aalberts integrated piping systems

VSH Super Brass

Environmental Product Declaration

in accordance with
ISO 14044, ISO 14040 and EN 15804

EN

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.
Oude Amersfoortseweg 99 / 1212 AA Hilversum /
+31 (0)35 - 6884 211 / info.nl@aalberts-ips.com /
www.aalberts-ips.eu

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 Super brass and DZR fittings listed in the appendix -chapter 5- of this document. Articles which are chrome plated are not covered in this declaration. A VSH Super straight coupling FF 15, article number: 0860301, has been used as a reference article.

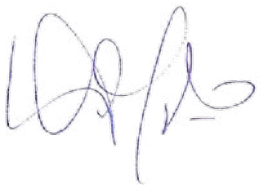
1.4 verification

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.

Version:	1.0
Date of issue:	01/03/2023
Author of LCA:	Fabian Bruns
Calculated in:	Ecochain, v3.5.71
Production data:	2021

Hilversum, February 2023
Aalberts integrated piping systems B.V.



Roland Voermans
COO

2 product

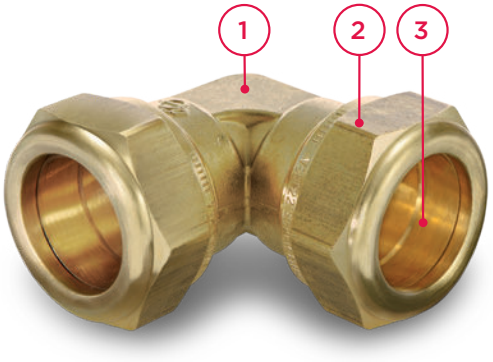
2.1 description and application purpose

VSH Super compression fittings are made of brass and are suitable for a wide variety of applications, from drinking water, natural gas, heating and cooling to solar installations and compressed air systems. The VSH Super compression fittings are manufactured from following materials:

- brass CW617N
- DZR-brass CW602N

The VSH Super compression fittings are compatible with the following metal pipes:

- copper tube in accordance with EN 1057
- stainless steel tube according to EN 10312
- thin-walled carbon steel tube according to EN 10305-3
- thick-walled steel pipe in accordance with EN 10255 (when fitted with a plastic Super Blue compression ring)



1. fitting body
2. compression nut
3. compression ring

For the composition of the components, see chapter 3.2 “product composition”

2.2 VSH Super Brass fittings

All VSH Super compression fittings are produced in our modern, automated factories in Europe. The VSH Super product range includes fittings and valves. The connection is realised using a standard tool (wrench or open ring key), compressing the sharp edges of the compression ring against the tube and into the nut thus forming a leak-tight and mechanically strong connection. The fittings are demountable.

2.3 range and conversion factors

The reference product for this declaration is the VSH Super straight coupling FF 15. This article was chosen as a reference because it is the most common product in the VSH Super 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 Super straight coupling FF 15, consists of the following raw materials:

brass:	88 gram
Total:	88 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.
A2: For transport of materials to Aalberts integrated piping systems in Hilversum 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 XPress products are manufactured in the factory of Aalberts integrated piping systems located in Hilversum, Netherlands. This factory makes use of green electricity for manufacturing the VSH XPress products. Therefore the green electricity Netherlands mix, was used for calculating the electricity consumption. Water and auxillary materials were considered negligible.
Assembly of products is done at a separate Aalberts integrated piping systems warehouse located in Zeewolde, Netherlands. This warehouse also uses green electricity. The electricity consumption for this process was estimated and modelled at 10% of the electricity consumed for manufacturing.
A4: Transport from the factory in Hilversum to production partners and the warehouse 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 715km. 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 730km.
A5: The installation is done by use of a press tool which uses a considered negligible amount of energy.
B1-B7: A VSH XPress Carbon fitting is designed for a lifetime of 50+ years of service. A VSH XPress Carbon 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 30km and modelled by use of Class Euro5 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 processer 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, incineration and landfill. 90% of steel will be recycled, the O-ring incinerated and remainder of the product was calculated to go to landfill.

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 v3.5.71

Ecochain

Product:	VSH Super straight coupling FF 15mm	LCA standard:	EN15804+A2 (2019)
Unit:	1 units	Standard database:	Dutch - Nationale Milieudatabase v3.3 (obv Ecoinvent 3.6)
Manufacturer:	Aalberts integrated piping systems	Externally verified:	No
		Export date:	10-03-2023

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The LCA background information and project dossier have been registered in the online Ecochain application in the account Aalberts integrated piping systems (2021). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	MND	MND	☑

Product stage

A1 Raw material supply **A2** Transport **A3** Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use **B2** Maintenance **B3** Repair **B4** Replacement **B5** Refurbishment
B6 Operational energy use **B7** Operational water use

End-of-Life stage

C1 De-construction demolition **C2** Transport **C3** Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

environmental impacts and parameters

GWP-total = EF Climate Change [kg CO_2 eq]; GWP-f = EF Climate change - Fossil [kg CO_2 eq]; GWP-b = EF Climate Change - Biogenic [kg CO_2 eq]; GWP-luluc = EF Climate Change - Land use and LU change [kg CO_2 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]; PENRM = Use of 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

results

Environmental impact	Unit	A1	A2	A3	A1-A3	A4	C2	D	Total
GWP-total	kg CO2 eq	3.848E-1	4.801E-3	1.614E-2	4.058E-1	8.249E-3	4.404E-4	-1.039E-1	3.105E-1
GWP-f	kg CO2 eq	3.842E-1	4.797E-3	1.376E-2	4.027E-1	8.242E-3	4.401E-4	-1.046E-1	3.068E-1
GWP-b	kg CO2 eq	9.257E-5	2.559E-6	2.317E-3	2.413E-3	3.805E-6	2.348E-7	6.761E-4	3.093E-3
GWP-luluc	kg CO2 eq	6.082E-4	1.677E-6	6.160E-5	6.715E-4	3.020E-6	1.538E-7	3.192E-5	7.066E-4
ODP	kg CFC11 eq	2.426E-8	1.090E-9	1.919E-9	2.727E-8	1.819E-9	9.996E-11	-3.484E-9	2.571E-8
AP	mol H+ eq	3.526E-2	1.960E-5	2.430E-4	3.553E-2	4.780E-5	1.798E-6	-4.423E-4	3.513E-2
EP-fw	kg P eq	2.834E-4	3.767E-8	5.033E-7	2.839E-4	8.314E-8	3.456E-9	-2.537E-6	2.815E-4
EP-m	kg N eq	1.767E-3	5.815E-6	5.046E-5	1.823E-3	1.684E-5	5.335E-7	-7.668E-5	1.764E-3
EP-T	mol N eq	2.610E-2	6.431E-5	8.350E-4	2.700E-2	1.857E-4	5.900E-6	-8.892E-4	2.631E-2
POCP	kg NMVOC eq	6.927E-3	1.969E-5	1.564E-4	7.103E-3	5.302E-5	1.806E-6	-6.346E-4	6.523E-3
ADP-mm	kg Sb eq	2.263E-3	1.298E-7	1.399E-6	2.265E-3	2.088E-7	1.191E-8	9.962E-8	2.265E-3
ADP-f	MJ	4.406E+0	7.233E-2	1.510E-1	4.630E+0	1.243E-1	6.636E-3	-7.541E-1	4.007E+0
WDP	m3 depriv.	3.323E-1	2.013E-4	6.414E-3	3.389E-1	4.446E-4	1.847E-5	-1.577E-2	3.236E-1
PM	disease inc.	7.747E-8	3.337E-10	2.467E-9	8.027E-8	7.402E-10	3.061E-11	-5.653E-9	7.539E-8
IR	kBq U-235 eq	1.807E-2	3.162E-4	1.145E-4	1.851E-2	5.208E-4	2.900E-5	7.445E-4	1.980E-2
ETP-fw	CTUe	3.504E+2	5.790E-2	7.714E-1	3.512E+2	1.108E-1	5.312E-3	-3.552E+0	3.478E+2
HTP-c	CTUh	5.071E-9	1.628E-12	3.968E-11	5.112E-9	3.595E-12	1.493E-13	-1.289E-11	5.103E-9
HTP-nc	CTUh	4.099E-7	6.315E-11	1.200E-9	4.112E-7	1.212E-10	5.793E-12	2.194E-8	4.332E-7
SQP	Pt	5.217E+0	4.988E-2	5.315E+0	1.058E+1	1.078E-1	4.576E-3	-1.656E-1	1.053E+1
Resource use	Unit	A1	A2	A3	A1-A3	A4	C2	D	Total
PERE	MJ	1.128E+0	1.021E-3	2.036E+0	3.165E+0	1.556E-3	9.364E-5	9.675E-3	3.176E+0
PERM	MJ	0	0	0	0	0	0	0	0
PERT	MJ	1.128E+0	1.021E-3	2.036E+0	3.165E+0	1.556E-3	9.364E-5	9.675E-3	3.176E+0
PENRE	MJ	4.694E+0	7.679E-2	1.608E-1	4.931E+0	1.320E-1	7.045E-3	-7.825E-1	4.288E+0
PENRM	MJ	0	0	0	0	0	0	0	0
PENRT	MJ	4.694E+0	7.679E-2	1.608E-1	4.931E+0	1.320E-1	7.045E-3	-7.825E-1	4.288E+0
PET	MJ	5.821E+0	7.781E-2	2.197E+0	8.096E+0	1.335E-1	7.138E-3	-7.728E-1	7.464E+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	m3	8.811E-3	7.617E-6	2.034E-4	9.022E-3	1.514E-5	6.988E-7	-3.596E-4	8.679E-3
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	A4	C2	D	Total
HWD	kg	2.819E-4	1.896E-7	9.250E-11	2.821E-4	3.150E-7	1.739E-8	-1.340E-5	2.690E-4
NHWD	kg	1.287E-1	3.457E-3	6.434E-5	1.322E-1	7.885E-3	3.171E-4	-4.999E-3	1.354E-1
RWD	kg	1.493E-5	4.932E-7	4.170E-11	1.542E-5	8.163E-7	4.524E-8	-1.174E-7	1.617E-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.

S1200	VSH Super straight coupling (2 x compression)	
Article no.	**dimension**	**conversion factor**
0860081	8	0,27
0860090	10	0,47
0880121	10 DZR	0,43
0860200	12	0,56
0880132	12 DZR	0,64
0860301	15	1,00
0880143	15 DZR	1,00
0868879	16	1,23
0860409	18	1,31
0880154	18 DZR	1,30
0882387	20 DZR	1,55
0860508	22	1,69
0880165	22 DZR	1,75
0860607	28	2,58
0880176	28 DZR	2,59
0860706	35	3,70
0880187	35 DZR	3,72
0878306	42	6,05
0866239	42 DZR	6,05
0878317	54	9,57
0866272	54 DZR	9,57

S1208	VSH Super slip coupling (2 x compression)	
Article no.	**dimension**	**conversion factor**
0876854	15	2,08
0876876	22	3,27

S1201	VSH Super reducer (2 x compression)	
Article no.	**dimension**	**conversion factor**
0880321	10 x 8 DZR	0,38
0880319	12 x 8 DZR	0,49
0873103	12 x 10	0,51
0880231	12 x 10 DZR	0,55
0880242	15 x 8 DZR	0,81
0873136	15 x 10	0,77
0880253	15 x 10 DZR	0,80
0860211	15 x 12	0,85
0880264	15 x 12 DZR	0,89
0880330	16 x 15 DZR	1,16
0880275	18 x 12 DZR	1,01
0880286	18 x 15 DZR	1,14
0860310	22 x 15	1,55
0880297	22 x 15 DZR	1,53
0860741	22 x 18	1,61
0860783	22 x 20	1,67
0860387	28 x 15	2,10
0860519	28 x 22	2,33

S1202	VSH Super straight connector (compression x male thread)	
Article no.	**dimension**	**conversion factor**
0862114	6 x G¼"	0,25
0861971	8 x G¼"	0,24
0861993	8 x G⅜"	0,40
0880431	8 x G⅜» DZR	0,48
0880473	8 x G½" DZR	0,57
0861212	10 x G¼"	0,31
0880429	10 x G¼" DZR	0,31
0861201	10 x G⅜"	0,43
0880440	10 x G⅜" DZR	0,44
0861267	10 x G½"	0,52
0880484	10 x G½" DZR	0,52
0861300	12 x G⅜"	0,45
0877580	12 x R⅜"	0,49
0880451	12 x G⅜" DZR	0,50
0857505	12 x R½"	0,73
0880495	12 x G½" DZR	0,61
0861520	12 x G¾"	0,91
0861311	15 x G⅜"	0,69
0861498	15 x R⅜"	0,80
0880462	15 x G⅜" DZR	0,69
0861401	15 x R½"	0,89
0861377	15 x G½"	0,83
0880506	15 x G½" DZR	0,82
0861597	15 x G¾"	1,13
0880781	15 x G¾" DZR	1,14
0861850	15 x R¾"	1,06
0885951	16 x G½" DZR	0,85
0877602	16 x R½"	0,99
0886633	18 x G⅜" DZR	0,83
0861630	18 x R½"	1,00
0880517	18 x G½" DZR	0,88
0880528	18 x G¾" DZR	1,19
0861586	18 x R¾"	1,24
0878262	20 x R½"	1,10
0862070	20 x R¾"	1,23
0861454	22 x G½"	1,22
0880594	22 x G½" DZR	1,23
0877646	22 x R½"	1,38
0861905	22 x R¾"	1,40
0861509	22 x G¾"	1,25
0880539	22 x G¾" DZR	1,27
0861619	22 x G1"	1,91
0880792	22 x G1" DZR	1,93
0861927	22 x R1"	1,98
0861003	28 x R¾"	1,95
0880385	28 x G¾" DZR	1,83
0861608	28 x G1"	1,98
0880541	28 x G1" DZR	1,99
0861949	28 x R1"	2,13
0861696	28 x G1¼"	3,07
0861621	35 x G1"	2,60

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0880605	35 x G1" DZR	2,57
0861707	35 x G1¼"	2,93
0880550	35 x G1¼" DZR	2,90
0866393	42 x G1½" DZR	4,33
0866415	54 x G2" DZR	6,64

S1204 **VSH Super straight connector (compression x female thread)**

Article no.	dimension	conversion factor
0862268	8 x Rp⅜"	0,45
0862246	10 x Rp¼"	0,36
0862281	10 x Rp⅜"	0,52
0880627	10 x Rp⅜" DZR	0,52
0862389	10 x Rp½"	0,74
0880660	10 x Rp½" DZR	0,74
0862301	12 x G⅜"	0,49
0880638	12 x Rp⅜" DZR	0,60
0862499	12 x G½"	0,67
0880671	12 x Rp½" DZR	0,85
0862312	15 x G⅜"	0,68
0880649	15 x Rp⅜" DZR	0,75
0862400	15 x G½"	0,94
0862367	15 x Rp½"	1,09
0880682	15 x Rp½" DZR	1,07
0864996	15 x G¾"	0,92
0862598	15 x Rp¾"	1,28
0880704	15 x Rp¾" DZR	1,27
0868846	16 x G½"	1,00
0885995	16 x Rp½" DZR	1,14
0862411	18 x G½"	0,94
0880693	18 x Rp½" DZR	1,10
0862587	18 x G¾"	0,98
0873565	20 x Rp½"	1,33
0862807	22 x Rp½"	1,23
0880770	22 x Rp½" DZR	1,22
0862501	22 x G¾"	1,13
0862488	22 x Rp¾"	1,51
0880726	22 x Rp¾" DZR	1,50
0862611	22 x Rp1"	2,06
0880759	22 x Rp1" DZR	2,73
0877668	28 x Rp¾"	2,20
0862609	28 x G1"	1,89
0862686	28 x Rp1"	2,31
0880737	28 x Rp1" DZR	2,31
0877681	28 x Rp1¼"	2,93
0862708	35 x Rp1¼"	3,42
0880748	35 x Rp1¼" DZR	3,42
0878097	42 x Rp1½"	4,82
0866461	42 x Rp1½" DZR	4,82
0866481	54 x Rp2" DZR	8,27

S1275 **VSH Super straight coupling (compression x male)**

Article no.	dimension	conversion factor
0875039	28	2,03

S1206 **VSH Super stop end (1 x compression)**

Article no.	dimension	conversion factor
0880871	10 DZR	0,28
0861124	12	0,35
0880814	12 DZR	0,40
0861135	15	0,64
0880825	15 DZR	0,64
0880880	18 DZR	0,88
0861157	22	1,18
0880836	22 DZR	1,16
0861168	28	1,81
0880869	28 DZR	1,74
0886908	35	2,39

S1207 **VSH Super stop end air release (1 x compression)**

Article no.	dimension	conversion factor
0861181	22 x G⅛"	1,17

S1210 **VSH Super angle adapter 90° (2 x compression)**

Article no.	dimension	conversion factor
0863181	8	0,28
0863192	10	0,49
0880924	10 DZR	0,49
0863203	12	0,65
0880935	12 DZR	0,70
0863302	15	1,08
0880946	15 DZR	1,08
0863401	18	1,39
0880957	18 DZR	1,40
0863500	22	1,86
0880968	22 DZR	1,88
0863601	28	2,74
0880979	28 DZR	2,77
0863709	35	4,11
0880981	35 DZR	4,00
0878273	42	6,17
0863731	42 DZR	6,63
0878284	54	11,06
0863753	54 DZR	11,06

S1211 **VSH Super reduced angle adapter 90° (2 x compression)**

Article no.	dimension	
0863456	12 x 10	
0863379	15 x 10	conversion factor
0863214	15 x 12	0,85
0882816	15 x 12 DZR	0,86
0882827	16 x 15 DZR	1,19
0863313	22 x 15	1,42
0882838	22 x 15 DZR	1,61
0863599	28 x 22	2,27

S1212	VSH Super angle adapter 90° (compression x male thread)	
Article no.	**dimension**	**conversion factor**
0881023	10 x G⅜" DZR	0,57
0881056	10 x G½" DZR	0,69
0862169	12 x R⅜"	0,57
0881034	12 x G⅜" DZR	0,61
0864490	12 x G½"	0,68
0881067	12 x G½" DZR	0,74
0877701	15 x G⅜"	0,93
0886259	15 x G⅜" DZR	0,93
0864402	15 x G½"	0,97
0881078	15 x G½" DZR	0,99
0862004	15 x R½"	1,02
0864512	15 x G¾"	1,13
0881201	15 x G¾" DZR	1,90
0877745	16 x R½"	1,24
0864457	18 x R½"	1,14
0881089	18 x G½" DZR	1,15
0864523	18 x R¾"	1,35
0886270	18 x G¾" DZR	1,32
0862840	22 x G½"	1,34
0882508	22 x G½" DZR	1,34
0864501	22 x G¾"	1,53
0881091	22 x G¾" DZR	1,58
0862026	22 x R¾"	1,61
0864611	22 x G1"	1,97
0864534	28 x G¾"	2,57
0864600	28 x G1"	2,48
0881100	28 x G1" DZR	2,49
0877767	28 x R1"	2,53
0863984	35 x G1¼" DZR	3,73
0864193	42 x G1½" DZR	5,83

S1214	VSH Super angle adapter 90° (compression x female thread)	
Article no.	**dimension**	**conversion factor**
0865293	10 x Rp⅜"	0,53
0881232	10 x Rp½" DZR	0,90
0865304	12 x Rp⅜"	0,63
0881210	12 x Rp⅜" DZR	0,66
0865491	12 x Rp½"	0,89
0881243	12 x Rp½" DZR	0,93
0865315	15 x Rp⅜"	0,84
0865403	15 x G½"	0,91
0865471	15 x Rp½"	1,09
0881254	15 x Rp½" DZR	1,11
0865513	15 x Rp¾"	1,40
0865414	18 x Rp½"	1,31
0881265	18 x Rp½" DZR	1,28
0865524	18 x Rp¾"	1,56
0862829	22 x Rp½"	1,43
0881342	22 x Rp½" DZR	1,42
0865581	22 x Rp¾"	1,74
0881276	22 x Rp¾" DZR	1,76
0865502	22 x G¾"	1,55
0865590	22 x G1"	1,78
0865689	22 x Rp1"	2,09
0865601	28 x Rp1"	2,48
0881287	28 x Rp1" DZR	2,47
0863962	35 x Rp1¼" DZR	4,32
0864215	54 x Rp2" DZR	10,13

S1216	VSH Super elbow 90° (2 x compression)	
Article no.	**dimension**	**conversion factor**
0863016	15	1,13
0863027	22	1,94
0863038	28	3,18
0863049	35	4,74

S1218	VSH Super angle adapter 90° (compression x male)	
Article no.	**dimension**	**conversion factor**
0312070	15	0,91
0862091	22	1,25

S1220	VSH Super T-piece (3 x compression)	
Article no.	**dimension**	**conversion factor**
0866701	8	0,42
0881419	8 DZR	0,81
0866987	10	0,69
0867009	12	0,89
0881430	12 DZR	1,00
0867053	15	1,55
0881441	15 DZR	1,53
0866998	18	1,94
0881452	18 DZR	1,92
0867174	22	2,57
0881463	22 DZR	2,59
0867284	28	3,78
0881474	28 DZR	3,78
0867394	35	5,57
0881485	35 DZR	5,32
0866613	42 DZR	8,81
0866635	54 DZR	14,77

S1221	VSH Super reduced T-piece (3 x compression)	
Article no.	**dimension**	**conversion factor**
0881551	12 x 10 x 12 DZR	0,91
0867011	12 x 15 x 12	1,13
0881562	12 x 15 x 12 DZR	1,18
0881584	15 x 10 x 15 DZR	1,66
0867031	15 x 12 x 15	1,33
0881606	15 x 12 x 15 DZR	1,36
0867064	15 x 22 x 15	1,92
0885973	15 x 22 x 15 DZR	1,94
0881507	16 x 15 x 16 DZR	1,73
0881639	18 x 12 x 18 DZR	1,72
0867372	18 x 15 x 18	1,77
0881650	18 x 15 x 18 DZR	2,07
0867130	22 x 12 x 22	1,95
0886314	22 x 12 x 22 DZR	2,11
0867141	22 x 15 x 22	2,19
0881661	22 x 15 x 22 DZR	2,18
0867449	22 x 18 x 22	2,43
0881751	22 x 18 x 22 DZR	2,82
0867185	22 x 28 x 22	3,06
0867229	28 x 15 x 28	2,95
0881683	28 x 15 x 28 DZR	2,93
0867451	28 x 18 x 28	3,34
0867251	28 x 22 x 28	3,36
0881694	28 x 22 x 28 DZR	3,34

S1247	VSH Super reduced T-piece (3 x compression)	
Article no.	**dimension**	**conversion factor**
0867042	15 x 15 x 12	1,35
0881617	15 x 15 x 12 DZR	1,39
0867163	22 x 22 x 15	2,35
0881672	22 x 22 x 15 DZR	2,31
0867262	28 x 28 x 15	3,22
0881408	28 x 28 x 15 DZR	4,44
0867273	28 x 28 x 22	3,56

S1248	VSH Super reduced T-piece (3 x compression)	
Article no.	**dimension**	**conversion factor**
0867020	15 x 12 x 12	1,10
0881595	15 x 12 x 12 DZR	1,20
0867361	18 x 15 x 15	1,68
0881641	18 x 15 x 15 DZR	2,22
0867119	22 x 15 x 12	1,78
0867121	22 x 15 x 15	1,93
0886292	22 x 15 x 15 DZR	1,92
0867218	28 x 15 x 22	2,63
0867231	28 x 22 x 15	2,92
0867240	28 x 22 x 22	3,07

S1223	VSH Super threaded T-piece (compression x compression x female thread)	
Article no.	**dimension**	**conversion factor**
0869253	12 x Rp½" x 12	1,16
0881815	12 x Rp½" x 12 DZR	1,26
0869321	15 x Rp¼" x 15	1,18
0869330	15 x Rp⅜" x 15	1,24
0882090	15 x Rp⅜" x 15 DZR	1,25
0869341	15 x Rp½" x 15	1,58
0881826	15 x Rp½" x 15 DZR	1,57
0869440	18 x Rp½" x 18	1,73
0882101	18 x Rp½" x 18 DZR	1,77
0882376	18 x Rp¾" x 18 DZR	2,18
0869539	22 x Rp⅜" x 22	1,92
0869541	22 x Rp½" x 22	2,15
0882079	22 x Rp½" x 22 DZR	2,16
0869550	22 x Rp¾" x 22	2,53
0882081	22 x Rp¾" x 22 DZR	2,53
0869649	28 x G½" x 28	2,89
0869651	28 x G¾" x 28	3,26
0869660	28 x Rp1" x 28	3,68

S1224	VSH Super threaded T-piece (compression x female thread x compression)	
Article no.	**dimension**	**conversion factor**
0869814	15 x 15 x G⅜"	1,60
0869803	15 x 15 x Rp½"	1,50
0881837	15 x 15 x Rp½" DZR	1,58
0869836	22 x 22 x Rp½"	2,16
0869847	22 x 22 x Rp¾"	2,44
0869880	28 x 28 x G½"	3,06

S1225	VSH Super threaded T-piece (compression x male thread x compression)	
Article no.	**dimension**	**conversion factor**
0867988	15 x R½" x 15	1,39
0883003	15 x G½" x 15 DZR	1,51
0871706	22 x R½" x 22	2,20

S1226	VSH Super threaded T-piece (compression x male thread x compression)	
Article no.	**dimension**	**conversion factor**
0867977	15 x 15 x R½"	1,47

S1227	VSH Super threaded T-piece (compression x male thread x female thread)	
Article no.	**dimension**	**conversion factor**
0871805	15 x G½" x R½"	1,51

S1230	VSH Super crossing (4 x compression)	
Article no.	**dimension**	**conversion factor**
0866008	15	1,99
0866030	22	3,42

S1231	VSH Super reduced crossing (4 x compression)	
Article no.	**dimension**	**conversion factor**
0866019	22 x 15 x 15 x 15	2,35
0866021	22 x 15 x 22 x 15	2,73

S1235	VSH Super corner T-piece (3 x compression)	
Article no.	**dimension**	**conversion factor**
0871332	15	1,65
0871354	22	2,83

S1236	VSH Super reduced corner T-piece (3 x compression)	
Article no.	**dimension**	**conversion factor**
0871365	22 x 15 x 15	2,22
0871343	22 x 15 x 22	2,48

S1237	VSH Super offset T-piece (3 x compression)	
Article no.	**dimension**	**conversion factor**
0867955	15	1,99
0867999	22	3,33

S1240	VSH Super wall plate 90° (compression x female thread)	
Article no.	**dimension**	**conversion factor**
0865238	12 x G½"	1,53
0865007	15 x G½"	1,65
0881925	15 x Rp½" DZR	1,59
0865018	22 x G¾"	2,66

S1241		
Article no.	**dimension**	**conversion factor**
0874500	15 x G½"	1,02
0874522	22 x G¾"	1,65

S1242		
Article no.	**dimension**	**conversion factor**
0874533	15 x G½"	1,10
0874544	22 x G¾"	1,98

S1245	VSH Super tank connector with union (compression x counter nut)	
Article no.	**dimension**	**conversion factor**
0874566	15	1,32
0874577	22	2,01

S1250	VSH Super straight coupling with air vent (2 x compression)	
Article no.	**dimension**	**conversion factor**
0860112	15	1,30
0860123	22	1,82

S1251	VSH Super angle adapter 90° with air vent (2 x compression)	
Article no.	**dimension**	**conversion factor**
0863907	15	1,19
0863951	22	1,99

S1255	VSH Super straight coupling with drain (2 x compression)	
Article no.	**dimension**	**conversion factor**
0860816	15	1,47
0860827	22	2,20

S1256	VSH Super angle adapter 90° with drain (2 x compression)	
Article no.	**dimension**	**conversion factor**
0863126	15	1,48
0863137	22	2,61

S1257	VSH Super angle adapter 90° with drain (compression x male thread)	
Article no.	**dimension**	**conversion factor**
0864820	15 x R½"	1,56

S1290	VSH Super angle adapter 90° with needle (2 x compression)	
Article no.	**dimension**	**conversion factor**
2614953	15	1,60

K1043	VSH Super coupling with nut (compression x femal thread)	
Article no.	**dimension**	**conversion factor**
0604340	G¾" x 15	1,30
0604362	G1" x 22	2,24

K2588	VSH Super connector (compression x female thread)	
Article no.	**dimension**	**conversion factor**
0405680	15 x G¾"	1,28

S1268	VSH Super one piece reducer	
Article no.	**dimension**	**conversion factor**
0885071	10 x 8 DZR	0,06
0878108	12 x 10	0,08
0885093	12 x 10 DZR	0,08
0885082	12 x 8 DZR	0,13
0878119	15 x 10	0,20
0885115	15 x 10 DZR	0,20
0878121	15 x 12	0,15
0885126	15 x 12 DZR	0,15
0886787	15 x 13 DZR	0,11
0885104	15 x 8 DZR	0,20
0885247	18 x 10 DZR	0,31
0885137	18 x 12 DZR	0,26
0885148	18 x 15 DZR	0,19
0885159	18 x 16 DZR	0,15
0878130	22 x 12	0,43
0885161	22 x 12 DZR	0,43
0878141	22 x 15	0,38
0885170	22 x 15 DZR	0,38
0885181	22 x 18 DZR	0,31
0885931	22 x 20 DZR	0,15
0878152	28 x 15	0,74
0886017	28 x 15 DZR	0,73
0878163	28 x 22	0,49
0885192	28 x 22 DZR	0,49
0878174	35 x 22	1,14
0887139	35 x 22 DZR	1,14
0878185	35 x 28	0,83
0886028	35 x 28 DZR	0,86
0878196	42 x 22	2,58
0886039	42 x 22 DZR	2,58
0878207	42 x 28	2,43
0886041	42 x 28 DZR	2,43
0878218	42 x 35	1,52
0886050	42 x 35 DZR	1,52
0886061	42 x 36 DZR	1,36
0878229	54 x 35	4,28
0886094	54 x 35 DZR	4,28
0878231	54 x 42	3,20
0886105	54 x 42 DZR	3,20

S1271	VSH Super closing plate	
Article no.	**dimension**	**conversion factor**
0882123	10 DZR	0,06
0882013	12 DZR	0,07
0866932	15	0,11
0882024	15 DZR	0,11
0882035	18 DZR	0,16
0866954	22	0,24
0882046	22 DZR	0,24
0882057	28 DZR	0,38
0882068	35 DZR	0,55
0882191	42 DZR	0,85

S1295	VSH Super closing plate with air release	
Article no.	**dimension**	**conversion factor**
0879989	15	0,27

S1280	VSH Super compression nut	
Article no.	**dimension**	**conversion factor**
0869891	6	0,07
0870001	8	0,07
0870166	10	0,13
0870485	12	0,16
0870034	15	0,28
0870144	16	0,35
0870045	18	0,34
0870155	20	0,43
0870056	22	0,47
0870067	28	0,70
0870078	35	0,97
0870089	42	1,44
0870133	54	2,41

S1281	VSH Super compression ring	
Article no.	**dimension**	**conversion factor**
0877305	6 DZR	0,01
0881111	8 DZR	0,01
0878009	10	0,02
0881122	10 DZR	0,02
0878011	12	0,03
0881133	12 DZR	0,02
0878020	15	0,03
0881144	15 DZR	0,03
0881001	16 DZR	0,05
0878031	18	0,05
0881155	18 DZR	0,05
0877371	20 DZR	0,06
0878042	22	0,06
0881166	22 DZR	0,06
0878053	28	0,09
0881177	28 DZR	0,08
0878064	35	0,13
0881188	35 DZR	0,11
0878075	42	0,17
0877415	42 DZR	0,16
0878086	54	0,24
0877426	54 DZR	0,22

G1200	VSH Super Gas Belgium straight coupling (2 x compression)	
Article no.	**dimension**	**conversion factor**
0879208	12	0,86
0879219	15	1,22
0865997	18	1,69
0879221	22	2,40
0879230	28	3,70

G1201	VSH Super Gas Belgium reduced coupling (2 x compression)	
Article no.	**dimension**	**conversion factor**
0879263	22 x 15	1,97
0879274	28 x 22	3,23

G1202		
Article no.	**dimension**	**conversion factor**
0879538	12 x R⅜"	0,64
0879351	12 x R½"	0,90
0879252	15 x R⅜"	0,89
0879362	15 x R½"	0,98
0879065	15 x R¾"	1,14
0876810	18 x R½"	1,20
0879098	18 x R¾"	1,43
0879373	22 x R¾"	1,70
0879384	22 x R1"	2,28
0879395	28 x R1"	2,70

G1204		
Article no.	**dimension**	**conversion factor**
0879307	12 x Rp½"	0,97
0879318	15 x Rp½"	1,17
0879109	15 x Rp¾"	1,36
0876821	18 x Rp½"	1,30
0879549	18 x Rp¾"	1,51
0879329	22 x Rp¾"	1,82
0879331	22 x Rp1"	2,40
0879340	28 x Rp1"	2,90

G1210	VSH Super Gas Belgium angle adapter 90° (2 x compression)	
Article no.	**dimension**	**conversion factor**
0879406	12	0,93
0879417	15	1,28
0876667	18	1,78
0879428	22	2,49
0879439	28	3,88

G1211	VSH Super Gas Belgium reduced angle adapter 90° (2 x compression)	
Article no.	**dimension**	**conversion factor**
0879615	22 x 15	1,85
0879626	28 x 22	3,18

G1212		
Article no.	**dimension**	**conversion factor**
0879001	12 x R⅜"	0,70
0879516	15 x R½"	1,11
0876678	18 x R½"	1,34
0879111	18 x R¾"	1,55
0879527	22 x R¾"	1,94
0879285	28 x R1"	3,07

G1214		
Article no.	**dimension**	**conversion factor**
0879142	12 x Rp½"	1,03
0879560	15 x Rp½"	1,18
0876656	18 x Rp½"	1,51
0879571	22 x Rp¾"	2,05
0879582	22 x Rp1"	2,42
0879043	28 x Rp1"	3,01

G1220	VSH Super Gas Belgium T-piece (3 x compression)	
Article no.	**dimension**	**conversion factor**
0879648	12	1,34
0879659	15	1,88
0876689	18	2,53
0879661	22	3,55
0879670	28	5,47

G1221	VSH Super Gas Belgium reduced T-piece (3 x compression)	
Article no.	**dimension**	**conversion factor**
0879681	22 x 15 x 22	2,95
0879725	28 x 15 x 28	4,16

G1223	VSH Super Gas Belgium threaded T-piece (2 x compression x female thread)	
Article no.	**dimension**	**conversion factor**
0879813	15 x Rp½" x 15	1,78
0879824	22 x Rp½" x 22	2,80

G1280	VSH Super Gas Belgium compression nut	
Article no.	**dimension**	**conversion factor**
0879835	12	0,30
0879846	15	0,38
0879857	18	0,53
0879868	22	0,77
0879879	28	1,23

G1281	VSH Super Gas Belgium compression ring	
Article no.	**dimension**	**conversion factor**
0879450	12	0,02
0879461	15	0,06
0879472	18	0,05
0879483	22	0,08
0879494	28	0,11

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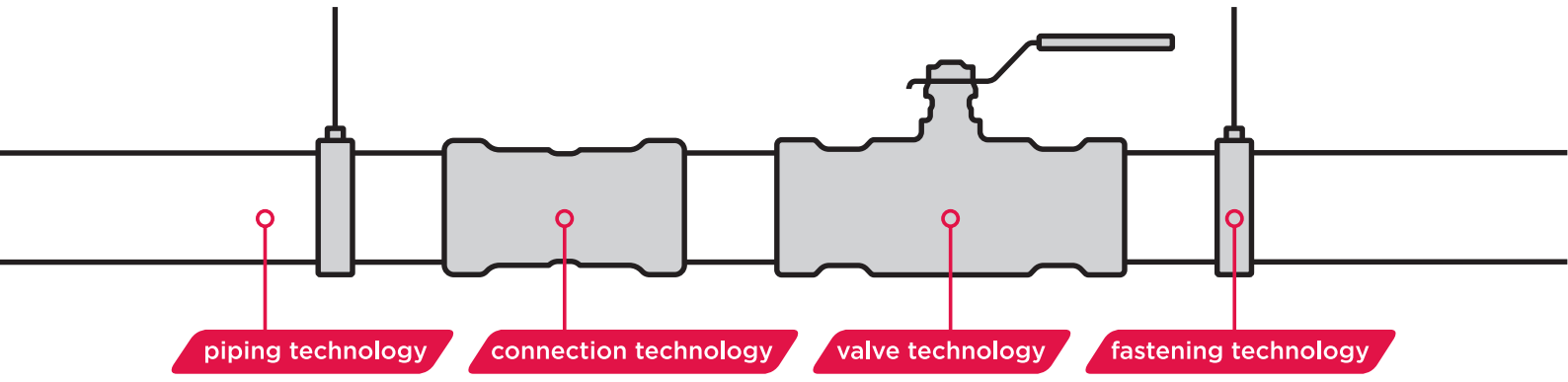

Aalberts integrated piping systems B.V.
Oude Amersfoortseweg 99 / 1212 AA Hilversum
P.O. Box 498 / 1200 AL Hilversum
The Netherlands
www.aalberts-ips.eu