil, and all materials and energy used have been included.

Foreground modelling of infrastructures is excluded, but infrastructures are still included in used datasets.
The results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity, noncancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes.

This EPD including module C, we strongly advise against using the results of modules A1-A3 without considering the results of module C.

The following results do <u>not</u> refer to a product unit (1 disc, 1 set, etc.).

All values refer to the functional unit “create 1m² of new surface area on a workpiece”, using a 125 x 1,3 mm Norton® Expert “Faster Pro” Inox cutting disc (66252849390).

Discs in 115 x 1,3 mm (66252849389) are covered by conversion factors provided in the “Additional Environmental Information” section.

Environmental Impacts – Norton® Expert “Faster Pro” Inox

Functional unit – Cutting: Create 1m² of new surface area on a workpiece by removal of material, considering both newly created areas.

Environmental indicators	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND LIFE CYCLE
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Climate Change - total [kg CO2 eq.]	6,6E+00	9,5E-02	0	0	0	0	0	0	1,6E+00	0	0	2,8E-03	0	5,3E-02	0
Climate Change - fossil [kg CO2 eq.]	6,6E+00	9,4E-02	0	0	0	0	0	0	1,6E+00	0	0	2,7E-03	0	9,3E-03	0
Climate Change - biogenic [kg CO2 eq.]	-3,8E-02	2,7E-04	0	0	0	0	0	0	1,5E-02	0	0	7,9E-06	0	4,3E-02	0
Climate Change - land use and land use change [kg CO2 eq.]	5,3E-03	8,8E-04	0	0	0	0	0	0	1,7E-04	0	0	2,6E-05	0	1,9E-05	0
Ozone depletion [kg CFC-11 eq.]	1,0E-07	8,3E-15	0	0	0	0	0	0	2,9E-11	0	0	2,4E-16	0	2,0E-14	0
Acidification [Mole of H+ eq.]	4,2E-02	1,1E-04	0	0	0	0	0	0	3,3E-03	0	0	3,2E-06	0	4,8E-05	0
Eutrophication - freshwater [kg P eq.]	1,9E-03	3,5E-07	0	0	0	0	0	0	5,8E-06	0	0	1,0E-08	0	8,8E-07	0
Eutrophication - marine [kg N eq.]	8,0E-03	3,8E-05	0	0	0	0	0	0	8,0E-04	0	0	1,1E-06	0	1,2E-05	0
Eutrophication - terrestrial [Mole of N eq.]	8,2E-02	4,4E-04	0	0	0	0	0	0	8,3E-03	0	0	1,3E-05	0	1,3E-04	0
Photochemical ozone formation - human health [kg NMVOC eq.]	2,5E-02	9,5E-05	0	0	0	0	0	0	2,1E-03	0	0	2,8E-06	0	3,7E-05	0
Resource use, minerals and metals [kg Sb eq.][1]	5,8E-05	6,2E-09	0	0	0	0	0	0	2,4E-07	0	0	1,8E-10	0	3,4E-10	0
Resource use, fossils [MJ][1]	9,6E+01	1,3E+00	0	0	0	0	0	0	3,3E+01	0	0	3,8E-02	0	1,3E-01	0
Water use [m³ world equiv.][1]	3,1E+00	1,1E-03	0	0	0	0	0	0	3,5E-01	0	0	3,2E-05	0	4,7E-04	0

[1]The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

Resource Use – Norton® Expert “Faster Pro” Inox

Functional unit – Cutting: Create 1m² of new surface area on a workpiece by removal of material, considering both newly created areas.

	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND LIFE CYCLE
Resource use indicators	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Use of renewable primary energy (PERE) [MJ]	1,7E+01	9,1E-02	0	0	0	0	0	0	2,0E+01	0	0	2,7E-03	0	1,7E-02	0
Primary energy resources used as raw materials (PERM) [MJ]	5,3E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	1,7E+01	9,1E-02	0	0	0	0	0	0	2,0E+01	0	0	2,7E-03	0	1,7E-02	0
Use of non-renewable primary energy (PENRE) [MJ]	9,4E+01	1,3E+00	0	0	0	0	0	0	3,3E+01	0	0	3,8E-02	0	1,3E-01	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	1,1E+01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	1,0E+02	1,3E+00	0	0	0	0	0	0	3,3E+01	0	0	3,8E-02	0	1,3E-01	0
Input of secondary material (SM) [kg]	2,3E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,1E-01	1,0E-04	0	0	0	0	0	0	1,6E-02	0	0	2,9E-06	0	1,7E-05	0

Resource use indicators are calculated using the method presented as “option B” in Annex 3 of PCR 2019:14 “Construction Products” v1.3.4.

Waste Category & Output flows – Norton® Expert “Faster Pro” Inox

Functional unit – Cutting: Create 1m² of new surface area on a workpiece by removal of material, considering both newly created areas.

	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND LIFE CYCLE
Waste category & output flows	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Hazardous waste disposed (HWD) [kg]	9,3E-06	4,8E-12	0	0	0	0	0	0	-2,6E-09	0	0	1,4E-13	0	7,1E-12	0
Non-hazardous waste disposed (NHWD) [kg]	2,6E+00	1,9E-04	0	0	0	0	0	0	2,4E-02	0	0	5,4E-06	0	3,9E-01	0
Radioactive waste disposed (RWD) [kg]	3,6E-04	1,7E-06	0	0	0	0	0	0	5,2E-03	0	0	4,9E-08	0	1,5E-06	0
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	1,1E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Additional voluntary indicators from EN 15804 – Norton® Expert “Faster Pro” Inox

Functional unit – Cutting: Create 1m² of new surface area on a workpiece by removal of material, considering both newly created areas.

	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND LIFE CYCLE
Additional voluntary indicators from EN 15804	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
GWP - GHG [kg CO2 eq.][1]	6,6E+00	9,5E-02	0	0	0	0	0	0	1,6E+00	0	0	2,8E-03	0	9,3E-03	0

[1] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Biogenic carbon content – Norton® Expert “Faster Pro” Inox

Functional unit – Cutting: Create 1m² of new surface area on a workpiece by removal of material, considering both newly created areas.

Biogenic carbon content	A1 / A2 / A3
Biogenic carbon content in product [kg]	1,2E-02
Biogenic carbon content in packaging [kg]	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2.

Biogenic carbon is found in the paper used in the blotter on the product.

LCIA indicators max. variation – Norton® Expert “Faster Pro” Inox

Functional unit – Cutting: Create 1m² of new surface area on a workpiece by removal of material, considering both newly created areas.

As per requirements of PCR 2019:14 version 1.3.4 for EPDs of multiple products, this table declares the maximum variation of environmental impact between the declared product and the product furthest away from it, on each indicator, across modules A to C.

It allows the reader to know to which extent the multiple products gathered in the same EPD have similar environmental impacts.

		Cradle-to-Grave (excluding module D)	
Maximum variation of included products vs declared product		A - C	
	Climate Change - total	+ 0%	+ 50%
	Climate Change - fossil	+ 0%	+ 50%
	Climate Change - biogenic	+ 0%	+ 8%
	Climate Change - land use and land use change	+ 0%	+ 63%
	Ozone depletion	+ 0%	+ 64%
	Acidification	+ 0%	+ 59%
	Eutrophication - freshwater	+ 0%	+ 64%
	Eutrophication - marine	+ 0%	+ 57%
	Eutrophication - terrestrial	+ 0%	+ 57%
	Photochemical ozone formation - human health	+ 0%	+ 58%
	Resource use, minerals and metals	+ 0%	+ 62%
	Resource use, fossils	+ 0%	+ 45%
	Water use	+ 0%	+ 57%
	GWP-GHG	+ 0%	+ 50%

Additional environmental information

Conversion factors for discs in other dimensions

Conversion factors provided in the table below can be used to convert results for the declared product (**125 x 1,3 mm - 66252849390**) into results for the same product in a different dimension (**115 x 1,3 mm – 66252849389**).

Conversion factors are provided for every module declared and on which environmental impacts are reported (non-zero values) and are applicable to environmental impact indicators only.

Conversion factors are meant to be multiplied by the corresponding value (same module, same indicator) in the declared results of the reference product.
The Technical Service Life (TSL) of discs in 115 x 1,3 mm is **75,8 discs per functional unit.**

	Conversion factors applicable to the results of the reference product														
	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate Change - total	1,65	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,67	-
Climate Change, fossil	1,65	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,95	-
Climate Change, biogenic	1,60	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,61	-
Climate Change, land use and land use change	1,64	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,96	-
Ozone depletion	1,64	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,96	-
Acidification	1,64	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,96	-
Eutrophication, freshwater	1,64	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,94	-
Eutrophication, marine	1,64	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,96	-
Eutrophication, terrestrial	1,64	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,96	-
Photochemical ozone formation, human health	1,64	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,96	-
Resource use, mineral and metals	1,63	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,96	-
Resource use, fossils	1,64	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,95	-
Water use	1,65	1,65	-	-	-	-	-	-	0,88	-	-	1,96	-	1,97	-

Recycled content according to ISO 14021

This new generation of cutting discs incorporates abrasive grains recycled from pre-consumer origin. It is eligible to recycled content claims under ISO 14021, but not under EN15804+A2, which only accounts for materials recycled from post-consumer origin.

Therefore, its recycled content under ISO 14021 cannot be declared in the EPD® in the "content declaration" section. Hence, it is shown here, for all products covered by the EPD®.

Recycled materials come from:

- **Abrasive grains:** 25%-weight of the total abrasive grain quantity is recycled from **pre-consumer** waste streams.
- **Steel ring:** 12%-weight of the steel ring attachment is recycled from **post-consumer** waste streams.

ISO 14021:2016 defines the recycled content[1], expressed as a percentage, as follows:

$$\frac{mass\ of\ pre\text{-}consumer^{2}\ recycled\ material + mass\ of\ post\text{-}consumer^{3}\ recycled\ material}{mass\ of\ the\ product} \times 100$$

The following table gives the total recycled content values, including pre-consumer, according to ISO 14021, at product level:

Recycled content in product according to ISO 14021 (including pre-consumer)		
Dimensions	**125 x 1,3 mm**	**115 x 1,3 mm**
Article code	66252849390	66252849389
Total Recycled Content, including pre-consumer, according to ISO 14021, weight-%	**15%**	**16%**

[1] **Recycled content:** proportion, by mass, of recycled material in a product or packaging. Only pre-consumer and post-consumer materials shall be considered as recycled content.

[2] **Pre-consumer material:** material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

[3] **Post-consumer material:** material generated by households or commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose.

Additional information:

Electricity information

The factory of Koło in Poland uses electricity purchased from the grid. Hence, the electricity mix considered for the manufacturing of the studied product is modelled using the residual mix, as modelled in Ecoinvent 3.9.1.
For electricity consumed during usage, the market mix of Europe average was taken, as modelled in Sphera 2023.2.

<table>
<tr><th>Type of information</th><th>Description</th></tr>
<tr><td>Location</td><td>Poland / Europe Average</td></tr>
<tr><td>Share of electricity covered by Guarantee of Origin</td><td>100% of the electricity consumed is purchased from the grid</td></tr>
<tr><td>Energy sources for electricity</td><td>
<table>
<tr><th></th><th>Residual mix AIB year 2021</th><th>Market mix Sphera year 2019</th></tr>
<tr><td>RE Total</td><td>8%</td><td>24%</td></tr>
<tr><td>RE unspecified</td><td>0%</td><td>0%</td></tr>
<tr><td>RE biomass</td><td>2%</td><td>1%</td></tr>
<tr><td>RE solar</td><td>2%</td><td>3%</td></tr>
<tr><td>RE geothermal</td><td>0%</td><td>0%</td></tr>
<tr><td>RE wind</td><td>3%</td><td>7%</td></tr>
<tr><td>RE hydro</td><td>1%</td><td>13%</td></tr>
<tr><td>Nuclear</td><td>1%</td><td>67%</td></tr>
<tr><td>FO Total</td><td>91%</td><td>9%</td></tr>
<tr><td>FO unspecified</td><td>1%</td><td>1%</td></tr>
<tr><td>FO hard coal</td><td>79%</td><td>0%</td></tr>
<tr><td>FO lignite</td><td>0%</td><td>0%</td></tr>
<tr><td>FO oil</td><td>0%</td><td>1%</td></tr>
<tr><td>FO gas</td><td>11%</td><td>7%</td></tr>
</table>
RE: Renewable Electricity
FO: Fossil Origin
</td></tr>
<tr><td>Type of dataset</td><td>Cradle to gate from Ecoinvent 3.9.1 and Sphera MLC 2023.2 databases.</td></tr>
<tr><td>Source</td><td>AIB, 2022 Report – Residual mix composition representative of year 2021
Sphera MLC 2023.2 – RER: Electricity grid mix</td></tr>
<tr><td>CO_2 emission kg CO_2 eq. / kWh</td><td>PL Residual mix: 1,08 kg of CO_2 eq / kWh – GWP-GHG indicator
RER Consumer mix: 0,326 kg of CO_2 eq / kWh – GWP-GHG indicator</td></tr>
</table>

Data quality

Inventory data quality is judged by geographical, temporal, and technological representativeness. To cover these requirements and to ensure reliable results, first-hand industry data crossed with LCA background datasets were used. The data was collected from internal records. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects overall good inventory data quality.

References

1. EN 15804:2012+A1:2013 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
2. EN 15804:2012+A2:2019/AC:2021 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
3. EPD International. General Program Instructions (GPI) for the International EPD® System (version 4.0) www.environdec.com.
4. The International EPD System PCR 2019:14 Construction products and Construction services. Version 1.3.4
5. The International EPD System c-PCR 030 Abrasive Products (c-PCR to PCR 2019:14). Version 2024-06-20.
6. European Chemical Agency, Candidate List of substances of very high concern for Authorization. https://echa.europa.eu/candidate-list-table
7. LCA report Thin Wheels – Saint-Gobain Surface Solutions