

Environmental Information Module

Spacers SP12, SP13 and SP14

Former designation : TGI-Spacer M

TECHNOFORM



As per NF EN ISO 14025, NF EN 15804+A1 and NF EN 15804/CN

Spacers SP12, SP13 and SP14

EPD/LCI in accordance with the INIES declaration program

Issue date: 15 – 06 – 2019

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Version 1.1



CSTB
le futur en construction

Foreword

The information contained within this declaration are provided under the responsibility of Technoform Glass Insulation as per NF EN ISO 14025, NF EN 15804+A1 and its national supplement NF EN 15804+A1/CN.

Any use, in whole or in part, of the information provided within this document must at least be accompanied by a complete reference to the original EPD as well as to its producer who may provide a complete copy.

The standard EN 15804+A1 serves as product category rules (PCR).

Reading guide

The following writing conventions are used:

- Numerical values are expressed according to simplified scientific notation: $0,0038 = 3,80 \times 10^{-3} = 3,80E-3$;
- When the result of calculation of the inventory is null, then the value zero is displayed;
- Non-zero values are expressed with 3 significant digits.

List of abbreviations used:

LCA: Life Cycle Analysis
RSL: Reference Service Life
FU: Functional Unit

Comparability of EPD for construction products

The FDES of construction products may not be comparable if they do not comply with standard NF EN 15804+A1.

Standard NF EN 15804+A1 defines the conditions under which construction products can be compared in §5.3 Comparability of FDES for construction products based on the information provided by the EPD:

"In principle the comparison of products on the basis of their EPD is defined by the contribution they make to the environmental performance of the building. Consequently, comparison of the environmental performance of construction products using the EPD information shall be based on the product's use in and its impacts on the building, and shall consider the complete life cycle (all information modules)".

General Information

This EPD is an individual EPD covering the life cycle from cradle to gate and produced at the request of Technoform Glass Insulation - ZAC des grandes terres - 471, rue Antoine Pinay -69740 Genas, France


Person responsible for the declaration and placing on the market of the products: Mr. Grégoire Jourdain, gregoire.jourdain@technoform.com

Product covered by the declaration: SP12 8mm ; SP13 and SP14 10, 12, 13, 14, 15, 16, 17, 18, 20mm, any colors, any type of connector.
(Formerly referred to as TGI M nw « 2 » et TGI M ww « 2 »)

The study that led to this environmental and health declaration was carried out by the CSTB represented by Manuel BAZZANA, research engineer in the Energy Environment Department and Jacques CHEVALIER, divisional head.

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Verification

The standard EN 15804+A1 and the national complement NF EN 15804/CN serve as PCR	
Independent verification of the declaration according to EN ISO 14025: 2010	
<input type="checkbox"/> Internal	<input checked="" type="checkbox"/> External
	Verifier name: Nicolas Béalu, EVEA Conseil, www.Evea-conseil.com Verification program: FDES INIES Adresse : Association HQE. 4, avenue du Recteur Poincaré - 75016 Paris

This EPD has been published on 08/08/19.

Description of the functional unit of the product

Description of the functional unit

The declaration covers one declared unit of Spacer SP12 8 mm, SP13 and SP14 from 10 to 20mm, any color, for one 1 meter including connector, at factory gate.

Product description and field of application

Spacers SP12, SP13 and SP14 are insulating glass components. They help reducing heat transfer at the periphery of the glazing. They are based on polypropylene and comprise a frame consisting of a stainless-steel film.

Description of the main components and materials of the product

The main components of the product are:

- > 1m polypropylene/steel spacer (20mm width): 0,0628 kg;
- > Packaging: Steel pallet: 4,41E-04 kg; Wood support: 2,49E-02 kg; Carboard support: 6,68E-04 kg; Wood panel: 1,75E-02 kg; Carboard box: 4,40E-03 kg; Package leaflet: 3,34E-06 kg; Plastic film: 6,36E-05 kg.

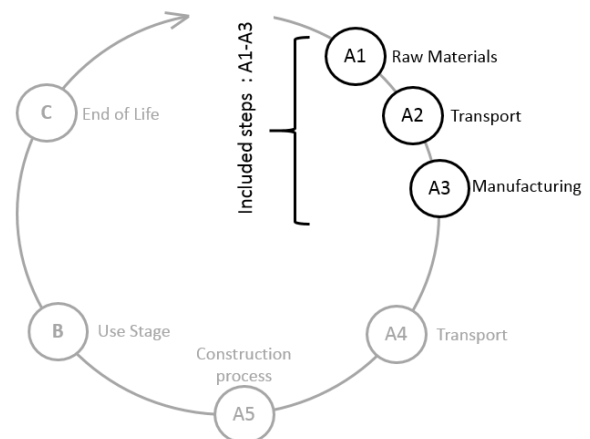
Substances from the candidate list according to REACH

The product does not contain any substances from the candidate list according to the REACH Regulation at more than 0,1% by mass.

Description of the reference service life

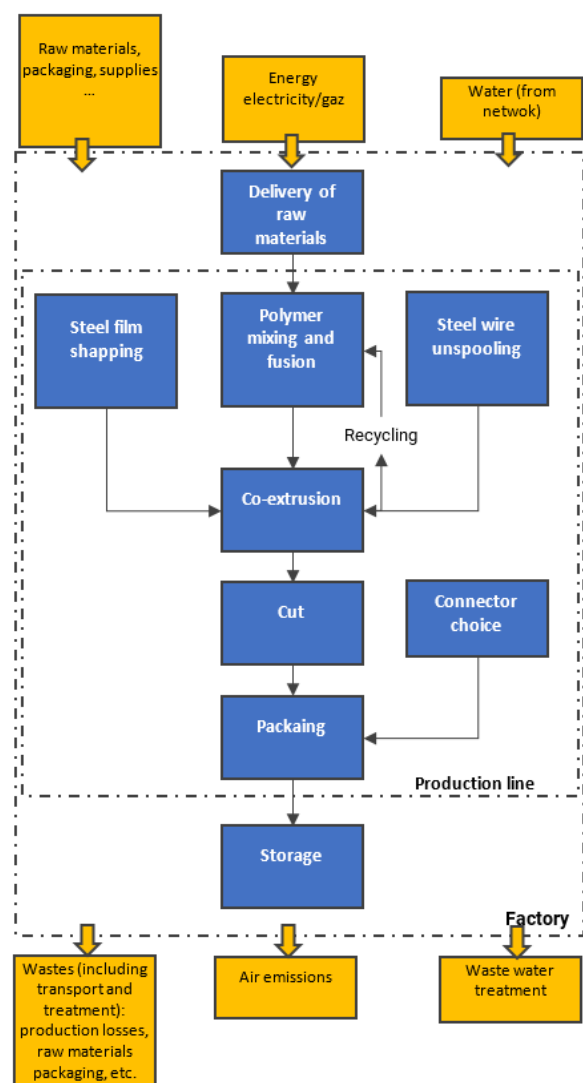
Not applicable

Steps of the life cycle



Production step, A1-A3

The product production phase follows the principle of the following diagram (only the main input and output are shown).



mm, in order to include all the thinner references.

Information regarding LCA calculation

Paramètres	Valeur
PCR used	NF EN 15804+A1 and NF EN 15804/CN
System boundaries	The study covers the entire life cycle from cradle to gate.
Allocations	The provision of energy and raw materials in factories did not require allocation.
Cut-off rules	1% of renewable and non-renewable primary energy use and 1 % of the total mass input each unit process. Excluded processes: <ul style="list-style-type: none"> - Production and maintenance of road and building infrastructures; - Production and maintenance of production tools; - Flows related to the administrative, management, R&D, sales and marketing activities of the product. Operation of staff restoration and production facilities (lighting, heating, sanitary and cleaning).
Geographical and temporal representativeness of primary data	Background data comes from the 2017 Ecoinvent v3.4 database, which is subject to an internal critical review as defined by ISO 14040. Foreground data were provided by the manufacturer from their own measurements, accounting and estimates and correspond to the context of the year 2016.
Variability of results	No variability assessment carried out
Software used	Simapro 8.5
Additional assumptions	Given the large number of references it was decided to adopt a penalizing approach and to identify a reference product. A pre-study has identified that, at constant thickness, the most impacting products are those: <ul style="list-style-type: none"> > With metal wires (SP14), as opposed to those without reinforcement (SP13); > With galvanized steel connectors It was not possible to the environmental profiles according to the chosen RAL color since the same upstream data is used for each of the different shades. The environmental impacts of products increase with their thickness. It was therefore decided that the reference product would have a thickness of 20

Résultats de l'analyse de cycle de vie du berceau à la sortie d'usine (A1-A3)

Impacts	A1-A3
GWP (kg CO2 eq.)	3,44E-01
ODP (kg CFC 11 eq.)	1,83E-08
AP (kg SO2 eq.)	1,63E-03
EP (kg PO43 eq.)	1,95E-04
POCP (kg Eth. eq.)	1,20E-03
ADPE (kg Sb eq.)	3,79E-06
ADPF (MJ)	5,60E+00
PE (m3)	8,30E-02
PA (m3)	8,63E+01

GWP: Global warming; **ODP:** Depletion of the ozone layer; **AP:** Acidification of soil and water; **EP:** Eutrophication; **POCP:** Photochemical ozone formation; **ADPE:** Exhaustion of abiotic resources (elements); **ADPF:** Exhaustion of abiotic resources (fossil); **WP:** Water pollution; **AP:** Air pollution.

Utilisation des ressources	A1-A3
PERE (MJ)	1,02E+00
PERM (MJ)	5,63E-05
PERT (MJ)	1,02E+00
PENRE (MJ)	4,43E+00
PENRM (MJ)	1,70E+00
PENRT (MJ)	6,12E+00
SM (kg)	1,09E-02
RSF (MJ)	0
NRSF (MJ)	0
FWU (m3)	2,92E-03

PERE: Use of renewable primary energy, excluding renewable primary energy resources used as raw materials; **PERM:** Use of renewable primary energy resources 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 as raw materials; **PENRT:** Total use of non-renewable primary energy resources; **SM:** Use of secondary material; **RSF:** Use of renewable secondary fuels; **NRSF:** Use of non-renewable secondary fuels; **FWU:** Total freshwater use

Catégorie de déchets	A1-A3
HWD (kg)	1,28E-01
NHWD (kg)	2,35E-01
RWD (kg)	9,84E-06

HWD: Hazardous waste disposed; **NHWD:** Non-hazardous waste disposed; **RWD:** Radioactive waste disposed.

Flux sortants	A1-A3
CRU (kg)	0
MFR (kg)	0
MER (kg)	0
EEE (MJ)	0
EET (MJ)	0
EEG (MJ)	0

CRU: Components for re-use; **MFR:** Materials for recycling; **MER:** Materials for energy recovery; **EEE:** Exported electrical energy; **EET:** Exported thermal energy (steam); **EEG:** Exported gas energy.

Additional information on release of dangerous substances to indoor air, soil and water during the use stage

Indoor air

Not applicable.

Soil and water

The product is not connected to the drinking water network. No water emission tests were performed.

Contribution of product to the assessment of quality of life inside the building

Hygrothermal comfort

The warm edge spacers SP12, SP13 and SP14 help to maintain a constant temperature in all seasons (between 18 and 20 ° C), a humidity level of 40 to 60% and a maximum temperature difference between indoor air and walls of 3 ° C.

Acoustic comfort

This product does not claim any acoustic performance.

Visual comfort

This product does not claim any visual performance.

Olfactory comfort

This product does not claim any olfactory performance.