

VSH SudoPress Copper Gas



Environmental Product Declaration

in accordance with
ISO 14044, ISO 14040 and EN 15804



1 general information

1.1 note on this document

The original document was written in English, all other versions are a translation of the original document.

1.2 declaration holder

Aalberts integrated piping systems B.V.

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Aalberts integrated piping systems develops the most advanced integrated piping systems for distribution and control of liquids and gases. These systems are used in various markets such as industry, utility and residential construction. We offer fully integrated piping systems in valve, connection, fastening and piping technology. In close cooperation with our customers, we build the perfect integrated piping system that meets all their requirements. Our piping systems are easy to specify, install, check and maintain, saving you considerable time on preparation and installation. We meet the highest quality and industry standards required in our markets. The Aalberts integrated piping systems production locations mentioned in this document, Hilversum and Zeewolde, are certified acc. ISO 9001, ISO 14001 and ISO 45001.

1.3 declared Product

This document applies to the VSH SudoPress Copper Gas fittings listed in the appendix -chapter 5- of this document. Articles with bronze, brass or gunmetal components are not covered in this declaration. A VSH SudoPress Copper Gas bend 90° FF 22, article number: 6674052, has been used as a reference article.

1.4 verification

The European standard EN15804:2012 +A2:2019 has been used as the core PCR. Environmental product declarations for construction products may not be comparable if they do not comply with the EN15804. It is only possible to make a limited comparison between life cycle assessment results when different background databases are used and/or different assumptions as described in chapter 3.3.

This is a Self-Declared Environmental Product Declaration acc. NEN-EN ISO 14025.

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Author of LCA: Fabian Bruns

Calculated in: Ecochain, v3.5.80

Production data: 2021

Hilversum, September 2023

Aalberts integrated piping systems B.V.

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2 product

2.1 description and application purpose

VSH SudoPress Copper Gas is a complete piping system suitable for natural gas and compressed air applications. The VSH SudoPress Copper Gas range consists of press fittings and pressing tools. The VSH SudoPress Copper Gas fittings are pressed with jaws and slings with V-profile and are available from 12 up to and including 54 mm, including fittings for 14, 16 and 18mm copper tube.

- VSH SudoPress Copper Gas fittings are made of CU-DHP copper, bronze CC499K (Rg5) or brass (CW617N).
- VSH SudoPress Copper Gas can be used with copper pipes in accordance with EN 1057 R220/R350/R290.

The o-ring has decisive influence on the performance of the system in different applications, with different media and parameters. The material is:

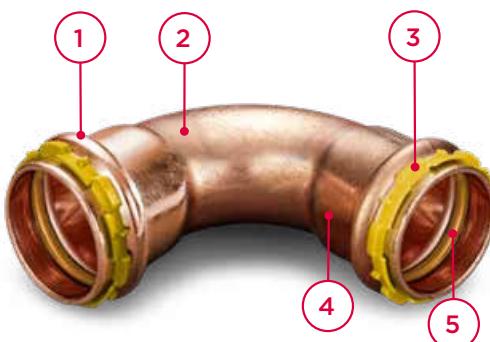
- HNBR (Hydrogenated Nitrile Butadiene Rubber / yellow)

The VSH SudoPress LBP function is achieved using a special, patented o-ring. Fittings with a Leak Before Pressed function have the advantage that connections which have not been pressed will leak water or gas during pressure testing, causing the test pressure to drop.

Visu-Control® is an additional safety feature on VSH SudoPress fittings which ensures that a visual and tangible check is carried out (in addition to the Leak Before Pressed function). After pressing, the Visu-Control® ring is disposed of.

2.2 VSH SudoPress Copper Gas fittings

All VSH SudoPress Copper Gas fittings are produced in our modern, automated factory in the France. The VSH SudoPress product range includes fittings, valves, tubes and tools. VSH SudoPress fittings are compatible with various press tool brands. Use our online tool selector to find the right tool for the right material. During the pressing process, bead, socket and tube are deformed to form a leak-tight and mechanically strong, permanent connection



1. fitting bead
2. fitting body
3. Visu-Control® ring
4. insertion socket
5. o-ring

For the composition of the components, see chapter 3.2 "product composition"

2.3 range and conversion factors

The reference product for this declaration is the VSH SudoPress Copper Gas bend 90° FF 22. This article was chosen as a reference because it is the most common product in the VSH SudoPress Copper Gas article range. The life cycle assessment results in chapter 4 can be converted to other articles listed in the appendix of this document. This can be done by multiplying the results with the conversion factor for a specific product. For products and their corresponding conversion factors, see the appendix -chapter 5-.

3 life cycle assessment scope

3.1 system boundaries

This EPD can be regarded as a Cradle-to-Gate with options, module C2 and D. The following phases are considered not relevant for this product range: A5, B, C1, C3 and C4.

3.2 declared unit composition

The reference article, VSH SudoPress Copper Gas 90° bend FF 22, consists of the following raw materials:

carbon steel: 84 gram

elastomers: 1.6 gram

plastic: 0.5 gram

Total: 86 gram

3.3 assumptions and background information

A1: For the raw material supply 100% of the materials on the bill of materials were modelled using data from the Ecoinvent database. Also included were copper waste and ancillary materials like water and lubrication oil.

A2: For transport of materials to Aalberts integrated piping systems in Saint-Denis-de-l'Hôtel specific transport distances from materials suppliers were used. Class Euro5 trucks are used as the main means of transport and were used for calculation.

A3: VSH SudoPress Copper Gas products are manufactured in the factory of Aalberts integrated piping systems located in Sain-Denis-de-l'Hôtel, France. This factory makes use of green electricity for manufacturing the VSH SudoPress products. Therefore the green electricity France mix was used for calculating the electricity consumption.

A4: Transport from the factory in Saint-Denis-de-l'Hôtel to the warehouse in Zeewolde is done by Aalberts integrated piping systems and logistical partners. The main means of transport is by Class Euro5 trucks. The transportation distance is calculated at 632 km.

Transportation to customers within Europe is done by logistical partners. The main means of transport in Europe is by Class Euro5 trucks. The average transportation distance is calculated at 662 km.

A5: The installation is done by use of a press tool which uses a considered negligible amount of energy.

B1-B7: A VSH SudoPress Copper Gas fitting is designed for a lifetime of 50+ years of service. A VSH SudoPress Copper Gas fitting needs no maintenance, repair, replacement or refurbishment and has no operational

water or energy use during its lifetime.

C1-C4: The piping system is assumed to be stripped as a whole from a building in the demolition process and separate energy used for the fitting de-construction is considered negligible in this process. Transportation to a waste processing site is assumed at 50 km and modelled by use of garbage trucks. The waste processing is assumed to be done at a material level rather than component level since the fittings are permanently fitted onto piping. Therefore energy consumption for the waste processing of fittings was considered negligible. Partial disposal was considered to happen at a recycler rather than a waste processor and is therefore calculated in phase D.

D: Average recycling rates for building materials in Europe were used to calculate the amount of material that went for recycling, landfill and incineration. 90% of copper will be recycled, 32.5% of plastics recycled and 42.5% was modelled to go into landfill. The remainder of the product including O-ring was modelled to be incinerated.

3.4 quality of life cycle assessment, data and reporting

This environmental product declaration is based on a life cycle assessment conducted according to the ISO 14040 and ISO 14044 and meets further requirements from the EN 15804:2012 + A2:2019. The modelling and calculation was done in the Ecochain software tool "Helix", which uses the Ecoinvent database. Inventory data was mainly provided by Aalberts integrated piping systems b.v. and was peer reviewed by several internal partners. The environmental product declaration report is automatically generated to prevent human errors and ensure its quality. Improved quality of the life cycle assessment will be achieved when it would get externally verified according to ISO 14025.

Because of the nature of a life cycle assessment and accompanying assumptions, the environmental impact of a product will remain an underestimate. Care must be taken when comparing EPDs from different sources. Aalberts integrated piping systems b.v. is committed to providing the most accurate environmental impact possible to its customers and will continue to improve the quality of the data, model and results.



4 life cycle assessment results

The following environmental profile shows the results of the life cycle assessment of a single unit of the declared product.

Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804
Ecochain v3.5.80



Product: Sudopress Elbow 90° Copper Gas FF 22mm HNBR
Unit: 1 units
Manufacturer: Aalberts IPS - FR

LCA standard: EN15804+A2 (2019)
Standard database: Worldwide - Ecoinvent v 3.8 Cut-Off
Externally verified: No
Export date: 30-06-2023



The LCA background information and project dossier have been registered in the online Ecochain application in the account Aalberts IPS - FR (2022). (☒ = module declared, MND = module not declared).

| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D | |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-----|---------------------------|--------------------------|-----------|----------------|------------------|-----|-----|-------------------------------|-------------------------------------|---------------------|-----|-------------------------------------|--|
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | MND | MND | MND | MND | MND | MND | MND | MND | MND | <input checked="" type="checkbox"/> | MND | MND | <input checked="" type="checkbox"/> | |
| Product stage | | | | | | | | | | | | | | | | | |
| A1 Raw material supply | A2 Transport | A3 Manufacturing | | | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | | | C1 De-construction demolition | C2 Transport | C3 Waste processing | | | |
| Construction process stage | | | | | | | | | | | | | | | | | |
| A4 Transport gate to site | | | | | B6 Operational energy use | B7 Operational water use | | | | | | C4 Disposal | | | | | |
| Benefits and loads beyond the system boundaries | | | | | | | | | | | | | | | | | |
| A5 Assembly / Construction installation process | | | | | | | | | | | | | | | | | |
| Environmental impacts and parameters | | | | | | | | | | | | | | | | | |

environmental impacts and parameters

GWP-total = EF Climate Change [kg CO₂ eq]; GWP-f = EF Climate change - Fossil [kg CO₂ eq]; GWP-b = EF Climate Change - Biogenic [kg CO₂ eq];
GWP-Iuluc = EF Climate Change - Land use and LU change [kg CO₂ eq]; ODP = EF Ozone depletion [kg CFC11 eq]; AP = EF Acidification [mol H⁺ eq];
EP-fw = EF Eutrophication, freshwater [kg P eq]; EP-m = EF Eutrophication, marine [kg N eq]; EP-T = EF Eutrophication, terrestrial [mol N eq]; POCP = EF Photochemical ozone formation [kg NMVOC eq]; ADP-mm = EF Resource use, minerals and metals [kg Sb eq]; ADP-f = EF Resource use, fossils [MJ]; WDP = EF Water use [m³ depriv.]; PM = EF Particulate matter [disease inc.]; IR = EF Ionising radiation [kBq U-235 eq]; ETP-fw = EF Ecotoxicity, freshwater [CTUe]; HTP-c = EF Human toxicity, cancer [CTUh]; HTP-nc = EF Human toxicity, non-cancer [CTUh]; SQP = EF Land use [Pt]; PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; PERM = Use of renewable primary energy resources used as raw materials [MJ]; PERT = Total use of renewable primary energy resources [MJ]; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; PENRT = Total use of non-renewable primary energy resources [MJ]; PET = Total energy [MJ]; SM = Use of secondary material [kg]; RSF = Use of renewable secondary fuels [MJ]; NRSF = Use of non-renewable secondary fuels [MJ]; FW = Use of net fresh water [m³]; HWD = Hazardous waste disposed [kg]; NHWD = Non-hazardous waste disposed [kg]; RWD = Radioactive waste disposed [kg]; CRU = Components for re-use [kg]; MFR = Materials for recycling [kg]; MER = Materials for energy recovery [kg]; EE = Exported energy [MJ]; EET = Exported energy thermic [MJ]; EEE = Exported energy electric [MJ]

statement of confidentiality

This document and supporting material contain confidential and proprietary business information of Aalberts integrated piping systems. These materials may be printed or (photo) copied or otherwise used only with the written consent of Aalberts integrated piping systems.

results

| Environmental impact | Unit | A1 | A2 | A3 | A1-A3 | A4 | C2 | D | Total |
|-----------------------------------|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| GWP-total | kg CO ₂ eq | 4.130E-1 | 9.817E-3 | 4.663E-3 | 4.275E-1 | 1.853E-2 | 8.016E-4 | -1.275E-1 | 3.194E-1 |
| GWP-f | kg CO ₂ eq | 4.171E-1 | 9.805E-3 | 4.613E-3 | 4.315E-1 | 1.851E-2 | 8.008E-4 | -1.271E-1 | 3.238E-1 |
| GWP-b | kg CO ₂ eq | -4.503E-3 | 8.822E-6 | 4.683E-5 | -4.447E-3 | 1.666E-5 | 3.542E-7 | -2.390E-4 | -4.669E-3 |
| GWP-luluc | kg CO ₂ eq | 4.266E-4 | 3.850E-6 | 3.635E-6 | 4.341E-4 | 7.269E-6 | 3.564E-7 | -1.256E-4 | 3.161E-4 |
| ODP | kg CFC11 eq | 2.383E-8 | 2.269E-9 | 1.488E-9 | 2.759E-8 | 4.284E-9 | 3.754E-10 | -1.006E-8 | 2.219E-8 |
| AP | mol H ₊ eq | 4.695E-2 | 3.979E-5 | 3.053E-5 | 4.702E-2 | 7.512E-5 | 5.282E-6 | -5.593E-3 | 4.150E-2 |
| EP-fw | kg P eq | 3.734E-4 | 6.874E-8 | 1.350E-7 | 3.736E-4 | 1.298E-7 | 8.328E-9 | -4.467E-5 | 3.291E-4 |
| EP-m | kg N eq | 2.169E-3 | 1.186E-5 | 4.692E-6 | 2.186E-3 | 2.240E-5 | 1.380E-6 | -5.180E-4 | 1.691E-3 |
| EP-T | mol N eq | 3.287E-2 | 1.310E-4 | 5.129E-5 | 3.305E-2 | 2.473E-4 | 1.522E-5 | -8.010E-3 | 2.530E-2 |
| POCP | kg NMVOC eq | 8.777E-3 | 4.012E-5 | 5.199E-5 | 8.869E-3 | 7.574E-5 | 4.725E-6 | -1.763E-3 | 7.186E-3 |
| ADP-mm | kg Sb eq | 2.675E-4 | 3.409E-8 | 1.200E-7 | 2.677E-4 | 6.437E-8 | 3.363E-8 | -9.321E-5 | 1.745E-4 |
| ADP-f | MJ | 4.490E+0 | 1.482E-1 | 4.117E-1 | 5.050E+0 | 2.799E-1 | 2.414E-2 | -1.634E+0 | 3.720E+0 |
| WDP | m ³ depriv. | 3.403E-1 | 4.439E-4 | 4.978E-3 | 3.457E-1 | 8.381E-4 | 4.057E-5 | -1.118E-1 | 2.348E-1 |
| PM | disease inc. | 1.010E-7 | 8.437E-10 | 1.974E-10 | 1.020E-7 | 1.593E-9 | 5.980E-11 | -1.985E-8 | 8.384E-8 |
| IR | kBq U-235 eq | 1.257E-2 | 6.436E-4 | 3.480E-3 | 1.669E-2 | 1.215E-3 | 1.042E-4 | -7.861E-3 | 1.015E-2 |
| ETP-fw | CTUe | 4.519E+2 | 1.157E-1 | 1.616E-1 | 4.522E+2 | 2.184E-1 | 1.619E-2 | -9.985E+1 | 3.526E+2 |
| HTP-c | CTUh | 6.283E-9 | 3.746E-12 | 4.170E-12 | 6.291E-9 | 7.073E-12 | 3.765E-13 | -2.184E-9 | 4.115E-9 |
| HTP-nc | CTUh | 5.379E-7 | 1.213E-10 | 1.045E-10 | 5.381E-7 | 2.291E-10 | 1.188E-11 | -1.588E-7 | 3.795E-7 |
| SQP | Pt | 6.214E+0 | 1.019E-1 | 2.805E-2 | 6.343E+0 | 1.923E-1 | 9.441E-3 | -1.704E+0 | 4.841E+0 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | A4 | C2 | D | Total |
| PERE | MJ | 0 | 2.089E-3 | 2.690E-2 | 2.899E-2 | 3.945E-3 | 0 | 3.287E-5 | 3.297E-2 |
| PERM | MJ | 1.305E+0 | 0 | 0 | 1.305E+0 | 0 | 1.972E-4 | -5.344E-1 | 7.710E-1 |
| PERT | MJ | 1.305E+0 | 2.089E-3 | 2.690E-2 | 1.334E+0 | 3.945E-3 | 1.972E-4 | -5.344E-1 | 8.039E-1 |
| PENRE | MJ | 0 | 1.574E-1 | 4.206E-1 | 5.780E-1 | 2.972E-1 | 0 | 1.098E-3 | 8.763E-1 |
| PENRM | MJ | 4.787E+0 | 0 | 0 | 4.787E+0 | 0 | 2.563E-2 | -1.739E+0 | 3.074E+0 |
| PENRT | MJ | 4.787E+0 | 1.574E-1 | 4.206E-1 | 5.365E+0 | 2.972E-1 | 2.563E-2 | -1.738E+0 | 3.950E+0 |
| PET | MJ | 6.092E+0 | 1.595E-1 | 4.475E-1 | 6.699E+0 | 3.011E-1 | 2.583E-2 | -2.273E+0 | 4.754E+0 |
| SM | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RSF | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NRSF | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FW | m ³ | 8.585E-3 | 1.652E-5 | 1.911E-4 | 8.792E-3 | 3.120E-5 | 1.495E-6 | -2.816E-3 | 6.009E-3 |
| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | A4 | C2 | D | Total |
| HWD | kg | 2.597E-5 | 3.872E-7 | 3.054E-7 | 2.666E-5 | 7.310E-7 | 6.569E-8 | -2.024E-6 | 2.543E-5 |
| NHWD | kg | 1.580E-1 | 7.624E-3 | 6.478E-4 | 1.663E-1 | 1.439E-2 | 5.464E-4 | -9.897E-2 | 8.223E-2 |
| RWD | kg | 1.170E-5 | 1.003E-6 | 4.643E-6 | 1.734E-5 | 1.893E-6 | 1.673E-7 | -7.213E-6 | 1.219E-5 |
| CRU | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MFR | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MER | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EE | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EET | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EEE | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

5 appendix

The life cycle assessment results listed in chapter 4 can be converted to the other sales articles listed using the conversion factor in accordance with the following tables.

| SPG5270V | straight coupling (2 x press) | |
|-------------|-------------------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6674668 | 12 | 0.30 |
| 6674670 | 14 | 0.40 |
| 6674679 | 15 | 0.38 |
| 6674692 | 16 | 0.45 |
| 6674681 | 18 | 0.50 |
| 6674690 | 22 | 0.67 |
| 6674701 | 28 | 0.87 |
| 6674712 | 35 | 1.13 |
| 6674723 | 42 | 2.45 |
| 6674734 | 54 | 3.47 |

| SPG5041V | bend 45° (2 x press) | |
|-------------|----------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6674184 | 12 | 0.35 |
| 6674186 | 14 | 0.44 |
| 6674195 | 15 | 0.47 |
| 6674197 | 16 | 0.52 |
| 6674206 | 18 | 0.60 |
| 6674217 | 22 | 0.87 |
| 6674228 | 28 | 1.14 |
| 6674239 | 35 | 1.43 |
| 6674241 | 42 | 3.12 |
| 6674250 | 54 | 4.29 |

| SPG5275V | slip coupling (2 x press) | |
|-------------|---------------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6674745 | 12 | 0.49 |
| 6674747 | 14 | 0.62 |
| 6674756 | 15 | 0.63 |
| 6674758 | 16 | 0.70 |
| 6674767 | 18 | 0.76 |
| 6674778 | 22 | 1.01 |
| 6674789 | 28 | 1.38 |
| 6674791 | 35 | 1.98 |
| 6674800 | 42 | 3.43 |
| 6674811 | 54 | 4.83 |

| SPG5040V | bend 45° (press x male) | |
|-------------|-------------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6674107 | 12 x Ø12 | 0.34 |
| 6674109 | 14 x Ø14 | 0.42 |
| 6674118 | 15 x Ø15 | 0.44 |
| 6674120 | 16 x Ø16 | 0.49 |
| 6674129 | 18 x Ø18 | 0.58 |
| 6674131 | 22 x Ø22 | 0.83 |
| 6674140 | 28 x Ø28 | 1.10 |
| 6674151 | 35 x Ø35 | 1.42 |
| 6674162 | 42 x Ø42 | 3.07 |
| 6674173 | 54 x Ø54 | 4.40 |

| SPG5002V | bend 90° (2 x press) | |
|-------------|----------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6674021 | 12 | 0.40 |
| 6674023 | 14 | 0.52 |
| 6674030 | 15 | 0.52 |
| 6674032 | 16 | 0.59 |
| 6674041 | 18 | 0.72 |
| 6674052 | 22 | 1.00 |
| 6674063 | 28 | 1.47 |
| 6674074 | 35 | 2.19 |
| 6674085 | 42 | 4.17 |
| 6674096 | 54 | 5.99 |

| SPG4001GV | angle adapter 90° (press x male thread) | |
|-------------|---|-------------------|
| article no. | dimensions | conversion factor |
| 6673447 | 15 x R $\frac{1}{2}$ " | 1.00 |
| 6673458 | 18 x R $\frac{1}{2}$ " | 1.36 |
| 6673469 | 18 x R $\frac{3}{4}$ " | 1.55 |
| 6673471 | 22 x R $\frac{3}{4}$ " | 1.72 |
| 6673436 | 28 x R1" | 3.14 |

| SPG5001V | bend 90° (press x male) | |
|-------------|-------------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6673942 | 12 x Ø12 | 0.37 |
| 6673944 | 14 x Ø14 | 0.49 |
| 6673953 | 15 x Ø15 | 0.50 |
| 6673955 | 16 x Ø16 | 0.56 |
| 6673964 | 18 x Ø18 | 0.70 |
| 6673975 | 22 x Ø22 | 1.03 |
| 6673986 | 28 x Ø28 | 1.43 |
| 6673997 | 35 x Ø35 | 2.10 |
| 6674008 | 42 x Ø42 | 4.17 |
| 6674019 | 54 x Ø54 | 5.90 |

| SPG4090GV | angle adapter 90° (press x female thread) | |
|-------------|---|-------------------|
| article no. | dimensions | conversion factor |
| 6673502 | 15 x Rp $\frac{1}{2}$ " | 0.91 |
| 6673513 | 18 x Rp $\frac{1}{2}$ " | 1.22 |
| 6673524 | 18 x Rp $\frac{3}{4}$ " | 1.45 |
| 6673535 | 22 x Rp $\frac{1}{2}$ " | 1.37 |
| 6673546 | 22 x Rp $\frac{3}{4}$ " | 1.70 |
| 6673480 | 22 x Rp1" | 2.56 |
| 6673491 | 28 x Rp1" | 2.66 |



| SPG5130V | | |
|-----------------|------------|-------------------|
| tee (3 x press) | | |
| article no. | dimensions | conversion factor |
| 6674437 | 12 | 0.80 |
| 6674439 | 14 | 0.97 |
| 6674448 | 15 | 1.01 |
| 6674450 | 16 | 1.08 |
| 6674459 | 18 | 1.31 |
| 6674461 | 22 | 1.71 |
| 6674470 | 28 | 2.29 |
| 6674481 | 35 | 3.08 |
| 6674492 | 42 | 6.08 |
| 6674503 | 54 | 8.37 |

| SPG5130RV | | |
|-------------------------|--------------|-------------------|
| tee reduced (3 x press) | | |
| article no. | dimensions | conversion factor |
| 6672814 | 14 x 12 x 14 | 1.00 |
| 6672816 | 14 x 16 x 14 | 1.14 |
| 6674272 | 15 x 12 x 15 | 1.00 |
| 6674289 | 16 x 14 x 16 | 1.20 |
| 6674294 | 18 x 12 x 18 | 1.29 |
| 6674296 | 18 x 14 x 18 | 1.30 |
| 6674305 | 18 x 15 x 18 | 1.36 |
| 6674307 | 18 x 16 x 18 | 1.36 |
| 6674316 | 22 x 12 x 22 | 1.53 |
| 6674318 | 22 x 14 x 22 | 1.60 |
| 6674338 | 22 x 15 x 22 | 1.60 |
| 6674340 | 22 x 16 x 22 | 1.62 |
| 6674349 | 22 x 18 x 22 | 1.72 |
| 6674360 | 28 x 15 x 28 | 2.10 |
| 6674371 | 28 x 22 x 28 | 2.24 |
| 6674382 | 35 x 22 x 35 | 2.83 |
| 6674393 | 35 x 28 x 35 | 2.94 |
| 6674404 | 42 x 28 x 42 | 4.93 |
| 6674415 | 42 x 35 x 42 | 5.07 |
| 6674426 | 54 x 42 x 54 | 7.50 |

| SPG5130RVR | | |
|-------------------------|--------------|-------------------|
| tee reduced (3 x press) | | |
| article no. | dimensions | conversion factor |
| 6674261 | 15 x 12 x 12 | 1.02 |
| 6674283 | 15 x 15 x 12 | 1.02 |
| 6674287 | 16 x 14 x 14 | 1.17 |
| 6674291 | 16 x 16 x 14 | 1.17 |
| 6674327 | 22 x 15 x 15 | 1.56 |
| 6674351 | 22 x 22 x 15 | 1.65 |

| SPG4130GV | | |
|---|----------------|-------------------|
| tee female branch (press x female thread x press) | | |
| article no. | dimensions | conversion factor |
| 6673557 | 15 x Rp½" x 15 | 1.24 |
| 6673568 | 18 x Rp½" x 18 | 1.41 |
| 6673579 | 22 x Rp½" x 22 | 1.78 |
| 6673581 | 28 x Rp½" x 28 | 2.13 |
| 6673590 | 28 x Rp¾" x 28 | 2.70 |
| 6673601 | 35 x Rp½" x 35 | 2.70 |
| 6673612 | 42 x Rp½" x 42 | 4.23 |
| 6673623 | 54 x Rp½" x 54 | 5.36 |

| SPG5243V | | |
|------------------------|------------|-------------------|
| reducer (male x press) | | |
| article no. | dimensions | conversion factor |
| 6670942 | Ø14 x 12 | 0.31 |
| 6674514 | Ø15 x 12 | 0.33 |
| 6674516 | Ø16 x 12 | 0.33 |
| 6674518 | Ø16 x 14 | 0.35 |
| 6674525 | Ø18 x 12 | 0.33 |
| 6674527 | Ø18 x 14 | 0.40 |
| 6674536 | Ø18 x 15 | 0.42 |
| 6674538 | Ø18 x 16 | 0.42 |
| 6674540 | Ø22 x 14 | 0.48 |
| 6674547 | Ø22 x 15 | 0.44 |
| 6674549 | Ø22 x 16 | 0.48 |
| 6674558 | Ø22 x 18 | 0.50 |
| 6674569 | Ø28 x 15 | 0.67 |
| 6674572 | Ø28 x 16 | 0.70 |
| 6674571 | Ø28 x 18 | 0.76 |
| 6674580 | Ø28 x 22 | 0.70 |
| 6674591 | Ø35 x 22 | 0.88 |
| 6674602 | Ø35 x 28 | 0.90 |
| 6674613 | Ø42 x 22 | 1.50 |
| 6674624 | Ø42 x 28 | 1.70 |
| 6674635 | Ø42 x 35 | 1.45 |
| 6674646 | Ø54 x 35 | 2.27 |
| 6674657 | Ø54 x 42 | 2.69 |

| SPG4243GV | | |
|--|------------|-------------------|
| straight connector (press x male thread) | | |
| article no. | dimensions | conversion factor |
| 6671860 | 14 x R¾" | 0.42 |
| 6671856 | 14 x R½" | 0.55 |
| 6673678 | 15 x R½" | 0.55 |
| 6673689 | 15 x R¾" | 0.69 |
| 6673692 | 16 x R½" | 0.60 |
| 6673694 | 16 x R¾" | 0.92 |
| 6673691 | 18 x R½" | 0.56 |
| 6673700 | 18 x R¾" | 0.71 |
| 6673711 | 22 x R½" | 0.72 |
| 6673722 | 22 x R¾" | 0.83 |
| 6673634 | 22 x R1" | 1.07 |
| 6673645 | 28 x R1" | 1.23 |
| 6673744 | 28 x R1¼" | 2.09 |
| 6673733 | 28 x R¾" | 0.98 |
| 6673656 | 35 x R1" | 1.58 |
| 6673766 | 35 x R1¼" | 2.01 |
| 6673755 | 35 x R1½" | 2.26 |
| 6673788 | 42 x R1¼" | 2.43 |
| 6673777 | 42 x R1½" | 2.48 |
| 6673799 | 54 x R1½" | 3.27 |
| 6673667 | 54 x R2" | 4.79 |

| SPG4270GV | | |
|-------------|-------------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6672100 | 14 x Rp $\frac{3}{8}$ " | 0.45 |
| 6672096 | 14 x Rp $\frac{1}{2}$ " | 0.77 |
| 6673832 | 15 x Rp $\frac{1}{2}$ " | 0.58 |
| 6673843 | 15 x Rp $\frac{3}{4}$ " | 0.76 |
| 6673845 | 16 x Rp $\frac{1}{2}$ " | 0.78 |
| 6673847 | 16 x Rp $\frac{3}{4}$ " | 0.98 |
| 6673854 | 18 x Rp $\frac{1}{2}$ " | 0.58 |
| 6673865 | 18 x Rp $\frac{3}{4}$ " | 0.73 |
| 6673887 | 22 x Rp $\frac{3}{4}$ " | 0.79 |
| 6673801 | 22 x Rp1" | 1.60 |
| 6673876 | 22 x Rp $\frac{1}{2}$ " | 0.69 |
| 6673810 | 28 x Rp1" | 1.56 |
| 6673898 | 35 x Rp $\frac{1}{4}$ " | 1.66 |
| 6673909 | 42 x Rp $\frac{1}{2}$ " | 2.56 |
| 6673821 | 54 x Rp2" | 4.38 |

| SPG4471GV | | |
|-------------|-------------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6673911 | 15 x Rp $\frac{1}{2}$ " | 1.13 |
| 6673920 | 18 x Rp $\frac{1}{2}$ " | 1.56 |
| 6673931 | 22 x Rp $\frac{3}{4}$ " | 1.70 |

| SPG5301V | | |
|-------------|------------|-------------------|
| article no. | dimensions | conversion factor |
| 6673253 | 12 | 0.17 |
| 6673255 | 14 | 0.23 |
| 6674822 | 15 | 0.26 |
| 6674824 | 16 | 0.28 |
| 6674833 | 18 | 0.30 |
| 6674844 | 22 | 0.43 |
| 6674855 | 28 | 0.58 |
| 6674866 | 35 | 0.84 |
| 6674877 | 42 | 1.42 |
| 6674888 | 54 | 1.94 |

| SPG-FB | | |
|-------------|------------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6675273 | 12 x M20 x 1,5 | 0.59 |
| 6675295 | 14 x M20 x 1,5 | 0.69 |
| 6678317 | 14 x G $\frac{3}{4}$ " | 0.91 |
| 6675339 | 16 x G $\frac{3}{4}$ " | 0.87 |
| 6675341 | 18 x G $\frac{3}{4}$ " | 0.98 |
| 6675306 | 14 x G $\frac{1}{2}$ " | 0.59 |
| 6675328 | 16 x G $\frac{1}{2}$ " | 0.63 |
| 6675350 | 22 x G $\frac{3}{4}$ " | 1.16 |

| SPG-2P-JPC | | |
|-------------|------------|-------------------|
| article no. | dimensions | conversion factor |
| 6675121 | 22 x DN20 | 1.22 |
| 6675130 | 28 x DN20 | 1.38 |
| 6675141 | 28 x DN32 | 1.97 |
| 6675152 | 35 x DN32 | 2.31 |
| 6675163 | 54 x DN50 | 5.35 |

| SPG-MAM-JPC | | |
|-------------|------------|-------------------|
| article no. | dimensions | conversion factor |
| 6675229 | 22 x DN20 | 1.23 |
| 6675231 | 28 x DN20 | 1.55 |
| 6675240 | 28 x DN32 | 2.21 |
| 6675251 | 35 x DN32 | 1.94 |

| SPG-MAM-JPG | | |
|-------------|-------------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6675174 | 22 x G1" | 1.53 |
| 6675185 | 28 x G1 $\frac{1}{4}$ " | 2.21 |
| 6675196 | 35 x G1 $\frac{1}{2}$ " | 2.69 |

| SPG-RC-JPG | | |
|-------------|-------------------------|-------------------|
| article no. | dimensions | conversion factor |
| 6675009 | 12 x G $\frac{1}{2}$ " | 0.55 |
| 6675011 | 14 x G $\frac{1}{2}$ " | 0.64 |
| 6675020 | 16 x G $\frac{1}{2}$ " | 0.65 |
| 6675042 | 18 x G $\frac{1}{2}$ " | 0.71 |
| 6675031 | 16 x G $\frac{3}{4}$ " | 0.88 |
| 6675053 | 18 x G $\frac{3}{4}$ " | 0.99 |
| 6675064 | 22 x G $\frac{3}{4}$ " | 1.14 |
| 6675075 | 22 x G1" | 1.55 |
| 6675097 | 28 x G1 $\frac{1}{4}$ " | 2.26 |
| 6675108 | 35 x G1 $\frac{1}{2}$ " | 2.77 |
| 6675119 | 42 x G2" | 5.06 |
| 6675086 | 28 x G1" | 1.91 |

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