Environmental Product Declaration (EPD)

Declaration code EPD-VRF-GB-67.0

Viega GmbH & Co. KG

connecting technology

Raxofix press connectors and pipes

Basis:

DIN EN ISO 14025
EN 15804 + A2

Company EPD **E**nvironmental **P**roduct **D**eclaration

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Declaration holder	Viega GmbH & Co. KG Viega Platz 1 57439 Attendorn, Germany www.viega.de		
Declaration code	EPD-VRF-GB-67.0		
Designation of declared product	Raxofix press connectors and pipes		
Scope	Transportation of media inside/outside buildings.		
Basis	This EPD was prepared on the basis of EN ISO 14025:2011 and DIN EN 15804:2012+A2:2019. In addition, the "Allgemeiner Leitfaden zur Erstellung von Typ III Umweltproduktdeklarationen" (General guideline for preparation of Type III Environmental Product Declarations) applies. The declaration is based on the PCR documents “PCR Part A” PCR-A-0.3:2018 and “Piping systems including connecting and fitting technology” PCR-RS-1.0:2022.		
Validity	Publication date: 18.12.2023	Last revision: 15.10.2025	Valid until: 18.12.2028
	This verified Company Environmental Product Declaration (company EPD) applies solely to the specified products and is valid for a period of five years from the date of publication in accordance with DIN EN 15804.		
LCA Basis	The LCA was prepared in accordance with DIN EN ISO 14040 and DIN EN ISO 14044. The base data includes the data collected at one production plant of Viega GmbH & Co. KG, and the generic data derived from the Ecoinvent 3 data base (v3.8 with aggregated inputs) and Ecoinvent EN 15804. LCA calculations were carried out for the included “cradle to grave” including all upstream chains (e.g. raw material extraction, etc.).		
Notes	The ift-Guidance Sheet “Conditions and Guidance for the Use of ift Test Documents” applies. The declaration holder assumes full liability for the underlying data, certificates and verifications.		

Christoph Seehauser Deputy Head of Sustainability	Dr. Torsten Mielecke Chairman of Expert Committee ift-EPD and PCR	Prof. Dr. Eric Brehm External verifier

1 General Product Information

Product definition

The EPD relates to the product group connecting technology and applies to:

1 kg Raxofix press connector and 1 linear metre pipe of company Viega GmbH & Co. KG

These are divided into the following product groups

Product groups (PG)		Unit weight
PG1	Raxofix press connector	0.027 - 1.412 kg/pcs.
PG2	Raxofix pipe	0.106 - 1.025 kg/m

*The respective conversion values can be found in Annex B.

Table 1 Product groups*

The declared unit is obtained by summing up:

PG	Assessed product	Unit weight	Declared unit
1	Moulded T with SC (Item no. 647575)	1.47 kg/pcs.[1]	1 kg
2	Raxofix pipe (Item no. 743307)	0.46 kg/m[1]	1 linear metre

[1]A conversion for different unit weights/length weights is possible by dividing the results by the balanced unit weight/length weight and multiplying them by the respective unit weight/length weight from Annex B.

Table 2 Functional unit per reference product

The average unit is declared as follows:
Directly used material flows are determined by means of manufactured masses (kg) and allocated to the declared unit. All other inputs and outputs in the production were scaled to the declared unit in their entirety since there is no typical functional unit due to the high number of variants. The reference period is the year 2022.

The validity of the EPD is restricted to the systems listed in Table 1.

Product description

Flow-optimized press connector system with press connectors made of silicon bronze and multi-layer composite piping and solid plastic pipes. multi-layer composite piping, dimensionally stable, oxygen-tight, color: grey. Press connector with PPSU support body to ensure the tightness and mechanical strength of the connection. Secure and fast connection without expanding and calibrating the pipe ends thanks to O-ringless pressing technology in all pipe dimensions. Pipes are fitted with pipe plugs for protection. Solid plastic pipe, flexible. Suitable for wall mounting and concealed applications of risers and storey installations.

For a detailed product description refer to the manufacturer specifications or the product specifications of the respective offer/quotation.

Product manufacture

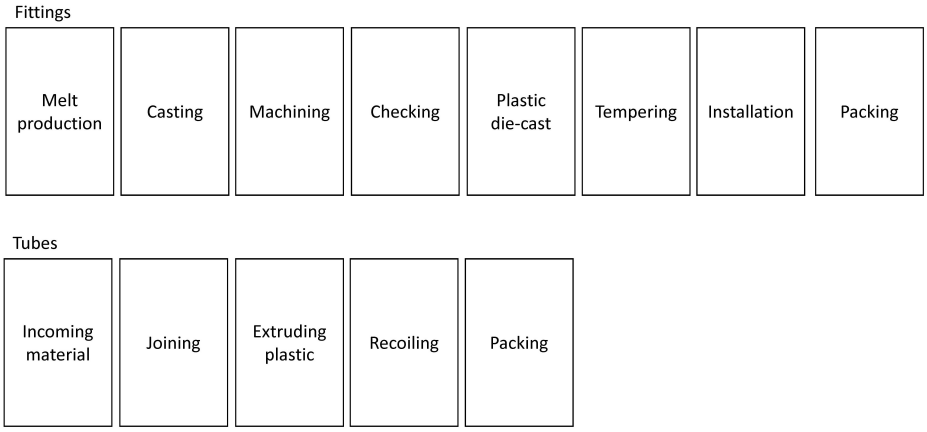


Illustration 1 Manufacturing process

Application

- Drinking water
- Heating systems
- Rainwater
- Compressed air systems

Test evidence / reports

For information on updated verifications (including other national approvals) refer to www.viega.de.

Management systems

The following management systems are held:

- Quality management system as per DIN EN ISO 9001:2015
- Energy management system as per DIN EN ISO 50001:2018
- Environmental management system as per DIN EN ISO 14001:2015
- Occupational health and safety management system as per DIN EN ISO 45001:2018

Additional information

For additional verifications of applicability or conformity refer to the CE marking and the documents accompanying the product, if applicable.

2 Materials used

Primary materials

The raw materials used can be found in chapter 6.2 Inventory analysis (Inputs).
The raw materials used can be found in chapter 6 Life Cycle Assessment.

Declarable substances

For individual articles, substances according to REACH candidate list are included (declaration of 04.10.2023). Further information on the listed substance are available on request from the manufacturer.

All relevant safety data sheets are available from Viega GmbH & Co. KG.

3 Construction process stage

Processing recommendations, installation

Observe the instructions for assembly/installation, operation, maintenance and disassembly, provided by the manufacturer. For this, see www.viega.de

4 Use stage

Emissions to the environment

No emissions to indoor air, water and soil are known. There may be VOC emissions. There is no contact with the indoor/outdoor air.

Reference service life (RSL)

The RSL information was provided by the manufacturer. The RSL must be established under specified reference conditions of use and relate to the declared technical and functional performance of the product within the building. It must be determined according to all specific rules given in European product standards or, if none are available, according to a c-PCR. It must also take into account ISO 15686-1, -2, -7 and -8. If there is guidance on deriving RSLs from European Product Standards or a c-PCR, then such guidance must take precedence.
If it is not possible to determine the service life as the RSL in accordance with ISO 15686, the BBSR table “Nutzungsdauer von Bauteilen zur Lebenszyklusanalyse nach BNB” (service life of building components for life cycle assessment in accordance with the sustainable construction evaluation system) can be used. For further information and explanations refer to www.nachhaltigesbauen.de.

For this EPD the following applies:
A reference service life (RSL) must be stated for the “cradle to grave” EPD and module D (A + B + C + D).
The service life for Raxofix press connectors and pipes of company Viega GmbH & Co. KG is specified as 50 years according to the manufacturer.

The service life is dependent on the characteristics of the product and in-use conditions. The conditions and characteristics described in the EPD are applicable, in particular the characteristics listed below:

- Outdoor environment: Climatic influences may have a negative impact on the service life.
- Indoor environment: No impacts (e.g. humidity, temperature) known that have a negative effect on the service life.

The service life solely applies to the characteristics specified in this EPD or the corresponding references.
The RSL does not reflect the actual life time, which is usually determined by the service life and the redevelopment of a building. It does not give any information on the useful life, warranty referring to performance characteristics or guarantees.

5 End-of-life stage

Possible end-of-life stages

Raxofix press connectors and pipes are sent to central collection points. There the products are usually shredded and sorted into their constituents. The end-of-life stage depends on the site where the products are used and is therefore subject to the local regulations. Observe the locally applicable regulatory requirements.

In this EPD, the modules of after-use are presented according to the market situation.

Metal and plastics are recycled to certain parts. Residual fractions are sent to landfill or, in part, thermally recycled.

Disposal routes

The LCA includes the average disposal routes.

All life cycle scenarios are detailed in the Annex.

6 Life Cycle Assessment (LCA)

Environmental product declarations are based on life cycle assessments (LCAs) which use material and energy flows for the calculation and subsequent representation of environmental impacts.

As a basis for this, life cycle assessments were prepared for Raxofix press connectors and pipes. These LCAs are in conformity with the requirements set out in DIN EN 15804 and the international standards DIN EN ISO 14040, DIN EN ISO 14044, ISO 21930 and EN ISO 14025.

The LCA is representative of the products presented in the Declaration and the specified reference period.

6.1 Definition of goal and scope

Aim

The goal of the LCA is to demonstrate the environmental impacts of the products. In accordance with DIN EN 15804, the environmental impacts covered by this Environmental Product Declaration are presented for the entire product life cycle in the form of basic information. No other additional environmental impacts are specified.

Data quality, data availability and geographical and time-related system boundaries

The specific data originate exclusively from the 2022 fiscal year. They were collected on-site at the plant located in Ennest and originate in parts from company records and partly from values directly obtained by measurement. Validity of the data was checked by the ift Rosenheim.

The generic data originate from the Ecoinvent 3 data base (v3.9.1 with aggregated inputs from 2022) and Ecoinvent EN 15804. The last update of both databases was in 2023. Data from before this date originate also from these databases and are not more than ten years old. No other generic data were used for the calculation.

Generic data are selected as accurately as possible in terms of geographic reference. If no country-specific data sets are available or if the regional reference cannot be determined, European or globally valid data sets are used.

Data gaps were either filled with comparable data or conservative assumptions, or the data were cut off in compliance with the 1% rule.

The life cycle was modelled using the sustainability software tool “Umberto 11” for the development of life cycle assessments.

The data quality complies with the requirements of prEN 15941:2022.

Scope / system boundaries

The system boundaries refer to the supply of raw materials and purchased parts, manufacture/production, use and end-of-life stage of the Raxofix press connectors and pipes.
No additional data from pre-suppliers/subcontractors or other sites were taken into consideration.

Cut-off criteria

All company data collected, i.e. all commodities/input and raw materials used, the thermal energy and electricity consumption, were taken into consideration.

The boundaries cover only the product-relevant data. Building sections/parts of facilities that are not relevant to the manufacture of the products, were excluded.

The transport distances of the pre-products used were taken into consideration as a function of 100% of the mass of the products. The following means of transportation was adopted.

- >32 t truck/semitrailer, Euro 6, diesel, 53 % capacity utilization

Other transport distances of the pre-products were not taken into consideration.

The criteria for the exclusion of inputs and outputs as set out in DIN EN 15804 are fulfilled. From the data analysis it can be assumed that the total of negligible processes per life cycle stage does not exceed 1% of the mass/primary energy. This way the total of negligible processes does not exceed 5% of the energy and mass input. The life cycle calculation also includes material and energy flows that account for less than 1%.

6.2 Inventory analysis

Aim

All material and energy flows are described below. The processes covered are presented as input and output parameters and refer to the declared units.

Life cycle stages

The complete life cycle of Raxofix press connectors and pipes is shown in the annex. The product stage "A1 – A3", construction process stage "A4 – A5", use stage "B1 – B7", end-of-life stage "C1 – C4" and the benefits and loads beyond the system boundaries "D" are considered.

Benefits

The below benefits have been defined as per DIN EN 15804:

- Benefits from recycling
- Benefits (thermal and electrical) from incineration

Allocation of co-products

Allocations occur during production.
Allocation was based on the masses (units) of products produced.

Allocations for re-use, recycling and recovery

If the products are reused/recycled and recovered during the product stage (rejects), the elements are shredded, if necessary and then sorted into their constituents. This is done by various process plants, e.g. magnetic separators.
The system boundaries were set following their disposal, reaching the end-of-waste status.

Allocations beyond life cycle boundaries

The use of recycled materials in the manufacturing process was based on the current market-specific situation. In parallel to this, a recycling potential was taken into consideration that reflects the economic value of the product after recycling (recyclate).
The system boundary set for the recycled material refers to collection.

Secondary material

The use of secondary material in module A3 by Viega GmbH & Co. KG was considered. Secondary material is not used.

Inputs

The LCA includes the following production-relevant inputs per of 1 kg Raxofix press connector:

Energy
For the input material natural gas, "natural gas, high pressure, GER, domestic supply with seasonal storage" was assumed. For the electricity mix, the "Electricity Mix Germany" were assumed.

A portion of the process heat is used for space heating. This can, however, not be quantified, hence a “worst case” figure was taken into account for the product.

Water
The water consumed by the individual process steps for the production amounts to a total of 0.83 l (Raxofix press connector) or 0.14 l (Raxofix pipe) per kg of the element.
The consumption of fresh water specified in Section 6.3 originates (among others) from the process chain of the pre-products and the process water for cooling.

Raw material/Pre-products
The chart below shows the share of raw materials/pre-products in percent.

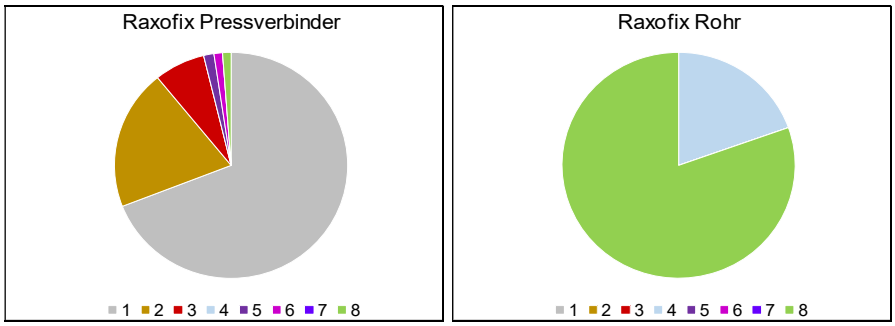


Illustration 2 Percentage of individual materials per declared unit

No.	Material	Mass in %	
		Raxofix press connector	Raxofix pipe
1	SiBr	69.10	0.00
2	Brass	20.05	0.00
3	Gunmetal	7.08	0.00
4	Aluminium	0.00	19.57
5	PPSU	1.42	0.00
6	PA GF30	1.18	0.00
7	PP	0.00	0.00
8	PE	1.18	80.43

Table 3 Percentage of individual materials per declared unit

Ancillary materials and consumables
There are 103 g (Raxofix press connector) and 17 g (Raxofix pipe) of ancillary materials and consumables.

Product packaging
The amounts used for product packaging are as follows:

No.	Material	Mass in g	
		Raxofix press connector	Raxofix pipe
1	PE film, PE foam	4.03	4.67
2	Paper, cardboard, carton	1.22	85.88

Table 4 Weight in kg of packaging per declared unit

Biogenic carbon content
Only the biogenic carbon content of the associated packaging is reported, as the total mass of biogenic carbon-containing materials is less than 5% of the total mass of the product and associated packaging. According to EN 16449, the following amounts of biogenic carbon are generated for packaging:

No.	Part	Content in kg C per declared unit	
		Raxofix press connector	Raxofix pipe
1	In the corresponding packaging	5.36E-4	3.83E-02

Table 5 Biogenic carbon content of the packaging at the factory gate

Outputs

The following manufacturing-related outputs were included in the LCA per 1 kg Raxofix press connector or 1 linear metre Raxofix pipe:

Waste
Secondary raw materials were included in the benefits.
See Section 6.3 Impact assessment.

Waste water
During production, 0.83 l (Raxofix press connector) or 0.14 l (Raxofix pipe) of wastewater is generated.

6.3 Impact assessment

Aim

The impact assessment covers both inputs and outputs. The impact categories applied are stated below:

Core indicators

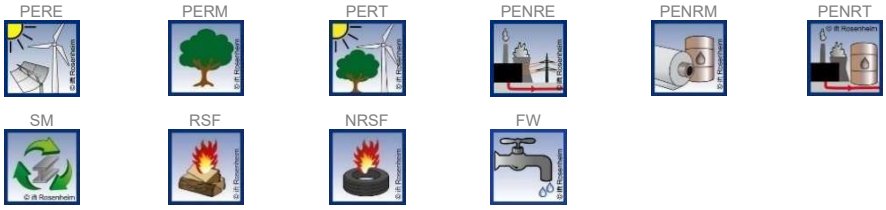
The models for impact assessment were applied as described in DIN EN 15804-A2.
The core indicators presented in the EPD are as follows:

- Climate change - total (GWP-t)
- Climate change - fossil (GWP-f)
- Climate change - biogenic (GWP-b)
- Climate change - land use & land use change (GWP-l)
- Ozone depletion (ODP)
- Acidification (AP)
- Eutrophication freshwater (EP-fw)
- Eutrophication salt water (EP-m)
- Eutrophication land (EP-t)
- Photochemical ozone creation (POCP)
- Depletion of abiotic resources - fossil fuels (ADPF)
- Depletion of abiotic resources - minerals and metals (ADPE)
- Water use (WDP)

Resource management

The models for impact assessment were applied as described in DIN EN 15804-A2.
The following resource use indicators are presented in the EPD:

- Renewable primary energy as energy source (PERE)
- Renewable primary energy for material use (PERM)
- Total use of renewable primary energy (PERT)
- Non-renewable primary energy as energy source (PENRE)
- Renewable primary energy for material use (PENRM)
- Total use of non-renewable primary energy (PENRT)
- Use of secondary materials (SM)
- Use of renewable secondary fuels (RSF)
- Use of non-renewable secondary fuels (NRSF)
- Net use of freshwater resources (FW)



Waste

The waste generated during the production of 1 kg Raxofix press connector and 1 linear metre Raxofix pipe is evaluated and shown separately for the fractions trade wastes, special wastes and radioactive wastes. Since waste handling is modelled within the system boundaries, the amounts shown refer to the deposited wastes. A portion of the waste indicated is generated during the manufacture of the pre-products.

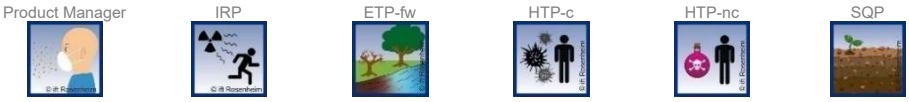
The models for impact assessment were applied as described in DIN EN 15804-A2.
The following waste categories and indicators for output closures are presented in the EPD:

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

Additional environmental impact indicators

The models for impact assessment were applied as described in DIN EN 15804-A2.
The additional impact categories presented in the EPD are as follows:

- Particulate matter emissions (PM)
- Ionizing radiation, human health (IRP)
- Ecotoxicity – freshwater (ETP-fw)
- Human toxicity, carcinogenic effects (HTP-c)
- Human toxicity, non-carcinogenic effects (HTP-nc)
- Impacts associated with land use/soil quality (SQP)



	Results per 1 kg Raxofix press connector															
	Unit	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Core indicators																
GWP-t	kg CO_2 equivalent	1.64E+01	6.30E-02	6.54E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05E-02	3.39E-02	4.10E-04	-4.72E+00
GWP-f	kg CO_2 equivalent	1.58E+01	6.30E-02	3.40E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05E-02	3.44E-02	4.08E-04	-4.71E+00
GWP-b	kg CO_2 equivalent	5.91E-01	2.20E-05	3.13E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.47E-06	-5.48E-04	2.48E-06	-8.80E-03
GWP-l	kg CO_2 equivalent	3.69E-02	3.23E-05	7.34E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.21E-06	4.13E-05	2.97E-07	-8.51E-03
ODP	kg CFC-11-eq.	2.72E-07	1.07E-09	2.05E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72E-10	3.70E-10	9.62E-12	-8.35E-08
AP	mol H^+-eq.	3.71E-01	2.46E-04	1.15E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47E-05	2.08E-04	3.92E-06	-6.43E-02
EP-fw	kg P-eq.	3.14E-02	5.27E-06	2.36E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.52E-07	1.34E-05	1.07E-07	-2.52E-02
EP-m	kg N-eq.	3.17E-02	4.50E-05	9.59E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68E-05	6.84E-05	1.08E-06	-1.64E-02
EP-t	mol N-eq.	3.77E-01	4.65E-04	3.18E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80E-04	6.94E-04	1.16E-05	-2.27E-01
POCP	kg NMVOC-eq.	1.09E-01	1.72E-04	8.47E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.59E-05	2.63E-04	2.90E-06	-3.15E-01
ADPF*²	MJ	2.37E+02	0.00E+00	4.81E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.91E-08	1.32E-06	8.54E-10	-4.76E-03
ADPE*²	kg Sb equivalent	7.32E-03	9.54E-01	1.54E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.26E-01	8.90E-03	-6.22E+01
WDP*²	m^3 world-eq. deprived	2.23E+01	4.76E-03	8.05E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.74E-04	5.89E-03	4.92E-05	-3.71E+00
Resource management																
PERE	MJ	6.05E+01	1.20E-02	2.01E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94E-03	4.44E-02	1.51E-04	-1.42E+01
PERM	MJ	1.92E-02	0.00E+00	-1.92E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	6.06E+01	1.20E-02	8.98E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94E-03	4.44E-02	1.51E-04	-1.42E+01
PENRE	MJ	2.33E+02	9.54E-01	9.74E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.69E+00	1.30E-01	-6.22E+01
PENRM	MJ	3.57E+00	0.00E+00	-8.20E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	-3.36E+00	-1.21E-01	0.00E+00
PENRT	MJ	2.37E+02	9.54E-01	1.54E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54E-01	3.26E-01	8.90E-03	-6.22E+01
SM	kg	2.76E-01	4.00E-04	5.16E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48E-05	5.15E-04	3.40E-06	-1.93E-01
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	5.24E-01	1.31E-04	-4.79E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13E-05	1.45E-04	8.94E-06	-1.09E-01
Categories of waste																
HWD	kg	1.31E+00	7.00E-04	2.55E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13E-04	1.10E-03	7.64E-06	-4.83E-01
NHWD	kg	1.11E+02	2.24E-02	1.08E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.62E-03	5.25E-02	2.28E-04	-9.08E+01
RWD	kg	8.00E-04	0.00E+00	1.24E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34E-08	3.87E-07	2.80E-09	-1.22E-04
Output material flows																
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	7.00E-02	0.00E+00	5.42E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20E-06	8.60E-01	6.21E-08	-8.99E-03
MER	kg	5.04E-04	0.00E+00	4.87E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.52E-09	6.63E-08	2.79E-10	-2.48E-05
EE	MJ	2.40E-01	0.00E+00	4.49E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.76E-05	2.21E-04	1.53E-06	-6.41E-02

Key:
GWP-t – global warming potential - total **GWP-f** – global warming potential fossil fuels **GWP-b** – global warming potential - biogenic **GWP-l** – global warming potential - land use and land use change **ODP** – ozone depletion potential **AP** - acidification potential **EP-fw** - eutrophication potential - aquatic freshwater **EP-m** - eutrophication potential - aquatic marine **EP-t** - feutrophication potential - terrestrial **POCP** - photochemical ozone formation potential **ADPF*²** - abiotic depletion potential – fossil resources **ADPE*²** - abiotic depletion potential - minerals&metals **WDP*²** - Water (user) deprivation potential **PERE** - Use of renewable primary energy **PERM** - use of renewable primary energy resources **PERT** - total use of renewable primary energy resources **PENRE** - use of non-renewable primary energy **PENRM** - use of non-renewable primary energy resources **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** - net use of fresh water **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 **EE** - exported energy

Results per 1 kg Raxofix press connector															
	Unit	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Additional environmental impact indicators																
PM	Disease incidence	1.28E-06	6.11E-09	2.70E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08E-09	3.99E-09	6.25E-11	-7.67E-07
IRP*[1]	kBq U235-eq.	2.87E+00	8.66E-04	5.84E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41E-04	1.55E-03	1.16E-05	-4.71E-01
ETP-fw*[2]	CTUe	1.06E+03	5.04E-01	3.44E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.13E-02	2.63E-01	3.87E-03	-3.73E+02
HTP-c*[2]	CTUh	7.42E-08	0.00E+00	1.68E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.57E-12	4.78E-11	2.29E-13	-4.77E-08
HTP-nc*[2]	CTUh	4.69E-06	2.80E-11	6.61E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12E-10	1.55E-09	2.59E-12	-4.11E-06
SQP*[2]	dimensionless	1.45E+02	9.38E-01	9.30E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55E-01	5.72E-01	2.02E-02	-1.01E+02

Key:
PM – particulate matter emissions potential **IRP*[1]** – ionizing radiation potential – human health **ETP-fw*[2]** - Eco-toxicity potential – freshwater **HTP-c*[2]** - Human toxicity potential – cancer effects **HTP-nc*[2]** - Human toxicity potential – non-cancer effects **SQP*[2]** – soil quality potential

Disclaimers:
*1 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 nor due to radioactive waste disposal in underground facilities. Potential ionising radiation from the soil, from radon and from some building materials is also not measured by this indicator.

*2 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 experience with the indicator.

Results per 1 kg linear metre Raxofix pipe																
	Unit	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Core indicators																
GWP-t	kg CO_2 equivalent	1.91E+00	3.42E-02	2.17E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.80E-03	3.22E-02	1.03E-03	-9.65E-01
GWP-f	kg CO_2 equivalent	1.85E+00	3.42E-02	4.49E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.80E-03	2.92E-02	1.03E-03	-9.61E-01
GWP-b	kg CO_2 equivalent	5.40E-02	1.19E-05	2.12E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59E-06	3.03E-03	6.24E-06	-3.12E-03
GWP-l	kg CO_2 equivalent	5.55E-03	1.75E-05	3.86E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.39E-06	2.63E-05	7.46E-07	-1.11E-03
ODP	kg CFC-11-eq.	1.81E-08	5.79E-10	3.60E-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.91E-11	1.79E-10	2.42E-11	-9.33E-09
AP	mol H^+-eq.	8.48E-03	1.34E-04	1.23E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.97E-05	7.51E-05	9.88E-06	-2.92E-03
EP-fw	kg P-eq.	6.70E-04	2.86E-06	2.55E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.91E-07	3.78E-06	2.69E-07	-2.56E-04
EP-m	kg N-eq.	1.56E-03	2.44E-05	7.48E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.71E-06	3.74E-05	2.73E-06	-7.01E-04
EP-t	mol N-eq.	1.58E-02	2.53E-04	1.86E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.24E-05	2.33E-04	2.92E-05	-7.18E-03
POCP	kg NMVOC-eq.	6.64E-03	9.32E-05	4.71E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10E-05	7.07E-05	7.30E-06	-3.43E-03
ADPF*²	MJ	4.20E+01	0.00E+00	5.76E-09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34E-08	1.27E-07	2.15E-09	-1.23E-06
ADPE*²	kg Sb equivalent	1.84E-05	5.18E-01	1.92E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.08E-02	1.30E-01	2.24E-02	-1.75E+01
WDP*²	m^3 world-eq. deprived	6.23E-01	2.59E-03	1.07E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.55E-04	3.71E-03	1.24E-04	-2.32E-01
Resource management																
PERE	MJ	-8.80E-02	6.52E-03	1.38E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.89E-04	1.16E-02	3.81E-04	-8.35E-01
PERM	MJ	1.37E+00	0.00E+00	-1.37E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.29E+00	6.52E-03	9.76E-04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.89E-04	1.16E-02	3.81E-04	-8.35E-01
PENRE	MJ	3.42E+01	5.18E-01	1.16E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.08E-02	6.36E+00	1.48E+00	-1.75E+01
PENRM	MJ	7.78E+00	0.00E+00	-9.64E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	-6.23E+00	-1.46E+00	0.00E+00
PENRT	MJ	4.20E+01	5.18E-01	1.92E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.08E-02	1.30E-01	2.24E-02	-1.75E+01
SM	kg	6.42E-03	2.17E-04	9.07E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.97E-05	5.40E-04	8.56E-06	-1.54E-03
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	7.88E-03	7.09E-05	1.64E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.76E-06	7.32E-05	2.25E-05	-3.05E-03
Categories of waste																
HWD	kg	9.80E-02	3.80E-04	7.51E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.19E-05	6.71E-04	1.92E-05	-2.74E-02
NHWD	kg	2.93E+00	1.22E-02	1.15E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66E-03	1.40E-02	5.73E-04	-1.18E+00
RWD	kg	4.80E-05	0.00E+00	1.36E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53E-08	2.06E-07	7.06E-09	-1.69E-05
Output material flows																
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.07E-03	0.00E+00	9.04E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.51E-07	2.10E-01	1.56E-07	-4.59E-04
MER	kg	7.69E-05	0.00E+00	8.72E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99E-09	5.86E-08	7.02E-10	-4.12E-07
EE	MJ	1.39E-02	0.00E+00	3.69E-06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26E-05	1.41E-04	3.86E-06	-1.93E-03

Key:
GWP-t – global warming potential - total **GWP-f** – global warming potential fossil fuels **GWP-b** – global warming potential - biogenic **GWP-l** – global warming potential - land use and land use change **ODP** – ozone depletion potential **AP** - acidification potential **EP-fw** - eutrophication potential - aquatic freshwater **EP-m** - eutrophication potential - aquatic marine **EP-t** - feutrophication potential - terrestrial **POCP** - photochemical ozone formation potential **ADPF*²** - abiotic depletion potential – fossil resources **ADPE*²** - abiotic depletion potential - minerals&metals **WDP*²** - Water (user) deprivation potential **PERE** - Use of renewable primary energy **PERM** - use of renewable primary energy resources **PERT** - total use of renewable primary energy resources **PENRE** - use of non-renewable primary energy **PENRM** - use of non-renewable primary energy resources **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** - net use of fresh water **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 **EE** - exported energy

Results per 1 kg linear metre Raxofix pipe															
	Unit	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Additional environmental impact indicators																
PM	Disease incidence	7.28E-08	3.32E-09	2.50E-08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.94E-10	2.50E-09	1.57E-10	-3.10E-08
IRP*1	kBq U235-eq.	1.69E-01	4.70E-04	6.31E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.45E-05	8.13E-04	2.93E-05	-6.90E-02
ETP-fw*2	CTUe	6.47E+00	2.74E-01	4.06E-01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.73E-02	1.61E-01	9.74E-03	-1.85E+00
HTP-c*2	CTUh	8.40E-10	0.00E+00	1.54E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.09E-12	4.50E-11	5.75E-13	-2.08E-10
HTP-nc*2	CTUh	2.82E-08	1.52E-11	6.52E-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15E-11	3.42E-10	6.51E-12	-5.79E-09
SQP*2	dimensionless	3.81E+00	5.10E-01	2.55E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.12E-02	2.37E-01	5.08E-02	-1.20E+00

Key:
PM – particulate matter emissions potential **IRP*1** – ionizing radiation potential – human health **ETP-fw*2** - Eco-toxicity potential – freshwater **HTP-c*2** - Human toxicity potential – cancer effects **HTP-nc*2** - Human toxicity potential – non-cancer effects **SQP*2** – soil quality potential

Disclaimers:

*1 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 nor due to radioactive waste disposal in underground facilities. Potential ionising radiation from the soil, from radon and from some building materials is also not measured by this indicator.

*2 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 experience with the indicator.

6.4 Interpretation, LCA presentation and critical review

Evaluation

The environmental impacts of

- Raxofix press connector
- Raxofix pipe

differ considerably from each other. The differences in the environmental impact of the products lie in the various pre-products and raw materials used and in the mass of the pre-products and raw materials used in each case. Increasing the proportion of recycling can reduce these environmental impacts.

The main environmental impact of production is caused by silicon bronze and brass. This is to be expected, as these raw materials account for up to over 90 percent depending on the product and the high LCIA values associated with the raw material are the main source of emissions. The pipes are aluminium profiles with thermal barrier. This results in lower values.

Cardboard packaging contributes to the high biogenic environmental values of pipes.

The LCA covers the complete life cycle. As the products do not generate any emissions in the use stage, here the value is 0.00. The replacement was balanced separately in B4 for 1 year as a scenario. Otherwise, there is no environmental impact during the use phase.

Due to the metals at press connectors and pipes (aluminum), there are correspondingly high credits at the end of life (depending on the environmental indicator).

The charts below show the allocation of the main environmental impacts.

The values obtained from the LCA calculation are suitable for the certification of buildings.

Diagrams

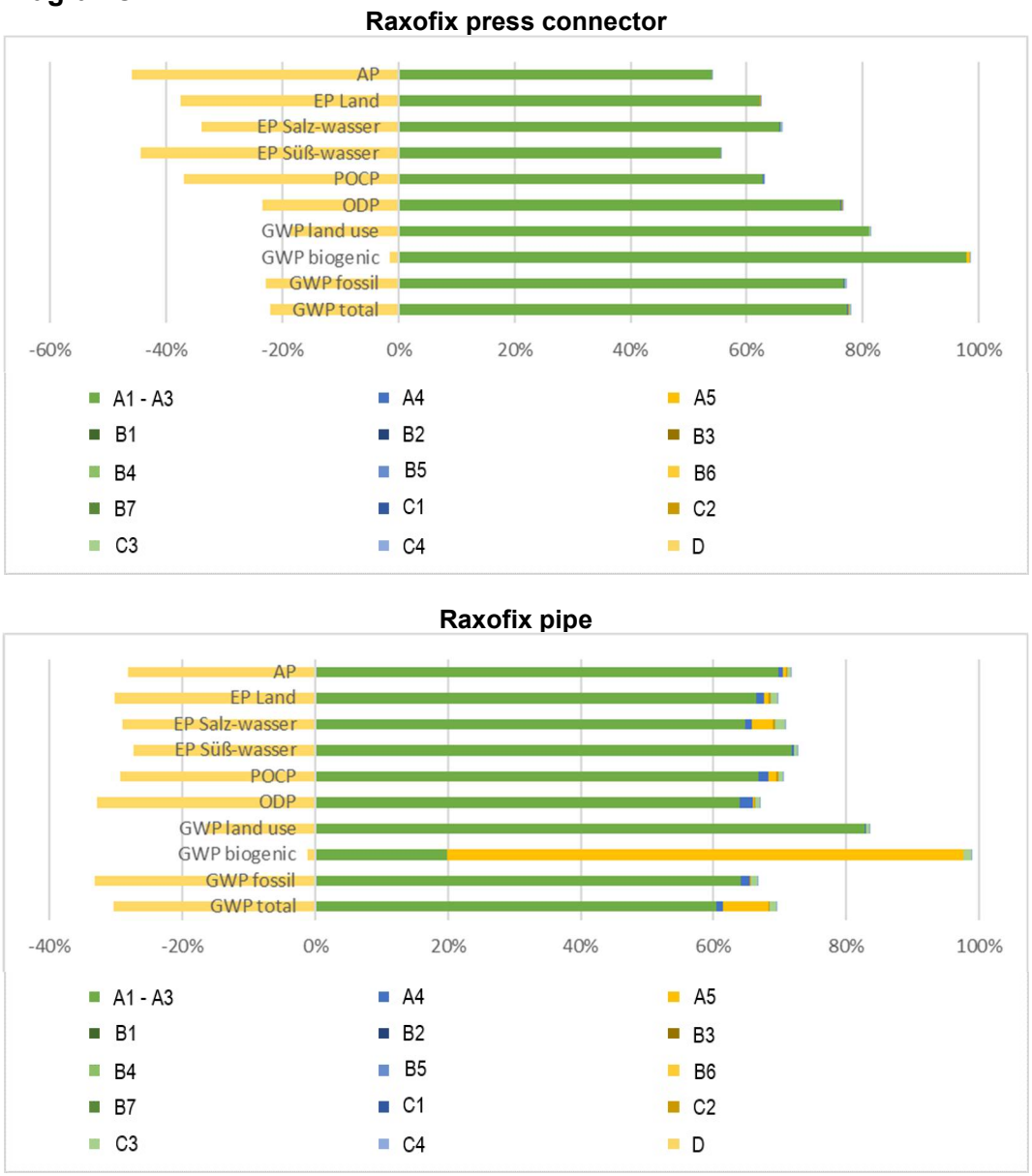


Illustration 3 Percentage of the modules in selected environmental impact indicators

Report

The LCA report underlying this EPD was developed according to the requirements of DIN EN ISO 14040 and DIN EN ISO 14044 as well as DIN EN 15804 and DIN EN ISO 14025. It is deposited with ift Rosenheim. The results and conclusions reported to the target group are complete, correct, without bias and transparent. The results of the study are not designed to be used for comparative statements intended for publication.

Critical review

The critical review of the LCA and of the report took place in the course of verification of the EPD and was carried out by the external auditor Prof. Dr. Eric Brehm.

7 General information regarding the EPD

Comparability

This EPD was prepared in accordance with DIN EN 15804 and is therefore only comparable to those EPDs that also comply with the requirements set out in DIN EN 15804.
Any comparison must refer to the building context and the same boundary conditions of the various life cycle stages.
For comparing EPDs of construction products, the rules set out in DIN EN 15804, Clause 5.3, apply.

The detailed individual results of the products were summarised on the basis of conservative assumptions and differ from the average results. Identification of the product groups and the resulting variations are documented in the background report.

Communication

The communications format of this EPD meets the requirements of EN 15942:2012 and is therefore the basis for B2B communication. Only the nomenclature has been changed according to DIN EN 15804.

Verification

Verification of the Environmental Product Declaration is documented in accordance with the ift "Richtlinie zur Erstellung von Typ III Umweltproduktdeklarationen" (Guidance on preparing Type III Environmental Product Declarations) in accordance with the requirements set out in DIN EN ISO 14025.

This declaration is based on the PCR documents “PCR Part A” PCR-A-0.3:2018 and “Piping systems including connecting and fitting technology” PCR-RS-1.0: 2022.

The European standard EN 15804 serves as the core PCR [a)]
Independent verification of the declaration and statement according to EN ISO 14025:2010
Independent third party verifier: [b)] Eric Brehm
[a)] Product category rules [b)] Optional for business-to-business communication Mandatory for business-to-consumer communication (see EN ISO 14025:2010. 9.4).

Revisions of this document

No.	Date	Note	Person in charge	Testing personnel
1	18.12.2023	External verification	Pscherer	Brehm
2	05.08.2024	Formal adjustment	Pscherer	--
3	28.08.2024	Formal adjustment	Dumproff	--
4	15.10.2025	Adjustment Conversion factors	Ludwig	--

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8 Annex A

Description of life cycle scenarios for Raxofix press connectors and pipes

Product stage			Con-struction process stage		Use stage*							End-of-life stage				Benefits and loads beyond system boundaries
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material supply	Transport	production	Transport	Construction/installation process	Use	maintenance	Repair	replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse Recovery Recycling potential
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

* For declared B-modules, the calculation of the results is performed taking into account the specified RSL related to one year

Table 6 Overview of applied life cycle stages

The scenarios were calculated taking into account the defined RSL (see 4 Use stage).

The scenarios were furthermore based on the research project “EPDs for transparent building components”. (1)

Note: The standard scenarios selected are presented in bold type. They were also used for calculating the indicators in the summary table.

✓ Included in the LCA
— Not included in the LCA

A4 Transport to construction site

No.	Scenario	Description
A4.1	**National**	**Transport mix 35-53% capacity used[1], approx. 600 km**
A4.2	International/EU country	Transport mix 35-53% capacity used[1], approx. 2,000 km
A4.3	International/Non-EU	Transport mix 35-53% capacity used[1], approx. 15,000 km

[1] Capacity used: utilized loading capacity of the truck

The transport distances shown represent a transport average with the following transport mix. The scenarios include the return transport, if applicable.

Shipping method	Network fleet structure	Share in %		
		A4.1	A4.2	A4.3
Parcel service provider (CEP - Courier-Express- Parcel service)	Van 7.5 – 16 t (Euro 6), diesel, 35% capacity utilization	2	0	0.5
Forwarding agency and own truck fleet	32 - 40 t truck/semitrailer (Euro 6), diesel, 53% capacity utilization	98	90	85
Air freights	Cargo and passenger aircrafts, kerosene	0	9	11
Seagoing vessels/containers	Seagoing/container vessels to receiving port, heavy oil	0	1	3.5

A4 Transport to construction site	Transport weight [kg] per declared unit	Density [kg/m³]	Capacity load factor[2]
Raxofix press connector	1.01	7.90	0.80
Raxofix pipes	0.55		

[2] Capacity load factor:
= 1 Product completely fills the packaging (without air inclusion)
< 1 Packaging contains unused volume (e.g.: air, filling material)
> 1 Product is packed in compressed form

The scenarios were calculated per kg and can be scaled to the product group using the above masses.

A4 Transport to construction site	Unit	A4.1	A4.2	A4.3
Core indicators				
GWP-t	kg CO_2 equivalent	**6.27E-05**	3.33E-04	2.81E-03
GWP-f	kg CO_2 equivalent	**6.26E-05**	3.33E-04	2.81E-03
GWP-b	kg CO_2 equivalent	**2.18E-08**	8.84E-08	7.09E-07
GWP-l	kg CO_2 equivalent	**3.21E-08**	1.06E-07	7.96E-07
ODP	kg CFC-11-eq.	**1.06E-12**	5.45E-12	4.58E-11
AP	mol H^+-eq.	**1.71E-07**	1.16E-06	1.03E-05
EP-fw	kg P-eq.	**5.24E-09**	1.74E-08	1.31E-07
EP-m	kg N-eq.	**4.47E-08**	3.98E-07	3.63E-06
EP-t	mol N-eq.	**4.62E-07**	4.21E-06	3.85E-05
POCP	kg NMVOC-eq.	**2.45E-07**	1.62E-06	1.42E-05
ADPF	MJ	**9.49E-04**	4.78E-03	4.00E-02
ADPE	kg Sb equivalent	**1.81E-10**	5.55E-10	4.09E-09
WDP	m^3 world-eq. deprived	**4.74E-06**	1.66E-05	1.27E-04
Resource management				
PERE	MJ	**1.19E-05**	4.13E-05	3.15E-04
PERM	MJ	**0.00**	0.00	0.00
PERT	MJ	**1.19E-05**	4.13E-05	3.15E-04
PENRE	MJ	**9.49E-04**	4.78E-03	4.00E-02
PENRM	MJ	**0.00**	0.00	0.00
PENRT	MJ	**9.49E-04**	4.78E-03	4.00E-02
SM	kg	**3.98E-07**	1.33E-06	1.00E-05

RSF	MJ	**0.00**	0.00	0.00
NRSF	MJ	**0.00**	0.00	0.00
FW	m³	**1.30E-07**	4.63E-07	3.54E-06
Categories of waste				
HWD	kg	**6.96E-07**	2.36E-06	1.78E-05
NHWD	kg	**2.23E-05**	7.40E-05	5.57E-04
RWD	kg	**2.05E-10**	7.39E-10	5.69E-09
Output material flows				
CRU	kg	**0.00**	0.00	0.00
MFR	kg	**7.38E-09**	2.84E-08	2.27E-07
MER	kg	**4.16E-11**	1.35E-10	1.02E-09
EE	MJ	**1.68E-07**	5.81E-07	4.41E-06
Additional environmental impact indicators				
PM	Disease incidence	**6.08E-12**	1.94E-11	1.43E-10
IRP	kBq U235-eq.	**8.61E-07**	3.15E-06	2.44E-05
ETPfw	CTUe	**5.01E-04**	2.44E-03	2.02E-02
HTPc	CTUh	**2.78E-14**	9.74E-14	7.45E-13
HTPnc	CTUh	**6.85E-13**	3.61E-12	3.04E-11
SQP	dimensionless	**9.33E-04**	2.92E-03	2.12E-02

A5 Construction/Installation

No.	Scenario	Description
A5	**Manual**	**According to the manufacturer. the products are installed with battery-operated pressing pliers (0.0009 kWh/kg, electricity mix (GLO)).**

In case of deviating consumption during installation/assembly of the products which forms part of the site management, they are covered at the building level.

The following quantities of waste materials are produced during installation.

Product group	Waste materials in kg	of which quantities collected for waste recycling (output materials) in kg
Raxofix	0.005	0.091
Raxofix pipes	0.017	0.011

Ancillary materials, consumables, use of water, use of other resources, material losses as well as direct emissions during installation are negligible.

It is assumed that the packaging material in the Module construction / installation is sent to waste handling. Waste is only thermally recycled in line with the conservative approach. Benefits from A5 are specified in module D.

- Electricity replaces electricity mix (GLO, high voltage, market group);
- Thermal energy replaces thermal energy from natural gas (district or industrial, natural gas, RoW).
- SiBr from A5 replaces 100 % SiBr.
- PE from A5 replaces 100 % PE.

Transport to the recycling plants is included.

Since this is a single scenario, the results are shown in the relevant summary table.

B1 Use (not relevant)
Refer to Section 4 Use stage - Emissions to the environment.

No emissions are known which may occur during the use stage of the products because press fitting is without contact to air, water and soil.

Since this is a single scenario, the results are shown in the relevant summary table.

B2 Cleaning, maintenance and repair

B2.1 Cleaning (not relevant)

No cleaning is required.

Ancillary materials, consumables, use of energy and water, material losses and waste as well as transport distances during cleaning are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B2.2 Maintenance and repair (not relevant)

No maintenance is required.

Ancillary materials, consumables, use of energy and water, waste, material losses and transport distances during maintenance are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B3 Repair (not relevant)
No repair of the components of the building part is required.

For updated information refer to the respective instructions for assembly/installation, operation and maintenance from Viega GmbH & Co. KG.

Ancillary materials, consumables, use of energy and water, waste, material losses and transport distances during repair are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B4 Exchange/replacement

No.	Scenario	Description
B4.1	**No replacement**	**According to manufacturer, a replacement is not planned.**
B4.2	Normal use and heavy use	One-time replacement after 50 years (RSL)* Energy consumption 0.0009 kWh/kg.

*Assumptions for evaluation of possible environmental impacts; statements made do not constitute any guaranty or warranty of performance.

The statements made in this EPD are only informative to allow evaluation at the building level.

It is assumed that no replacement will be necessary during the 50-year reference service life and the 50-year building service life. The environmental impacts of replacement are due to the product, construction and disposal stages.
The results were based on one year, taking into account the RSL.

For updated information refer to the respective instructions for assembly/installation, operation and maintenance from Viega GmbH & Co. KG.

B4 Exchange/ replacement	Unit	B4.1	B4.2	
			Raxofix press connector	Raxofix pipe
Core indicators				
GWP-t	kg CO_2 equivalent	0.00	4.53E+01	1.24E+00
GWP-f	kg CO_2 equivalent	0.00	4.46E+01	9.66E-01
GWP-b	kg CO_2 equivalent	0.00	6.43E-01	2.66E-01
GWP-l	kg CO_2 equivalent	0.00	9.26E-02	4.50E-03
ODP	kg CFC-11-eq.	0.00	5.61E-07	9.60E-09
AP	mol H^+-eq.	0.00	2.60E+00	5.29E-03
EP-fw	kg P-eq.	0.00	2.10E-01	4.23E-04
EP-m	kg N-eq.	0.00	1.45E-01	1.01E-03
EP-t	mol N-eq.	0.00	1.96E+00	9.41E-03
POCP	kg NMVOC-eq.	0.00	5.52E-01	4.09E-03
ADPF	MJ	0.00	5.89E+02	2.52E+01
ADPE	kg Sb equivalent	0.00	4.12E-02	1.75E-05
WDP	m^3 world-eq. deprived	0.00	4.65E+01	3.99E-01
Resource management				
PERE	MJ	0.00	1.58E+02	4.75E-01
PERM	MJ	0.00	0.00E+00	0.00E+00
PERT	MJ	0.00	1.58E+02	4.75E-01
PENRE	MJ	0.00	5.90E+02	2.52E+01
PENRM	MJ	0.00	-2.22E-16	-1.33E-15
PENRT	MJ	0.00	5.90E+02	2.52E+01
SM	kg	0.00	1.64E+00	5.67E-03
RSF	MJ	0.00	0.00E+00	0.00E+00
NRSF	MJ	0.00	0.00E+00	0.00E+00
FW	m^3	0.00	1.26E+00	5.04E-03
Categories of waste				
HWD	kg	0.00	4.59E+00	7.19E-02
NHWD	kg	0.00	7.52E+02	1.78E+00
RWD	kg	0.00	1.59E-03	3.16E-05
Output material flows				
CRU	kg	0.00	0.00E+00	0.00E+00
MFR	kg	0.00	9.98E-01	2.19E-01
MER	kg	0.00	6.78E-04	7.65E-05
EE	MJ	0.00	6.76E-01	1.22E-02
Additional environmental impact indicators				
PM	Disease incidence	0.00	6.57E-06	7.30E-08
IRP	kBq U235-eq.	0.00	5.89E+00	1.02E-01
ETPfw	CTUe	0.00	3.62E+03	5.48E+00
HTPc	CTUh	0.00	4.09E-07	8.49E-10
HTPnc	CTUh	0.00	3.40E-05	2.38E-08
SQP	dimensionless	0.00	8.61E+02	3.44E+00

B5 Improvement/modernisation (not relevant)
According to the manufacturer, the elements are not included in the improvement/modernisation activities for buildings.

For updated information refer to the respective instructions for assembly/installation, operation and maintenance from Viega GmbH & Co. KG.

Ancillary materials, consumables, use of energy and water, material losses, waste as well as transport distances during replacement are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B6 Operational energy use (not relevant)
There is no energy used during normal use.

Ancillaries, consumables, water use, material losses, waste materials, transport distances and other scenarios are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

B7 Operational water use (not relevant)
No water consumption when used as intended. Water consumption for cleaning is specified in Module B2.1.

Ancillaries, consumables, energy use, material losses, waste materials, transport distances and other scenarios are negligible.

Since this is a single scenario, the results are shown in the relevant summary table.

C1 Deconstruction

No.	Scenario	Description
C1	**Deconstruction**	**Connecting technology 99% deconstruction.** **Further deconstruction rates are possible, give adequate reasons.**

No relevant inputs or outputs apply to the scenario selected. Energy consumption during dismantling is not required.

Since this is a single scenario, the results are shown in the relevant summary table.

In case of deviating consumption the removal of the products forms part of site management and is covered at the building level.

C2 Transport

No.	Scenario	Description
C2	**Transport**	**Transport to collection point with >32 t truck (Euro 4), diesel, 29.96 t payload, 53% capacity used, 50 km (1)**

Since this is a single scenario, the results are shown in the relevant summary table.

C3 Waste management

No.	Scenario	Description
C3	**Current market situation**	**Share for recirculation of materials:** • **SiBr 98% in melt** (UBA, 2017) • **Brass 98% in melt** (UBA, 2017) • **Gunmetal 98% in melt** (UBA, 2017) • **Aluminium 98% in melt** (UBA, 2017) • **Plastics 60 % thermal recycling in incineration plants** (Zukunft Bauen, 2017) • **Plastics 40 % recycled** (Zukunft Bauen, 2017) • **Remainder to landfill/disposal**

No electricity consumption for the recycling plant per declared unit was taken into account for waste treatment due to the low proportion and lack of sources.

As the products are placed on the European market, the disposal scenario is based on average European data sets.

The below table presents the disposal processes and their percentage by mass/weight. The calculation is based on the above mentioned shares in percent related to the declared unit of the product system.

C3 Disposal	Unit	C3	
		Raxofix press connector	Raxofis pipe
Collection process, collected separately	kg	0.99	0.45
Collection process, collected as mixed construction waste	kg	0.01	0.01
Recovery system, for re-use	kg	0.00	0.00
Recovery system, for recycling	kg	0.87	0.23
Recovery system, for energy recovery	kg	0.10	0.22
Disposal	kg	0.03	0.01

The 100% scenarios differ from the current average recovery shown here (in background report C3.4). The evaluation of each scenario is described in the background report.

Since this is a single scenario, the results are shown in the summary table.

C4 Disposal		
No.	**Scenario**	**Description**
C4	**Disposal**	**The non-recordable amounts and losses within the re-use/recycling chain (C1 and C3) are modelled as "disposed" (EU-28).**

The 100% scenarios differ from the current average recovery shown here (in background report C4.4). The evaluation of each scenario is described in the background report.

The consumption in scenario C4 results from physical pre-treatment, waste recycling and management of the disposal site. The benefits obtained here from the substitution of primary material production are allocated to Module D, e.g. electricity and heat from waste incineration.

Since this is a single scenario, the results are shown in the summary table.

D Benefits and loads from beyond the system boundaries		
No.	**Scenario**	**Description**
D	**Recycling potential**	**SiBr scrap from C3 excluding the scrap used in A3 replaces 100% of SiBr;** **Brass scrap from C3 excluding the scrap used in A3 replaces 100% of brass;** **Gunmetal scrap from C3 excluding the scrap used in A3 replaces 100% of gunmetal;** **Aluminium scrap from C3 excluding the scrap used in A3 replaces 100% of aluminium;** **Plastic recyclate from C3 excluding the plastics used in A3 replaces 60% of polyethylene granules or tetrafluoroethylene.** **Benefits from incineration plant: Electricity replaces electricity mix (GLO), thermal energy replaces thermal energy from natural gas (RoW).**

The values in Module D result from recycling of the packaging material in Module A5 and from deconstruction at the end of service life.

The 100% scenarios differ from the current average recovery shown here (in background report D4). The evaluation of each scenario is described in the background report.

Since this is a single scenario, the results are shown in the summary table.

Annex B

Conversion table for unit weights

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
500051	Raxofix	Raxofix-Fittings	532551 Wall plate with SC DN10x1/2 NG1 9	Wall plate with SC	532551	DN10 X 1/2	781491	125.422	0.125
500061	Raxofix	Raxofix-Fittings	531501 Coupling with SC DN10 NB1 9	Coupling with SC	531501	DN10	781507	45	0.045
500071	Raxofix	Raxofix-Fittings	531501 Coupling with SC DN10x16x2.2 NB1 9	Coupling with SC	531501	DN10 X 16 X 2.2	781514	44.6	0.045
500081	Raxofix	Raxofix-Fittings	531101 Adapter with SC DN10x1/2 NP1 9	Adapter with SC	531101	DN10 X 1/2	781521	56.6	0.057
500101	Raxofix	Raxofix-Fittings	531301 Plug-in piece with SC DN10x15NB1 9	Plug-in piece with SC	531301	DN10 X 15	781538	40.7	0.041
500131	Raxofix	Raxofix-Fittings	531801 Tee with SC 16xDN10x16 NG1 9	Tee with SC	531801	16 X DN10 X 16	781958	80	0.080
500161	Raxofix	Raxofix-Fittings	531601 Elbow 90° with SC DN10 NG1 9	Elbow 90° with SC	531601	DN10	781972	58	0.058
500171	Raxofix	Raxofix-Fittings	53301NU Boxed elbow DN10x1/2 NG1 9	Boxed elbow	53301NU	DN10 X 1/2	781989	101.42	0.101
500211	Raxofix	Raxofix-Fittings	53290NUUnion with SC DN10x3/4 NP1 9	Union with SC	53290NU	DN10 X 3/4	781996	70.32	0.070
502081	Raxofix	Raxofix-Fittings	53324 Double wall bushingSC 16x1/2x3/4x47NG1 9	Double wall bushing with SC	53324	16X 1/2X 3/4X 47	673994	210	0.210
502331	Raxofix	Raxofix-Fittings	53328 Double wall bushingSC 16x1/2x3/4x25NG1 9	Double wall bushing with SC	53328	16X 1/2 X 3/4 X 25	799205	152.27	0.152
502341	Raxofix	Raxofix-Fittings	53257 Double wall plate SC 25x1/2x25 NG1 9	Double wall plate with SC	53257	25 X 1/2 X 25	678463	253	0.253
502351	Raxofix	Raxofix-Fittings	53257 Double wall plate SC 25x1/2x20 NG1 9	Double wall plate with SC	53257	25 X 1/2 X 20	678470	232	0.232
502541	Raxofix	Raxofix-Fittings	53324 Double wall bushingSC 16x1/2x3/4x35NG1 9	Double wall bushing with SC	53324	16X 1/2X 3/4X 35	689582	192.556	0.193
502551	Raxofix	Raxofix-Fittings	53328 Double wall bushingSC 16x1/2x3/4x35NG1 9	Double wall bushing with SC	53328	16X 1/2 X 3/4 X 35	801755	166	0.166
528831	Raxofix	Raxofix-Fittings	5312 Adapter with SC 40x11/4 NB1 9	Adapter with SC	5312	40 X 1 1/4	646233	273.8	0.274
557781	Raxofix	Raxofix-Fittings	5328 Plug adapter 16x3/4 2 1 9	Plug adapter	5328	16 X 3/4	688431	120	0.120
560800	Raxofix	Raxofix-Fittings	53138 Adapter with SC 16x2.2x16x2NB1 9	Adapter with SC	53138	16 X 2.2 X 16 X2.2	712341	156.1	0.156
560810	Raxofix	Raxofix-Fittings	53138 Adapter with SC 20x2.8x20x2NP1 9	Adapter with SC	53138	20 X 2.8 X 20 X2.8	712655	154.8	0.155
563003	Raxofix	Raxofix-Fittings	53977 Radiator connection block 16 5 C 9	Radiator connection block	53977	16	698454	316	0.316
563011	Raxofix	Raxofix-Fittings	537531 Radiator connection block 16 E 1 9	Radiator connection block	537531	16	698461	515	0.515
565651	Raxofix	Raxofix-Fittings	53111 Adapter with SC 16x1/2 2 1 9	Adapter	53111	16 X 1/2	702199	93.7	0.094
565661	Raxofix	Raxofix-Fittings	53121 Adapter with SC 16x1/2 2 1 9	Adapter	53121	16 X 1/2	702205	105.3	0.105
574003	Raxofix	Raxofix-Fittings	532578 Extension piece with SC 1/2x16x1NG1 9	Extension piece with SC	532578	1/2 X 16 X 16	797096	141.5	0.142
574023	Raxofix	Raxofix-Fittings	532578 Extension piece with SC 1/2x20x2NG1 9	Extension piece with SC	532578	1/2 X 20 X 20	797102	174	0.174
574601	Raxofix	Raxofix-Fittings	53301NUElbow with SC 16x1/2 NG1 9	Elbow with SC	53301NU	16 X 1/2	733049	100.8	0.101
574611	Raxofix	Raxofix-Fittings	53301NUElbow with SC 20x1/2 NG1 9	Elbow with SC	53301NU	20 X 1/2	733551	105.3	0.105
574621	Raxofix	Raxofix-Fittings	53302NUElbow with SC 16x1/2x58.2 NG1 9	Elbow with SC	53302NU	16 X 1/2 X 58.2	733568	146	0.146
574631	Raxofix	Raxofix-Fittings	53302NUElbow with SC 20x1/2x58.2 NG1 9	Elbow with SC	53302NU	20 X 1/2 X 58.2	733575	152.4	0.152
576101	Raxofix	Raxofix-Fittings	5325 Wall plate with SC 16x1/2x90 NG1 9	Wall plate with SC	5325	16 X 1/2 X 90	799182	198	0.198
576121	Raxofix	Raxofix-Fittings	5325 Wall plate with SC 16x1/2x70 NG1 9	Wall plate with SC	5325	16 X 1/2 X 70	692902	169	0.169
576224	Raxofix	Raxofix-Fittings	5330 Connection socket 16x1/2 5 S 9	Connection socket	5330	16 X 1/2	687915	234	0.234
579101	Raxofix	Raxofix-Fittings	532181 Mounting unit with SC 16x1/2x150 NG1 9	Mounting unit with SC	532181	16 X 1/2 X 150	684020	420	0.420
579121	Raxofix	Raxofix-Fittings	53135 Überg.Union 16x16x2 NB1 9	ÜbergangsUnion	53135	16 X 16 X 2	684037	99.97	0.100
579261	Raxofix	Raxofix-Fittings	53976 Radiator connection block 180 5 C 9	Radiator connection block	53976	180	659042	242.5	0.243
579271	Raxofix	Raxofix-Fittings	53976 Radiator connection block 250 5 C 9	Radiator connection block	53976	250	659158	265	0.265
579541	Raxofix	Raxofix-Fittings	532161 Mounting unit 16x1/2x80/100/150 NG1 9	Mounting unit	532161	16X1/2X80/100/150	690144	381	0.381

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
580031	Raxofix	Raxofix-Fittings	53223 Plug adapter 16 2 1 9	Plug adapter	53223	16	662547	54	0.054
580041	Raxofix	Raxofix-Fittings	53223 Plug adapter 20 2 1 9	Plug adapter	53223	20	662554	60.37	0.060
580131	Raxofix	Raxofix-Fittings	53153 Repair Sliding coupling SC 16NB1 9	Repair Sliding coupling SC	53153	16	692445	138.48	0.138
580191	Raxofix	Raxofix-Fittings	53153 Repair Sliding coupling SC 20NB1 9	Repair Sliding coupling SC	53153	20	692438	177	0.177
582371	Raxofix	Raxofix-Fittings	5312 Adapter with SC 25x1/2 NB1 9	Adapter with SC	5312	25 X 1/2	799151	80	0.080
582421	Raxofix	Raxofix-Fittings	5311 Adapter with SC 25x1/2 NB1 9	Adapter with SC	5311	25 X 1/2	799168	97.31	0.097
582511	Raxofix	Raxofix-Fittings	53255 Wall plate with SC 16x1/2 NG1 9	Wall plate with SC	53255	16 X 1/2	645915	116.7	0.117
582521	Raxofix	Raxofix-Fittings	53255 Wall plate with SC 20x1/2 NG1 9	Wall plate with SC	53255	20 X 1/2	645922	127.8	0.128
582531	Raxofix	Raxofix-Fittings	53255 Wall plate with SC 20x3/4 NG1 9	Wall plate with SC	53255	20 X 3/4	645939	172	0.172
582541	Raxofix	Raxofix-Fittings	53257 Double wall plate SC 16x1/2x16 NG1 9	Double wall plate with SC	53257	16 X 1/2 X 16	645946	144	0.144
582551	Raxofix	Raxofix-Fittings	53257 Double wall plate SC 20x1/2x16 NG1 9	Double wall plate with SC	53257	20 X 1/2 X 16	645953	165	0.165
582561	Raxofix	Raxofix-Fittings	53257 Double wall plate SC 20x1/2x20 NG1 9	Double wall plate with SC	53257	20 X 1/2 X 20	645960	168	0.168
582571	Raxofix	Raxofix-Fittings	5323 Mounting unit with SC 16x1/2 NG1 9	Mounting unit with SC	5323	16 X 1/2	645977	302	0.302
582581	Raxofix	Raxofix-Fittings	5314 Elbow with SC 16x1/2 NG1 9	Elbow with SC	5314	16 X 1/2	645984	56	0.056
582591	Raxofix	Raxofix-Fittings	5314 Elbow with SC 16x3/4 NG1 9	Elbow with SC	5314	16 X 3/4	645991	67	0.067
582601	Raxofix	Raxofix-Fittings	5314 Elbow with SC 20x1/2 NG1 9	Elbow with SC	5314	20 X 1/2	646004	63.1	0.063
582611	Raxofix	Raxofix-Fittings	5314 Elbow with SC 20x3/4 NG1 9	Elbow with SC	5314	20 X 3/4	646011	83.3	0.083
582621	Raxofix	Raxofix-Fittings	5314 Elbow with SC 25x3/4 NG1 9	Elbow with SC	5314	25 X 3/4	646028	122.5	0.123
582631	Raxofix	Raxofix-Fittings	5314 Elbow with SC 25x1 NG1 9	Elbow with SC	5314	25 X 1	646035	156.5	0.157
582641	Raxofix	Raxofix-Fittings	5314 Elbow with SC 32x1 NG1 9	Elbow with SC	5314	32 X 1	646042	198	0.198
582651	Raxofix	Raxofix-Fittings	5314 Elbow with SC 40x11/4 NG1 9	Elbow with SC	5314	40 X 1 1/4	646059	410	0.410
582701	Raxofix	Raxofix-Fittings	531411 Elbow with SC 16x1/2 NG1 9	Elbow with SC	531411	16 X 1/2	646103	68	0.068
582711	Raxofix	Raxofix-Fittings	531411 Elbow with SC 20x1/2 NG1 9	Elbow with SC	531411	20 X 1/2	646110	79	0.079
582721	Raxofix	Raxofix-Fittings	531411 Elbow with SC 20x3/4 NG1 9	Elbow with SC	531411	20 X 3/4	646127	104	0.104
582731	Raxofix	Raxofix-Fittings	531411 Elbow with SC 25x3/4 NG1 9	Elbow with SC	531411	25 X 3/4	646134	141	0.141
582741	Raxofix	Raxofix-Fittings	531411 Elbow with SC 32x1 NG1 9	Elbow with SC	531411	32 X 1	646141	221.7	0.222
582751	Raxofix	Raxofix-Fittings	5312 Adapter with SC 16x1/2 NP1 9	Adapter with SC	5312	16 X 1/2	646158	47.712	0.048
582761	Raxofix	Raxofix-Fittings	5312 Adapter with SC 16x3/4 NB1 9	Adapter with SC	5312	16 X 3/4	646165	62.66	0.063
582771	Raxofix	Raxofix-Fittings	5312 Adapter with SC 20x1/2 NP1 9	Adapter with SC	5312	20 X 1/2	646172	52.6	0.053
582781	Raxofix	Raxofix-Fittings	5312 Adapter with SC 20x3/4 NB1 9	Adapter with SC	5312	20 X 3/4	646189	66.92	0.067
582791	Raxofix	Raxofix-Fittings	5312 Adapter with SC 25x3/4 NB1 9	Adapter with SC	5312	25 X 3/4	646196	95.69	0.096
582801	Raxofix	Raxofix-Fittings	5312 Adapter with SC 25x1 NB1 9	Adapter with SC	5312	25 X 1	646202	122.1	0.122
582811	Raxofix	Raxofix-Fittings	5312 Adapter with SC 32x1 NB1 9	Adapter with SC	5312	32 X 1	646219	147.13	0.147
582821	Raxofix	Raxofix-Fittings	5312 Adapter with SC 32x11/4 NB1 9	Adapter with SC	5312	32 X 1 1/4	646226	187.2	0.187
582841	Raxofix	Raxofix-Fittings	5312 Adapter with SC 50x11/4 NB1 9	Adapter with SC	5312	50 X 1 1/4	646240	307.2	0.307
582851	Raxofix	Raxofix-Fittings	5312 Adapter with SC 50x11/2 NB1 9	Adapter with SC	5312	50 X 1 1/2	646257	364	0.364
582861	Raxofix	Raxofix-Fittings	5312 Adapter with SC 63x2 NB1 9	Adapter with SC	5312	63 X 2	646264	516.5	0.517
582881	Raxofix	Raxofix-Fittings	5311 Adapter with SC 16x1/2 NP1 9	Adapter with SC	5311	16 X 1/2	646288	51.1	0.051
582891	Raxofix	Raxofix-Fittings	5311 Adapter with SC 16x3/4 NP1 9	Adapter with SC	5311	16 X 3/4	646295	65.83	0.066
582901	Raxofix	Raxofix-Fittings	5311 Adapter with SC 20x1/2 NP1 9	Adapter with SC	5311	20 X 1/2	646301	59.39	0.059
582911	Raxofix	Raxofix-Fittings	5311 Adapter with SC 20x3/4 NP1 9	Adapter with SC	5311	20 X 3/4	646318	70.9	0.071

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
582921	Raxofix	Raxofix-Fittings	5311 Adapter with SC 25x3/4 NP1 9	Adapter with SC	5311	25 X 3/4	646325	99.3	0.099
582931	Raxofix	Raxofix-Fittings	5311 Adapter with SC 25x1 NB1 9	Adapter with SC	5311	25 X 1	646332	137.9	0.138
582941	Raxofix	Raxofix-Fittings	5311 Adapter with SC 32x1 NB1 9	Adapter with SC	5311	32 X 1	646349	161.2	0.161
582951	Raxofix	Raxofix-Fittings	5311 Adapter with SC 40x11/4 NB1 9	Adapter with SC	5311	40 X 1 1/4	646356	302.6	0.303
582961	Raxofix	Raxofix-Fittings	5311 Adapter with SC 50x11/2 NB1 9	Adapter with SC	5311	50 X 1 1/2	646363	421.5	0.422
582971	Raxofix	Raxofix-Fittings	5311 Adapter with SC 63x2 NB1 9	Adapter with SC	5311	63 X 2	646370	564	0.564
582981	Raxofix	Raxofix-Fittings	5355 ElbowUnion with SC 16x1/2 NG1 9	ElbowUnion with SC	5355	16 X 1/2	646387	64.1	0.064
582991	Raxofix	Raxofix-Fittings	5355 ElbowUnion with SC 16x3/4 NG1 9	ElbowUnion with SC	5355	16 X 3/4	646394	92	0.092
583001	Raxofix	Raxofix-Fittings	5363 Union with SC 16x1/2 NB1 9	Union with SC	5363	16 X 1/2	646400	47.5	0.048
583011	Raxofix	Raxofix-Fittings	5363 Union with SC 16x3/4 NP1 9	Union with SC	5363	16 X 3/4	646417	74.47	0.074
583021	Raxofix	Raxofix-Fittings	5363 Union with SC 20x1/2 NP1 9	Union with SC	5363	20 X 1/2	646424	65.89	0.066
583031	Raxofix	Raxofix-Fittings	5363 Union with SC 20x3/4 NP1 9	Union with SC	5363	20 X 3/4	646431	81.9	0.082
583041	Raxofix	Raxofix-Fittings	5363 Union with SC 25x1 NB1 9	Union with SC	5363	25 X 1	646448	125.5	0.126
583051	Raxofix	Raxofix-Fittings	5363 Union with SC 25x11/4 NB1 9	Union with SC	5363	25 X 1 1/4	646455	221.2	0.221
583061	Raxofix	Raxofix-Fittings	5363 Union with SC 25x11/2 NB1 9	Union with SC	5363	25 X 1 1/2	646462	208.06	0.208
583081	Raxofix	Raxofix-Fittings	5363 Union with SC 32x11/4 NB1 9	Union with SC	5363	32 X 1 1/4	646486	256.3	0.256
583091	Raxofix	Raxofix-Fittings	5363 Union with SC 32x11/2 NB1 9	Union with SC	5363	32 X 1 1/2	646493	226.4	0.226
583101	Raxofix	Raxofix-Fittings	5363 Union with SC 40x11/4 NB1 9	Union with SC	5363	40 X 1 1/4	646509	277	0.277
583111	Raxofix	Raxofix-Fittings	5363 Union with SC 40x11/2 NB1 9	Union with SC	5363	40 X 1 1/2	646516	300	0.300
583121	Raxofix	Raxofix-Fittings	5363 Union with SC 50x13/4 NB1 9	Union with SC	5363	50 X 1 3/4	646523	421.136	0.421
583131	Raxofix	Raxofix-Fittings	5363 Union with SC 50x23/8 NB1 9	Union with SC	5363	50 X 2 3/8	646530	515	0.515
583141	Raxofix	Raxofix-Fittings	5363 Union with SC 63x23/8 NB1 9	Union with SC	5363	63 X 2 3/8	646547	537	0.537
583151	Raxofix	Raxofix-Fittings	5313 Plug-in piece with SC 16x15 NB1 9	Plug-in piece with SC	5313	16 X 15	646554	33.2	0.033
583161	Raxofix	Raxofix-Fittings	5313 Plug-in piece with SC 16x18 NP1 9	Plug-in piece with SC	5313	16 X 18	646561	37.16	0.037
583171	Raxofix	Raxofix-Fittings	5313 Plug-in piece with SC 20x18 NP1 9	Plug-in piece with SC	5313	20 X 18	646578	42.7	0.043
583181	Raxofix	Raxofix-Fittings	5313 Plug-in piece with SC 20x22 NP1 9	Plug-in piece with SC	5313	20 X 22	646585	50.404	0.050
583191	Raxofix	Raxofix-Fittings	5313 Plug-in piece with SC 25x22 NP1 9	Plug-in piece with SC	5313	25 X 22	646592	79.5	0.080
583201	Raxofix	Raxofix-Fittings	5313 Plug-in piece with SC 32x28 NB1 9	Plug-in piece with SC	5313	32 X 28	646608	117.14	0.117
583211	Raxofix	Raxofix-Fittings	5313 Plug-in piece with SC 40x35 NB1 9	Plug-in piece with SC	5313	40 X 35	646615	218	0.218
583221	Raxofix	Raxofix-Fittings	5313 Plug-in piece with SC 50x42 NB1 9	Plug-in piece with SC	5313	50 X 42	646622	307	0.307
583231	Raxofix	Raxofix-Fittings	53159 Adapter coupling 16x16 NB1 9	Adapter coupling	53159	16 X 16	646639	39.96	0.040
583251	Raxofix	Raxofix-Fittings	53159 Adapter coupling 20x20 NB1 9	Adapter coupling	53159	20 X 20	646653	53.86	0.054
583301	Raxofix	Raxofix-Fittings	5313P Adapter with SC 16x15 2 1 9	Adapter with SC	5313P	16 X 15	646707	43.19	0.043
583311	Raxofix	Raxofix-Fittings	5313P Adapter with SC 16x18 2 1 9	Adapter with SC	5313P	16 X 18	646714	48.1	0.048
583321	Raxofix	Raxofix-Fittings	5313P Adapter with SC 20x15 2 1 9	Adapter with SC	5313P	20 X 15	646721	48.52	0.049
583331	Raxofix	Raxofix-Fittings	5313P Adapter with SC 20x18 2 1 9	Adapter with SC	5313P	20 X 18	646738	54.42	0.054
583341	Raxofix	Raxofix-Fittings	5313P Adapter with SC 20x22 2 1 9	Adapter with SC	5313P	20 X 22	646745	67.5	0.068
583351	Raxofix	Raxofix-Fittings	5313P Adapter with SC 25x22 2 1 9	Adapter with SC	5313P	25 X 22	646752	98.69	0.099
583361	Raxofix	Raxofix-Fittings	5313P Adapter with SC 32x28 NB1 9	Adapter with SC	5313P	32 X 28	646769	126.8	0.127
583371	Raxofix	Raxofix-Fittings	5313P Adapter with SC 40x28 NB1 9	Adapter with SC	5313P	40 X 28	646776	204.1	0.204
583381	Raxofix	Raxofix-Fittings	5313P Adapter with SC 40x35 NB1 9	Adapter with SC	5313P	40 X 35	646783	212.3	0.212

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
583391	Raxofix	Raxofix-Fittings	5313P Adapter with SC 50x35 NB1 9	Adapter with SC	5313P	50 X 35	646790	290.7	0.291
583401	Raxofix	Raxofix-Fittings	5315 Coupling with SC 16 NB1 9	Coupling with SC	5315	16	646806	38	0.038
583411	Raxofix	Raxofix-Fittings	5315 Coupling with SC 20 NB1 9	Coupling with SC	5315	20	646813	51.1	0.051
583421	Raxofix	Raxofix-Fittings	5315 Coupling with SC 20x16 NB1 9	Coupling with SC	5315	20 X 16	646820	47.6	0.048
583431	Raxofix	Raxofix-Fittings	5315 Coupling with SC 25 NB1 9	Coupling with SC	5315	25	646837	111.8	0.112
583441	Raxofix	Raxofix-Fittings	5315 Coupling with SC 25x16 NB1 9	Coupling with SC	5315	25 X 16	646844	81.32	0.081
583451	Raxofix	Raxofix-Fittings	5315 Coupling with SC 25x20 NB1 9	Coupling with SC	5315	25 X 20	646851	86.16	0.086
583461	Raxofix	Raxofix-Fittings	5315 Coupling with SC 32 NB1 9	Coupling with SC	5315	32	646868	164.9	0.165
583471	Raxofix	Raxofix-Fittings	5315 Coupling with SC 32x20 NB1 9	Coupling with SC	5315	32 X 20	646875	126.84	0.127
583481	Raxofix	Raxofix-Fittings	5315 Coupling with SC 32x25 NB1 9	Coupling with SC	5315	32 X 25	646882	150	0.150
583491	Raxofix	Raxofix-Fittings	5315 Coupling with SC 40 NB1 9	Coupling with SC	5315	40	646899	315.2	0.315
583501	Raxofix	Raxofix-Fittings	5315 Coupling with SC 40x32 NB1 9	Coupling with SC	5315	40 X 32	646905	264	0.264
583511	Raxofix	Raxofix-Fittings	5315 Coupling with SC 50 NB1 9	Coupling with SC	5315	50	646912	450.5	0.451
583521	Raxofix	Raxofix-Fittings	5315 Coupling with SC 50x40 NB1 9	Coupling with SC	5315	50 X 40	646929	430	0.430
583531	Raxofix	Raxofix-Fittings	5315 Coupling with SC 63 NB1 9	Coupling with SC	5315	63	646936	585	0.585
583541	Raxofix	Raxofix-Fittings	5315 Coupling with SC 63x50 NB1 9	Coupling with SC	5315	63 X 50	646943	558.15	0.558
583551	Raxofix	Raxofix-Fittings	53153 Repair Sliding coupling SC 25NB1 9	Repair Sliding coupling SC	53153	25	646950	305.6	0.306
583561	Raxofix	Raxofix-Fittings	53153 Repair Sliding coupling SC 32NB1 9	Repair Sliding coupling SC	53153	32	646967	412.4	0.412
583571	Raxofix	Raxofix-Fittings	53153 Repair Sliding coupling SC 40NB1 9	Repair Sliding coupling SC	53153	40	646974	746.6	0.747
583581	Raxofix	Raxofix-Fittings	53153 Repair Sliding coupling SC 50NB1 9	Repair Sliding coupling SC	53153	50	646981	1073	1.073
583591	Raxofix	Raxofix-Fittings	53153 Repair Sliding coupling SC 63NB1 9	Repair Sliding coupling SC	53153	63	646998	1412.2	1.412
583601	Raxofix	Raxofix-Fittings	5316 Elbow 90° with SC 16 NG1 9	Elbow 90° with SC	5316	16	647001	51	0.051
583611	Raxofix	Raxofix-Fittings	5316 Elbow 90° with SC 20 NG1 9	Elbow 90° with SC	5316	20	647018	68.4	0.068
583621	Raxofix	Raxofix-Fittings	5316 Elbow 90° with SC 25 NG1 9	Elbow 90° with SC	5316	25	647025	139	0.139
583631	Raxofix	Raxofix-Fittings	5316 Elbow 90° with SC 32 NG1 9	Elbow 90° with SC	5316	32	647032	215.5	0.216
583641	Raxofix	Raxofix-Fittings	5316 Elbow 90° with SC 40 NG1 9	Elbow 90° with SC	5316	40	647049	438	0.438
583651	Raxofix	Raxofix-Fittings	5316 Elbow 90° with SC 50 NG1 9	Elbow 90° with SC	5316	50	647056	636	0.636
583661	Raxofix	Raxofix-Fittings	5316 Elbow 90° with SC 63 NG1 9	Elbow 90° with SC	5316	63	647063	903	0.903
583671	Raxofix	Raxofix-Fittings	5326 Elbow 45° with SC 25 NG1 9	Elbow 45° with SC	5326	25	647070	135.3	0.135
583681	Raxofix	Raxofix-Fittings	5326 Elbow 45° with SC 32 NG1 9	Elbow 45° with SC	5326	32	647087	194	0.194
583691	Raxofix	Raxofix-Fittings	5326 Elbow 45° with SC 40 NG1 9	Elbow 45° with SC	5326	40	647094	365	0.365
583701	Raxofix	Raxofix-Fittings	5326 Elbow 45° with SC 50 NG1 9	Elbow 45° with SC	5326	50	647100	562	0.562
583711	Raxofix	Raxofix-Fittings	5326 Elbow 45° with SC 63 NG1 9	Elbow 45° with SC	5326	63	647117	774	0.774
583721	Raxofix	Raxofix-Fittings	5317 Tee with SC 16x1/2x16 NG1 9	Tee with SC	5317	16 X 1/2 X 16	647124	86	0.086
583731	Raxofix	Raxofix-Fittings	5317 Tee with SC 20x1/2x20 NG1 9	Tee with SC	5317	20 X 1/2 X 20	647131	103.5	0.104
583741	Raxofix	Raxofix-Fittings	5317 Tee with SC 25x1/2x25 NG1 9	Tee with SC	5317	25 X 1/2 X 25	647148	172.2	0.172
583751	Raxofix	Raxofix-Fittings	5317 Tee with SC 25x3/4x25 NG1 9	Tee with SC	5317	25 X 3/4 X 25	647155	193.5	0.194
583771	Raxofix	Raxofix-Fittings	5317 Tee with SC 32x3/4x32 NG1 9	Tee with SC	5317	32 X 3/4 X 32	647179	265	0.265
583791	Raxofix	Raxofix-Fittings	5317 Tee with SC 32x1x32 NG1 9	Tee with SC	5317	32 X 1 X 32	647186	311	0.311
583801	Raxofix	Raxofix-Fittings	5317 Tee with SC 40x3/4x40 NG1 9	Tee with SC	5317	40 X 3/4 X 40	647193	446	0.446
583813	Raxofix	Raxofix-Fittings	5313P Adapter with SC 63x54 NB1 9	Adapter with SC	5313P	63 X 54	790417	514	0.514

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
583831	Raxofix	Raxofix-Fittings	5317 Tee with SC 50x1x50 NG1 9	Tee with SC	5317	50 X 1 X 50	647223	650	0.650
583841	Raxofix	Raxofix-Fittings	5317 Tee with SC 63x1x63 NG1 9	Tee with SC	5317	63 X 1 X 63	647230	840	0.840
583871	Raxofix	Raxofix-Fittings	5318 Tee with SC 16 NG1 9	Tee with SC	5318	16	647278	76	0.076
583881	Raxofix	Raxofix-Fittings	5318 Tee with SC 16x20x16 NG1 9	Tee with SC	5318	16 X 20 X 16	647285	84	0.084
583891	Raxofix	Raxofix-Fittings	5318 Tee with SC 20 NG1 9	Tee with SC	5318	20	647292	105	0.105
583901	Raxofix	Raxofix-Fittings	5318 Tee with SC 20x16x16 NG1 9	Tee with SC	5318	20 X 16 X 16	647308	89	0.089
583911	Raxofix	Raxofix-Fittings	5318 Tee with SC 20x16x20 NG1 9	Tee with SC	5318	20 X 16 X 20	647315	99.1	0.099
583921	Raxofix	Raxofix-Fittings	5318 Tee with SC 20x20x16 NG1 9	Tee with SC	5318	20 X 20 X 16	647322	98	0.098
583931	Raxofix	Raxofix-Fittings	5318 Tee with SC 25 NG1 9	Tee with SC	5318	25	647339	205	0.205
583941	Raxofix	Raxofix-Fittings	5318 Tee with SC 25x16x16 NG1 9	Tee with SC	5318	25 X 16 X 16	647346	118.5	0.119
583951	Raxofix	Raxofix-Fittings	5318 Tee with SC 25x16x20 NG1 9	Tee with SC	5318	25 X 16 X 20	647353	128.134	0.128
583961	Raxofix	Raxofix-Fittings	5318 Tee with SC 25x16x25 NG1 9	Tee with SC	5318	25 X 16 X 25	647360	158.78	0.159
583971	Raxofix	Raxofix-Fittings	5318 Tee with SC 25x20x20 NG1 9	Tee with SC	5318	25 X 20 X 20	647377	141.5	0.142
583981	Raxofix	Raxofix-Fittings	5318 Tee with SC 25x20x25 NG1 9	Tee with SC	5318	25 X 20 X 25	647384	170	0.170
583991	Raxofix	Raxofix-Fittings	5318 Tee with SC 25x25x16 NG1 9	Tee with SC	5318	25 X 25 X 16	647391	167.6	0.168
584001	Raxofix	Raxofix-Fittings	5318 Tee with SC 32 NG1 9	Tee with SC	5318	32	647407	322	0.322
584011	Raxofix	Raxofix-Fittings	5318 Tee with SC 32x16x25 NG1 9	Tee with SC	5318	32 X 16 X 25	647414	200	0.200
584021	Raxofix	Raxofix-Fittings	5318 Tee with SC 32x16x32 NG1 9	Tee with SC	5318	32 X 16 X 32	647421	238	0.238
584031	Raxofix	Raxofix-Fittings	5318 Tee with SC 32x20x20 NG1 9	Tee with SC	5318	32 X 20 X 20	647438	176	0.176
584041	Raxofix	Raxofix-Fittings	5318 Tee with SC 32x20x32 NG1 9	Tee with SC	5318	32 X 20 X 32	647445	246	0.246
584051	Raxofix	Raxofix-Fittings	5318 Tee with SC 32x25x25 NG1 9	Tee with SC	5318	32 X 25 X 25	647452	245	0.245
584061	Raxofix	Raxofix-Fittings	5318 Tee with SC 32x25x32 NG1 9	Tee with SC	5318	32 X 25 X 32	647469	284	0.284
584071	Raxofix	Raxofix-Fittings	5318 Tee with SC 40 NG1 9	Tee with SC	5318	40	647476	625	0.625
584081	Raxofix	Raxofix-Fittings	5318 Tee with SC 40x20x40 NG1 9	Tee with SC	5318	40 X 20 X 40	647483	417	0.417
584091	Raxofix	Raxofix-Fittings	5318 Tee with SC 40x25x32 NG1 9	Tee with SC	5318	40 X 25 X 32	647490	369	0.369
584101	Raxofix	Raxofix-Fittings	5318 Tee with SC 40x25x40 NG1 9	Tee with SC	5318	40 X 25 X 40	647506	461	0.461
584111	Raxofix	Raxofix-Fittings	5318 Tee with SC 40x32x32 NG1 9	Tee with SC	5318	40 X 32 X 32	647513	407	0.407
584121	Raxofix	Raxofix-Fittings	5318 Tee with SC 40x32x40 NG1 9	Tee with SC	5318	40 X 32 X 40	647520	491	0.491
584131	Raxofix	Raxofix-Fittings	5318 Tee with SC 50 NG1 9	Tee with SC	5318	50	647537	879	0.879
584141	Raxofix	Raxofix-Fittings	5318 Tee with SC 50x25x50 NG1 9	Tee with SC	5318	50 X 25 X 50	647544	617	0.617
584151	Raxofix	Raxofix-Fittings	5318 Tee with SC 50x32x50 NG1 9	Tee with SC	5318	50 X 32 X 50	647551	672.7	0.673
584161	Raxofix	Raxofix-Fittings	5318 Tee with SC 50x40x50 NG1 9	Tee with SC	5318	50 X 40 X 50	647568	774	0.774
584171	Raxofix	Raxofix-Fittings	5318 Tee with SC 63 NG1 9	Tee with SC	5318	63	647575	1350	1.350
584181	Raxofix	Raxofix-Fittings	5318 Tee with SC 63x25x63 NG1 9	Tee with SC	5318	63 X 25 X 63	647582	800	0.800
584191	Raxofix	Raxofix-Fittings	5318 Tee with SC 63x32x63 NG1 9	Tee with SC	5318	63 X 32 X 63	647599	860	0.860
584201	Raxofix	Raxofix-Fittings	5318 Tee with SC 63x40x63 NG1 9	Tee with SC	5318	63 X 40 X 63	647605	960.7	0.961
584211	Raxofix	Raxofix-Fittings	5318 Tee with SC 63x50x63 NG1 9	Tee with SC	5318	63 X 50 X 63	647612	1080	1.080
584221	Raxofix	Raxofix-Fittings	53264 Tee with SC 1/2x16x16 NG1 9	Tee with SC	53264	1/2 X 16 X 16	647629	82.8	0.083
584231	Raxofix	Raxofix-Fittings	53264 Tee with SC 3/4x16x16 NG1 9	Tee with SC	53264	3/4 X 16 X 16	647636	99.5	0.100
584241	Raxofix	Raxofix-Fittings	53264 Tee with SC 3/4x20x20 NG1 9	Tee with SC	53264	3/4 X 20 X 20	647643	118.5	0.119
584251	Raxofix	Raxofix-Fittings	53189 Cross piece with SC 1/2x16 NG1 9	Cross piece with SC	53189	1/2 X 16	647650	104	0.104

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
584271	Raxofix	Raxofix-Fittings	532631 Extension piece with SC 1/2x16 NG1 9	Extension piece with SC	532631	1/2 X 16	647674	116	0.116
584281	Raxofix	Raxofix-Fittings	532632 Extension piece with SC 15x16 NG1 9	Extension piece with SC	532632	15 X 16	647681	111.3	0.111
584291	Raxofix	Raxofix-Fittings	53258 Tee with SC 16x1/2x16 NG1 9	Tee with SC	53258	16 X 1/2 X 16	647698	107.4	0.107
584301	Raxofix	Raxofix-Fittings	53258 Tee with SC 20x1/2x20 NG1 9	Tee with SC	53258	20 X 1/2 X 20	647704	127	0.127
584311	Raxofix	Raxofix-Fittings	53258 Tee with SC 20x3/4x20 NG1 9	Tee with SC	53258	20 X 3/4 X 20	647711	165	0.165
584331	Raxofix	Raxofix-Fittings	533281 Double wall bushing SC 16x1/2x3/4x25NG1 9	Double wall bushing with SC	533281	16X 1/2 X 3/4 X 25	647735	205.4	0.205
584351	Raxofix	Raxofix-Fittings	533211 Wall bushing SC 16x1/2x3/4x18 NG1 9	Wall bushing with SC	533211	16X 1/2 X 3/4 X 18	647759	145	0.145
584361	Raxofix	Raxofix-Fittings	533211 Wall bushing SC 16x1/2x3/4x25 NG1 9	Wall bushing with SC	533211	16X 1/2 X 3/4 X 25	647766	178.5	0.179
584371	Raxofix	Raxofix-Fittings	533211 Wall bushing SC 16x1/2x3/4x35 NG1 9	Wall bushing with SC	533211	16X 1/2 X 3/4 X 35	647773	184	0.184
584381	Raxofix	Raxofix-Fittings	533211 Wall bushing SC 16x1/2x3/4x55 NG1 9	Wall bushing with SC	533211	16X 1/2 X 3/4 X 55	647780	216	0.216
584391	Raxofix	Raxofix-Fittings	533231 Wall bushing SC 16x1/2x3/4x30 NG1 9	Wall bushing with SC	533231	16X 1/2 X 3/4 X 30	647797	175	0.175
584401	Raxofix	Raxofix-Fittings	53243 Tee with SC 16x1/2 NG1 9	Tee with SC	53243	16 X 1/2	647803	179	0.179
584411	Raxofix	Raxofix-Fittings	53243 Tee with SC 20x1/2 NG1 9	Tee with SC	53243	20 X 1/2	647810	196	0.196
584431	Raxofix	Raxofix-Fittings	532605 Manifold with SC 16x3/4x4 NG1 9	Manifold with SC	532605	16 X 3/4 X 4	645595	523	0.523
584441	Raxofix	Raxofix-Fittings	532607 Manifold with SC 16x3/4x3 NG1 9	Manifold with SC	532607	16 X 3/4 X 3	645601	418	0.418
584451	Raxofix	Raxofix-Fittings	532606 Manifold with SC 16x3/4x2 NG1 9	Manifold with SC	532606	16 X 3/4 X 2	645618	232	0.232
584461	Raxofix	Raxofix-Fittings	532608 Manifold with SC 16x3/4x3 NG1 9	Manifold with SC	532608	16 X 3/4 X 3	645625	134.5	0.135
584471	Raxofix	Raxofix-Fittings	532609 Manifold with SC 16x3/4x5 NG1 9	Manifold with SC	532609	16 X 3/4 X 5	645632	226	0.226
584481	Raxofix	Raxofix-Fittings	537521P Radiator connection piece with SC 16x15x52x2 1 9	Radiator connection piece with SC	537521P	16 X 15 X 52 X 350	645649	188.1	0.188
584504	Raxofix	Raxofix-Fittings	5329 Union with SC 16 NP1 9	Union with SC	5329	16	647865	62.45	0.062
584514	Raxofix	Raxofix-Fittings	5329 Union with SC 20 NP1 9	Union with SC	5329	20	647872	68.79	0.069
584524	Raxofix	Raxofix-Fittings	5381 Union with SC 16x3/4 0 1 9	Union with SC	5381	16 X 3/4	647889	66.8	0.067
584534	Raxofix	Raxofix-Fittings	5381 Union with SC 20x3/4 0 1 9	Union with SC	5381	20 X 3/4	647896	76.3	0.076
584544	Raxofix	Raxofix-Fittings	53815 Union 16x3/4 0 4 9	Union	53815	16 X 3/4	647902	75	0.075
584554	Raxofix	Raxofix-Fittings	53815 Union 20x3/4 0 4 9	Union	53815	20 X 3/4	647919	79.85	0.080
584561	Raxofix	Raxofix-Fittings	5314 Elbow with SC 16x3/8 NG1 9	Elbow with SC	5314	16 X 3/8	725556	48	0.048
584571	Raxofix	Raxofix-Fittings	5349 Kreuzungs-T-St.mSC 16x16x16 0 1 9	Crossing-tee with SC	5349	16 X 16 X 16	647933	363.88	0.364
584581	Raxofix	Raxofix-Fittings	5349 Kreuzungs-T-St.mSC 20x16x16 0 1 9	Crossing-tee with SC	5349	20 X 16 X 16	647940	405	0.405
584591	Raxofix	Raxofix-Fittings	5349 Kreuzungs-T-St.mSC 20x16x20 0 1 9	Crossing-tee with SC	5349	20 X 16 X 20	647957	415	0.415
584601	Raxofix	Raxofix-Fittings	5349 Kreuzungs-T-St.mSC 20x20x20 0 1 9	Crossing-tee with SC	5349	20 X 20 X 20	647964	425	0.425
584611	Raxofix	Raxofix-Fittings	5373 Connection piece 16x1/2x16 0 4 9	Connection piece	5373	16 X 1/2 X 16	647971	485	0.485
584621	Raxofix	Raxofix-Fittings	5373 Connection piece 20x1/2x20 0 4 9	Connection piece	5373	20 X 1/2 X 20	647988	506	0.506
584651	Raxofix	Raxofix-Fittings	5356 Closing piece with SC 16 0 1 9	Closing piece with SC	5356	16	648015	27.43	0.027
584661	Raxofix	Raxofix-Fittings	5356 Closing piece with SC 20 0 1 9	Closing piece with SC	5356	20	648022	40.61	0.041
584671	Raxofix	Raxofix-Fittings	5356 Closing piece with SC 25 0 1 9	Closing piece with SC	5356	25	648039	85.07	0.085
584681	Raxofix	Raxofix-Fittings	5356 Closing piece with SC 32 0 1 9	Closing piece with SC	5356	32	648046	144.86	0.145
584691	Raxofix	Raxofix-Fittings	5356 Closing piece with SC 40 0 1 9	Closing piece with SC	5356	40	648053	297.385	0.297
584701	Raxofix	Raxofix-Fittings	5356 Closing piece with SC 50 0 1 9	Closing piece with SC	5356	50	648060	445.4	0.445
585511	Raxofix	Raxofix-Fittings	5311 Adapter with SC 16x3/8 NB1 9	Adapter with SC	5311	16 X 3/8	725563	40.36	0.040
585591	Raxofix	Raxofix-Fittings	5311 Adapter with SC 40x11/2 NB1 9	Adapter with SC	5311	40 X 1 1/2	728175	377.2	0.377
585611	Raxofix	Raxofix-Fittings	5312 Adapter with SC 40x11/2 NB1 9	Adapter with SC	5312	40 X 1 1/2	728182	329	0.329

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
585631	Raxofix	Raxofix-Fittings	5349 Kreuzungs-T-St.mSC 25x16x25 0 1 9	Crossing-tee with SC	5349	25 X 16 X 25	730772	624.9	0.625
585651	Raxofix	Raxofix-Fittings	5349 Kreuzungs-T-St.mSC 25x20x25 0 1 9	Crossing-tee with SC	5349	25 X 20 X 25	730789	633.2	0.633
585741	Raxofix	Raxofix-Fittings	5363 Union with SC 25x3/4 NB1 9	Union with SC	5363	25 X 3/4	762759	112.45	0.112
585761	Raxofix	Raxofix-Fittings	5311 Adapter with SC 25x11/4 NB1 9	Adapter with SC	5311	25 X 1 1/4	762766	196.99	0.197
585781	Raxofix	Raxofix-Fittings	53324 Double wall bushing SC 20x1/2x3/4x35NG1 9	Double wall bushing with SC	53324	20X 1/2X 3/4X35X20	762797	211.413	0.211
586451	Raxofix	Raxofix-Fittings	5318 Tee with SC 25x25x20 NG1 9	Tee with SC	5318	25 X 25 X 20	738457	170.56	0.171
586851	Raxofix	Raxofix-Fittings	5318 Tee with SC 40x16x40 NG1 9	Tee with SC	5318	40 X 16 X 40	790424	390	0.390
586871	Raxofix	Raxofix-Fittings	5318 Tee with SC 50x16x50 NG1 9	Tee with SC	5318	50 X 16 X 50	790431	564	0.564
587211	Raxofix	Raxofix-Fittings	5315 Coupling with SC 40x16 NB1 9	Coupling with SC	5315	40 X 16	781941	208	0.208
590874	Raxofix	Raxofix-Fittings	532171 Mounting unit with SC 16x1/2x70/1007 H 9	Mounting unit with SC	532171	16X1/2X70/100/150	660659	540	0.540
599201	Raxofix	Raxofix-Fittings	53256 Double wall plate SC 16x1/2x16 NG1 9	Double wall plate with SC	53256	16 X 1/2 X 16	724412	173.3	0.173
599211	Raxofix	Raxofix-Fittings	53256 Double wall plate SC 20x1/2x20 NG1 9	Double wall plate with SC	53256	20 X 1/2 X 20	724429	218.8	0.219
599221	Raxofix	Raxofix-Fittings	53256 Double wall plate SC 25x1/2x25 NG1 9	Double wall plate with SC	53256	25 X 1/2 X 25	724436	356	0.356
599251	Raxofix	Raxofix-Fittings	53254 Wall plate with SC 16x1/2 NG1 9	Wall plate with SC	53254	16 X 1/2	724443	93.1	0.093
599261	Raxofix	Raxofix-Fittings	53254 Wall plate with SC 20x1/2 NG1 9	Wall plate with SC	53254	20 X 1/2	724450	99.6	0.100
599264	Raxofix	Raxofix-Fittings	532191 Brackets-Set 150x100x40 7 H 9	Brackets-Set	532191	150 X 100 X 40	724467	334.5	0.335
599271	Raxofix	Raxofix-Fittings	53324 Double wall bushing SC 20x1/2x3/4x47NG1 9	Double wall bushing with SC	53324	20 X 1/2 X 3/4X 47	724474	232	0.232
601061	Raxofix	Raxofix-Fittings	53168NUElbow 90° with SC 16 NG1 9	Elbow 90° with SC	53168NU	16	796242	73.4	0.073
601071	Raxofix	Raxofix-Fittings	53118NUAdapter with SC 16x1/2 NP1 9	Adapter with SC	53118NU	16 X 1/2	796655	59.3	0.059
601151	Raxofix	Raxofix-Fittings	53118 Adapter with SC 16x1/2 NP1 9	Adapter with SC	53118	16 X 1/2	776732	70	0.070
601171	Raxofix	Raxofix-Fittings	53168 Adapter elbow90° with SC 16 NG1 9	Adapter elbow 90° with SC	53168	16	776749	83.3	0.083
601191	Raxofix	Raxofix-Fittings	53188 Tee-adapter with SC 16xNG1 9	Tee-adapter with SC	53188	16 X 1/2 X 16	776855	111.2	0.111
601201	Raxofix	Raxofix-Fittings	53188 Tee-adapter with SC 20xNG1 9	Tee-adapter with SC	53188	20 X 1/2 X 20	776862	134	0.134
601361	Raxofix	Raxofix-Fittings	53117NUAdapter with SC 20 NB1 9	Adapter with SC	53117NU	20	797317	68.48	0.068
687061	Raxofix	Raxofix-Fittings	5311NU Adapter with SC 16x1/2 NP1 9	Adapter with SC	5311NU	16 X 1/2	728854	50.72	0.051
687071	Raxofix	Raxofix-Fittings	5311NU Adapter with SC 16x3/4 NP1 9	Adapter with SC	5311NU	16 X 3/4	728861	65.83	0.066
687081	Raxofix	Raxofix-Fittings	5311NU Adapter with SC 20x1/2 NP1 9	Adapter with SC	5311NU	20 X 1/2	728878	59.44	0.059
687091	Raxofix	Raxofix-Fittings	5311NU Adapter with SC 20x3/4 NP1 9	Adapter with SC	5311NU	20 X 3/4	728885	69.579	0.070
687101	Raxofix	Raxofix-Fittings	5312NU Adapter with SC 16x1/2 NP1 9	Adapter with SC	5312NU	16 X 1/2	728892	48.2	0.048
687111	Raxofix	Raxofix-Fittings	5312NU Adapter with SC 16x3/4 NB1 9	Adapter with SC	5312NU	16 X 3/4	728908	63.3	0.063
687121	Raxofix	Raxofix-Fittings	5312NU Adapter with SC 20x1/2 NP1 9	Adapter with SC	5312NU	20 X 1/2	728915	52.8	0.053
687131	Raxofix	Raxofix-Fittings	5312NU Adapter with SC 20x3/4 NB1 9	Adapter with SC	5312NU	20 X 3/4	728922	65.96	0.066
687151	Raxofix	Raxofix-Fittings	5311NU Adapter with SC 25x3/4 NP1 9	Adapter with SC	5311NU	25 X 3/4	741570	98.98	0.099
687161	Raxofix	Raxofix-Fittings	5311NU Adapter with SC 25x1 NB1 9	Adapter with SC	5311NU	25 X 1	741587	138.72	0.139
687191	Raxofix	Raxofix-Fittings	5311NU Adapter with SC 32x1 NB1 9	Adapter with SC	5311NU	32 X 1	741594	163.3	0.163
687241	Raxofix	Raxofix-Fittings	5313NU Plug-in piece with SC 16x15 NB1 9	Plug-in piece with SC	5313NU	16 X 15	728939	33.1	0.033
687251	Raxofix	Raxofix-Fittings	5313NU Plug-in piece with SC 16x18 NP1 9	Plug-in piece with SC	5313NU	16 X 18	728946	37.55	0.038
687261	Raxofix	Raxofix-Fittings	5313NU Plug-in piece with SC 20x18 NP1 9	Plug-in piece with SC	5313NU	20 X 18	728953	42.56	0.043
687271	Raxofix	Raxofix-Fittings	5313NU Plug-in piece with SC 20x22 NP1 9	Plug-in piece with SC	5313NU	20 X 22	728960	50.76	0.051
687281	Raxofix	Raxofix-Fittings	5313PNUAdapter with SC 16x15 2 1 9	Adapter with SC	5313PNU	16 X 15	728977	43.33	0.043
687291	Raxofix	Raxofix-Fittings	5313PNUAdapter with SC 16x18 2 1 9	Adapter with SC	5313PNU	16 X 18	728984	48	0.048

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
687301	Raxofix	Raxofix-Fittings	5313PNUAdapter with SC 20x15 2 1 9	Adapter with SC	5313PNU	20 X 15	728991	48.43	0.048
687311	Raxofix	Raxofix-Fittings	5313PNUAdapter with SC 20x18 2 1 9	Adapter with SC	5313PNU	20 X 18	729004	54.6	0.055
687321	Raxofix	Raxofix-Fittings	5313PNUAdapter with SC 20x22 2 1 9	Adapter with SC	5313PNU	20 X 22	729011	67.78	0.068
687361	Raxofix	Raxofix-Fittings	5314NU Elbow with SC 16x1/2 NG1 9	Elbow with SC	5314NU	16 X 1/2	729028	55.2	0.055
687381	Raxofix	Raxofix-Fittings	5314NU Elbow with SC 16x3/4 NG1 9	Elbow with SC	5314NU	16 X 3/4	729035	67.53	0.068
687391	Raxofix	Raxofix-Fittings	5314NU Elbow with SC 20x1/2 NG1 9	Elbow with SC	5314NU	20 X 1/2	729042	65	0.065
687401	Raxofix	Raxofix-Fittings	5314NU Elbow with SC 20x3/4 NG1 9	Elbow with SC	5314NU	20 X 3/4	729059	81.58	0.082
687421	Raxofix	Raxofix-Fittings	5312NU Adapter with SC 25x3/4 NB1 9	Adapter with SC	5312NU	25 X 3/4	741617	96	0.096
687431	Raxofix	Raxofix-Fittings	5312NU Adapter with SC 25x1 NB1 9	Adapter with SC	5312NU	25 X 1	741624	122.7	0.123
687461	Raxofix	Raxofix-Fittings	5315NU Coupling with SC 16 NB1 9	Coupling with SC	5315NU	16	729066	38.12	0.038
687471	Raxofix	Raxofix-Fittings	5315NU Coupling with SC 20 NB1 9	Coupling with SC	5315NU	20	729073	51.48	0.051
687481	Raxofix	Raxofix-Fittings	5315NU Coupling with SC 20x16 NB1 9	Coupling with SC	5315NU	20 X 16	729080	47.9	0.048
687501	Raxofix	Raxofix-Fittings	5316NU Elbow 90° with SC 16 NG1 9	Elbow 90° with SC	5316NU	16	729097	50.3	0.050
687511	Raxofix	Raxofix-Fittings	5316NU Elbow 90° with SC 20 NG1 9	Elbow 90° with SC	5316NU	20	729103	67.5	0.068
687521	Raxofix	Raxofix-Fittings	5312NU Adapter with SC 32x1 NB1 9	Adapter with SC	5312NU	32 X 1	741631	147.15	0.147
687541	Raxofix	Raxofix-Fittings	5317NU Tee with SC 16x1/2x16 NG1 9	Tee with SC	5317NU	16 X 1/2 X 16	729110	84.2	0.084
687551	Raxofix	Raxofix-Fittings	5317NU Tee with SC 20x1/2x20 NG1 9	Tee with SC	5317NU	20 X 1/2 X 20	729127	103.6	0.104
687581	Raxofix	Raxofix-Fittings	5312NU Adapter with SC 32x11/4 NB1 9	Adapter with SC	5312NU	32 X 1 1/4	741648	189.4	0.189
687601	Raxofix	Raxofix-Fittings	5318NU Tee with SC 16 NG1 9	Tee with SC	5318NU	16	729134	74.1	0.074
687611	Raxofix	Raxofix-Fittings	5318NU Tee with SC 16x20x16 NG1 9	Tee with SC	5318NU	16 X 20 X 16	729141	84	0.084
687621	Raxofix	Raxofix-Fittings	5318NU Tee with SC 20 NG1 9	Tee with SC	5318NU	20	729158	105	0.105
687631	Raxofix	Raxofix-Fittings	5318NU Tee with SC 20x16x16 NG1 9	Tee with SC	5318NU	20 X 16 X 16	729165	90.5	0.091
687641	Raxofix	Raxofix-Fittings	5318NU Tee with SC 20x16x20 NG1 9	Tee with SC	5318NU	20 X 16 X 20	729172	99.1	0.099
687651	Raxofix	Raxofix-Fittings	5318NU Tee with SC 20x20x16 NG1 9	Tee with SC	5318NU	20 X 20 X 16	729189	96.4	0.096
687671	Raxofix	Raxofix-Fittings	5318NU Tee with SC 25x16x20 NG1 9	Tee with SC	5318NU	25 X 16 X 20	729202	129.3	0.129
687681	Raxofix	Raxofix-Fittings	5318NU Tee with SC 25x16x25 NG1 9	Tee with SC	5318NU	25 X 16 X 25	729219	159.6	0.160
687691	Raxofix	Raxofix-Fittings	5318NU Tee with SC 25x20x20 NG1 9	Tee with SC	5318NU	25 X 20 X 20	729240	141.4	0.141
687701	Raxofix	Raxofix-Fittings	5318NU Tee with SC 25x20x25 NG1 9	Tee with SC	5318NU	25 X 20 X 25	729233	169.8	0.170
687711	Raxofix	Raxofix-Fittings	5318NU Tee with SC 25x25x16 NG1 9	Tee with SC	5318NU	25 X 25 X 16	729226	166	0.166
687721	Raxofix	Raxofix-Fittings	5318NU Tee with SC 32x16x25 NG1 9	Tee with SC	5318NU	32 X 16 X 25	729257	200.8	0.201
687731	Raxofix	Raxofix-Fittings	5318NU Tee with SC 32x16x32 NG1 9	Tee with SC	5318NU	32 X 16 X 32	729264	234.1	0.234
687921	Raxofix	Raxofix-Fittings	5312NU Adapter with SC 40x11/4 NB1 9	Adapter with SC	5312NU	40 X 1 1/4	741853	271.3	0.271
687931	Raxofix	Raxofix-Fittings	5313NU Plug-in piece with SC 25x22 NP1 9	Plug-in piece with SC	5313NU	25 X 22	741860	79.06	0.079
688051	Raxofix	Raxofix-Fittings	53255NUWall plate with SC 16x1/2 NG1 9	Wall plate with SC	53255NU	16 X 1/2	729295	116	0.116
688061	Raxofix	Raxofix-Fittings	53255NUWall plate with SC 20x1/2 NG1 9	Wall plate with SC	53255NU	20 X 1/2	729301	126.6	0.127
688071	Raxofix	Raxofix-Fittings	53255NUWall plate with SC 20x3/4 NG1 9	Wall plate with SC	53255NU	20 X 3/4	729318	165.1	0.165
688081	Raxofix	Raxofix-Fittings	5313NU Plug-in piece with SC 32x28 NB1 9	Plug-in piece with SC	5313NU	32 X 28	741877	117.1	0.117
688831	Raxofix	Raxofix-Fittings	5313NU Plug-in piece with SC 40x35 NB1 9	Plug-in piece with SC	5313NU	40 X 35	741884	218.5	0.219
689001	Raxofix	Raxofix-Fittings	5313PNUAdapter with SC 25x22 2 1 9	Adapter with SC	5313PNU	25 X 22	741891	98.8	0.099
689071	Raxofix	Raxofix-Fittings	5313PNUAdapter with SC 32x28 NB1 9	Adapter with SC	5313PNU	32 X 28	741907	127	0.127
689081	Raxofix	Raxofix-Fittings	5313PNUAdapter with SC 40x28 NB1 9	Adapter with SC	5313PNU	40 X 28	741914	214	0.214

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
689121	Raxofix	Raxofix-Fittings	53264NUTee with SC 3/4x16x16 NG1 9	Tee with SC	53264NU	3/4 X 16 X 16	729332	98.24	0.098
689231	Raxofix	Raxofix-Fittings	5313PNUAdapter with SC 40x35 NB1 9	Adapter with SC	5313PNU	40 X 35	741921	214.5	0.215
689251	Raxofix	Raxofix-Fittings	5314NU Elbow with SC 25x3/4 NG1 9	Elbow with SC	5314NU	25 X 3/4	741938	122.3	0.122
689281	Raxofix	Raxofix-Fittings	5314NU Elbow with SC 25x1 NG1 9	Elbow with SC	5314NU	25 X 1	741945	155.1	0.155
689311	Raxofix	Raxofix-Fittings	5329NU Union with SC 16 NP1 9	Union with SC	5329NU	16	729356	63.7	0.064
689321	Raxofix	Raxofix-Fittings	5329NU Union with SC 20 NP1 9	Union with SC	5329NU	20	729363	68.2	0.068
689361	Raxofix	Raxofix-Fittings	5356NU Closing piece with SC 16 0 1 9	Closing piece with SC	5356NU	16	729370	28.1	0.028
689371	Raxofix	Raxofix-Fittings	5356NU Closing piece with SC 20 0 1 9	Closing piece with SC	5356NU	20	729387	40	0.040
689391	Raxofix	Raxofix-Fittings	5314NU Elbow with SC 32x1 NG1 9	Elbow with SC	5314NU	32 X 1	741952	197.5	0.198
689461	Raxofix	Raxofix-Fittings	53141NUElbow with SC 16x1/2 NG1 9	Elbow with SC	53141NU	16 X 1/2	741976	67.12	0.067
689501	Raxofix	Raxofix-Fittings	53141NUElbow with SC 20x1/2 NG1 9	Elbow with SC	53141NU	20 X 1/2	741983	79.2	0.079
689591	Raxofix	Raxofix-Fittings	53141NUElbow with SC 20x3/4 NG1 9	Elbow with SC	53141NU	20 X 3/4	741990	104.2	0.104
689621	Raxofix	Raxofix-Fittings	53141NUElbow with SC 25x3/4 NG1 9	Elbow with SC	53141NU	25 X 3/4	742003	140.6	0.141
689671	Raxofix	Raxofix-Fittings	5315NU Coupling with SC 25x16 NB1 9	Coupling with SC	5315NU	25 X 16	742027	80.26	0.080
689681	Raxofix	Raxofix-Fittings	5315NU Coupling with SC 25x20 NB1 9	Coupling with SC	5315NU	25 X 20	742034	83.1	0.083
689691	Raxofix	Raxofix-Fittings	5315NU Coupling with SC 25 NB1 9	Coupling with SC	5315NU	25	742041	111.75	0.112
689751	Raxofix	Raxofix-Fittings	5315NU Coupling with SC 32x25 NB1 9	Coupling with SC	5315NU	32 X 25	742065	149.2	0.149
689761	Raxofix	Raxofix-Fittings	5315NU Coupling with SC 32 NB1 9	Coupling with SC	5315NU	32	742072	164.2	0.164
689791	Raxofix	Raxofix-Fittings	5315NU Coupling with SC 40 NB1 9	Coupling with SC	5315NU	40	742096	313	0.313
691331	Raxofix	Raxofix-Fittings	53153NURepair Sliding coupling SC 32NB1 9	Repair Sliding coupling SC	53153NU	32	742133	455.4	0.455
691371	Raxofix	Raxofix-Fittings	5316NU Elbow 90° with SC 25 NG1 9	Elbow 90° with SC	5316NU	25	742157	139.2	0.139
691501	Raxofix	Raxofix-Fittings	5316NU Elbow 90° with SC 32 NG1 9	Elbow 90° with SC	5316NU	32	742164	216.5	0.217
691581	Raxofix	Raxofix-Fittings	5316NU Elbow 90° with SC 40 NG1 9	Elbow 90° with SC	5316NU	40	742171	425	0.425
691621	Raxofix	Raxofix-Fittings	5326NU Elbow 45° with SC 25 NG1 9	Elbow 45° with SC	5326NU	25	742188	134.6	0.135
691631	Raxofix	Raxofix-Fittings	5326NU Elbow 45° with SC 32 NG1 9	Elbow 45° with SC	5326NU	32	742195	193.8	0.194
691641	Raxofix	Raxofix-Fittings	5326NU Elbow 45° with SC 40 NG1 9	Elbow 45° with SC	5326NU	40	742201	372.4	0.372
691651	Raxofix	Raxofix-Fittings	5317NU Tee with SC 25x1/2x25 NG1 9	Tee with SC	5317NU	25 X 1/2 X 25	742218	172.1	0.172
691681	Raxofix	Raxofix-Fittings	5317NU Tee with SC 25x3/4x25 NG1 9	Tee with SC	5317NU	25 X 3/4 X 25	742225	193.8	0.194
691701	Raxofix	Raxofix-Fittings	5317NU Tee with SC 32x3/4x32 NG1 9	Tee with SC	5317NU	32 X 3/4 X 32	742232	266.4	0.266
691761	Raxofix	Raxofix-Fittings	5317NU Tee with SC 40x3/4x40 NG1 9	Tee with SC	5317NU	40 X 3/4 X 40	742249	445.6	0.446
691811	Raxofix	Raxofix-Fittings	5318NU Tee with SC 25 NG1 9	Tee with SC	5318NU	25	742256	204	0.204
691901	Raxofix	Raxofix-Fittings	5318NU Tee with SC 32 NG1 9	Tee with SC	5318NU	32	742263	320.1	0.320
691911	Raxofix	Raxofix-Fittings	5318NU Tee with SC 32x20x32 NG1 9	Tee with SC	5318NU	32 X 20 X 32	742270	239.3	0.239
691931	Raxofix	Raxofix-Fittings	5318NU Tee with SC 32x25x25 NG1 9	Tee with SC	5318NU	32 X 25 X 25	742294	244	0.244
691951	Raxofix	Raxofix-Fittings	5318NU Tee with SC 32x25x32 NG1 9	Tee with SC	5318NU	32 X 25 X 32	742300	289	0.289
692081	Raxofix	Raxofix-Fittings	5318NU Tee with SC 40x32x32 NG1 9	Tee with SC	5318NU	40 X 32 X 32	742348	407.1	0.407
692121	Raxofix	Raxofix-Fittings	5356NU Closing piece with SC 25 0 1 9	Closing piece with SC	5356NU	25	742379	86.82	0.087
692331	Raxofix	Raxofix-Fittings	53139NUAdapter with SC 16 NB1 9	Adapter with SC	53139NU	16	742409	149.8	0.150
692361	Raxofix	Raxofix-Fittings	5363NU Union with SC 16x3/4 NP1 9	Union with SC	5363NU	16 X 3/4	759285	74	0.074
692731	Raxofix	Raxofix-Fittings	5363NU Union with SC 25x11/4 NB1 9	Union with SC	5363NU	25 X 1 1/4	759490	220	0.220
692771	Raxofix	Raxofix-Fittings	5363NU Union with SC 32x11/4 NB1 9	Union with SC	5363NU	32 X 1 1/4	759506	256	0.256

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Mass in grams	Mass in kg
692881	Raxofix	Raxofix-Fittings	53266NUManifold with SC 16x3/4x2 NG1 9	Manifold with SC	53266NU	16 X 3/4 X 2	759520	224	0.224
692891	Raxofix	Raxofix-Fittings	53267NUManifold with SC 16x3/4x3 NG1 9	Manifold with SC	53267NU	16 X 3/4 X 3	759537	416	0.416
692901	Raxofix	Raxofix-Fittings	53265NUManifold with SC 16x3/4x4 NG1 9	Manifold with SC	53265NU	16 X 3/4 X 4	759544	526	0.526
692911	Raxofix	Raxofix-Fittings	53321NUWall bushing SC 16x1/2x3/4x55 NG1 9	Wall bushing with SC	53321NU	16X 1/2 X 3/4 X 55	759551	224	0.224
692951	Raxofix	Raxofix-Fittings	53321NUWall bushing SC 16x1/2x3/4x35 NG1 9	Wall bushing with SC	53321NU	16X 1/2 X 3/4 X 35	759568	186	0.186
693051	Raxofix	Raxofix-Fittings	53258NUTee with SC 16x1/2x16 NG1 9	Tee with SC	53258NU	16 X 1/2 X 16	759575	112	0.112
693071	Raxofix	Raxofix-Fittings	53258NUTee with SC 20x1/2x20 NG1 9	Tee with SC	53258NU	20 X 1/2 X 20	759582	130	0.130
742981	Raxofix	Raxofix-Fittings	53151 Coupling 16 2 1 9	Coupling	53151	16	700003	118	0.118
744781	Raxofix	Raxofix-Fittings	53321 Wall bushing SC 16x1/2x3/4x25 NG1 9	Wall bushing with SC	53321	16X1/2X3/4X25	689674	117.5	0.118
744791	Raxofix	Raxofix-Fittings	53321 Wall bushing SC 16x1/2x3/4x35 NG1 9	Wall bushing with SC	53321	16X1/2X3/4X35	689681	128	0.128
744801	Raxofix	Raxofix-Fittings	53321 Wall bushing SC 16x1/2x3/4x47 NG1 9	Wall bushing with SC	53321	16X1/2X3/4X47	689698	150.5	0.151
745171	Raxofix	Raxofix-Fittings	53321 Wall bushing SC 16x1/2x3/4x55 NG1 9	Wall bushing with SC	53321	16X1/2X3/4X55	779634	163.58	0.164

Conversion table for length weights

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Linear weight: g/m	Linear weight: kg/m	Conversion factor
500053	Raxofix	Raxofix-PEXALPEXPipe	530210 RAXOFIX PIPE DN10(16X3.8) 5HC 9	Raxofix-Pipe	530210	DN10 (16 X 3.8)	781477	139.000	0.139	0.302
500073	Raxofix	Raxofix-PEXALPEXPipe	530110 RAXOFIX PIPE DN10(16X3.8) 5HE 9	Raxofix-Pipe	530110	DN10 (16 X 3.8)	781484	196.000	0.196	0.426
517953	Raxofix	Raxofix-PEXALPEXPipe	5302 RAXOFIX PIPE 25X2.7 5JC 9	Raxofix-Pipe	5302	25 X 2.7	714604	230.427	0.230	0.501
527063	Raxofix	Raxofix-PEXALPEXPipe	53023 RAXOFIX PIPE 25X2.7 5JC 9	Raxofix-Pipe	53023	25 X 2.7	743314	413.378	0.413	0.899
528963	Raxofix	Raxofix-PEXALPEXPipe	53024 RAXOFIX PIPE 16X2.2 5JC 9	Raxofix-Pipe	53024	16 X 2.2	717926	154.600	0.155	0.336
528973	Raxofix	Raxofix-PEXALPEXPipe	53024 RAXOFIX PIPE 20X2.8 5JC 9	Raxofix-Pipe	53024	20 X 2.8	717933	220.900	0.221	0.480
528983	Raxofix	Raxofix-PEXALPEXPipe	53023 RAXOFIX PIPE 16X2.2 5JC 9	Raxofix-Pipe	53023	16 X 2.2	717940	254.000	0.254	0.552
528993	Raxofix	Raxofix-PEXALPEXPipe	53023 RAXOFIX PIPE 20X2.8 5JC 9	Raxofix-Pipe	53023	20 X 2.8	718053	306.200	0.306	0.666
562283	Raxofix	Raxofix-PEXALPEXPipe	53061 PIPE PB DD 16X1.8 5DC 9	Raxofix-Pipe	53061	16 X 1.8	698065	185.000	0.185	0.402
571353	Raxofix	Raxofix-PEXALPEXPipe	5306 PIPE PB DD 16X1.8 5CC 9	PB DD-Rohr	5306	16 X 1.8	696450	144.500	0.145	0.314
574252	Raxofix	Raxofix-PEX-Pipe	5351NU OPTIFLEX FLEX.-ROHR 16X2.2 5F519	Optiflex Flexible-Pipe	5351NU	16 X 2.2	738235	170.500	0.171	0.371
574262	Raxofix	Raxofix-PEX-Pipe	5351NU OPTIFLEX FLEX.-ROHR 20X2.8 5F519	Optiflex Flexible-Pipe	5351NU	20 X 2.8	738242	240.000	0.240	0.522
574272	Raxofix	Raxofix-PEX-Pipe	5351NU OPTIFLEX FLEX.-ROHR 16X2.2 5F519	Optiflex Flexible-Pipe	5351NU	16 X 2.2	738556	170.500	0.171	0.371
574282	Raxofix	Raxofix-PEX-Pipe	5351NU OPTIFLEX FLEX.-ROHR 20X2.8 5F519	Optiflex Flexible-Pipe	5351NU	20 X 2.8	738563	240.000	0.240	0.522

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Linear weight: g/m	Linear weight: kg/m	Conversion factor
574292	Raxofix	Raxofix-PEX-Pipe	5352NU OPTIFLEX FLEX.-ROHR 16X2.2 5F519	Optiflex Flexible-Pipe	5352NU	16 X 2.2	738570	113.240	0.113	0.246
574302	Raxofix	Raxofix-PEX-Pipe	5352NU OPTIFLEX FLEX.-ROHR 20X2.8 5F519	Optiflex Flexible-Pipe	5352NU	20 X 2.8	738587	171.475	0.171	0.373
574481	Raxofix	Raxofix-PB-Pipe	5352PNUOPTIFLEX FLEX.-ROHR 16X2.2 5BC 9	Optiflex Flexible-Pipe	5352PNU	16 X 2.2	663476	106.100	0.106	0.231
574491	Raxofix	Raxofix-PB-Pipe	5352PNUOPTIFLEX FLEX.-ROHR 20X2.8 5BC 9	Optiflex Flexible-Pipe	5352PNU	20 X 2.8	663483	169.090	0.169	0.368
574501	Raxofix	Raxofix-PB-Pipe	5352PNUOPTIFLEX FLEX.-ROHR 25X2.7 5BC 9	Optiflex Flexible-Pipe	5352PNU	25 X 2.7	663490	293.480	0.293	0.638
574511	Raxofix	Raxofix-PB-Pipe	5352PNUOPTIFLEX FLEX.-ROHR 32X3.2 5BC 9	Optiflex Flexible-Pipe	5352PNU	32 X 3.2	663506	323.290	0.323	0.703
574522	Raxofix	Raxofix-PEX-Pipe	53525NUOPTIFLEX FLEX.-ROHR 16X2.2 5FZ 9	Optiflex Flexible-Pipe	53525NU	16 X 2.2	738594	141.040	0.141	0.307
574532	Raxofix	Raxofix-PEX-Pipe	53525NUOPTIFLEX FLEX.-ROHR 20X2.8 5FZ 9	Optiflex Flexible-Pipe	53525NU	20 X 2.8	738600	193.075	0.193	0.420
574551	Raxofix	Raxofix-PB-Pipe	5351PNUOPTIFLEX FLEX.-ROHR 16X2.2 5BA 9	Optiflex Flexible-Pipe	5351PNU	16 X 2.2	663759	170.490	0.170	0.371
574561	Raxofix	Raxofix-PB-Pipe	5351PNUOPTIFLEX FLEX.-ROHR 20X2.8 5BA 9	Optiflex Flexible-Pipe	5351PNU	20 X 2.8	663766	250.280	0.250	0.544
574571	Raxofix	Raxofix-PB-Pipe	5351PNUOPTIFLEX FLEX.-ROHR 25X2.7 5BA 9	Optiflex Flexible-Pipe	5351PNU	25 X 2.7	663773	352.670	0.353	0.767
576543	Raxofix	Raxofix-PEXALPEXPipe	5302 RAXOFIX PIPE 32X3.2 5JC 9	Raxofix-Pipe	5302	32 X 3.2	687946	365.000	0.365	0.793
576703	Raxofix	Raxofix-PEXALPEXPipe	53041 RAXOFIX PIPE 16X2.2 5JC 9	Raxofix-Pipe	53041	16 X 2.2	684457	159.320	0.159	0.346
576713	Raxofix	Raxofix-PEXALPEXPipe	53041 RAXOFIX PIPE 20X2.8 5JC 9	Raxofix-Pipe	53041	20 X 2.8	684464	230.000	0.230	0.500
577910	Raxofix	Raxofix-PEXALPEXPipe	53081 RAXOFIX PIPE 20X2.8 5KC 9	Raxofix-Pipe	53081	20 X 2.8	795917	158.880	0.159	0.345

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Linear weight: g/m	Linear weight: kg/m	Conversion factor
582053	Raxofix	Raxofix-PEXALPEXPipe	5304 RAXOFIX PIPE 16X2.2 5JC 9	Raxofix-Pipe	5304	16 X 2.2	734084	172.576	0.173	0.375
582063	Raxofix	Raxofix-PEXALPEXPipe	5302 RAXOFIX PIPE 16X2.2 5JC 9	Raxofix-Pipe	5304	20 X 2.8	734091	269.168	0.269	0.585
582312	Raxofix	Raxofix-PEXALPEXPipe	5301 RAXOFIX PIPE 16X2.2 5JC 9	Raxofix-Pipe	5302	16 X 2.2	645717	110.600	0.111	0.240
582342	Raxofix	Raxofix-PEXALPEXPipe	5301 RAXOFIX PIPE 20X2.8 5JC 9	Raxofix-Pipe	5301	16 X 2.2	645748	168.500	0.169	0.366
582352	Raxofix	Raxofix-PEXALPEXPipe	53026 RAXOFIX PIPE 16X2.2 5JC 9	Raxofix-Pipe	5301	20 X 2.8	645755	230.000	0.230	0.500
582383	Raxofix	Raxofix-PEXALPEXPipe	53026 RAXOFIX PIPE 20X2.8 5JC 9	Raxofix-Pipe	53026	16 X 2.2	645786	130.000	0.130	0.283
582393	Raxofix	Raxofix-PEXALPEXPipe	53025 RAXOFIX PIPE 16X2.2 5JC 9	Raxofix-Pipe	53026	20 X 2.8	645793	193.000	0.193	0.420
582403	Raxofix	Raxofix-PEXALPEXPipe	53025 RAXOFIX PIPE 20X2.8 5JC 9	Raxofix-Pipe	53025	16 X 2.2	645809	138.500	0.139	0.301
582413	Raxofix	Raxofix-PEXALPEXPipe	5303 RAXOFIX PIPE 16X2.2 5JC 9	Raxofix-Pipe	53025	20 X 2.8	645816	202.100	0.202	0.439
582442	Raxofix	Raxofix-PEXALPEXPipe	5303 RAXOFIX PIPE 20X2.8 5JC 9	Raxofix-Pipe	5303	16 X 2.2	645847	112.000	0.112	0.243
582452	Raxofix	Raxofix-PEXALPEXPipe	5303 RAXOFIX PIPE 25X2.7 5JC 9	Raxofix-Pipe	5303	20 X 2.8	645854	180.000	0.180	0.391
582462	Raxofix	Raxofix-PEXALPEXPipe	5303 RAXOFIX PIPE 32X3.2 5JC 9	Raxofix-Pipe	5303	25 X 2.7	645861	226.000	0.226	0.491
582472	Raxofix	Raxofix-PEXALPEXPipe	5303 RAXOFIX PIPE 40X3.5 5JC 9	Raxofix-Pipe	5303	32 X 3.2	645878	345.000	0.345	0.750
582482	Raxofix	Raxofix-PEXALPEXPipe	5303 RAXOFIX PIPE 50X4.0 5JC 9	Raxofix-Pipe	5303	40 X 3.5	645885	517.000	0.517	1.124
582492	Raxofix	Raxofix-PEXALPEXPipe	5303 RAXOFIX PIPE 63X4.5 5JC 9	Raxofix-Pipe	5303	50 X 4.0	645892	752.000	0.752	1.635

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Linear weight: g/m	Linear weight: kg/m	Conversion factor
582502	Raxofix	Raxofix-PEXALPEXPipe	5304 RAXOFIX PIPE 25X2.7 5JC 9	Raxofix-Pipe	5303	63 X 4.5	645908	1025.000	1.025	2.228
582873	Raxofix	Raxofix-PEXALPEXPipe	5302 RAXOFIX PIPE 20X2.8 5JC 9	Raxofix-Pipe	5304	25 X 2.7	728779	358.970	0.359	0.780
583283	Raxofix	Raxofix-PEXALPEXPipe	53025 RAXOFIX PIPE 25X2.7 5JC 9	Raxofix-Pipe	5302	20 X 2.8	760441	173.000	0.173	0.376
584753	Raxofix	Raxofix-PEXALPEXPipe	53025 RAXOFIX PIPE 32X3.2 5JC 9	Raxofix-Pipe	53025	25 X 2.7	648114	280.427	0.280	0.610
584973	Raxofix	Raxofix-PEXALPEXPipe	53024 RAXOFIX PIPE 25X2.7 5JC 9	Raxofix-Pipe	53025	32 X 3.2	743284	393.286	0.393	0.855
584983	Raxofix	Raxofix-PEXALPEXPipe	53024 RAXOFIX PIPE 32X3.2 5JC 9	Raxofix-Pipe	53024	25 X 2.7	743291	306.588	0.307	0.666
584993	Raxofix	Raxofix-PEXALPEXPipe	5301NU RAXOFIX PIPE 16X2.2 5 A 9	Raxofix-Pipe	53024	32 X 3.2	743307	424.286	0.424	0.922
688108	Raxofix	Raxofix-PEXALPEXPipe	5301NU RAXOFIX PIPE 20X2.8 5 A 9	Raxofix-Pipe	5301NU	16 X 2.2	730796	168.500	0.169	0.366
688118	Raxofix	Raxofix-PEXALPEXPipe	5301NU RAXOFIX PIPE 25X2.7 5 A 9	Raxofix-Pipe	5301NU	20 X 2.8	730802	247.000	0.247	0.537
688128	Raxofix	Raxofix-PEXALPEXPipe	5302NU RAXOFIX PIPE 16X2.2 5 C 9	Raxofix-Pipe	5301NU	25 X 2.7	730819	355.427	0.355	0.773
688138	Raxofix	Raxofix-PEXALPEXPipe	5302NU RAXOFIX PIPE 20X2.8 5 C 9	Raxofix-Pipe	5302NU	16 X 2.2	730826	115.320	0.115	0.251
688148	Raxofix	Raxofix-PEXALPEXPipe	5302NU RAXOFIX PIPE 25X2.7 5 C 9	Raxofix-Pipe	5302NU	20 X 2.8	730833	180.000	0.180	0.391
688158	Raxofix	Raxofix-PEXALPEXPipe	53025NURAXOFIX PIPE 16X2.2 5 C 9	Raxofix-Pipe	5302NU	25 X 2.7	730840	230.427	0.230	0.501
688168	Raxofix	Raxofix-PEXALPEXPipe	53025NURAXOFIX PIPE 20X2.8 5 C 9	Raxofix-Pipe	53025NU	16 X 2.2	730857	157.669	0.158	0.343
688178	Raxofix	Raxofix-PEXALPEXPipe	53025NURAXOFIX PIPE 25X2.7 5 C 9	Raxofix-Pipe	53025NU	20 X 2.8	730864	219.508	0.220	0.477

Material	System	Product subgroup	Material short text	Designation	Model no.	Dimensions	Item no.	Linear weight: g/m	Linear weight: kg/m	Conversion factor
688188	Raxofix	Raxofix-PEXALPEXPipe	5303NU RAXOFIX PIPE 20X2.8 5 C 9	Raxofix-Pipe	53025NU	25 X 2.7	730871	277.378	0.277	0.603
688208	Raxofix	Raxofix-PEXALPEXPipe	5303NU RAXOFIX PIPE 25X2.7 5 C 9	Raxofix-Pipe	5303NU	20 X 2.8	730895	180.000	0.180	0.391
688218	Raxofix	Raxofix-PEXALPEXPipe	5303NU RAXOFIX PIPE 32X3.2 5 C 9	Raxofix-Pipe	5303NU	25 X 2.7	730901	230.427	0.230	0.501
688228	Raxofix	Raxofix-PEXALPEXPipe	5303NU RAXOFIX PIPE 40X3.5 5 C 9	Raxofix-Pipe	5303NU	32 X 3.2	730918	339.286	0.339	0.738
688248	Raxofix	Raxofix-PEXALPEXPipe	53025NURAXOFIX PIPE 32X3.2 5 C 9	Raxofix-Pipe	5303NU	40 X 3.5	738358	510.000	0.510	1.109
688333	Raxofix	Raxofix-PEXALPEXPipe	5051RNUPE-RT-PIPE 16X3.8 5HE 9	Raxofix-Pipe	53025NU	32 X 3.2	764357	393.286	0.393	0.855
763270	Raxofix	Raxofix-PEX-Pipe	5051RNUPE-RT-PIPE 16x3.8 5HE 9	PE-RT-Pipe	5051RNU	16 X 3.8	745172	194.614	0.195	0.423

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Notes
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