

# Product Environmental Profile

Family technical name: Indoor/Outdoor ribbon slotted core

Family brand name: GAHSQWQ

Reference product name : GAHSQWQ-K-AHNRV 96/C4 G652D S12



0,016  
kg CO<sub>2</sub> eq.  
Climate change - total



1,39E-09  
kg Sb eq.  
Resource use - minerals & metals (ADPe)




1,16E-04  
m<sup>3</sup>  
Net use of fresh water



0,5  
MJ  
Total Primary Energy

The above environmental impacts are "cradle to gate" or "Manufacturing phase" values (A1-A3) and one communication signal (one optical fibre) for 1 m of reference product (functional unit).

|   |                      |                                  |   |
|---|----------------------|----------------------------------|---|
| PEP ecopassport N°:   | NXNS-00252-V01.01-EN | Product Category Rules:          | PEP-PCR-ed4-EN-2021 09 06   |
| Verifier accreditation N°:  | VH08                 | Product Specific Rules:          | PSR-0001-ed4-EN-2022 11 16  |
| Date of publication:  | 03-2026              | Program information & documents: | <a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a>                  |
|   |                      | Validity period:                 | <b>5 years</b>  |
| <b>Independent verification of the declaration and data, in accordance with ISO 14025 : 2006</b>  |                      |                                  |   |
| Internal <input type="checkbox"/> External <input checked="" type="checkbox"/>  |                      |                                  |   |
| The PCR critical review was conducted by a panel of experts chaired by Julie Orgelet (Ddmain).  |                      |                                  |  |
| PEP are compliant with XP C08-100-1 :2016 or EN 50693<br>The elements of the present PEP cannot be compared with elements from another program. |                      |                                  |   |
| Compliant with ISO 14025: 2006 "Environmental labels and declarations - Type III environmental declarations".                                   |                      |                                  |   |

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Nexans Corporate Social Responsibility commitment

Corporate Social Responsibility which is the confluence between environmental, economic and social aspects, is an integral part of the Nexans's strategy. Nexans has been supporting the **United Nations Global Compact** since December 2008 and has implemented internal action plans to integrate Sustainable Development at all levels. It includes responsible governance, healthy and safe working environment for employees, reduced global carbon footprint through the **Nexans Carbon Neutrality strategy**.



Reference Product description

**GAHSQWQ-K-AHNRV 96/C4 G652D S12**

Type GAHSQWQ is a ribbon slotted core fibre optical cable. The cable type is intended for use in regional, urban and area networks.

Products covered:

The aforementioned products belong to the category communication and data wires & cables of the Product Specific Rules (PSR) for Wires, Cables and Accessories (PSR-0001) of the PEP ecopassport® program.

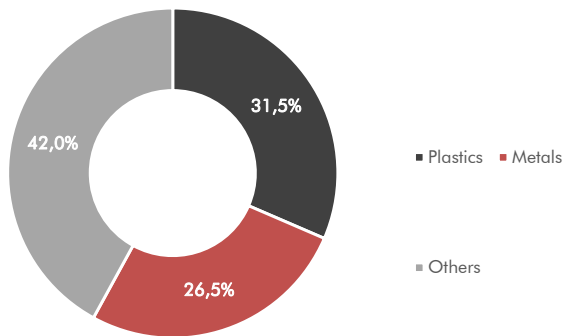
The PEP concern all the products in the range Indoor/Outdoor ribbon slotted core and the reference product of the PEP is GAHSQWQ-K-AHNRV 96/C4 G652D S12.

Functional unit:

To transmit one communication signal on 1 m cable according to protocol, 10GBASE-LR, during 20 years and a 100% use rate in accordance with the standards in force, detailed in the data sheet available on our website [www.nexans.com](http://www.nexans.com).

Lifetime and use rate correspond to the Infrastructure - Telecom network (fixed and mobile) application as defined in the table given in Appendix 1 of the specific rules for wires, cables and accessories.

Constituent materials



The total mass of the reference product and packaging is 326,19 g/m. Constituent materials are distributed as given in the graph.

Nexans has implemented necessary procedures to ensure product compliance with the relevant standards when products are put on the market.



### Manufacturing



- All the products in the range Indoor/Outdoor ribbon slotted core are manufactured in Sweden.
- **The electricity mix model for the manufacturing stage is from Sweden > 1 kV.**
- The reference year for the collected LCI is 2025
- All Nexans sites in Sweden have implemented a certified Environmental Management System according to ISO14001 standard.

#### Packaging designed to reduce environmental impacts:

- Packaging was designed according to the applicable standard (Directive 94/62/EC).
- The packaging considered to transport the reference product is a K14. It is considered to be used 8 times.

### Distribution



The transportation scenario for the impact assessment of the distribution stage is local, considering:

- 1000 km covered by truck.

### Installation



Installation processes for the reference product are considered out of the scope of the study, according to the Product Specific Rules document for "Wires, Cables and Accessories" from PEP ecopassport® program. Only 5% of product losses and packaging disposal is considered in this stage

### Use



The use scenario considers the operation of the reference product in Infrastructure - Telecom network (fixed and mobile), with:

- Reference Lifetime (RLT) = 20 years
- Protocol: 10GBASE-LR
- Use rate = 100%
- Type: Single mode

**Considering the aforementioned hypotheses, the energy consumption over the RLT at use stage is 0,0015 kWh/m.**

- The electricity mix considered at use stage is Sweden  $\leq 1$  kV.
- 96 Fibres in reference cable
- No maintenance is necessary to ensure the operation of the cable during the considered reference lifetime.

The reference lifetime mentioned in this PEP corresponds to an average data used for impact calculation, taking into account the average time a cable might be installed in a system before being disposed. **It CANNOT BE considered as an equivalent to the guaranteed product technical lifetime.**

### End-of-life



- The transportation scenario chosen for the impact analysis associated with end-of-life stage is 1000 km covered by truck.
- The assumed electricity mix model for end-of-life stage is Sweden  $\leq 1$  kV.

The cables are recycled through a grinding process for the separation of polymers and metal parts. The separated materials are then assumed to be recycled, incinerated or landfilled according to default scenarios given in the PCR.

If the customer wants to recycle their cables at the end-of-life, Nexans has the know-how of cables recycling at their end-of-life through the structure named Nexans Recycling Services (recycling.services@nexans.com), to offer a complete solution for the recycling of polymers and metals.



### III. ENVIRONMENTAL IMPACTS

The reference product GAHSQWQ-K-AHNRV 96/C4 G652D S12 belongs to the Product Category Rules (PEP-PCR-ed4-EN-2021 09 06) and Product Specific Rules (PSR-0001-ed4-EN-2022 11 16) from the PEP ecompassport® program. According to the PCR, the life cycle impact assessment of the reference product takes into account manufacturing, distribution, installation, use and end-of-life stages.

All the necessary hypotheses to evaluate the environmental impacts of the reference product lifecycle are presented in the previous sections (electricity mix models, use scenario, etc). The software used to perform the evaluation is EIME 6.3.2-4, with the Nexans-2025-04 database.

Representativeness: the study is representative of cable production in Sweden with a local scenario for distribution. The electricity model for use is Sweden  $\leq 1$  kV and the model for end-of-life is Sweden  $\leq 1$  kV.

#### Impact results for one communication signal (one optical fibre) and 1 m of GAHSQWQ-K-AHNRV 96/C4 G652D S12

##### Mandatory indicators:

| Environmental indicator/flows  | Unit                   | A1-Raw materials | A2-Transport to manufacturer | A3-Manufacturing process | Total manufacturing A1-A3 | A4-Distribution to customer | A5-Installation* | B6-Use   | C1-C4-End of life | TOTAL    |
|--|------------------------|------------------|------------------------------|--------------------------|---------------------------|-----------------------------|------------------|----------|-------------------|----------|
| Climate change - total (GWP)   | kg CO <sub>2</sub> eq. | 5,61E-03         | 7,04E-04                     | 9,94E-03                 | 1,63E-02                  | 1,86E-04                    | 9,91E-04         | 5,30E-07 | 1,54E-03          | 1,90E-02 |
| Climate change - fossil (GWPf)   | kg CO <sub>2</sub> eq. | 5,55E-03         | 7,04E-04                     | 9,85E-03                 | 1,61E-02                  | 1,86E-04                    | 8,74E-04         | 3,69E-07 | 1,52E-03          | 1,87E-02 |
| Climate change - biogenic (GWPb)   | kg CO <sub>2</sub> eq. | 5,47E-05         | 1,92E-09                     | 9,61E-05                 | 1,51E-04                  | 7,61E-10                    | 1,16E-04         | 1,61E-07 | 1,53E-05          | 2,82E-04 |
| Climate change - land use & land use change (GWPlu)  | kg CO <sub>2</sub> eq. | 1,66E-08         | 7,08E-10                     | 4,47E-11                 | 1,73E-08                  | 2,81E-10                    | 8,77E-10         | 0,00E+00 | 6,02E-10          | 1,91E-08 |
| Ozone layer depletion (ODP)  | kg CFC-11 eq.          | 7,92E-10         | 5,97E-12                     | 2,55E-10                 | 1,05E-09                  | 2,26E-12                    | 5,45E-11         | 9,43E-15 | 6,94E-11          | 1,18E-09 |
| Acidification potential of soil and water (AP)   | mol H+ eq.             | 2,15E-05         | 1,03E-05                     | 3,06E-05                 | 6,24E-05                  | 2,94E-07                    | 3,39E-06         | 8,04E-09 | 5,53E-06          | 7,16E-05 |
| Eutrophication - freshwater (Epf)  | kg PO43- eq.           | 6,51E-08         | 1,83E-09                     | 3,10E-07                 | 3,77E-07                  | 6,95E-10                    | 1,83E-08         | 2,12E-11 | 5,35E-09          | 4,02E-07 |
| Eutrophication - marine (Epm)  | kg N eq.               | 3,71E-06         | 2,31E-06                     | 8,27E-06                 | 1,43E-05                  | 5,32E-08                    | 7,52E-07         | 7,02E-10 | 8,30E-07          | 1,59E-05 |
| Eutrophication - terrestrial (Ept)   | mol N eq.              | 3,98E-05         | 2,54E-05                     | 9,13E-05                 | 1,56E-04                  | 5,84E-07                    | 8,39E-06         | 3,01E-08 | 1,15E-05          | 1,77E-04 |
| Photochemical ozone formation - human health (POCP)  | kg NMVOC eq.           | 1,65E-05         | 6,63E-06                     | 3,01E-05                 | 5,32E-05                  | 1,89E-07                    | 2,76E-06         | 1,55E-09 | 2,78E-06          | 5,89E-05 |
| Resource use - minerals & metals (ADPe)  | kg Sb eq.              | 3,04E-10         | 1,75E-10                     | 9,10E-10                 | 1,39E-09                  | 6,63E-11                    | 9,29E-11         | 2,45E-12 | 3,84E-10          | 1,93E-09 |
| Resource use - fossils (ADPf)  | MJ                     | 3,16E-01         | 1,12E-02                     | 1,11E-01                 | 4,38E-01                  | 3,30E-03                    | 2,26E-02         | 8,40E-05 | 2,36E-02          | 4,88E-01 |
| Water use (WU)   | m <sup>3</sup> eq.     | 2,43E-03         | 1,76E-05                     | 2,50E-03                 | 4,95E-03                  | 6,69E-06                    | 2,50E-04         | 2,92E-07 | 2,52E-04          | 5,46E-03 |
| Use of renewable primary energy excluding renewable primary energy used as raw material            | MJ                     | 7,08E-04         | 2,99E-05                     | 1,67E-02                 | 1,75E-02                  | 1,04E-05                    | 1,09E-03         | 6,13E-05 | 4,64E-03          | 2,33E-02 |
| Use of renewable primary energy used as raw material (PERM)  | MJ                     | 0,00E+00         | 0,00E+00                     | 1,36E-03                 | 1,36E-03                  | 0,00E+00                    | 6,80E-05         | 0,00E+00 | 0,00E+00          | 1,43E-03 |
| Total use of renewable primary energy resources (PERT)   | MJ                     | 7,08E-04         | 2,99E-05                     | 1,81E-02                 | 1,88E-02                  | 1,04E-05                    | 1,16E-03         | 6,13E-05 | 4,64E-03          | 2,47E-02 |
| Non-renewable primary energy excluding non-renewable primary energy resources used as raw material | MJ                     | 2,69E-01         | 1,12E-02                     | 1,11E-01                 | 3,92E-01                  | 3,30E-03                    | 2,04E-02         | 8,40E-05 | 2,36E-02          | 4,39E-01 |
| Use of non-renewable primary energy resources used as raw materials (PENRM)                        | MJ                     | 4,66E-02         | 0,00E+00                     | 1,85E-04                 | 4,68E-02                  | 0,00E+00                    | 2,22E-03         | 0,00E+00 | 0,00E+00          | 4,90E-02 |
| Total use of non-renewable primary energy resources (PENRT)  | MJ                     | 3,16E-01         | 1,12E-02                     | 1,11E-01                 | 4,38E-01                  | 3,30E-03                    | 2,26E-02         | 8,40E-05 | 2,36E-02          | 4,88E-01 |
| Use of secondary material (SM)   | kg                     | 0,00E+00         | 0,00E+00                     | 0,00E+00                 | 0,00E+00                  | 0,00E+00                    | 0,00E+00         | 0,00E+00 | 0,00E+00          | 0,00E+00 |
| Use of renewable secondary fuels (RSF)   | MJ                     | 0,00E+00         | 0,00E+00                     | 0,00E+00                 | 0,00E+00                  | 0,00E+00                    | 0,00E+00         | 0,00E+00 | 0,00E+00          | 0,00E+00 |
| Use of non-renewable secondary fuels (NRSF)  | MJ                     | 0,00E+00         | 0,00E+00                     | 0,00E+00                 | 0,00E+00                  | 0,00E+00                    | 0,00E+00         | 0,00E+00 | 0,00E+00          | 0,00E+00 |
| Net use of fresh water (FW)  | m <sup>3</sup>         | 5,67E-05         | 4,10E-07                     | 5,85E-05                 | 1,16E-04                  | 1,56E-07                    | 5,88E-06         | 6,84E-09 | 6,74E-06          | 1,28E-04 |
| Hazardous waste disposed (HWD)   | kg                     | 4,67E-05         | 1,96E-06                     | 7,08E-05                 | 1,19E-04                  | 7,78E-07                    | 3,12E-05         | 1,12E-07 | 2,40E-04          | 3,91E-04 |
| Non hazardous waste disposed (NHWD)  | kg                     | 1,08E-03         | 5,04E-05                     | 4,49E-04                 | 1,58E-03                  | 1,73E-05                    | 9,63E-05         | 4,89E-07 | 2,95E-04          | 1,99E-03 |
| Radioactive waste disposed   | kg                     | 1,81E-07         | 3,92E-08                     | 1,52E-07                 | 3,72E-07                  | 1,37E-08                    | 2,31E-08         | 2,87E-11 | 6,73E-08          | 4,76E-07 |
| Components for reuse (CRU)   | kg                     | 0,00E+00         | 0,00E+00                     | 7,49E-05                 | 7,49E-05                  | 0,00E+00                    | 3,74E-06         | 0,00E+00 | 0,00E+00          | 7,86E-05 |
| Materials for recycling (MFR)  | kg                     | 0,00E+00         | 0,00E+00                     | 5,77E-05                 | 5,77E-05                  | 0,00E+00                    | 6,27E-05         | 0,00E+00 | 1,14E-03          | 1,26E-03 |
| Materials for energy recovery (MER)  | kg                     | 0,00E+00         | 0,00E+00                     | 0,00E+00                 | 0,00E+00                  | 0,00E+00                    | 3,17E-06         | 0,00E+00 | 6,35E-05          | 6,67E-05 |
| Exported Energy (EE)   | MJ                     | 0,00E+00         | 0,00E+00                     | 0,00E+00                 | 0,00E+00                  | 0,00E+00                    | 0,00E+00         | 0,00E+00 | 0,00E+00          | 0,00E+00 |

\* Installation stage includes only 5% product losses & packaging disposal. Impacts related to installation processes might be completed by the PEP user.

| Environmental indicator/flows                 | Unit    | Total    |
|---|---------|----------|
| Biogenic carbon content - product (BC-pro)    | kg of C | 0,00E+00 |
| Biogenic carbon content - packaging (BC-pack) | kg of C | 2,83E-02 |

Biogenic carbon storage is calculated according to the -1/+1 assessment methodology & according to EN 16485.

**Optional indicators:**

| Environmental indicator/flow          | Unit               | A1-Raw materials | A2-Transport to manufacturer | A3-Manufacturing process | Total A1-A3 | A4-Distribution to customer | A5-Installation* | B6-Use   | C1-C4-End of life | TOTAL    |
|---------------------------------------|--------------------|------------------|------------------------------|--------------------------|-------------|-----------------------------|------------------|----------|-------------------|----------|
| Total Primary Energy (TPE)            | MJ                 | 3,16E-01         | 1,13E-02                     | 1,30E-01                 | 4,57E-01    | 3,31E-03                    | 2,38E-02         | 1,45E-04 | 2,83E-02          | 5,13E-01 |
| EF-particulate matter (EF-PM)         | Disease occurrence | 1,43E-10         | 5,57E-11                     | 2,21E-10                 | 4,20E-10    | 2,52E-12                    | 2,30E-11         | 1,36E-13 | 4,15E-11          | 4,87E-10 |
| Ionising radiation, human health (IR) | kg U235 eq.        | 8,82E-02         | 1,70E-05                     | 3,75E-03                 | 9,20E-02    | 6,58E-06                    | 4,43E-03         | 1,15E-05 | 9,83E-04          | 9,74E-02 |
| Ecotoxicity, freshwater (Eco-fw)      | CTUe               | 4,03E-02         | 1,38E-02                     | 3,67E-02                 | 9,08E-02    | 5,42E-03                    | 6,18E-03         | 2,93E-06 | 2,23E-02          | 1,25E-01 |
| Human toxicity, cancer (HT-c)         | CTUh-c             | 1,04E-12         | 9,51E-14                     | 4,67E-13                 | 1,61E-12    | 3,64E-14                    | 9,24E-14         | 9,01E-17 | 2,47E-13          | 1,98E-12 |
| Human toxicity, non-cancer (HT-nc)    | CTUh-nc            | 3,42E-11         | 1,83E-12                     | 1,74E-11                 | 5,34E-11    | 6,95E-13                    | 3,15E-12         | 3,08E-15 | 8,52E-12          | 6,57E-11 |
| Land use (LU)                         | No dimension       | 4,14E-04         | 2,00E-06                     | 3,08E-05                 | 4,47E-04    | 7,95E-07                    | 2,27E-05         | 1,15E-07 | 2,32E-05          | 4,94E-04 |

Environmental indicators are calculated according to JRC method - EF3.1.



## V. EXTRAPOLATION RULES FOR THE PRODUCT FAMILY GAHSQWQ

### General information

The extrapolation rules have been calculated based on the environment impact assessment results of 3 products in the range Indoor/Outdoor ribbon slotted core. The reference product is GAHSQWQ-K-AHNRV 96/C4 G652D S12. The weight of reference product is 319 g/m.

### Functional unit: Extrapolation rules for each life cycle stage

The extrapolation rules below apply to one communication signal (one optical fibre) and 1m of cable. In the following sections, the product weight is expressed in g for 1m of cable, where applicable.

|  | Life cycle stage             | Applicable extrapolation principle | Formula to calculate each environmental indicator  | Example: If the product weight is 329 g/m, each indicator value shall be calculated with: | Mean deviation of extrapolation rule |
|--|------------------------------|------------------------------------|--|---|--------------------------------------|
|  | A1-Raw materials             | Linear variation versus weight     | Indicator = ((a x Cable weight) + b) ÷ Fibre count | Indicator = ((a x 329) + b) ÷ 96  | 7,39%                                |
|  | A2-Transport to manufacturer | Linear variation versus weight     | Indicator = ((a x Cable weight) + b) ÷ Fibre count | Indicator = ((a x 329) + b) ÷ 96  | 1,53%                                |
|  | A3-Manufacturing process     | Linear variation versus weight     | Indicator = ((a x Cable weight) + b) ÷ Fibre count | Indicator = ((a x 329) + b) ÷ 96  | 4,51%                                |
|  | A4-Distribution to customer  | Linear variation versus weight     | Indicator = ((a x Cable weight) + b) ÷ Fibre count | Indicator = ((a x 329) + b) ÷ 96  | 0,64%                                |
|  | A5-Installation              | Maximum impact value               | Indicator = a                                      | Indicator = a   | N/A                                  |
|  | B6-Use                       | Maximum impact value               | Indicator = a                                      | Indicator = a   | N/A                                  |
|  | C1-C4-End of life            | Linear variation versus weight     | Indicator = ((a x Cable weight) + b) ÷ Fibre count | Indicator = ((a x 329) + b) ÷ 96  | 1,92%                                |

### Declared unit: Extrapolation rules for each life cycle stage

The extrapolation rules below apply to all communication signals in 1m of cable. In the following sections, the product weight is expressed in g for 1m of cable, where applicable.

|  | Life cycle stage             | Applicable extrapolation principle | Formula to calculate each environmental indicator | Example: If the product weight is 329 g/m, each indicator value shall be calculated with: | Mean deviation of extrapolation rule |
|--|------------------------------|------------------------------------|---|---|--------------------------------------|
|  | A1-Raw materials             | Linear variation versus weight     | Indicator = (a x Cable weight) + b                | Indicator = (a x 329) + b   | 7,39%                                |
|  | A2-Transport to manufacturer | Linear variation versus weight     | Indicator = (a x Cable weight) + b                | Indicator = (a x 329) + b   | 1,53%                                |
|  | A3-Manufacturing process     | Linear variation versus weight     | Indicator = (a x Cable weight) + b                | Indicator = (a x 329) + b   | 4,51%                                |
|  | A4-Distribution to customer  | Linear variation versus weight     | Indicator = (a x Cable weight) + b                | Indicator = (a x 329) + b   | 0,64%                                |
|  | A5-Installation              | Maximum impact value               | Indicator = a x Fibre count                       | Indicator = a x 96  | N/A                                  |
|  | B6-Use                       | Maximum impact value               | Indicator = a x Fibre count                       | Indicator = a x 96  | N/A                                  |
|  | C1-C4-End of life            | Linear variation versus weight     | Indicator = (a x Cable weight) + b                | Indicator = (a x 329) + b   | 1,92%                                |

Table to be considered for extrapolation calculations of different life cycle stages:

|        | A1-Raw materials |           | A2-Transport to manufacturer |           | A3-Manufacturing process |           | A4-Distribution to customer |           | A5-Installation | B6-Use   | C1-C4 End of life |           |
|--------|------------------|-----------|------------------------------|-----------|--------------------------|-----------|-----------------------------|-----------|-----------------|----------|-------------------|-----------|
|        | a                | b         | a                            | b         | a                        | b         | a                           | b         | a               | a        | a                 | b         |
| GWP    | 1,30E-03         | 1,03E-01  | 2,15E-04                     | 3,03E-04  | 9,05E-03                 | -1,96E+00 | 5,97E-05                    | -1,01E-03 | 3,39E-01        | 5,30E-07 | 4,69E-04          | -6,02E-05 |
| GWPf   | 1,28E-03         | 1,03E-01  | 2,15E-04                     | 3,03E-04  | 8,92E-03                 | -1,92E+00 | 5,97E-05                    | -1,01E-03 | 3,06E-01        | 3,69E-07 | 4,64E-04          | -2,82E-05 |
| GWPb   | 1,94E-05         | -3,86E-04 | 5,68E-10                     | -8,86E-10 | 1,27E-04                 | -3,61E-02 | 2,44E-10                    | -4,14E-09 | 3,27E-02        | 1,61E-07 | 4,74E-06          | -3,20E-05 |
| GWPfu  | 6,03E-09         | -4,50E-07 | 2,10E-10                     | -3,28E-10 | 1,41E-11                 | 3,89E-10  | 9,03E-11                    | -1,53E-09 | 2,11E-07        | 0,00E+00 | 1,88E-10          | 7,11E-10  |
| ODP    | 2,14E-10         | 1,27E-08  | 1,78E-12                     | -1,98E-12 | 2,27E-10                 | -4,85E-08 | 7,24E-13                    | -1,23E-11 | 1,50E-08        | 9,43E-15 | 2,20E-11          | 4,46E-11  |
| AP     | 4,71E-06         | 5,46E-04  | 3,28E-06                     | 2,07E-05  | 2,62E-05                 | -5,46E-03 | 9,43E-08                    | -1,60E-06 | 1,08E-03        | 8,04E-09 | 1,76E-06          | -1,31E-05 |
| Epf    | 2,19E-08         | -6,83E-07 | 5,44E-10                     | -6,34E-10 | 2,82E-07                 | -6,08E-05 | 2,23E-10                    | -3,78E-09 | 7,86E-06        | 2,12E-11 | 1,65E-09          | -1,02E-08 |
| Epm    | 8,16E-07         | 8,92E-05  | 7,40E-07                     | 4,74E-06  | 7,35E-06                 | -1,56E-03 | 1,71E-08                    | -2,89E-07 | 2,62E-04        | 7,02E-10 | 2,64E-07          | -3,32E-06 |
| Ept    | 8,74E-06         | 9,58E-04  | 8,11E-06                     | 5,19E-05  | 7,76E-05                 | -1,61E-02 | 1,88E-07                    | -3,18E-06 | 2,85E-03        | 3,01E-08 | 3,67E-06          | -4,56E-05 |
| POCP   | 3,97E-06         | 3,23E-04  | 2,12E-06                     | 1,33E-05  | 2,70E-05                 | -5,76E-03 | 6,06E-08                    | -1,03E-06 | 9,64E-04        | 1,55E-09 | 8,81E-07          | -7,91E-06 |
| ADPe   | 3,72E-11         | 1,53E-08  | 5,22E-11                     | -5,91E-11 | 4,54E-10                 | -5,90E-08 | 2,13E-11                    | -3,61E-10 | 2,35E-08        | 2,45E-12 | 1,20E-10          | -3,84E-10 |
| ADPf   | 6,10E-02         | 9,54E+00  | 3,40E-03                     | 2,58E-03  | 8,86E-02                 | -1,77E+01 | 1,06E-03                    | -1,79E-02 | 5,42E+00        | 8,40E-05 | 7,44E-03          | -3,94E-02 |
| WU     | 6,81E-04         | 2,21E-02  | 5,24E-06                     | -6,14E-06 | 2,21E-03                 | -4,71E-01 | 2,15E-06                    | -3,64E-05 | 8,43E-02        | 2,92E-07 | 7,99E-05          | 6,01E-05  |
| PERE   | 2,51E-04         | -9,80E-03 | 8,96E-06                     | -3,99E-06 | 5,99E-03                 | -3,35E-01 | 3,34E-06                    | -5,66E-05 | 2,64E-01        | 6,13E-05 | 1,43E-03          | -8,23E-03 |
| PERM   | 0,00E+00         | 0,00E+00  | 0,00E+00                     | 0,00E+00  | 4,10E-04                 | 5,46E-02  | 0,00E+00                    | 0,00E+00  | 1,83E-02        | 0,00E+00 | 0,00E+00          | 0,00E+00  |
| PERT   | 2,51E-04         | -9,80E-03 | 8,96E-06                     | -3,99E-06 | 6,39E-06                 | -2,81E-01 | 3,34E-06                    | -5,66E-05 | 2,82E-01        | 6,13E-05 | 1,43E-03          | -8,23E-03 |
| PENRE  | 4,53E-02         | 9,89E+00  | 3,40E-03                     | 2,58E-03  | 8,85E-02                 | -1,77E+01 | 1,06E-03                    | -1,79E-02 | 4,88E+00        | 8,40E-05 | 7,44E-03          | -3,94E-02 |
| PENRM  | 1,57E-02         | -3,43E-01 | 0,00E+00                     | 0,00E+00  | 6,11E-05                 | 6,07E-03  | 0,00E+00                    | 0,00E+00  | 5,38E-01        | 0,00E+00 | 0,00E+00          | 0,00E+00  |
| PENRT  | 6,10E-02         | 9,54E+00  | 3,40E-03                     | 2,58E-03  | 8,86E-02                 | -1,77E+01 | 1,06E-03                    | -1,79E-02 | 5,42E+00        | 8,40E-05 | 7,44E-03          | -3,94E-02 |
| SM     | 0,00E+00         | 0,00E+00  | 0,00E+00                     | 0,00E+00  | 0,00E+00                 | 0,00E+00  | 0,00E+00                    | 0,00E+00  | 0,00E+00        | 0,00E+00 | 0,00E+00          | 0,00E+00  |
| RSF    | 0,00E+00         | 0,00E+00  | 0,00E+00                     | 0,00E+00  | 0,00E+00                 | 0,00E+00  | 0,00E+00                    | 0,00E+00  | 0,00E+00        | 0,00E+00 | 0,00E+00          | 0,00E+00  |
| NRSF   | 0,00E+00         | 0,00E+00  | 0,00E+00                     | 0,00E+00  | 0,00E+00                 | 0,00E+00  | 0,00E+00                    | 0,00E+00  | 0,00E+00        | 0,00E+00 | 0,00E+00          | 0,00E+00  |
| FW     | 1,59E-05         | 5,13E-04  | 1,22E-07                     | -1,43E-07 | 5,16E-05                 | -1,10E-02 | 5,00E-08                    | -8,47E-07 | 1,98E-03        | 6,84E-09 | 2,15E-06          | 3,58E-06  |
| HWD    | 8,63E-06         | 1,31E-03  | 5,81E-07                     | -9,06E-07 | 3,97E-05                 | -5,92E-03 | 2,50E-07                    | -4,23E-06 | 7,93E-03        | 1,12E-07 | 7,79E-05          | -1,70E-03 |
| NHWD   | 3,29E-04         | 5,16E-03  | 1,51E-05                     | -4,74E-06 | 3,29E-04                 | -6,26E-02 | 5,54E-06                    | -9,38E-05 | 2,73E-02        | 4,89E-07 | 9,39E-05          | 2,86E-05  |
| RWD    | 5,47E-08         | 3,81E-07  | 1,18E-08                     | -5,32E-09 | 1,31E-07                 | -2,77E-05 | 4,39E-09                    | -7,43E-08 | 7,02E-06        | 2,87E-11 | 2,13E-08          | -5,18E-08 |
| CRU    | 0,00E+00         | 0,00E+00  | 0,00E+00                     | 0,00E+00  | 2,48E-05                 | 2,46E-03  | 0,00E+00                    | 0,00E+00  | 1,06E-03        | 0,00E+00 | 0,00E+00          | 0,00E+00  |
| MFR    | 0,00E+00         | 0,00E+00  | 0,00E+00                     | 0,00E+00  | 1,85E-05                 | -7,33E-05 | 0,00E+00                    | 0,00E+00  | 1,58E-02        | 0,00E+00 | 3,66E-04          | -1,45E-03 |
| MER    | 0,00E+00         | 0,00E+00  | 0,00E+00                     | 0,00E+00  | 0,00E+00                 | 0,00E+00  | 0,00E+00                    | 0,00E+00  | 7,66E-04        | 0,00E+00 | 2,04E-05          | 1,40E-04  |
| EE     | 0,00E+00         | 0,00E+00  | 0,00E+00                     | 0,00E+00  | 0,00E+00                 | 0,00E+00  | 0,00E+00                    | 0,00E+00  | 0,00E+00        | 0,00E+00 | 0,00E+00          | 0,00E+00  |
| TPE    | 6,13E-02         | 9,53E+00  | 3,41E-03                     | 2,58E-03  | 9,49E-02                 | -1,80E+01 | 1,06E-03                    | -1,80E-02 | 5,70E+00        | 0,00E+00 | 8,87E-03          | -4,76E-02 |
| EF-PM  | 3,74E-11         | 1,84E-09  | 1,78E-11                     | 1,06E-10  | 1,79E-10                 | -3,61E-08 | 8,09E-13                    | -1,37E-11 | 7,38E-09        | 0,00E+00 | 1,32E-11          | -9,78E-11 |
| IR     | 5,45E-03         | 8,91E+00  | 5,06E-06                     | -6,63E-06 | 1,67E-03                 | -1,82E-01 | 2,11E-06                    | -3,58E-05 | 6,95E-01        | 0,00E+00 | 3,04E-04          | -1,88E-03 |
| Eco-fw | 9,63E-03         | 5,80E-01  | 4,09E-03                     | -6,01E-03 | 3,23E-02                 | -6,86E+00 | 1,74E-03                    | -2,95E-02 | 1,78E+00        | 0,00E+00 | 6,95E-03          | -3,16E-02 |
| HT-c   | -8,58E-14        | 2,74E-10  | 2,83E-14                     | -3,50E-14 | 3,70E-13                 | -7,14E-11 | 1,17E-14                    | -1,98E-13 | 2,55E-11        | 0,00E+00 | 7,68E-14          | -3,58E-13 |
| HT-nc  | 8,00E-12         | 7,25E-10  | 5,43E-13                     | -6,38E-13 | 1,52E-11                 | -3,20E-09 | 2,23E-13                    | -3,78E-12 | 8,74E-10        | 0,00E+00 | 2,71E-12          | -1,34E-11 |
| LU     | 1,47E-04         | -2,71E-03 | 5,94E-07                     | -9,26E-07 | 8,33E-06                 | 3,85E-04  | 2,55E-07                    | -4,32E-06 | 5,77E-03        | 0,00E+00 | 7,31E-06          | -5,07E-05 |



## VI. PRODUCTS COVERED BY THE PEP

The products covered by the given PEP are represented in the below table with a:

| Product name                     | Fibre count |
|----------------------------------|-------------|
| GAHSQWQ-K-AHNRV 12/C4 G652D S12  | 12          |
| GAHSQWQ-K-AHNRV 24/C4 G652D S12  | 24          |
| GAHSQWQ-K-AHNRV 48/C4 G652D S12  | 48          |
| GAHSQWQ-K-AHNRV 96/C4 G652D S12  | 96          |
| GAHSQWQ-K-AHNRV 192/B8 G652D S12 | 192         |
| GAHSQWQ-K-AHNRV 480/B8 G652D S12 | 480         |