



Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

ELECTROFUSION FITTINGS

from

EUROSTANDARD S.p.A.



Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): Construction products, PCR 2019:14 version 1.11 UN CPC code(s): 36320
PCR review was conducted by: Martin Erlandsson, IVL Swedish Environmental Research Institute, martin.erlandsson@ivl.se
Independent third-party verification of the declaration and data, according to ISO 14025:2006: <input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification
Third party verifier: Marcel Gómez Ferrer, Marcel Gómez Consultoria Ambiental, info@marcelgomez.com
Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Name and contact information of LCA practitioners:

Esalex srl - info@esalex.eu

Company information

Owner of the EPD: Eurostandard S.p.A.

Contact: Maurizio Tiso, email: maurizio.tiso@eurostandard.it

Description of the organisation: Eurostandard S.p.A. carries out moulding of plastic materials for the production of polyethylene and polypropylene fittings, used in gas and water distribution networks, in fire-fighting and water treatment systems.

The Company was founded in the 1965 for the production of high density polyethylene crates and since 1984 has converted its production into polyethylene fittings for pressure pipelines. The production plant is located in Tesero, in Val di Fiemme, in the hearth of the Dolomites. All production is highly automated and equipped with robot and complex machineries. Eurostandard S.p.A. is certified ISO 9001:2015 (certificate n. 21071/10/S), ISO 14001:2015 (certificate n. EMS-2935/S), ISO 45001:2018 (certificate n. OHS-3876). The company has an accredited laboratory for the product quality control (n.0740L).

More information: www.eurostandard.it

Name and location of production site:

Eurostandard S.p.A.
Zona Industriale Lago 22
38038 Tesero (TN), Italy
T. +39 0462 811 211
info@eurostandard.it

Product information

Product name: Electrofusion fitting

Product description and identification: the fittings are made of polyethylene injection moulded. The polyethylene compounds used are added at the origin with carbon black for UV stabilization, are suitable for drinking water and foodstuffs (conformity to Italian law DM 21st March 1973 and the DM n. 174 dated 6th April 2004). In the product is included a copper wire for the electro-welding.

The products included in the LCA study are:

- Sockets
 - Electrofusion socket (cod. 21.00)
- Elbows
 - Electrofusion 90° elbow (cod. 21.11)
 - Electrofusion 45° elbow (cod. 21.16)
- Tee
 - Electrofusion 90° TEE (cod. 21.21.16)
 - Electrofusion reduced 90° TEE (cod. 21.22.16)
- Other forms
 - Electrofusion cap (cod. 21.36.16)
 - Electrofusion cap (cod. 21.36.25)
 - Electrofusion Reducer (cod. 21.51.16)
- Saddles
 - Electrofusion spigot saddle Monobloc (cod. 21.20.16A)
 - Electrofusion spigot saddle (cod. 21.20.16)
 - Electrofusion tapping saddle Monobloc (cod. 21.30.16A)
 - Electrofusion tapping saddle (cod. 21.30.16)
 - Electrofusion tapping saddle with valve (cod. 21.73.16)

UN CPC code: 36320

Geographical scope: International

Technical specification:

The technical features of the products are:

FEATURES	Typical values	Unit	Methods test
Density	958 - 959	kg/m ³	ISO 1183-1
Melt mass-flow rate (MFR) 5 kg/190°C	0,23 - 0,45	g/10 min	ISO 1133-1
Tensile strength at yield	23 - 25	MPa	ISO 527
Tensile elongation at break	≥ 350	%	ISO 527
Carbon black content	2,0 - 2,5	%	ISO 6964
Linear thermal expansion coefficient	2,0 x 10 ⁻⁴	m/m °C	
Temperature of brittleness	- 80	°C	ASTM D746

The Eurostandard fittings are constantly monitored throughout the production process in accordance with the provisions of the internal self-control plans derived from UNI EN 1555, UNI EN 12201 and UNI UN ISO 15494 standard for fittings.

The test activities are carried out continuously in full compliance with the standards established by the reference standards and include mechanical and physical tests, performed both on the fittings and on the raw material.

In particular, the production is subjected to the following tests:

- Mass fluidity index (MFR): UNI EN ISO 1133-1
- Dimensional check - Examination of the appearance - Verification of marking - Electric resistance: UNI EN 1555, UNI EN 12201, UNI EN ISO 15494, UNI EN ISO 3126
- Resistance to internal hydrostatic pressure at 20°C AND 80°C: UNI EN ISO 1167
- Peel test and crush test: ISO 13954, ISO 13955, ISO 13956
- Oxidation induction time (OIT): ISO 11357-6

The LCA study has been modelled on Eurostandard production data for 2020. The following tables list the products under study and their weight. More technical information for each product can be found on the Eurostandard website (www.eurostandard.it).

Article code	Article description	Weight (kg)
C-2100100032AA	SOCKET EL. d. 32 PN10 SDR17	0,063
C-2100100040AA	SOCKET EL. d. 40 PN10 SDR17	0,095
C-2100100050AA	SOCKET EL. d. 50 PN10 SDR17	0,135
C-2100100063AA	SOCKET EL. d. 63 PN10 SDR17	0,204
C-2100100110AA	SOCKET EL. d.110 PN10 SDR17	0,597
C-2100100110AZ	SOCKET EL. d.110 PN10 SDR17	0,597
C-2100100125A0	SOCKET EL. d.125 PN10 SDR17	0,766

C-2100100160A0	SOCKET EL. d.160 PN10 SDR17	1,446
C-2100100160AZ	SOCKET EL. d.160 PN10 SDR17	1,446
C-2100100160F0	SOCKET EL. d.160 PN10 SDR17	1,446
C-2100100180A0	SOCKET EL. d.180 PN10 SDR17	2,006
C-2100100180AZ	SOCKET EL. d.180 PN10 SDR17	2,006
C-2100100200A0	SOCKET EL. d.200 PN10 SDR17	1,885
C-2100100200AZ	SOCKET EL. d.200 PN10 SDR17	1,885
C-2100100225AA	SOCKET EL. d.225 PN10 SDR17	2,652

C-2100100250AA	SOCKET EL. d.250 PN10 SDR17	3,380
C-2100100280AA	SOCKET EL. d.280 PN10 SDR17	6,796
C-2100100315AA	SOCKET EL. d.315 PN10 SDR17	6,695
C-2100100355AA	SOCKET EL. d.355 PN10 SDR17	9,136
C-2100100400AA	SOCKET EL. d.400 PN10 SDR17	13,744
C-2100100450	SOCKET EL. d.450 PN10 SDR17	19,360
C-2100100450AA	SOCKET EL d.450 PN10 SDR17	19,360
C-2100100500	SOCKET EL. d.500 PN10 SDR17	21,296
C-2100100500AA	SOCKET EL. d.500 PN10 SDR17	16,246
C-2100100560	SOCKET EL d 560 PN10 SDR17	28,406
C-2100100560AA	SOCKET EL d 560 PN10 SDR17	22,064
C-2100100630	SOCKET EL. d.630 PN10 SDR17	42,679
C-2100100630AA	SOCKET EL. d.630 PN10 SDR17	27,429
C-2100160020AA	SOCKET EL. d. 20 PN16 SDR11	0,035
C-2100160025AA	SOCKET EL. d. 25 PN16 SDR11	0,045
C-2100160032AA	SOCKET EL. d. 32 PN16 SDR11	0,063
C-2100160040AA	SOCKET EL. d. 40 PN16 SDR11	0,095
C-2100160050AA	SOCKET EL. d. 50 PN16 SDR11	0,135
C-2100160063AA	SOCKET EL. d. 63 PN16 SDR11	0,204
C-2100160075AA	SOCKET EL. d. 75 PN16 SDR11	0,229
C-2100160075FA	SOCKET EL. d. 75 SDR11 FERMO	0,229
C-2100160090AA	SOCKET EL. d. 90 PN16 SDR11	0,401
C-2100160090FA	SOCKET EL. d. 90 SDR11 FERMO	0,431
C-2100160110AA	SOCKET EL. d.110 PN16 SDR11	0,597
C-2100160110AZ	SOCKET EL. d.110 PN16 SDR11	0,597
C-2100160110FA	SOCKET EL. d.110 SDR11 FERMO	0,597
C-2100160125A0	SOCKET EL. d.125 PN16 SDR11	0,766
C-2100160125F0	SOCKET EL. d.125 SDR11 FERMO	0,766
C-2100160140A0	SOCKET EL. d.140 PN16 SDR11	0,997
C-2100160140F0	SOCKET EL. d.140 SDR11 FERMO	0,997
C-2100160160A0	SOCKET EL. d.160 PN16 SDR11	1,464

C-2100160160AZ	SOCKET EL. d.160 PN16 SDR11	1,464
C-2100160160F0	SOCKET EL. d.160 PN16 SDR11	1,464
C-2100160180A0	SOCKET EL. d.180 PN16 SDR11	2,006
C-2100160180AZ	SOCKET EL. d.180 PN16 SDR11	2,006
C-2100160200A0	SOCKET EL. d.200 PN16 SDR11	2,875
C-2100160200AZ	SOCKET EL. d.200 PN16 SDR11	2,875
C-2100160225AA	SOCKET EL. d.225 PN16 SDR11	3,811
C-2100160225FA	SOCKET EL. d.225 SDR11 FERMO	3,811
C-2100160250AA	SOCKET EL. d.250 PN16 SDR11	5,132
C-2100160250FA	SOCKET EL. d.250 SDR11 FERMO	5,132
C-2100160280AA	SOCKET EL. d.280 PN16 SDR11	6,838
C-2100160315AA	SOCKET EL. d.315 PN16 SDR11	10,284
C-2100160315FA	SOCKET EL. d.315 SDR11 FERMO	10,284
C-2100160355AA	SOCKET EL. d.355 PN16 SDR11	11,331
C-2100160400AA	SOCKET EL. d.400 PN16 SDR11	19,672
C-2100160450	SOCKET EL d.450 PN16 SDR11	19,360
C-2100160450AA	SOCKET EL. d.450 PN16 SDR11	19,660
C-2100160500	SOCKET EL. d.500 PN16 SDR11	21,296
C-2100160500AA	SOCKET EL. d.500 PN16 SDR11	24,496
C-2100160560	SOCKET EL. d.560 PN16 SDR11	28,406
C-2100160560AA	SOCKET EL. d.560 PN16 SDR11	29,206
C-2100160630	SOCKET EL. d.630 PN16 SDR11	42,679
C-2100160630AA	SOCKET EL. d.630 PN16 SDR11	42,329
C-2100250020AA	SOCKET EL. d. 20 PN25 SDR7,4	0,035
C-2100250025AA	SOCKET EL. d. 25 PN25 SDR7,4	0,045
C-2100250032AA	SOCKET EL. d. 32 PN25 SDR7,4	0,063
C-2100250040AA	SOCKET EL. d. 40 PN25 SDR7,4	0,095
C-2100250050AA	SOCKET EL. d. 50 PN25 SDR7,4	0,135
C-2100250063AA	SOCKET EL. d. 63 PN25 SDR7,4	0,204
C-2100250075AA	SOCKET EL. d. 75 PN25 SDR7,4	0,299
C-2100250090AA	SOCKET EL. d. 90 PN25 SDR7,4	0,472

C-2100250110AA	SOCKET EL. d.110 PN25 SDR7,4	0,768
C-2100250125A0	SOCKET EL. d.125 PN25 SDR7,4	1,008
C-2100250140A0	SOCKET EL. d.140 PN25 SDR7,4	1,379
C-2100250160A0	SOCKET EL. d.160 PN25 SDR7,4	1,794
C-2100250180A0	SOCKET EL. d.180 PN25 SDR7,4	2,898
C-2100250200A0	SOCKET EL. d.200 PN25 SDR7,4	3,979
C-2100250200F0	SOCKET EL. d.200 SDR7,4 PN25	3,979
C-2100250225AA	SOCKET EL. d.225 PN25 SDR7,4	5,679
C-2100250250AA	SOCKET EL. d.250 PN25 SDR7,4	6,257
C-2100250315AA	SOCKET EL. d.315 PN25 SDR7,4	12,032
C-2111160020AA	ELBOW 90° EL. d. 20 PN16 SDR11	0,065
C-2111160025AA	ELBOW 90° EL. d. 25 PN16 SDR11	0,070
C-2111160032AA	ELBOW 90° EL. d. 32 PN16 SDR11	0,118
C-2111160040AA	ELBOW 90° EL. d. 40 PN16 SDR11	0,175
C-2111160050AA	ELBOW 90° EL. d. 50 PN16 SDR11	0,280
C-2111160063AA	ELBOW 90° EL. d. 63 PN16 SDR11	0,429
C-2111160075AA	ELBOW 90° EL. d. 75 PN16 SDR11	0,638
C-2111160090AA	ELBOW 90° EL. d. 90 PN16 SDR11	0,836
C-2111160110AA	ELBOW 90° EL. d. 110 PN16 SDR11	1,289
C-2111160125	ELBOW 90° EL. d. 125 PN16 SDR11	2,080
C-2111160125A0	ELBOW 90° EL. d. 125 PN16 SDR11	2,080
C-2111160140A0	ELBOW 90° EL. d. 140 PN16 SDR11	2,658
C-2111160160	ELBOW 90° EL. d. 160 PN16 SDR11	3,994
C-2111160160A0	ELBOW 90° EL. d. 160 PN16 SDR11	3,994
C-2111160180	ELBOW 90° EL. d. 180 PN16 SDR11	4,669
C-2111160180AA	ELBOW 90° EL. d. 180 PN16 SDR11	4,679
C-2111160200AA	ELBOW 90° EL. d. 200 PN16 SDR11	6,285
C-2111160225AA	ELBOW 90° EL. d. 225 PN16 SDR11	9,185
C-2111160250AA	ELBOW 90° EL. d. 250 PN16 SDR11	11,401
C-2111160315AA	ELBOW 90° EL. d. 315 PN16 SDR11	22,666
C-2111250020AA	ELBOW 90° EL. d. 20 PN25 SDR7,4	0,065

C-2111250025AA	ELBOW 90° EL. d. 25 PN25 SDR7,4	0,070
C-2111250032AA	ELBOW 90° EL. d. 32 PN25 SDR7,4	0,118
C-2111250040AA	ELBOW 90° EL. d. 40 PN25 SDR7,4	0,175
C-2111250040AA	ELBOW 90° EL. d. 40 PN16 SDR11	0,175
C-2111250050AA	ELBOW 90° EL. d. 50 PN25 SDR7,4	0,280
C-2111250063AA	ELBOW 90° EL. d. 63 PN25 SDR7,4	0,429
C-2111250075AA	ELBOW 90° EL. d. 75 PN25 SDR7,4	0,638
C-2111250090AA	ELBOW 90° EL. d. 90 PN25 SDR7,4	1,021
C-2111250110AA	ELBOW 90° EL. d. 110 PN25 SDR7,4	1,579
C-2111250125A0	ELBOW 90° EL. d. 125 PN25 SDR 7,4	2,081
C-2111250160A0	ELBOW 90° EL. d. 160 PN25 SDR 7,4	3,994
C-2116160025AA	ELBOW 45° EL. d. 25 PN16 SDR11	0,070
C-2116160032AA	ELBOW 45° EL. d. 32 PN16 SDR11	0,098
C-2116160040AA	ELBOW 45° EL. d. 40 PN16 SDR11	0,160
C-2116160050AA	ELBOW 45° EL. d. 50 PN16 SDR11	0,240
C-2116160063AA	ELBOW 45° EL. d. 63 PN16 SDR11	0,369
C-2116160075AA	ELBOW 45° EL. d. 75 PN16 SDR11	0,584
C-2116160090AA	ELBOW 45° EL. d. 90 PN16 SDR11	0,886
C-2116160110AA	ELBOW 45° EL. d. 110 PN16 SDR11	1,379
C-2116160125	ELBOW 45° EL. d. 125 PN16 SDR11	1,781
C-2116160125A0	ELBOW 45° EL. d. 125 PN16 SDR11	1,781
C-2116160140A0	ELBOW 45° EL. d. 140 PN16 SDR11	2,158
C-2116160160	ELBOW 45° EL. d. 160 PN16 SDR11	3,344
C-2116160160A0	ELBOW 45° EL. d. 160 PN16 SDR11	3,344
C-2116160180	ELBOW 45° EL. d. 180 PN16 SDR11	4,169
C-2116160200	ELBOW 45° EL. d. 200 PN16 SDR11	5,125
C-2116160225AA	ELBOW 45° EL. d. 225 PN16 SDR11	7,201
C-2116160250AA	ELBOW 45° EL. d. 250 PN16 SDR11	9,121
C-2116160315AA	ELBOW 45° EL. d. 315 PN16 SDR11	16,636
C-2116250032AA	ELBOW 45° EL. d. 32 PN25 SDR7,4	0,098
C-2116250040AA	ELBOW 45° EL. d. 40 PN25 SDR7,4	0,160

C-2116250050AA	ELBOW 45° EL. d. 50 PN25 SDR7,4	0,240
C-2116250063AA	ELBOW 45° EL. d. 63 PN25 SDR7,4	0,369
C-2116250075AA	ELBOW 45° EL. d. 75 PN25 SDR7,4	0,584
C-2116250090AA	ELBOW 45° EL. d. 90 PN25 SDR7,4	0,886
C-2116250110AA	ELBOW 45° EL. d. 110 PN25 SDR7,4	1,379
C-2116250125A0	ELBOW 45° EL. d. 125 PN25 SDR7,4	1,781
C-2116250160A0	ELBOW 45° EL. d. 160 PN25 SDR7,4	3,344
C-2121160025	TE 90° EL. d. 25 PN16 SDR11	0,085
C-2121160032AA	TE 90° EL. d. 32 PN16 SDR11	0,093
C-2121160040	TE 90° EL. d. 40 PN16 SDR11	0,163
C-2121160050	TE 90° EL. d. 50 PN16 SDR11	0,282
C-2121160063	TE 90° EL. d. 63 PN16 SDR11	0,400
C-2121160075	TE 90° EL. d. 75 PN16 SDR11	0,674
C-2121160090	TE 90° EL. d. 90 PN16 SDR11	1,152
C-2121160110	TE 90° EL. d. 110 PN16 SDR11	1,804
C-2121160125	TE 90° EL. d. 125 PN16 SDR11	2,748
C-2121160140	TE 90° EL. d. 140 PN16 SDR11	3,148
C-2121160160	TE 90° EL. d. 160 PN16 SDR11	5,495
C-2121160180	TE 90° EL. d. 180 PN16 SDR11	5,687
C-2121160200	TE 90° EL. d. 200 PN16 SDR11	7,418
C-2121160200AA	TE 90° EL. d. 200 PN16 SDR11	7,418
C-2121160225AA	TE 90° EL. d. 225 PN16 SDR11	9,751
C-2121160250AA	TE 90° EL. d. 250 PN16 SDR11	13,261
C-2122161163A0	TE 90EL RID 110x 63 PN16 SDR11	1,634
C-2122161190A0	TE 90EL RID 110x 90 PN16 SDR11	1,714
C-2122161611A0	TE 90EL RID 160x110 PN16 SDR11	4,705
C-2122161663A0	TE 90EL RID 160x 63 PN16 SDR11	4,555
C-2122161690A0	TE 90EL RID 160x 90 PN16 SDR11	4,625
C-2122169063A0	TE 90EL RID 90x 63 PN16 SDR11	1,042
C-2136160032AA	CUP EL. d. 32 PN16 SDR11	0,085
C-2136160040AA	CUP EL. d. 40 PN16 SDR11	0,130

C-2136160050AA	CUP EL. d. 50 PN16 SDR11	0,185
C-2136160063AA	CUP EL. d. 63 PN16 SDR11	0,289
C-2136160075AA	CUP EL. d. 75 PN16 SDR11	0,389
C-2136160090AA	CUP EL. d. 90 PN16 SDR11	0,636
C-2136160110AA	CUP EL. d. 110 PN16 SDR11	1,017
C-2136160125A0	CUP EL. d. 125 PN16 SDR11	1,386
C-2136160140A0	CUP EL. d. 140 PN16 SDR11	1,837
C-2136160160A0	CUP EL. d. 160 PN16 SDR11	2,397
C-2136160180A0	CUP EL. d. 180 PN16 SDR11	3,521
C-2136250020AA	CUP EL. d. 20 PN25 SDR7,4	0,050
C-2136250025AA	CUP EL. d. 25 PN25 SDR7,4	0,065
C-2136250032AA	CUP EL. d. 32 PN25 SDR7,4	0,092
C-2136250040AA	CUP EL. d. 40 PN25 SDR7,4	0,140
C-2136250050AA	CUP EL. d. 50 PN25 SDR7,4	0,230
C-2136250063AA	CUP EL. d. 63 PN25 SDR7,4	0,339
C-2136250075	CUP EL. d. 75 PN25 SDR7,4	0,519
C-2136250090A0	CUP EL. d. 90 PN25 SDR7,4	0,832
C-2136250110A0	CUP EL. d. 110 PN25 SDR7,4	1,368
C-2136250125A0	CUP EL. d. 125 PN25 SDR7,4	1,748
C-2136250140A0	CUP EL. d. 140 PN25 SDR7,4	2,339
C-2136250160A0	CUP EL. d. 160 PN25 SDR7,4	3,294
C-2151161163	REDUCER EL 110x 63 PN16	0,885
C-2151161163AA	REDUCER EL 110x 63 PN16	0,885
C-2151161190AA	REDUCER EL 110x 90 PN16	0,831
C-2151161211	REDUCER EL 125x110 PN16	1,174
C-2151161211A0	REDUCER EL 125x110 PN16	1,174
C-2151161290	REDUCER EL 125x 90 PN16	1,063
C-2151161611	REDUCER EL 160x110 PN16	2,329
C-2151161611A0	REDUCER EL 160x110 PN16	2,329
C-2151161612	REDUCER EL 160x125 PN16	2,435
C-2151161612A0	REDUCER EL 160x125 PN16	2,435

C-2151161690	REDUCER EL 160x 90 PN16	2,282
C-2151161690A0	REDUCER EL 160x 90 PN16	2,282
C-2151161812AA	REDUCER EL 180x125 PN16	3,035
C-2151162016AA	REDUCER EL 200x160 PN16	3,872
C-2151162216AA	REDUCER EL 225x160 PN16	4,578
C-2151162220AA	REDUCER EL 225x200 PN16	4,734
C-2151162520AA	REDUCER EL 25x 20 PN16	0,033
C-2151162522AA	REDUCER EL 250x225 PN16	5,808
C-2151163220AA	REDUCER EL 32x 20 PN16	0,048
C-2151163225AA	REDUCER EL 32x 25 PN16	0,051
C-2151164020	REDUCER EL 40x 20 PN16	0,091
C-2151164025AA	REDUCER EL 40x 25 PN16	0,076
C-2151164032AA	REDUCER EL 40x 32 PN16	0,081
C-2151165025	REDUCER EL 50x 25 PN16	0,140
C-2151165032	REDUCER EL 50x 32 PN16	0,157
C-2151165040	REDUCER EL 50x 40 PN16	0,182
C-2151166332	REDUCER EL 63x 32 PN16	0,235
C-2151166340	REDUCER EL 63x 40 PN16	0,238
C-2151166350	REDUCER EL 63x 50 PN16	0,237
C-2151166350AA	REDUCER EL 63x 50 PN16	0,213
C-2151167550AA	REDUCER EL 75x 50 PN16	0,347
C-2151167563AA	REDUCER EL 75x 63 PN16	0,382
C-2151169050	REDUCER EL 90x 50 PN16	0,539
C-2151169050AA	REDUCER EL 90x 50 PN16	0,539
C-2151169063AA	REDUCER EL 90x 63 PN16	0,498
C-2151169075AA	REDUCER EL 90x 75 PN16	0,533
C-2120161125A0	SPIGOT SADDLE MONOBLOC 110x 25	0,284
C-2120161132A0	SPIGOT SADDLE MONOBLOC 110x 32	0,296
C-2120161140A0	SPIGOT SADDLE MONOBLOC 110x 40	0,296
C-2120161150A0	SPIGOT SADDLE MONOBLOC 110x 50	0,331
C-2120161163A0	SPIGOT SADDLE MONOBLOC 110x 63	0,381

C-2120161225	SPIGOT SADDLE 125x 25	0,775
C-2120161232	SPIGOT SADDLE 125x 32	0,775
C-2120161240	SPIGOT SADDLE 125x 40	0,825
C-2120161250	SPIGOT SADDLE 125x 50	0,825
C-2120161263	SPIGOT SADDLE 125x 63	0,875
C-2120161290	SPIGOT SADDLE 125x 90	1,078
C-2120161425	SPIGOT SADDLE 140x 25	0,920
C-2120161432	SPIGOT SADDLE 140x 32	0,920
C-2120161440	SPIGOT SADDLE 140x 40	0,920
C-2120161450	SPIGOT SADDLE 140x 50	0,970
C-2120161463	SPIGOT SADDLE 140x 63	1,020
C-2120161611A0	SPIGOT SADDLE 160x110	1,823
C-2120161625	SPIGOT SADDLE 160x 25	0,599
C-2120161632	SPIGOT SADDLE 160x 32	0,599
C-2120161640	SPIGOT SADDLE 160x 40	0,599
C-2120161650	SPIGOT SADDLE 160x 50	0,649
C-2120161663	SPIGOT SADDLE 160x 63	0,699
C-2120161690A0	SPIGOT SADDLE 160x 90	1,443
C-2120161811	SPIGOT SADDLE 180x110	2,003
C-2120161825	SPIGOT SADDLE 180x 25	1,500
C-2120161832	SPIGOT SADDLE 180x 32	1,200
C-2120161850	SPIGOT SADDLE 180x 50	1,300
C-2120161863	SPIGOT SADDLE 180x 63	1,300
C-2120161890	SPIGOT SADDLE 180x 90	1,703
C-2120162011	SPIGOT SADDLE 200x110	1,223
C-2120162025	SPIGOT SADDLE 200x 25	1,550
C-2120162032	SPIGOT SADDLE 200x 32	1,452
C-2120162040	SPIGOT SADDLE 200x 40	1,452
C-2120162050	SPIGOT SADDLE 200x 50	1,502
C-2120162063	SPIGOT SADDLE 200x 63	1,502
C-2120162090	SPIGOT SADDLE 200x 90	1,643

C-2120162211	SPIGOT SADDLE 225x110	1,975
C-2120162232	SPIGOT SADDLE 225x 32	1,602
C-2120162240	SPIGOT SADDLE 225x 40	1,602
C-2120162250	SPIGOT SADDLE 225x 50	1,652
C-2120162263	SPIGOT SADDLE 225x 63	1,702
C-2120162290	SPIGOT SADDLE 225x 90	1,775
C-2120162511	SPIGOT SADDLE 250x110	2,505
C-2120162532	SPIGOT SADDLE 250x 32	2,152
C-2120162540	SPIGOT SADDLE 250x 40	2,152
C-2120162550	SPIGOT SADDLE 250x 50	2,202
C-2120162563	SPIGOT SADDLE 250x 63	2,252
C-2120162590	SPIGOT SADDLE 250x 90	2,305
C-2120164020A	SPIGOT SADDLE MONOBLOC 40x 20	0,077
C-2120164025A	SPIGOT SADDLE MONOBLOC 40x 25	0,077
C-2120164032A	SPIGOT SADDLE MONOBLOC 40x 32	0,077
C-2120165020	SPIGOT SADDLE 50x 20	0,034
C-2120165025	SPIGOT SADDLE 50x 25	0,034
C-2120165032	SPIGOT SADDLE 50x 32	0,039
C-2120166320A0	SPIGOT SADDLE MONOBLOC 63x 20	0,083
C-2120166325A0	SPIGOT SADDLE MONOBLOC 63x 25	0,093
C-2120166332A0	SPIGOT SADDLE MONOBLOC 63x 32	0,103
C-2120166340A0	SPIGOT SADDLE MONOBLOC 63x 40	0,123
C-2120166350A0	SPIGOT SADDLE MONOBLOC 63x 50	0,133
C-2120166363A0	SPIGOT SADDLE 63x 63	0,324
C-2120167525	SPIGOT SADDLE 75x 25	0,341
C-2120167532	SPIGOT SADDLE 75x 32	0,341
C-2120167540	SPIGOT SADDLE 75x 40	0,391
C-2120167550	SPIGOT SADDLE 75x 50	0,391
C-2120167563	SPIGOT SADDLE 75x 63	0,441
C-2120169020A0	SPIGOT SADDLE MONOBLOC 90x 20	0,182
C-2120169025	SPIGOT SADDLE 90x 25	0,420

C-2120169025A0	SPIGOT SADDLE MONOBLOC 90x 25	0,187
C-2120169032A0	SPIGOT SADDLE MONOBLOC 90x 32	0,192
C-2120169040A0	SPIGOT SADDLE MONOBLOC 90x 40	0,197
C-2120169050A0	SPIGOT SADDLE MONOBLOC 90x 50	0,222
C-2120169063A0	SPIGOT SADDLE MONOBLOC 90x 63	0,272
C-2130161120A0	TAPPING SADDLE MONOBLOC 110x20	0,429
C-2130161125A0	TAPPING SADDLE MONOBLOC 110x25	0,433
C-2130161132A0	TAPPING SADDLE MONOBLOC 110x32	0,439
C-2130161140A0	TAPPING SADDLE MONOBLOC 110x40	0,465
C-2130161150A0	TAPPING SADDLE MONOBLOC 110x50	0,493
C-2130161163A0	TAPPING SADDLE MONOBLOC 110x63	0,521
C-2130161225	TAPPING SADDLE 125x25	0,918
C-2130161232	TAPPING SADDLE 125x32	0,918
C-2130161240	TAPPING SADDLE 125x40	1,018
C-2130161250	TAPPING SADDLE 125x50	1,086
C-2130161263	TAPPING SADDLE 125x63	1,136
C-2130161425	TAPPING SADDLE 140x25	1,063
C-2130161432	TAPPING SADDLE 140x32	1,063
C-2130161440	TAPPING SADDLE 140x40	1,064
C-2130161450	TAPPING SADDLE 140x50	1,181
C-2130161463	TAPPING SADDLE 140x63	1,231
C-2130161620	TAPPING SADDLE 160x20	0,693
C-2130161625	TAPPING SADDLE 160x25	0,692
C-2130161632	TAPPING SADDLE 160x32	0,742
C-2130161640	TAPPING SADDLE 160x40	0,792
C-2130161650	TAPPING SADDLE 160x50	0,860
C-2130161663	TAPPING SADDLE 160x63	0,910
C-2130161825	TAPPING SADDLE 180x25	1,342
C-2130161832	TAPPING SADDLE 180x32	1,341
C-2130161840	TAPPING SADDLE 180x40	1,392
C-2130161850	TAPPING SADDLE 180x50	1,457

C-2130161863	TAPPING SADDLE 180x63	1,506
C-2130162020	TAPPING SADDLE 200x20	1,442
C-2130162025	TAPPING SADDLE 200x25	1,441
C-2130162032	TAPPING SADDLE 200x32	1,441
C-2130162040	TAPPING SADDLE 200x40	1,492
C-2130162050	TAPPING SADDLE 200x50	1,556
C-2130162063	TAPPING SADDLE 200x63	1,656
C-2130162225	TAPPING SADDLE 225x25	1,591
C-2130162232	TAPPING SADDLE 225x32	1,591
C-2130162240	TAPPING SADDLE 225x40	1,642
C-2130162250	TAPPING SADDLE 225x50	1,756
C-2130162263	TAPPING SADDLE 225x63	1,806
C-2130162525	TAPPING SADDLE 250x25	1,988
C-2130162532	TAPPING SADDLE 250x32	2,103
C-2130162540	TAPPING SADDLE 250x40	2,153
C-2130162550	TAPPING SADDLE 250x50	2,153
C-2130162563	TAPPING SADDLE 250x63	2,203
C-2130164020A	TAPPING SADDLE MONOBLOC 40x20	0,101
C-2130164025A	TAPPING SADDLE MONOBLOC 40x25	0,101
C-2130164032A	TAPPING SADDLE MONOBLOC 40x32	0,101
C-2130165020	TAPPING SADDLE 50x20	0,129
C-2130165025	TAPPING SADDLE 50x25	0,122
C-2130165032	TAPPING SADDLE 50x32	0,129
C-2130166320A0	TAPPING SADDLE MONOBLOC 63x20	0,189
C-2130166325	TAPPING SADDLE 63x25	0,335
C-2130166325A0	TAPPING SADDLE MONOBLOC 63x25	0,204
C-2130166332A0	TAPPING SADDLE MONOBLOC 63x32	0,209
C-2130166332B0	TAPPING SADDLE MONOBLOC 63x32	0,209
C-2130166340A0	TAPPING SADDLE MONOBLOC 63x40	0,222
C-2130166350A0	TAPPING SADDLE MONOBLOC 63x50	0,242
C-2130166363A0	TAPPING SADDLE MONOBLOC 63x63	0,282

C-2130167520	TAPPING SADDLE 75x20	0,485
C-2130167525	TAPPING SADDLE 75x25	0,484
C-2130167532	TAPPING SADDLE 75x32	0,484
C-2130167540	TAPPING SADDLE 75x40	0,534
C-2130167550	TAPPING SADDLE 75x50	0,602
C-2130167563	TAPPING SADDLE 75x63	0,702
C-2130169020A0	TAPPING SADDLE MONOBLOC 90x20	0,267
C-2130169025A0	TAPPING SADDLE MONOBLOC 90x25	0,287
C-2130169032A0	TAPPING SADDLE MONOBLOC 90x32	0,297
C-2130169040A0	TAPPING SADDLE MONOBLOC 90x40	0,322
C-2130169050A0	TAPPING SADDLE MONOBLOC 90x50	0,342
C-2130169063A0	TAPPING SADDLE MONOBLOC 90x63	0,382
C-2173161132A0	TAPPING SADDLE WITH VALVE d. 110x32	1,027
C-2173161163A0	TAPPING SADDLE WITH VALVE d. 110x63	1,117
C-2173161263A0	TAPPING SADDLE WITH VALVE d. 125x63	1,217
C-2173161463A0	TAPPING SADDLE WITH VALVE d. 140x63	1,312
C-2173161632A0	TAPPING SADDLE WITH VALVE d. 160x32	1,422
C-2173161663A0	TAPPING SADDLE WITH VALVE d. 160x63	1,512
C-2173162032A0	TAPPING SADDLE WITH VALVE d. 200x32	1,712
C-2173162063A0	TAPPING SADDLE WITH VALVE d. 200x63	1,752
C-2173162563A0	TAPPING SADDLE WITH VALVE d. 250x63	2,352
C-2173167532A0	TAPPING SADDLE WITH VALVE d. 75x32	0,698
C-2173167563A0	TAPPING SADDLE WITH VALVE d. 75x63	0,788
C-2173169032A0	TAPPING SADDLE WITH VALVE d. 90x32	0,707
C-2173169063A0	TAPPING SADDLE WITH VALVE d. 90x63	0,797
C-6116160032C	ELBOW 45° EL. d 32 PN 25 40V	0,098
C-6116160040C	ELBOW 45° EL. d 40 PN 25 40V	0,161
C-6116160050AC	ELBOW 45° EL. d 50 PN 16 40V UNIDL	0,240
C-6120161125AC	SPIGOT SADDLE d. 110x 25 40V	0,284
C-6120161132C	SPIGOT SADDLE d. 110x 32 40V	0,296
C-6120161150AC	SPIGOT SADDLE d. 110x 50 40V	0,331

C-6120161163C	SPIGOT SADDLE d. 110x 63 40V	0,381
C-6120161225C	SPIGOT SADDLE d. 125x 25 40V	0,775
C-6120161290C	SPIGOT SADDLE d. 125x 90 40V	1,078
C-6120161625AC	SPIGOT SADDLE d. 160x 25 40V	0,599
C-6120161632C	SPIGOT SADDLE d. 160x 32 40V	0,599
C-6120161650AC	SPIGOT SADDLE d. 160x 50 40V	0,649
C-6120161663C	SPIGOT SADDLE d. 160x 63 40V	0,699
C-6120161690C	SPIGOT SADDLE d. 160x 90 40V	1,443
C-6120162232AC	SPIGOT SADDLE d. 225x 32 40V	1,602
C-6120162590C	SPIGOT SADDLE d. 250x 90 40V	2,305
C-6120166332C	SPIGOT SADDLE d. 63x 32 40V	0,103
C-6120167532C	SPIGOT SADDLE d. 75x 32 40V	0,341
C-6120169050AC	SPIGOT SADDLE d. 90x 50 40V	0,222
C-6120169063C	SPIGOT SADDLE d. 90x 63 40V	0,272
C-6130161163C	TAPPING SADDLE d. 110x 63 40V	0,521
C-6130161232C	TAPPING SADDLE d. 125x 32 40V	0,918
C-6130161432C	TAPPING SADDLE d. 140x 32 40V	1,063
C-6130162032C	TAPPING SADDLE d. 200x 32 40V	1,441
C-6130162232C	TAPPING SADDLE d. 225x 32 40V	1,591
C-6130162263C	TAPPING SADDLE d. 225x 63 40V	1,806
C-6130162532C	TAPPING SADDLE d. 250x 32 40V	2,103
C-6130162563C	TAPPING SADDLE d. 250x 63 40V	2,203
C-2200160020AA	SOCKET EL. d. 20 SDR11 40V	0,032
C-2200160025AA	SOCKET EL. d. 25 SDR11 40V	0,037
C-2200160032AA	SOCKET EL. d. 32 SDR11 40V	0,065
C-2200160040AA	SOCKET EL. d. 40 SDR11 40V	0,100
C-2200160050AA	SOCKET EL. d. 50 SDR11 40V	0,135
C-2200160063AA	SOCKET EL. d. 63 SDR11 40V	0,198
C-2200160075AA	SOCKET EL. d. 75 SDR11 40V	0,244
C-2211160020AA	ELBOW 90° EL. d. 20 PN16 SDR11 40V	0,047
C-2211160025AA	ELBOW 90° EL. d. 25 PN16 SDR11 40V	0,070

C-2211160032AA	ELBOW 90° EL. d. 32 PN16 SDR11 40V	0,110
C-2211160040AA	ELBOW 90° EL. d. 40 PN16 SDR11 40V	0,170
C-2211160050AA	ELBOW 90° EL. d. 50 PN16 SDR11 40V	0,280
C-2211160063AA	ELBOW 90° EL. d. 63 PN16 SDR11 40V	0,430
C-2211160075AA	ELBOW 90° EL. d. 75 PN16 SDR11 40V	0,640
C-2216160025AA	ELBOW 45° EL. d. 25 PN16 SDR11 40V	0,070
C-2216160032AA	ELBOW 45° EL. d. 32 PN16 SDR11 40V	0,090
C-2216160040AA	ELBOW 45° EL. d. 40 PN16 SDR11 40V	0,155
C-2216160050AA	ELBOW 45° EL. d. 50 PN16 SDR11 40V	0,240
C-2216160063AA	ELBOW 45° EL. d. 63 PN16 SDR11 40V	0,370
C-2216160075AA	ELBOW 45° EL. d. 75 PN16 SDR11 40V	0,585
C-2221160025AA	TE 90° EL. d. 25 PN16 SDR11 40V	0,085
C-2221160032AA	TE 90° EL. d. 32 PN16 SDR11 40V	0,085
C-2221160040AA	TE 90° EL. d. 40 PN16 SDR11 40V	0,157
C-2221160050AA	TE 90° EL. d. 50 PN16 SDR11 40V	0,282
C-2221160063AA	TE 90° EL. d. 63 PN16 SDR11 40V	0,395
C-2221160075AA	TE 90° EL. d. 75 PN16 SDR11 40V	0,642

LCA information

Functional unit: 1 kg of product installed

The products under study are fittings installed in pipes for water or gas distribution network. The study comprises the raw material extraction, raw material transportation, manufacturing, transportation to customer, installation, end-of-life of product.

Reference service life: 50 years

Time representativeness: primary data refer to 2020 year. The generic data has been updated in 2019 (Ecoinvent 3.6).

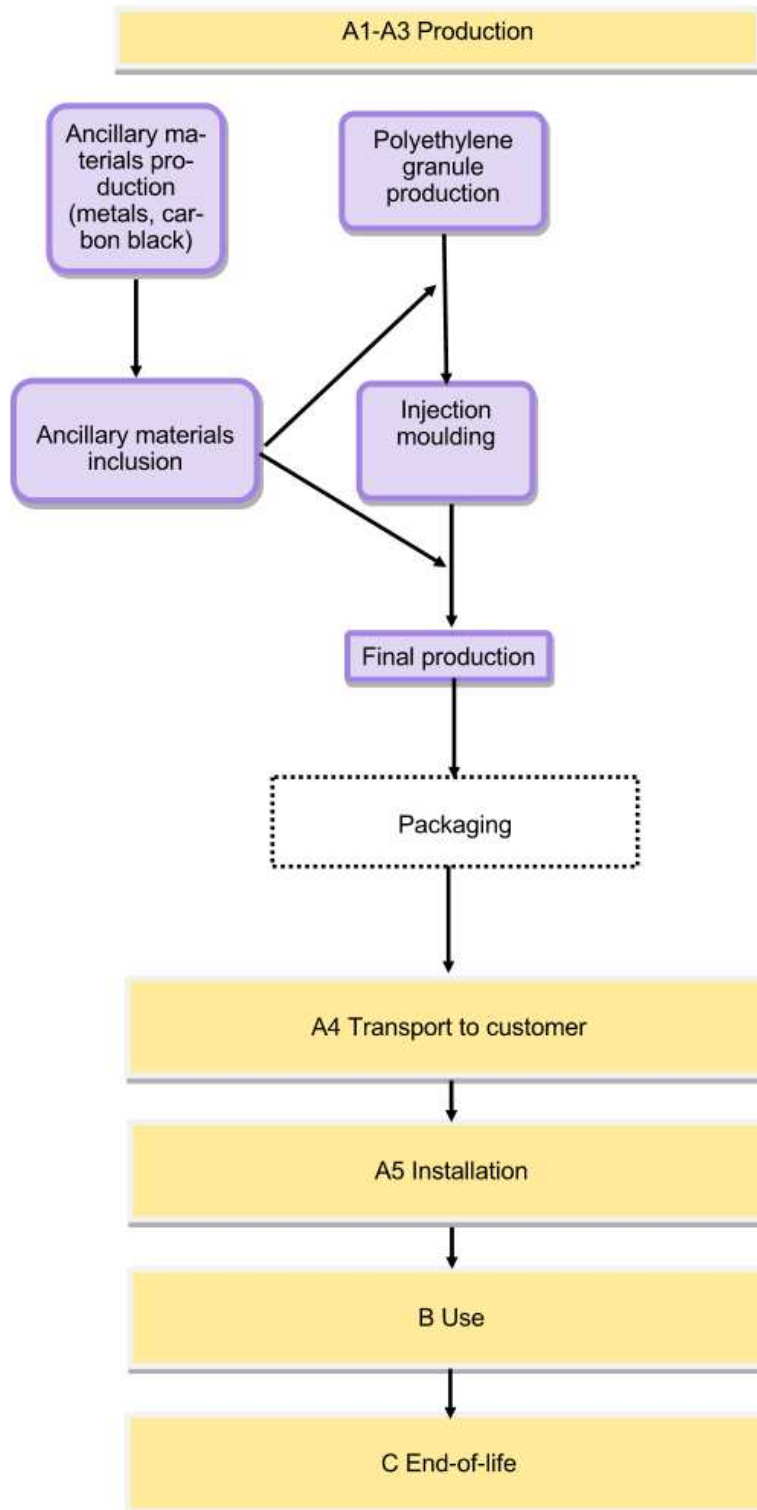
Database(s) and LCA software used: for the elaboration of data SimaPro v. 9.1.1.7; the database used is Ecoinvent 3.6.

Description of system boundaries: cradle-to-grave (A-B-C) + module D

Excluded lifecycle stages: all life stages are included in the LCA study

More information: www.eurostandard.it

System boundary is presented in the flow chart below:



Additional information:

- The allocation is applied in the LCA study: when necessary, mass allocation is used.
- Electricity: the Eurostandard supplier mix in the 2020 is used.
1 kWh = 0,176 Kg CO₂eq.
Furthermore, the company generates electricity from a photovoltaic plant and a cogeneration plant (in A1 module).
- Cut-off: at least 95% of the energy and materials used by module has been introduced, as well as 99% of the total use of energy and materials
- The modularity principle, as well as the polluter payer principle have been followed
- The next processes have not been included since its impact is not significant:
 - Environmental impact from infrastructure, construction, production equipment, and tools that are not directly consumed in the production process.
 - Personnel-related impacts, such as transportation to and from work.
- The impact methods used are:
 - EN 15804+A2 v.1.00
 - Cumulative energy demand v. 1.00 for resource use
 - EDIP 2003 v. 1.07 for waste production

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

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

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

	Product stage		Construction process stage			Use stage							End of life stage				Resource recovery stage	
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential	
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	Europe	Italy	Italy	World	World	World	World	World	World	World	World	World	World	World	World	World	World	
Specific data used	Yes					-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	Less than 10% of impacts in every group of products					-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	One manufacturing site - not relevant					-	-	-	-	-	-	-	-	-	-	-	-	-

- Module A1 - Raw material supply: this module includes the extraction of raw material and the energy production.
- Module A2 - Transport: this module includes the transportation of raw materials from suppliers to the Eurostandard gate.
- Module A3 - Manufacturing: this module considers the Eurostandard internal processes, including consumption resources and packaging. The production process consists in injection moulding of the polyethylene granulate and inclusion of metal parts, when necessary.

- Module A4 - Transport: this module considers the transport of product to construction site.

PARAMETER	DESCRIPTION / VALUE
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc	From Ecoinvent Truck (16-32 metric ton): 0,0375 kg of diesel low sulfur for ton*km transported Ferry: 0,030 kg of heavy fuel oil for ton*km transported Ship: 0,0025 kg of heavy fuel oil for ton*km transported Plane: 8,4016 kg of kerosene for ton*km transported
Distance	Electrofusion fittings: - Truck: 1163 Km - Ferry: 6,06 mi - Ship: 546,35 mi
Capacity utilisation (including empty returns)	From Ecoinvent database: Truck: 66% Ferry: 50% Ship: 70% Plane: unspecified
Bulk density of transported products (kg/m ³)	0,965
Volume capacity utilisation factor	1

- Module A5 - Construction installation: this module considers the installation of product in the building with use of auxiliary materials.

PARAMETER	DESCRIPTION	VALUE
Auxiliary materials for installation	kg	0
Use of water	m ³	0
Use of other resources	Solvent organic (g)	2,1
Quantitative description of energy type and consumption during the preparation and installation process	Electric energy kWh	0,25
Direct emissions to ambient air, soil and water	kg	0
Waste materials on the building site, before waste processing, generated by the product's installation; specified by type	Product losses	1%
	Cardboard box kg	0,098
	Plastic bag kg	0,013
Output materials (specified by type) as result of waste processing at the building site e.g. of collection for recycling, for energy recovery, disposal; specified by route	Landfill	

- Module B - Use stage: the product doesn't require any use, maintenance, repair, replacement, refurbishment and it isn't necessary use of energy or water for his use.

- Module C1 - Deconstruction/demolition: The product is uninstalled manually, without the use of energy.
- Module C2 - Transport to waste processing: the product is then transported to disposal; the scenario provides the transport for 50 km.
- Module C3 - Waste processing for reuse, recovery and/or recycling: the product is send to landfill and there isn't any reuse, recovery or recycling.
- Module C4 - Disposal: the product is totally disposed in landfill.

PARAMETER	VALUE / DESCRIPTION
Collection process specified by type	The product is uninstalled manually Product waste collected with 3,5-7,5 metric ton truck
Recovery system specified by type	There is no recovery, recycling or reuse
Disposal specified by type	100 % Landfill (1 kg)
Assumptions for scenario development (e.g. transportation)	3,5-7,5 metric ton truck. Distance: 50 km

- Module D - Reuse-Recovery-Recycling potential: Module D calculates the potential environmental benefits of the recycling or reuse of materials. This product has not considerable benefits due to recycling or/and reuse.

Content information

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
Polyethylene	0,97	0	0
Carbon black	0,02	0	0
Copper / Brass / CuNi alloy	0,01	0	0
TOTAL	1,00	0	0
Packaging materials	Weight, kg	Weight-% (versus the product)	
Corrugated board box	0,10	9,8	
Packaging film	0,01	1,3	
TOTAL	0,11	11,1	

Some brass components contain lead in concentration up to 3,5% weight/weight (Source: Eurostandard declaration of 06/06/2019, https://www.eurostandard.it/wp-content/uploads/2020/11/REACH_dichiarazione_rev0.pdf).

The lead (N.CE 231-100-4, N. CAS 7439-92-1) is included in candidate list of ECHA as SVHC.

Environmental Information

Potential environmental impact - mandatory indicators according to EN 15804

Results per functional unit										
Indicator	Tot.A1-A3	A4	A5	B	C1	C2	C3	C4	total	D
GWP-fossil (kg CO ₂ eq.)	4,18E+00	2,10E-01	2,39E-01	0,00E+00	0,00E+00	2,71E-02	0,00E+00	5,27E-03	4,66E+00	0,00E+00
GWP-biogenic (kg CO ₂ eq.)	3,13E-02	7,51E-05	1,44E-03	0,00E+00	0,00E+00	8,00E-06	0,00E+00	1,04E-05	3,28E-02	0,00E+00
GWP-luluc (kg CO ₂ eq.)	1,50E-03	7,83E-05	4,10E-04	0,00E+00	0,00E+00	1,54E-05	0,00E+00	1,47E-06	2,01E-03	0,00E+00
GWP-total (kg CO ₂ eq.)	4,21E+00	2,11E-01	2,41E-01	0,00E+00	0,00E+00	2,71E-02	0,00E+00	5,28E-03	4,70E+00	0,00E+00
ODP (kg CFC 11 eq.)	3,23E-07	4,55E-08	1,46E-08	0,00E+00	0,00E+00	5,46E-09	0,00E+00	2,17E-09	3,91E-07	0,00E+00
AP (mol H ⁺ eq.)	1,37E-02	1,12E-03	1,16E-03	0,00E+00	0,00E+00	1,32E-04	0,00E+00	5,00E-05	1,61E-02	0,00E+00
EP-freshwater (kg PO ₄ ³⁻ eq.)	1,14E-03	1,28E-04	1,08E-04	0,00E+00	0,00E+00	1,65E-05	0,00E+00	6,66E-06	1,40E-03	0,00E+00
EP-freshwater (kg P eq.)	6,86E-05	1,90E-06	1,13E-05	0,00E+00	0,00E+00	3,38E-07	0,00E+00	5,90E-08	8,22E-05	0,00E+00
EP-marine (kg N eq.)	2,26E-03	3,12E-04	1,96E-04	0,00E+00	0,00E+00	4,03E-05	0,00E+00	1,72E-05	2,83E-03	0,00E+00
EP-terrestrial (mol N eq.)	2,63E-02	3,45E-03	2,22E-03	0,00E+00	0,00E+00	4,46E-04	0,00E+00	1,90E-04	3,26E-02	0,00E+00
POCP (kg NMVOC eq.)	1,05E-02	1,02E-03	6,40E-04	0,00E+00	0,00E+00	1,29E-04	0,00E+00	5,51E-05	1,24E-02	0,00E+00
ADP-minerals&metals (kg Sb eq.) [1]	4,52E-05	5,37E-06	1,38E-06	0,00E+00	0,00E+00	1,27E-06	0,00E+00	4,82E-08	5,33E-05	0,00E+00
ADP-fossil (MJ) [1]	1,02E+02	3,08E+00	3,67E+00	0,00E+00	0,00E+00	3,89E-01	0,00E+00	1,47E-01	1,09E+02	0,00E+00
WDP (m ³) [1]	2,46E+00	9,79E-03	5,66E-02	0,00E+00	0,00E+00	1,58E-03	0,00E+00	6,60E-03	2,54E+00	0,00E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

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

The modules B1-B7 have impacts 0.

Potential environmental impact - additional mandatory and voluntary indicators

Results per functional unit										
Indicator	Tot.A1-A3	A4	A5	B	C1	C2	C3	C4	total	D
GWP-GHG (kg CO ₂ eq.) [2]	4,01E+00	2,08E-01	2,33E-01	0,00E+00	0,00E+00	2,68E-02	0,00E+00	5,15E-03	4,48E+00	0,00E+00

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

Information on biogenic carbon content

Results per functional unit

BIOGENIC CARBON CONTENT	Unit	QUANTITY
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	3,94E-02

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

Use of resources

Results per functional unit

Indicator	Tot.A1-A3	A4	A5	B	C1	C2	C3	C4	total	D
PERE (MJ)	8,83E+00	3,40E-02	3,90E-01	0,00E+00	0,00E+00	6,16E-03	0,00E+00	1,19E-03	9,26E+00	0,00E+00
PERM (MJ)	1,65E+00	0,00E+00	1,67E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,67E+00	0,00E+00
PERT (MJ)	1,05E+01	3,40E-02	4,07E-01	0,00E+00	0,00E+00	6,16E-03	0,00E+00	1,19E-03	1,09E+01	0,00E+00
PENRE (MJ)	1,02E+02	3,08E+00	3,67E+00	0,00E+00	0,00E+00	3,89E-01	0,00E+00	1,47E-01	1,09E+02	0,00E+00
PENRM (MJ)	4,46E+01	0,00E+00	4,50E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,50E+01	0,00E+00
PENRT (MJ)	1,46E+02	3,08E+00	4,12E+00	0,00E+00	0,00E+00	3,89E-01	0,00E+00	1,47E-01	1,54E+02	0,00E+00
SM (kg)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF (MJ)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF (MJ)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW (m ³)	1,82E-02	5,77E-04	1,03E-03	0,00E+00	0,00E+00	7,88E-05	0,00E+00	1,64E-04	2,00E-02	0,00E+00
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Waste production and output flows

Waste production

Results per functional unit

Indicator	Tot.A1-A3	A4	A5	B	C1	C2	C3	C4	total	D
Hazardous waste disposed (kg)	4,93E-05	7,95E-06	2,06E-06	0,00E+00	0,00E+00	1,08E-06	0,00E+00	2,20E-07	6,06E-05	0,00E+00
Non-hazardous waste disposed (kg)	2,32E-01	1,41E-01	1,37E-01	0,00E+00	0,00E+00	1,17E-02	0,00E+00	1,00E+00	1,52E+00	0,00E+00
Radioactive waste disposed (kg)	9,03E-05	2,03E-05	9,89E-06	0,00E+00	0,00E+00	2,44E-06	0,00E+00	9,67E-07	1,24E-04	0,00E+00

Output flows

Results per functional unit										
Indicator	Tot.A1-A3	A4	A5	B	C1	C2	C3	C4	total	D
Components for re-use (kg)	0	0	0	0	0	0	0	0	0	0
Material for recycling (kg)	0	0	0	0	0	0	0	0	0	0
Materials for energy recovery (kg)	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity (MJ)	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal (MJ)	0	0	0	0	0	0	0	0	0	0

Additional information

No further information is provided.

This document is the first version of EPD.

References

- General Programme Instructions of the International EPD® System. Version 3.0.
- PCR 2019:14. CONSTRUCTION PRODUCTS. Version 1.11
- ISO 14040:2006 Environmental management-Life Cycle Assessment - Principles and framework
- ISO 14044:2006 Environmental management-Life Cycle Assessment-Requirements and guidelines
- ISO 14025:2010 Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures
- EN 15804:2012+A2:2019, Sustainability of construction works — Environmental product declarations
- Project report rev.4 – Life cycle assessment: buttfusion fittings, transition fittings, electrofusion fittings

