LO2 - 60/6

SILERE

Acoustically insulated pipes and fittings for waste systems

CATALOGUE

valsir®

COMPANY
WITH QUALITY SYSTEM
CERTIFIED BY DNV
=ISO 9001/2000=

DET NORSKE VERITAS

QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificato No. / Certificate No. ***CERT-00192-94-AQ-MIL-SINCERT***

Si attesta che / This certifies that

IL SISTEMA DI GESTIONE PER LA QUALITÀ DI / THE QUALITY MANAGEMENT SYSTEM OF

VALSIR S.p.A.

Località Merlaro, 2 - 25078 Vestone (BS) - Italy
Località Piani di Mura – 25070 Casto (BS) – Italy
Via Comunale, 125 – Frazione Carpeneda – 25079 Vobarno (BS) - Italy
Via della Ferriera, 1 – 25079 Vobarno (BS) - Italy

È CONFORME AI REQUISITI DELLA NORMA PER I SISTEMI DI GESTIONE PER LA QUALITÀ
CONFORMS TO THE QUALITY MANAGEMENT SYSTEMS STANDARD

UNI EN ISO 9001:2000 (ISO 9001:2000)

Questa certificazione è valida per il seguente campo applicativo:
This certificate is valid for the following products or services:
(Ulteriori chiarimenti riguardanti lo scopo e l'applicabilità dei requisiti della normativa si possono ottenere consultando l'organizzazione certificata)
(Further clarifications regarding the scope and the applicability of the requirements of the standard(s) may be obtained by consulting the certified organisation)

Progettazione e produzione di cassette di risciacquamento per incasso ed esterne
Produzione di tubi e raccordi per scarico in polipropilene copolimero, polipropilene omopolimero autoestinguente, polipropilene fonoassorbente, polietilene ad alta densità.
Produzione di tubi per impianti sanitari e di riscaldamento in multistrato e in polietilene ad alta densità reticolato e con barriera di ossigeno (E.V.O.H). Progettazione e produzione di raccordi in polifenilsulfone (PPSU). Produzione e commercializzazione di sifoni ed accessori.

Production of pipes and fittings for waste systems, made of copolymer polypropylene, self-extinguishing homopolymer polypropylene, acoustically insulated polypropylene, high density polyethylene. Production of multi-layer and high density crosslinked polyethylene pipes with oxygen barrier (E.V.O.H) for sanitary and heating systems. Design and production of polyphenyl sulfone (PPSU) fittingsProduction and trade of traps and accessories.

Luogo e data
Place and date
Agrate Brianza, (MI) 2004-04-14

Data Prima Emissione:
First Issue Date:
1994-02-07

per l'Organismo di Certificazione
for the Accredited Unit
Det Norske Veritas Italia S.r.l.

Lead Auditor: GIUSEPPE SPALLA

Settore EA: 14 – 29a - 17

SINCERT

SOGGETTO ACCREDITATO DA ENTI DI CERTIFICAZIONE

SQG Registrazione N. 003A
SGA Registrazione N. 003C
PRD Registrazione N. 003B
SCR Registrazione N. 004F
ISSI Registrazione N. 002G

Membro degli Accordi di Mutuo Riconoscimento EA e IAF
Signatory of EA and IAF Mutual Recognition Agreements

Leonardo Omodeo Zorini
Management Representative

La validità del presente certificato è subordinata a sorveglianza periodica (ogni 6, 9 o 12 mesi) e al riesame completo del sistema con periodicità triennale
The validity of this certificate is subject to periodical audits (every 6, 9 or 12 months) and the complete re-assessment of the system every three years
Le aziende in possesso di un certificato valido sono presenti nella banca dati sul sito www.dnv.it e sul sito Sincert (www.sincert.it) - All the companies with a valid certificate are online at the following addresses: www.dnv.it and www.sincert.it

COMPANY ON A GLOBAL SCALE

When examining the global market, the verb "to stand out" takes on a very particular meaning. **VALSIR,** in a global industrial market, has developed the capacity to manufacture products of a high technical and aesthetic quality, to introduce the safety and comfort of a modern hydrosanitary installation into civil and industrial constructions. VALSIR also stands out due to its particularly dynamic Marketing Management backed by diversified production centres and numerous representatives both at home and abroad thus guaranteeing rapid shipments whenever and wherever requested. **VALSIR**'s winning card lies in its vast range of pipes and fittings in HD-PE and PPS, its modern flush cisterns, its PEXAL line for hydrosanitary and heating systems, and its recently launched SILERE range of acoustically insulated pipes and fittings; **VALSIR**'s present and future strategic objective is that of offering the Customer elevated product quality in order to "stand out" and remain consistently competitive in the global market.

valsir®

Among the first in Italy and Europe
to be certified
ISO 9001:2000 (Vision 2000)
by DNV Institute

CERTIFIED QUALITY SYSTEM
UNI EN ISO 9001/2000
SINCERT
DNV

NOISE IN BUILDINGS

1. What is noise?

Noise is a sensation transmitted from the ear to the brain and is caused by pressure waves that travel through the air to reach the eardrum, the ear's "sensor".

Noise comprises several, pure sounds. It has a frequency and amplitude. The amplitude measures noise intensity, whereas frequency is an index that differentiates low tones from high tones.

2. How do you measure noise?

A sound level meter is used to measure noise intensity; this can filter the noise and then record the intensity at its various frequencies. Noise intensity is expressed however using just one value, "weighing" the various intensities against the frequencies; the sensation of disturbance caused by noise is expressed in **decibels**.

3. What is a decibel?

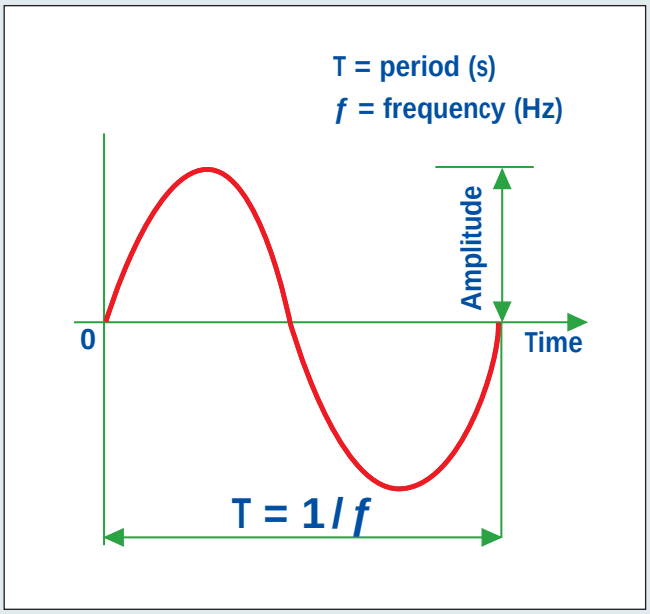
A decibel is a unit calculated from a logarithm of the ratio between the measured sound pressure and reference sound pressure multiplied by 10. The human ear, via the eardrum, is sensitive to pressure, but not in a linear way; doubling a pressure value does not mean that the sensation increases two-fold. For example 40 dB is not half of 80 dB.

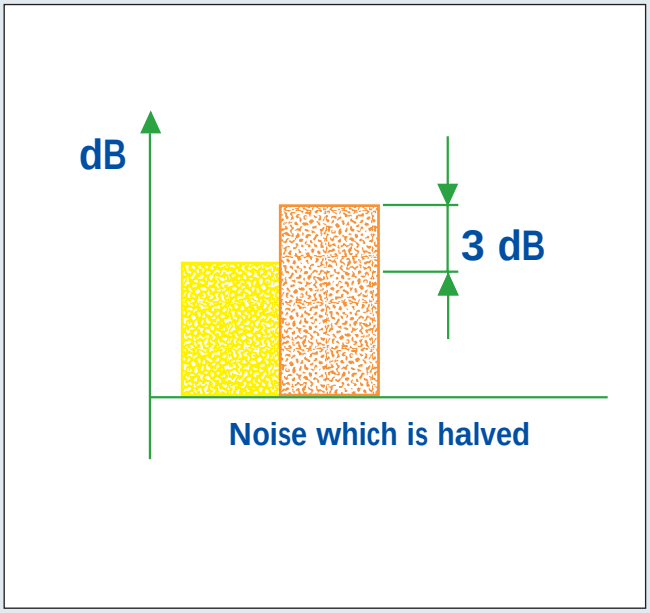
Instead the 3 dB rule is applied i.e. "doubling an acoustic power value corresponds to an increase in sound intensity of 3 dB; vice versa, an acoustic power value that is halved corresponds to a decrease in sound intensity of 3 dB.

So 40 dB + 40 dB = 43 dB

And 80 dB - 40dB = 77dB

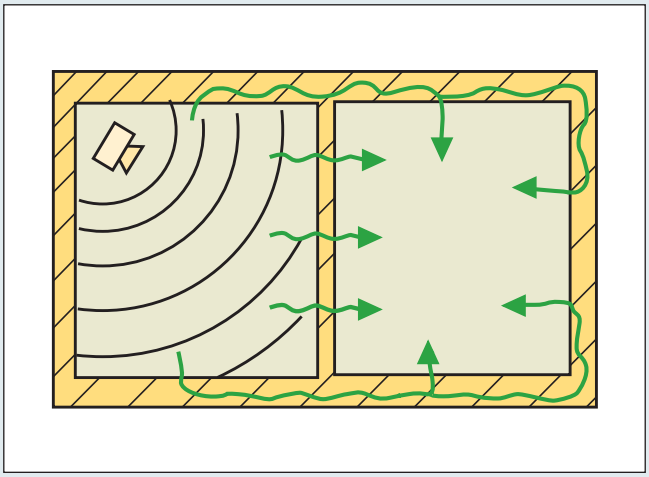
$$dB = 10 \log \frac{P}{Pa}$$

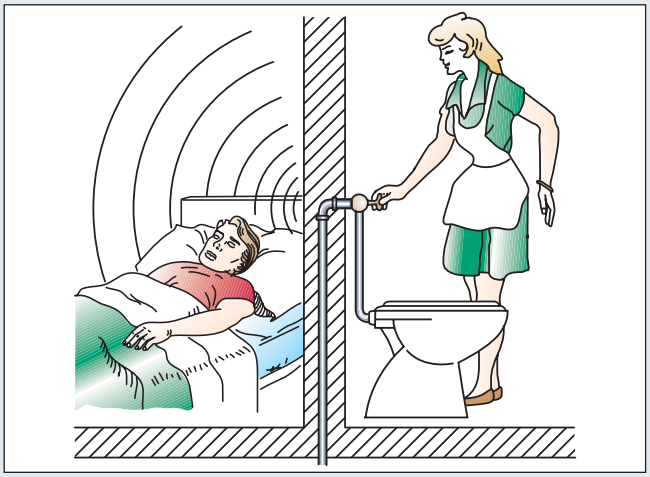




4. How does noise travel?

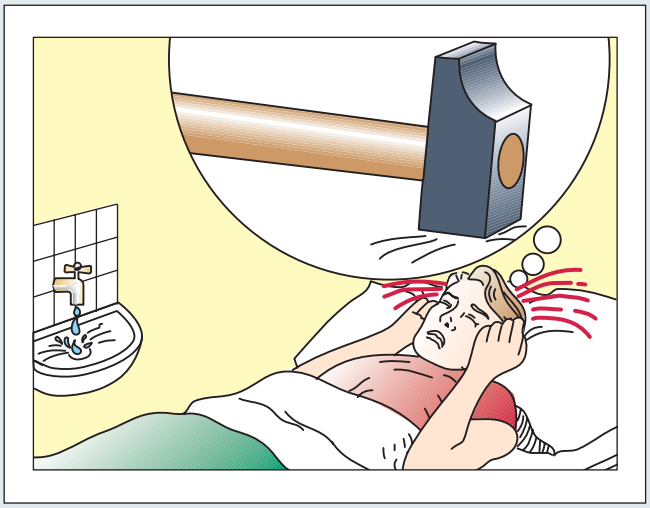
Noise does not propagate in space, but only in the presence of matter, irrespective of whether it is solid, liquid or gaseous. Noise travels at different speeds depending on the matter the pressure wave propagates through.



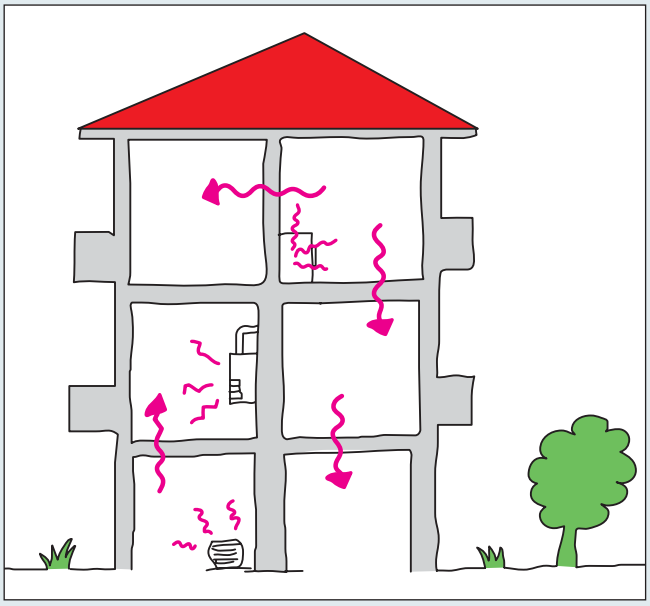


In houses we can hear all sorts of different noises:
- outside noise from traffic, planes, etc.
- noise from neighbours (people walking, children playing, radio and TV, etc.)
noise from fixtures and fittings (air conditioners, pumps, toilets flushing, etc.).

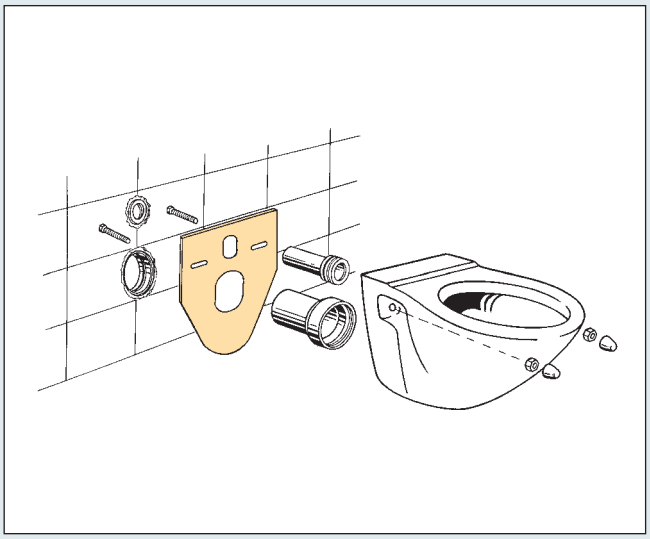
Material	Speed of sound (m/s)
Air	344
Lead	1220
Water	1410
Bricks	3000
Wood	3400
Glass	4100
Steel	5200

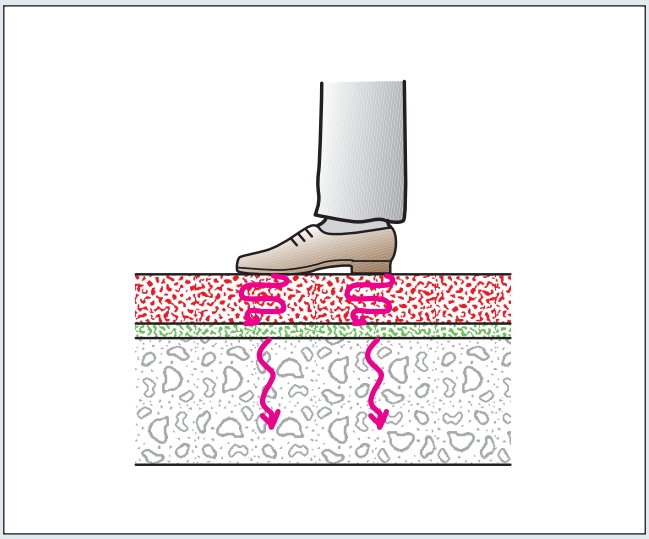


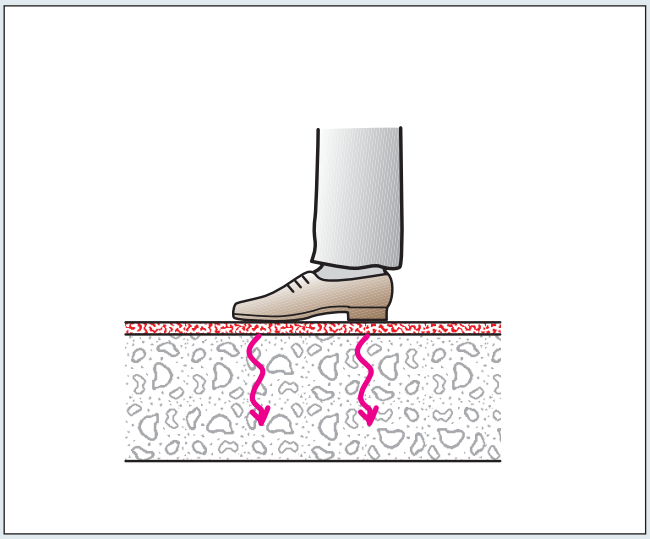
Noise travels in all sorts of ways and via all sorts of paths. The vibrations generated in an environment reach the adjacent environment as airborne noise, but also reach nearby buildings. Airborne noise is turned into vibrations in buildings and also reaches environments close by. One way to lower noise transmission is to put elastic material in construction blocks and eliminate any rigid contact between the floor and surrounding walls. Another way is to soundproof walls and ceiling with material that intercepts airborne noise so it is not transmitted to the building.



The vibrations generated by plumbing, and the water flowing inside, reach walls via the pipes and supports. **To limit this noise, the continuity of pipes must therefore be broken up with pre-insulated drainpipes, that is pipes constructed with sound absorption materials and assembled with special supports and fittings to reduce noise.**







AN UNBELIEVABLY SILENT SYSTEM

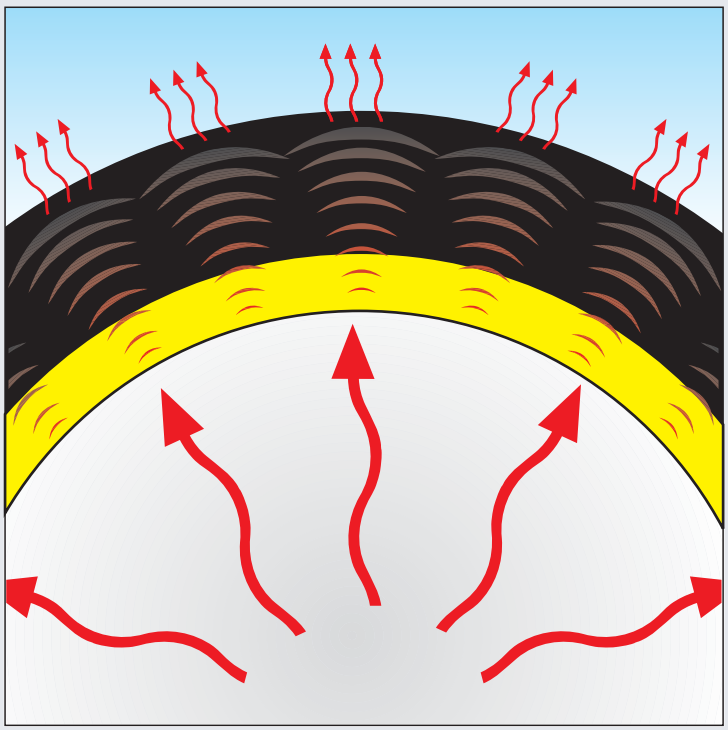
Due to the characteristics and high insulation value of the **SILERE** system, the transmission of noise through pipes is minimised considerably, especially in the proximity of bends or branches.

The optimum insulating qualities are a result of the molecular structure and specific weight of the material used in the production.

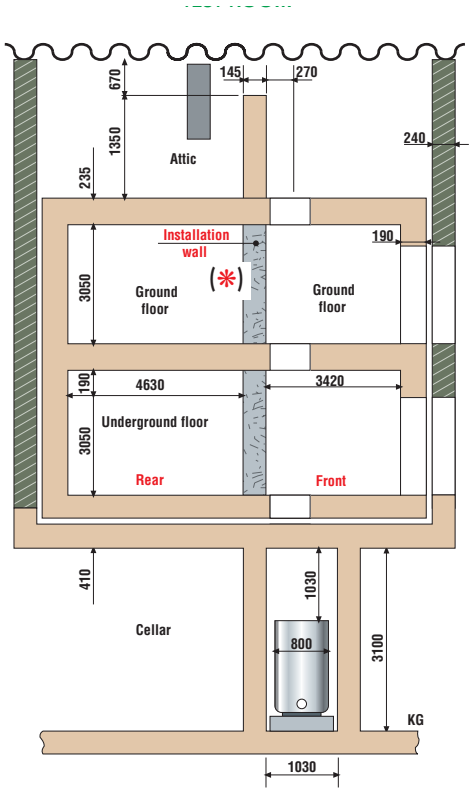
The special attention paid during production guarantees a perfectly smooth surface which can be used even for open plumbing systems in buildings.

Furthermore, the complete range of accessories and special attachments allows **SILERE** to be connected to other piping systems made of different materials.

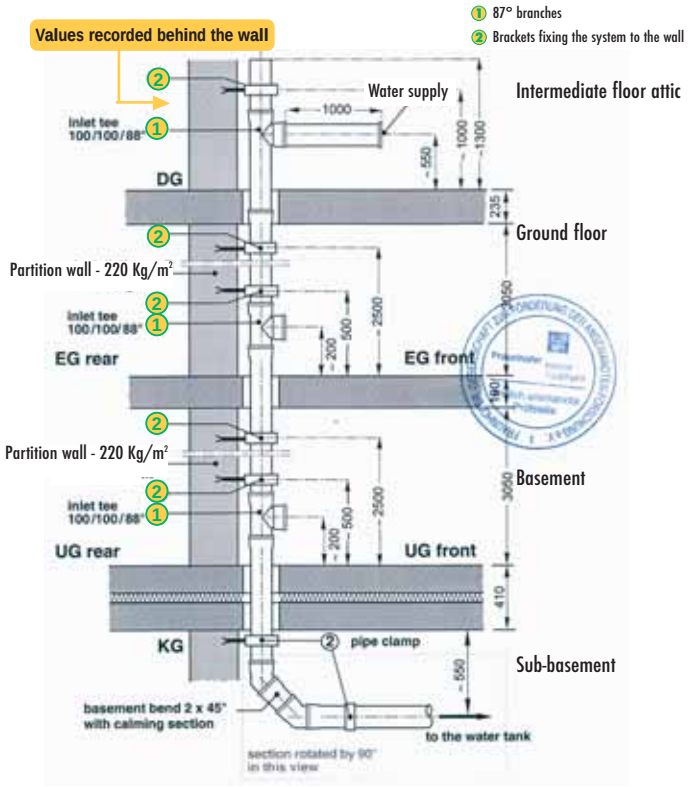
SILERE represents the ideal solution which your customers having been seeking and which today you are in the position to offer.



TEST ROOM



DESIGN OF PLANT

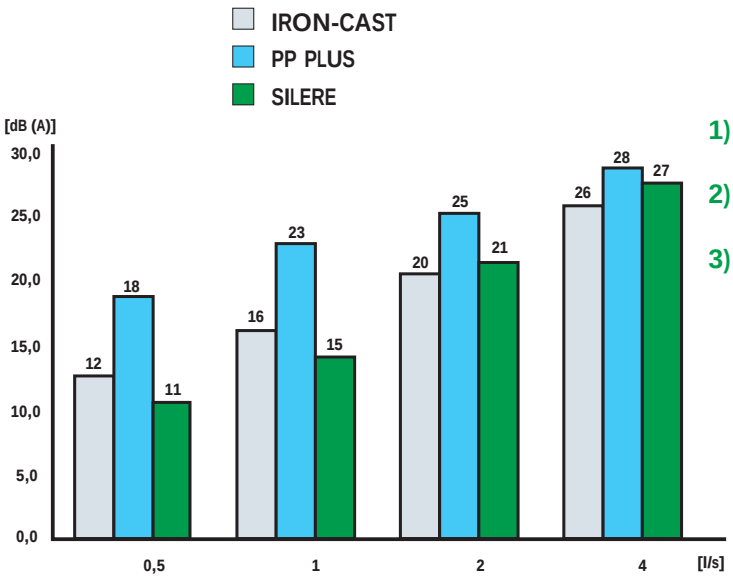


TEST ROOM AND DESIGN OF PLANT FOR NOISE LEVEL TESTING IN QUALIFIED GERMAN TECHNICAL INSTITUTES

1 87° branches
2 Brackets fixing the system to the wall

8

RESULTS AND COMPARISONS WITH CAST-IRON AND PP PIPING



PIPE SAMPLES

1)	VALSIR'S SILERE	DN 100	S_1=5,6	m=2.6 Kg/m
2)	IRON-CAST	DN 100	S_1=3,5	m=9 Kg/m
3)	PP PLUS	DN 100	S_1=2,7	m=0.95 Kg/m

Source of the drainage: WC

The values were measured on the ground floor (*) behind the installation wall.

Measurement tools: B & K phonometer with octave bands analyser.

ACOUSTIC INSULATION FOR WASTE SYSTEMS

VALSIR, technologically advanced in the production of sanitary systems, offers a complete range of pipes and fittings, manufactured with a special acoustically insulated patented material which guarantees maximum silence in every plumbing installation. Silere can be used for every type of installation but thanks to its soundproofing properties it is particularly suitable for buildings requiring minimum noise levels.

SILERE

The Silere waste and soil drainage system has been tested at the Fraunhofer-Institut für Bauphysik in Stuttgart (Test report n° P-BA 113/2004e del 11/05/2004). With a rate of flow of 4 l/s a noise level of 27 dB(A) was measured behind the installation wall on the ground floor. This value is well below the noise limit of 35 dB(A).

DK VD 2.14/15034

AU W Spec 05 Lic W600

A VAKU 18142 GEPRÜFT

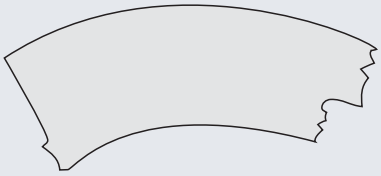
S SITAC 1422

N Produktsertifikat Nr. 0390 - 0391 BYGGFORSK Norges byggforskningsinstitutt

TECHNICAL PROPERTIES

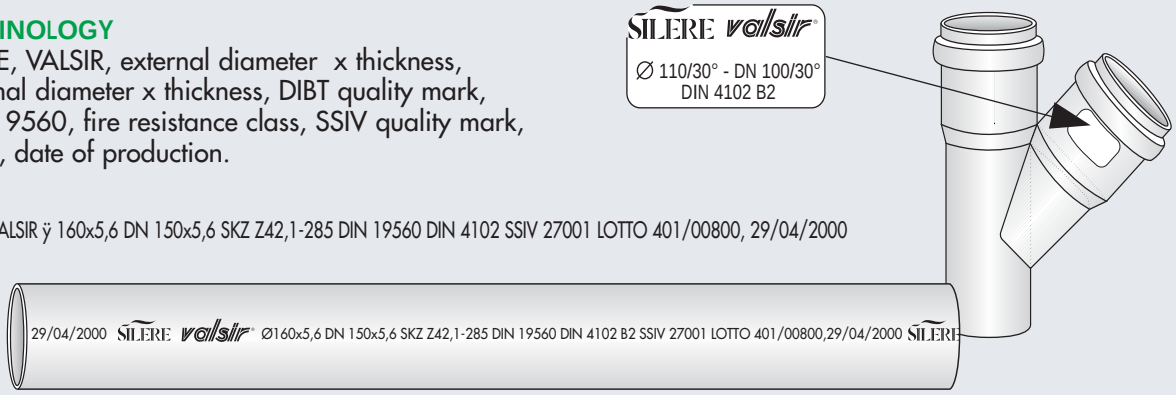
MATERIAL
Polypropylene with added minerals offers high resistance to water at elevated temperatures

COLOUR
Light grey RAL 7035



TERMINOLOGY
SILERE, VALSIR, external diameter x thickness, nominal diameter x thickness, DIBT quality mark, DIN 19560, fire resistance class, SSIV quality mark, batch, date of production.

Eg:
SILERE VALSIR ÿ 160x5,6 DN 150x5,6 SKZ Z42,1-285 DIN 19560 DIN 4102 SSIV 27001 LOTTO 401/00800, 29/04/2000



CHEMICAL RESISTANCE
The entire SILERE system (pipes, fittings, sealing components) is capable of holding water with pH values between 2 and 12 and maximum temperatures of 95° C.

PHYSICAL PROPERTIES:

Specific weight:	1,60 g/ cm^3
Ultimate elongation	>2%
Tensile strength	>14 N/mm^2
Modulus of elasticity	2800 N/mm^2
Linear coefficient of expansion	0.08 mm/mK
Flame resistance according to DIN 4102	Class B2

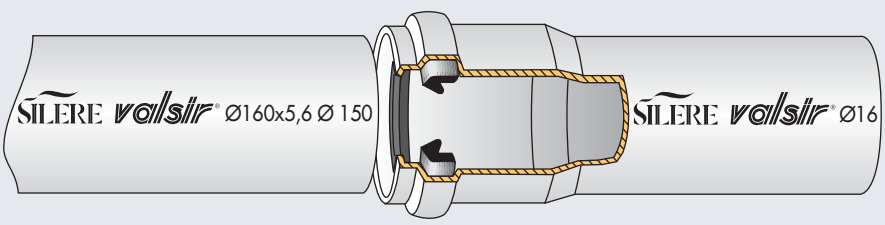
TESTING
VALSIR's SILERE system is under warranty and is subject to continuous quality control.

SILERE OFFERS EASY INSTALLATION

TRANSPORT
SILERE pipes and fittings offer easy transport and handling.

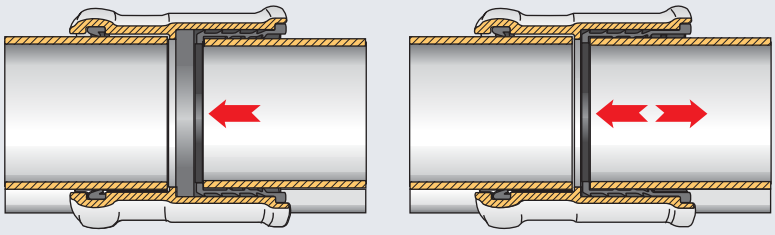
FIXING SYSTEM
SILERE pipes can be anchored to the wall with normal clipping; special clamping and anchoring systems are not required.

PRE-INSERTED SEAL
The sockets on the SILERE pipes and fittings are fitted with a single-lipped seal inserted in a special housing and pre-fitted in the factory.
Such a system facilitates jointing and guarantees the seal.



SOCKETED FITTINGS
The use of the socket-seal system allows entire installations to be carried out rapidly and safely.

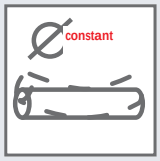
BI-JOINT SLEEVE
When joining normal socketed pipes, in order to compensate thermal expansion, the pipe must be inserted fully and then extracted by a depth of approximately 10mm. With a double-socketed sleeve this operation is no longer necessary in that the specially formed gasket seated in the sleeve compensates for thermal expansion preventing loss of time and allowing greater seal.



INSTALLATION ON SITE
SILERE pipes are available in various lengths thus reducing waste to a minimum.

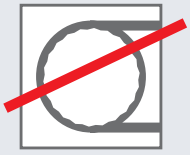
SILERE IS PARTICULARLY RESISTANT TO

MECHANICAL STRESS
The SILERE system is made up of thick-walled pipes and fittings and is consequently very robust. When tested, normal waste systems currently on the market show, under equal loads, a higher tendency toward deformation than SILERE.

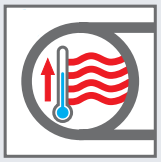


CORROSION
SILERE pipes and fittings resist corrosion by acids, oxidizing agents and inorganic reducers and will last therefore for at least 10 years.

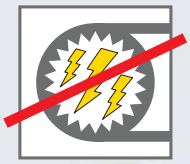
SCALING
The internal and external walls of the SILERE pipe are very smooth and consequently, all waste installations that have been carried out with SILERE have low performance loss and there is less tendency toward scale buildup.



HEAT
SILERE is resistant to hot water in conformity with DIN 1986 (from 0° to 95°C).



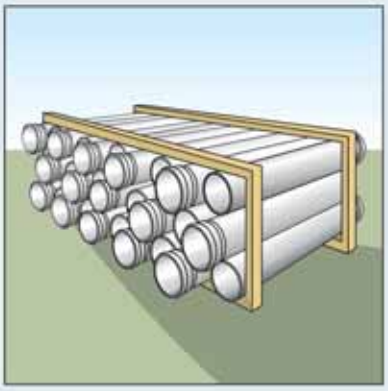
AGENTS
VALSIR's SILERE system can hold waste water with pH values from 2 to 12.



INDICATIONS ON USE

TRANSPORT AND STOCKING OF PIPES

If SILERE pipes have been removed from their original frames then they should not be transported in a disorderly manner, mixed up with other materials or undergo violent knocks. SILERE pipes must be stored in an orderly manner or at any rate in such a way that they do not become deformed. If they are to be stacked, then total height should not exceed 1.5 m.



PIPE CUTTING

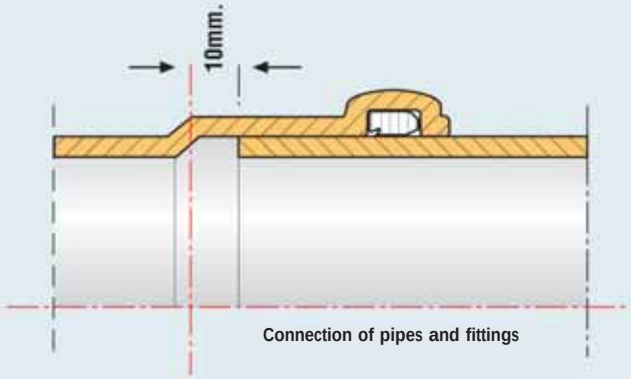
The pipes can be cut with normal pipe cutters (photo A) or simple saws.
The pipe must be cut perpendicularly to the axis after which, in order to facilitate jointing with sockets, pipes or fittings, the edges should be chamfered using a suitable bevelling machine (photo B).

JOINTING OF PIPE TO SOCKET

In joining pipes, carry out the following operations:

1. Clean the socket and gasket, check the condition of the gasket.
2. Clean the ends of both the pipe and fitting to be connected.
3. Apply VALSIR lubricant to the ends of the pipe and gasket (do not use grease or other lubricants).
4. Insert the pipe completely into the socket.
5. Withdraw about 10 mm of the pipe (such a space will compensate for expansions); in the case of a fitting, this operation is not necessary.

NB: For upright installations, the pipe must be anchored to the wall so that the 10 mm of extracted pipe do not fall back into its previous position, thereby depriving the system of the space necessary to allow for expansion.



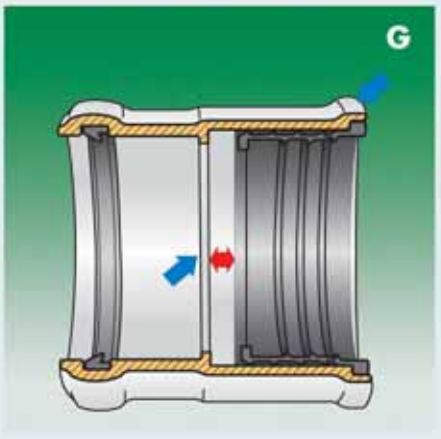
Connection of pipes and fittings

COUPLING CONNECTION BETWEEN PIPES WITHOUT SOCKETS

In joining pipes without sockets, use the special sleeve (double-socketed code 229...). Such a system also prevents pipe wastage.

Jointing should be carried out according to the following operations:

1. Cleaning and bevelling of pipe end.
2. Inspection of sleeve and cleaning of ends if necessary.
3. Mounting of gasket onto pipe (photo C).
4. Application of VALSIR lubricant onto the inside of the sleeve (never use oils or grease) (photo D).
5. Application of a small quantity of VALSIR lubricant on the mouth of the connecting gasket (photo E).
6. Insertion of sleeve onto the gasket until reaching the ledge and inspection that the gasket itself has been inserted properly (photo F-G-H)
7. Application of VALSIR lubricant onto lip seal fitted on the opposite side.
8. Complete insertion of pipe or fitting.



ANCHORAGE OF PIPING

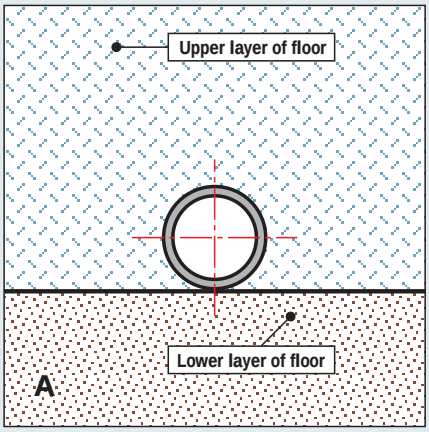
The pipes must be sustained with vibration-damping rubber-clad steel clips (cod. 251.....)

CLIPS FOR CAPS

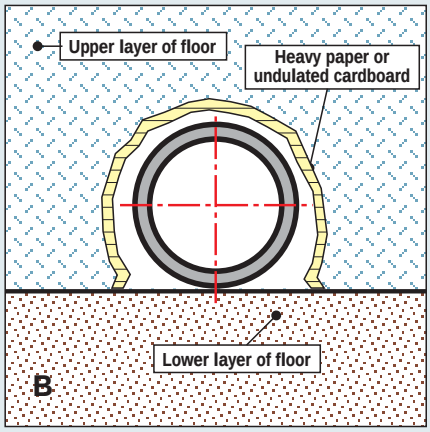
VALSIR supplies special clips (code 250...) which ensure that the cap remains attached to the pipe when under pressure from discharged water.

LAYING IN CONCRETE CASTING

For small distribution systems to bathrooms and kitchens, the piping can be layed directly into the concrete. (Fig. A).
As regards piping which is to hold liquids at high temperatures, it is better to cover them with undulated cardboard in such a way as to allow for expansion (fig. B).



Piping buried in cement (no allowance for expansion)

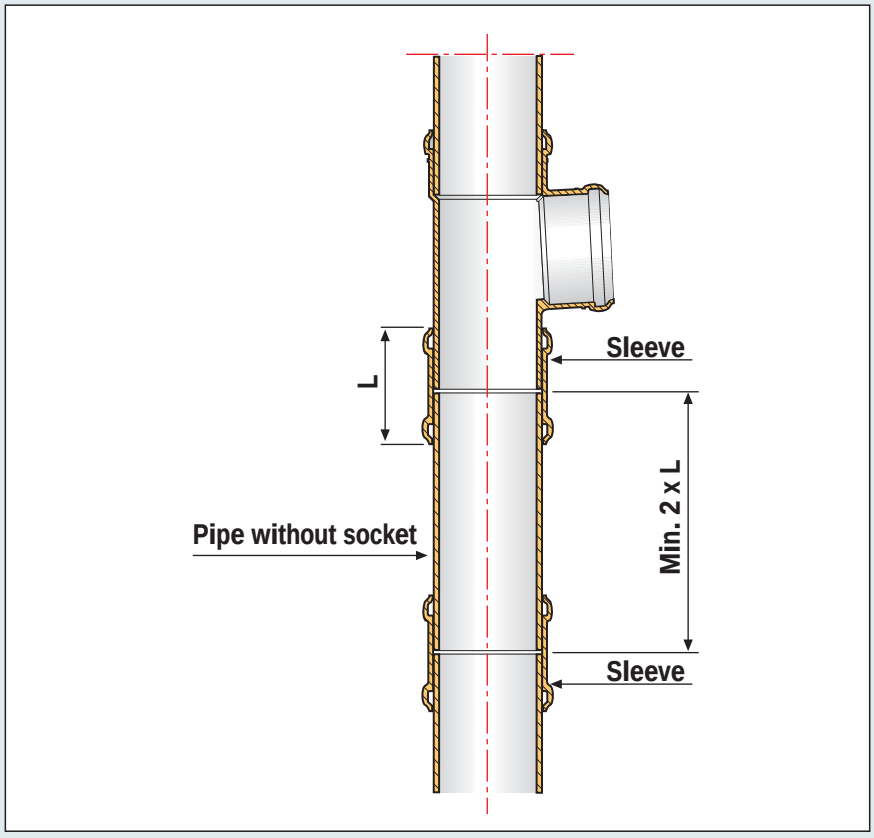


Piping installed with covering in heavy paper or undulated cardboard (allowance for expansion).

MODIFICATION OF EXISTING WASTE PIPES

It is possible to connect a socketed fitting to an existing canalisation by using two sliding sleeves and one piece of pipe and by carrying out the following operations:

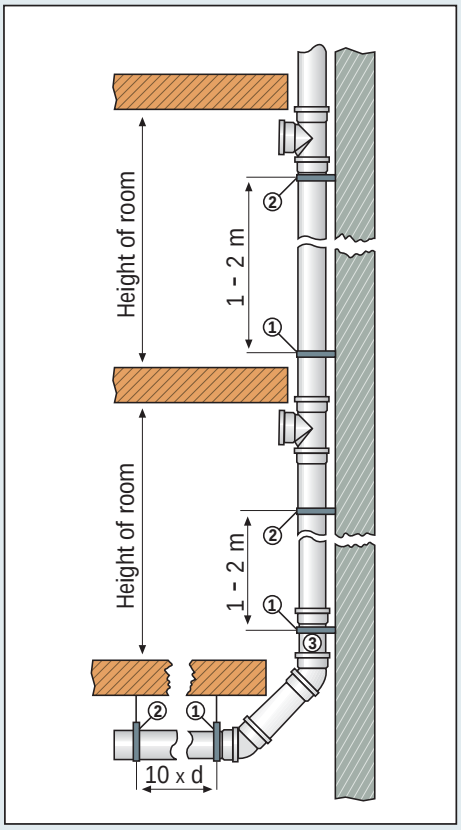
1. Cut a piece of waste pipe equal to the length of the fittings and three times greater than the external diameter of the pipe
2. Clean and bevel the edges of the cut pipe
3. Insert the two sliding sleeves onto the waste pipe and mount the fitting to be inserted
4. Cut a new piece of pipe and fit it into the remaining space
5. Position the sliding sleeves equally over the areas to be connected.



FASTENING OF PIPES

Support instructions for vertical and horizontal installations:

1. When anchoring the piping, the distance between the clips should be 10 times greater than the pipe diameter. Vertical piping on the other hand, should be fixed at distances of 1 to 2 m depending on the diameter of the pipe to be installed.
2. Fasten the clips to the walls of the building.
3. Where vertical pipes are to pass through various floors then it is better to mount a guide clip near the socket and another at the distance recommended above. In this case, the fixing to floors constitutes in itself a static anchorage.
4. If the passage through other floors is to be carried out with through holes then a static connector and a guide connector must be mounted for every pipe; the first ones must be mounted under the fittings, double-socketed sleeves or on the lower end of the pipe. Slide the two sleeves over the joints and tighten them by means of static clips.



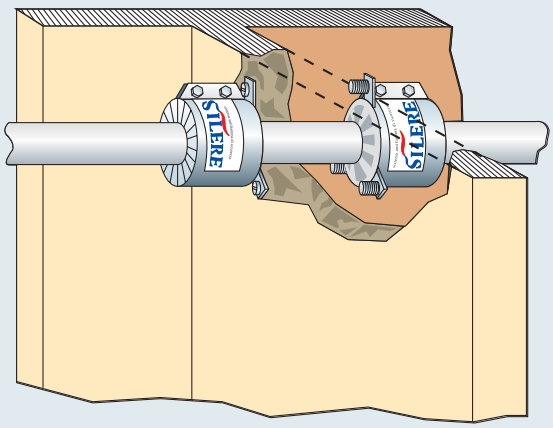
PASSAGE THROUGH FLOORS

The passage of piping through floors, ceilings, etc. must be sealed against humidity and noise with lagging or thermal and soundproof materials.

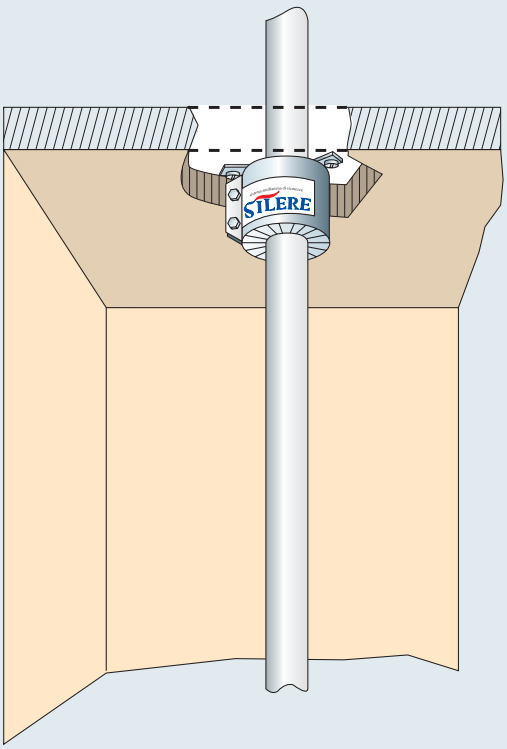
FIRE-RESISTANT PROTECTION

When installing SILERE pipes and fittings which pass through floors or walls, the fire prevention standards in force must be complied with. This is done through the use of fire-stops which over-lap the piping thereby preventing passage of flames; the inside of the fire-stops is made of a flameproof material which expands when it comes in contact with heat and in doing so, squeezes the pipe and prevents the passage of the flame.

1



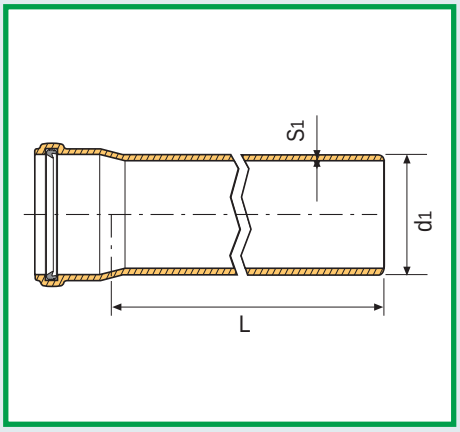
2



1 Wall-installation of fire-stops

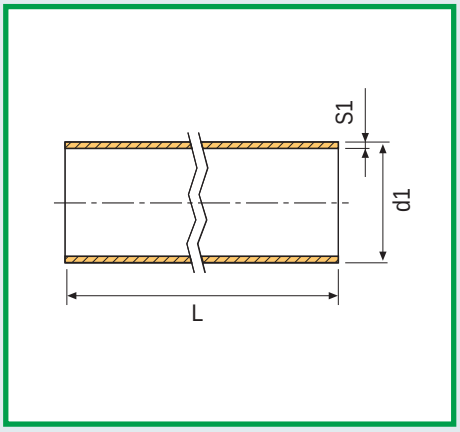
2 Ceiling-installation of fire-stops

PIPE WITH SOCKET



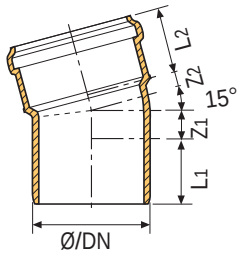
Ø / d1	DN	CODE	S1 (mm)	L (mm)	Kg / piece	Quantity
58	50	220001	4.2	150	0.25	4
58	50	220003	4.2	250	0.36	4
58	50	220005	4.2	500	0.64	4
58	50	220007	4.2	1.000	1.12	16
58	50	220009	4.2	2.000	2.32	16
58	50	220011	4.2	3.000	3.44	16
78	70	220021	4.6	150	0.40	4
78	70	220023	4.6	250	0.60	4
78	70	220025	4.6	500	1.00	4
78	70	220027	4.6	1.000	2.00	16
78	70	220029	4.6	2.000	4.10	16
78	70	220031	4.6	3.000	6.10	16
90	80	220041	4.6	150	0.43	4
90	80	220043	4.6	250	0.63	4
90	80	220045	4.6	500	1.20	4
90	80	220047	4.6	1.000	2.50	12
90	80	220049	4.6	2.000	4.90	12
90	80	220050	4.6	3.000	7.50	12
110	100	220051	5.6	150	0.80	4
110	100	220053	5.6	250	1.20	4
110	100	220055	5.6	500	1.95	4
110	100	220057	5.6	1.000	3.60	15
110	100	220059	5.6	2.000	6.90	15
110	100	220061	5.6	3.000	10.20	15
135	125	220071	5.6	150	0.96	4
135	125	220073	5.6	250	1.38	4
135	125	220075	5.6	500	2.43	4
135	125	220077	5.6	1.000	4.53	8
135	125	220079	5.6	2.000	8.73	8
135	125	220081	5.6	3.000	12.93	8
160	150	220091	5.6	150	1.20	4
160	150	220093	5.6	250	1.68	4
160	150	220095	5.6	500	2.90	4
160	150	220097	5.6	1.000	5.30	8
160	150	220099	5.6	2.000	10.12	8
160	150	220101	5.6	3.000	15.00	8

PIPE WITHOUT SOCKET



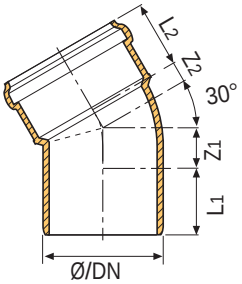
Ø / d1	DN	CODE	S1 (mm)	L (mm)	Kg / piece	Quantity (meter)
58	50	220501	4.2	5.000	5.50	180
78	70	220503	4.6	5.000	10.00	180
90	80	220505	4.6	5.000	12.00	120
110	100	220507	5.6	5.000	16.40	150
135	125	220509	5.6	5.000	21.00	120
160	150	220511	5.6	5.000	24.00	70

BEND 15°



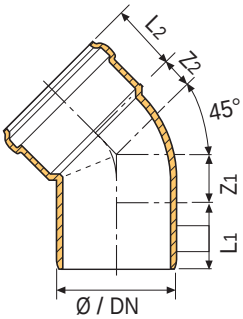
Ø	DN	CODE	Z_1 (mm)	L_1 (mm)	Z_2 (mm)	L_2 (mm)	Kg	Quantity
58	**50**	**221001**	4	70	8	55	0.17	4
78	**70**	**221011**	6	60	10	60	0.25	4
90	**80**	**221021**	8	60	80	60	0.29	4
110	**100**	**221031**	27	61	15	65	0.49	4
135	**125**	**221041**	29	64	10	70	0.65	4
160	**150**	**221051**	13	66	19	70	0.72	4

BEND 30°



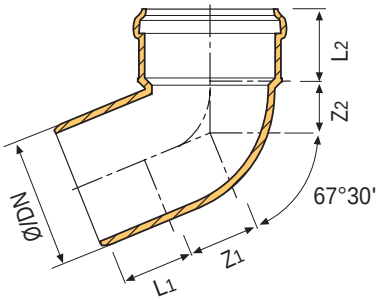
Ø	DN	CODE	Z_1 (mm)	L_1 (mm)	Z_2 (mm)	L_2 (mm)	Kg	Quantity
58	**50**	**221003**	8	70	16	55	0.17	4
78	**70**	**221013**	11	60	30	60	0.30	4
90	**80**	**221023**	14	60	14	60	0.28	4
110	**100**	**221033**	37	61	19	65	0.52	4
135	**125**	**221043**	38	64	45	70	0.73	4
160	**150**	**221053**	24	66	30	70	0.80	4

BEND 45°



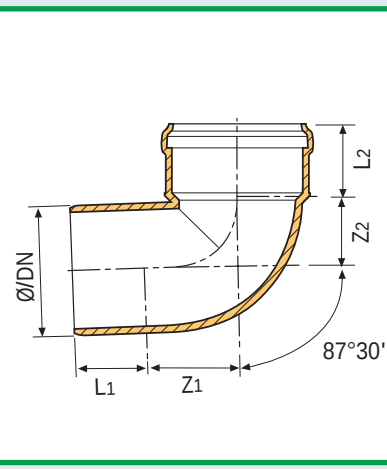
Ø	DN	CODE	Z_1 (mm)	L_1 (mm)	Z_2 (mm)	L_2 (mm)	Kg	Quantity
58	**50**	**221005**	28	70	17	55	0.18	4
78	**70**	**221015**	37	60	21	60	0.31	4
90	**80**	**221025**	22	60	20	60	0.36	4
110	**100**	**221035**	44	61	28	65	0.57	4
135	**125**	**221045**	50	64	34	70	0.79	4
160	**150**	**221055**	30	66	42	70	0.88	4

BEND 67°



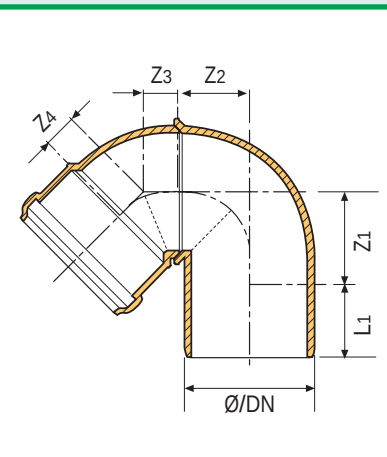
Ø	DN	CODE	Z_1 (mm)	L_1 (mm)	Z_2 (mm)	L_2 (mm)	Kg	Quantity
58	50	221007	32	70	21	55	0.18	4
78	70	221017	26	60	26	60	0.42	4
110	100	221037	44	61	44	65	0.70	4

BEND 87°



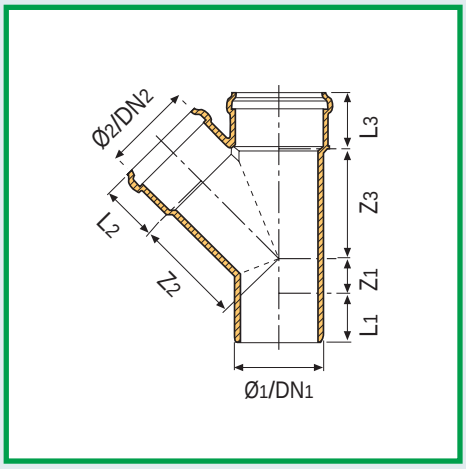
Ø	DN	CODE	Z_1 (mm)	L_1 (mm)	Z_2 (mm)	L_2 (mm)	Kg	Quantity
58	50	221009	47	70	32	55	0.20	4
78	70	221019	62	60	42	60	0.37	4
90	80	221029	49	60	42	60	0.33	4
110	100	221039	78	61	58	65	0.72	4
135	125	221049	96	64	102	70	1.10	4
160	150	221059	83	66	89	70	1.42	4

VENTILATING BEND



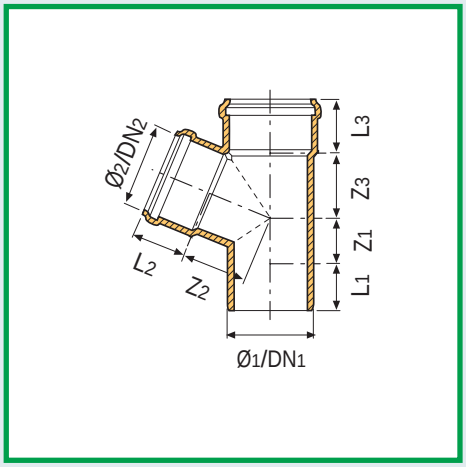
Ø	DN	CODE	Z_1 (mm)	L_1 (mm)	Z_2 (mm)	Z_3 (mm)	Z_4 (mm)	Kg	Quantity
110	100	232011	78	61	61	29	28	1.20	2

BRANCH 45°



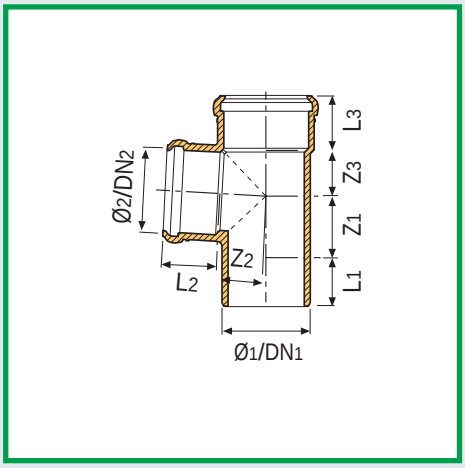
Ø1 / Ø2	DN1 / DN2	CODE	z1 (mm)	L1 (mm)	z2 (mm)	L2 (mm)	z3 (mm)	L3 (mm)	Kg	Quantity
58/58	50/50	222005	12	70	75	55	75	55	0.34	4
78/58	70/50	222007	2	60	99	60	100	55	0.46	4
78/78	70/70	222009	16	60	99	60	99	60	0.60	4
90/58	80/50	222011	19	60	113	60	113	55	0.59	4
90/90	80/80	222013	-4	60	116	60	113	60	0.57	4
110/58	100/50	222015	1	61	110	65	97	55	0.75	4
110/78	100/70	222017	21	61	122	65	115	60	0.98	4
110/110	100/100	222019	44	61	136	70	136	70	1.25	4
135/110	125/100	222021	49	64	169	70	169	65	1.43	2
135/135	125/125	222023	49	64	169	70	169	70	1.63	2
160/110	150/100	222025	36	95	180	70	200	70	1.44	2
160/160	150/150	222027	36	95	200	70	200	70	1.76	2

BRANCH 67°



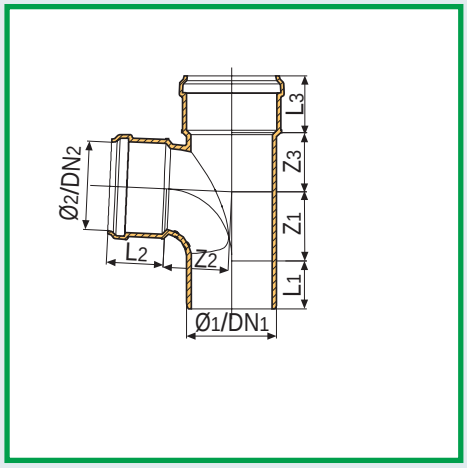
Ø1 / Ø2	DN1 / DN2	CODE	z1 (mm)	L1 (mm)	z2 (mm)	L2 (mm)	z3 (mm)	L3 (mm)	Kg	Quantity
58/58	50/50	223005	20	70	45	55	45	55	0.31	4
78/58	70/50	223007	15	60	63	60	60	55	0.41	4
78/78	70/70	223009	26	60	61	60	60	60	0.51	4
110/58	100/50	223015	11	61	75	65	65	55	0.65	4
110/78	100/70	223017	22	61	61	65	65	60	0.80	4
110/110	100/100	223019	58	61	84	70	84	70	0.98	4

BRANCH 87°



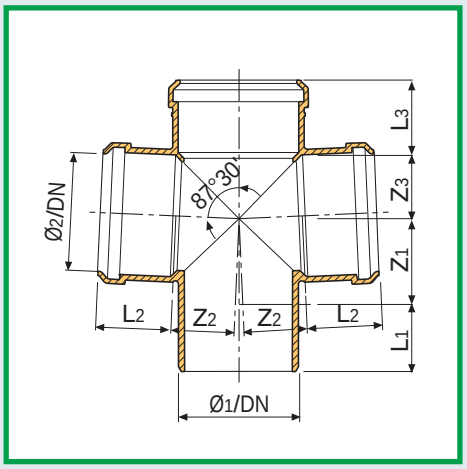
Ø1 / Ø2	DN1 / DN2	CODE	z1 (mm)	L1 (mm)	z2 (mm)	L2 (mm)	z3 (mm)	L3 (mm)	Kg	Quantity
58/58	50/50	224005	28	70	32	55	32	55	0.30	4
78/58	70/50	224007	27	60	43	60	43	55	0.40	4
78/78	70/70	224009	37	60	43	60	43	60	0.47	4
110/58	100/50	224015	47	61	61	65	27	55	0.62	4
110/78	100/70	224017	60	61	61	65	43	55	0.88	4
110/110	100/100	224019	78	61	58	70	58	70	0.92	4
135/110	125/100	224021	90	64	72	70	72	65	1.11	2
135/135	125/125	224023	90	64	72	70	72	70	1.25	2

SWEEPT BRANCH Ø 110



Ø1 / Ø2	DN	CODE	z1 (mm)	L1 (mm)	z2 (mm)	L2 (mm)	z3 (mm)	L3 (mm)	Kg	Quantity
110/110	100/100	238011	78	65	80	70	72	70	1.030	4

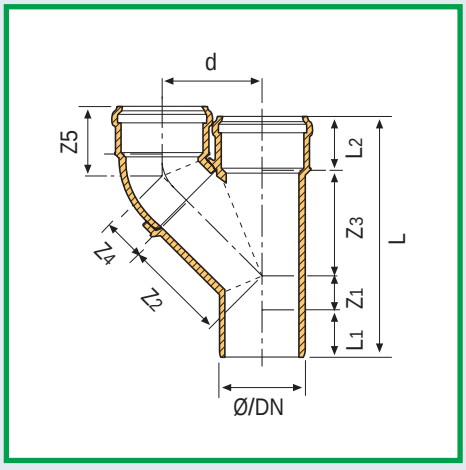
DOUBLE BRANCH FITTING



Ø1 / Ø2	DN	CODE	z1 (mm)	L1 (mm)	z2 (mm)	L2 (mm)	z3 (mm)	L3 (mm)	Kg	Quantity
110/110	100/100	225011	78	61	58	70	58	70	1.170	2

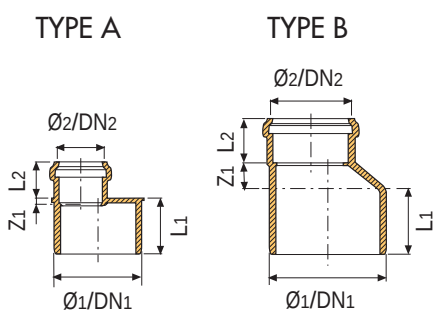
WELDED BRANCH

PARALLEL BRANCH



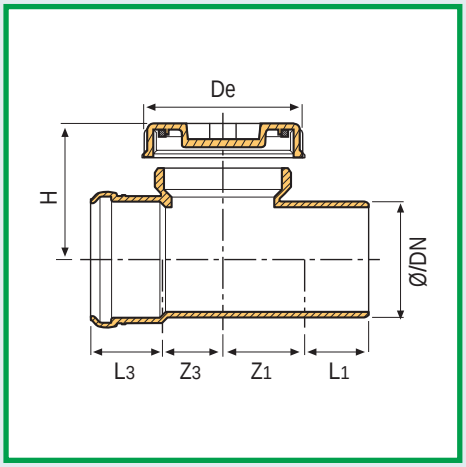
Ø	DN	CODE	Z1 (mm)	Z2 (mm)	Z3 (mm)	Z4 (mm)	Z5 (mm)	d (mm)	L1 (mm)	L (mm)	Kg	Quantity
110	100	233011	44	136	136	46	89	129	61	310	1.54	2

ECCENTRIC REDUCTION



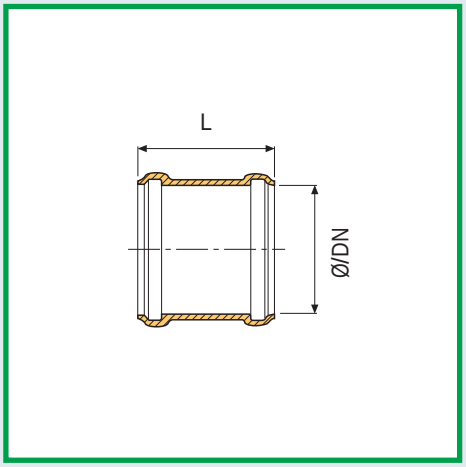
Ø1/Ø2	DN1/DN2	CODE	Z1 (mm)	L1 (mm)	L2 (mm)	Type	Kg	Quantity
78/58	70/50	226005	10	60	55	A	0.16	4
90/58	80/50	226007	10	67	55	A	0.24	4
90/78	80/70	226009	15	67	60	A	0.32	4
110/58	100/50	226011	10	70	55	A	0.36	4
110/78	100/70	226013	10	70	60	A	0.38	4
110/90	100/80	226015	10	70	60	A	0.38	4
135/110	125/100	226017	15	85	65	B	0.50	4
160/110	150/100	226019	35	90	65	B	0.80	4
160/135	150/125	226021	32	90	70	B	0.82	4

ACCESS PIPE WITH ROUND THREADED CAP



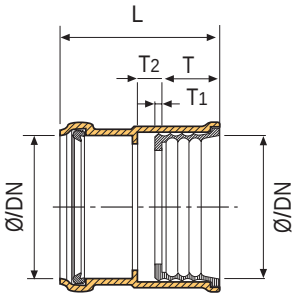
Ø	DN	CODE	Z 1 (mm)	L1 (mm)	Z3 (mm)	L3 (mm)	H (mm)	De (mm)	Kg	Quantity
58	50	227005	28	70	32	55	72	90	0.40	4
78	70	227007	37	60	43	60	82	120	0.80	4
110	100	227011	78	61	58	70	110	150	1.18	4
135	125	227013	90	64	72	65	115	150	1.50	4
160	150	227015	80	95	80	70	120	150	1.80	2

SLIDING SLEEVE



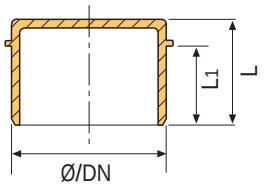
Ø	DN	CODE	L (mm)	Kg	Quantity
58	50	228005	105	0.17	4
78	70	228007	107	0.20	4
110	100	228011	117	0.40	4
135	125	228013	126	0.53	4
160	150	228015	147	0.60	4

BI-JOINT



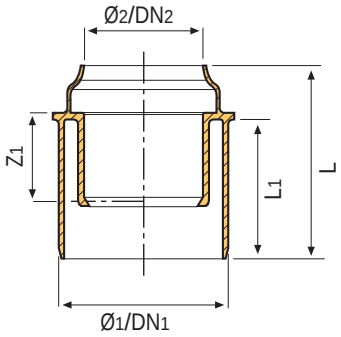
Ø	DN	CODE	T (mm)	T1 (mm)	T2 (mm)	L (mm)	Kg	Quantity
58	50	229005	48	5	15	119	0.16	4
78	70	229007	48	6	16	119	0.21	4
90	80	229009	47	6	16	124	0.21	4
110	100	229011	48	6	16	124	0.35	4
135	125	229013	65	6	16	145	0.53	4
160	150	229015	65	6	16	147	0.60	4

CAP



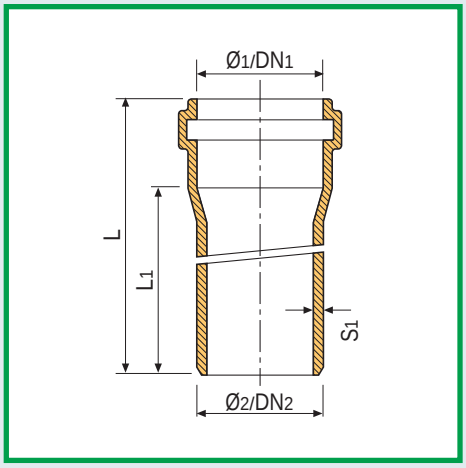
Ø	DN	CODE	L1 (mm)	L (mm)	Kg	Quantity
58	50	230005	50	65	0.09	4
78	70	230007	51	66	0.14	4
90	80	230009	51	66	0.20	4
110	100	230011	56	72	0.28	4
135	125	230013	60	77	0.39	4
160	150	230015	45	63.5	0.43	4

CONNECTOR PP/HDPE - SILERE



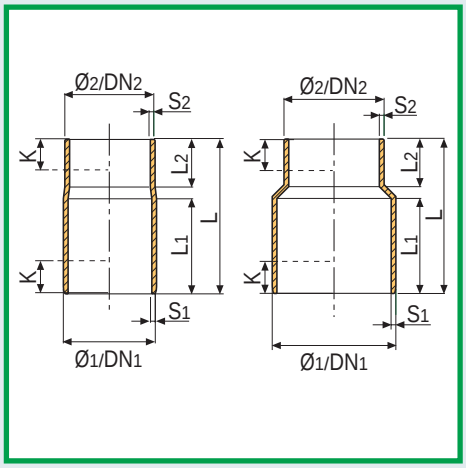
Ø1/Ø2	DN1/DN2	CODE	z1 (mm)	L (mm)	L1 (mm)	Kg	Quantity
58/40	50/40	231001	30	67	50	0.03	4
58/50	50/50	231003	25	86	60	0.05	4
78/50	70/50	231005	37	80	60	0.15	4
78/75	70/70	231007	0	116	60	0.15	4
135/125	125/125	231013	0	138	72.5	0.23	2

CONNECTOR SILERE - PP / HDPE



Ø1 / Ø2	DN1 / DN2	CODE	L (mm)	L1 (mm)	S1 (mm)	Kg	Quantity
58/50	50/50	237003	145	60	2,5	0.135	4
78/75	70/70	237007	150	70	3,5	0.260	4
135/125	125/125	237013	190	75	3,5	0.600	2

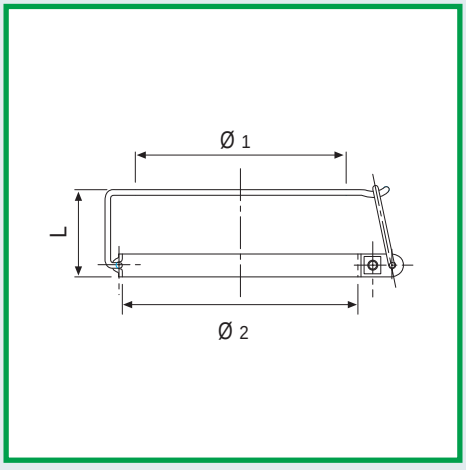
REDUCTION CONNECTORS HDPE - SILERE



HDPE

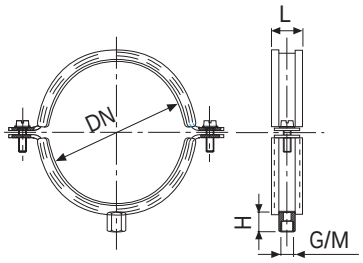
Ø1 / Ø2	DN1 / DN2	CODE	S1 / S2 (mm)	L (mm)	L1 (mm)	L2 (mm)	K	Kg	Quantity
58/56	50/50	336061	3	95	60	30	15	46	20
78/63	70/50	336063	3	100	60	30	15	62	20

FASTENING CLIP



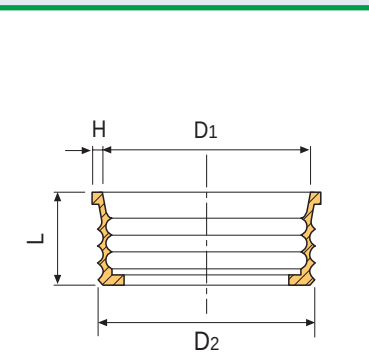
Ø	DN	CODE	Ø1 (mm)	Ø2 (mm)	L (mm)	Kg	Quantity
58	50	250005	59	69	41	0.06	10
78	70	250007	79	99	41	0.08	10
90	80	250009	91	102	41	0.10	10
110	100	250011	111	123	46	0.12	10
135	125	250013	136	146	47	0.13	10
160	150	250015	161	181	47	0.18	10

PIPE CLIP
WITH ANTI-VIBRATION RUBBER INSERT



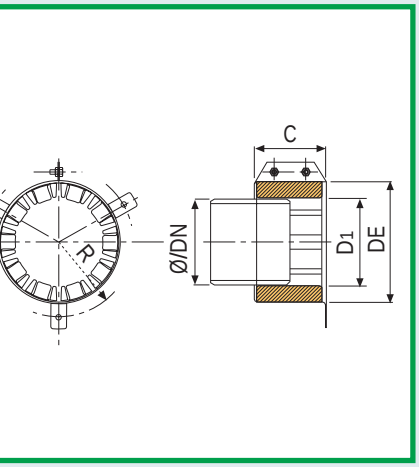
Ø	DN	CODE	G/M	L (mm)	H (mm)	Kg	Quantity
58	50	251005	M 10	20	20	0.12	25
78	70	251007	M 10	20	20	0.16	25
90	80	251009	M 10	20	20	0.18	25
110	100	251011	M 10	20	20	0.25	25
135	125	251013	M 10	20	20	0.28	25
160	150	251015	M 10	20	20	0.41	25
58	50	252005	G 1/2"	30	20	0.20	25
78	70	252007	G 1/2"	30	20	0.23	25
90	80	252009	G 1/2"	30	20	0.27	25
110	100	252011	G 1/2"	30	20	0.29	25
135	125	252013	G 1/2"	30	20	0.36	25
160	150	252015	G 1/2"	30	20	0.42	25

CONNECTION JOINT SOCKET TYP / HS



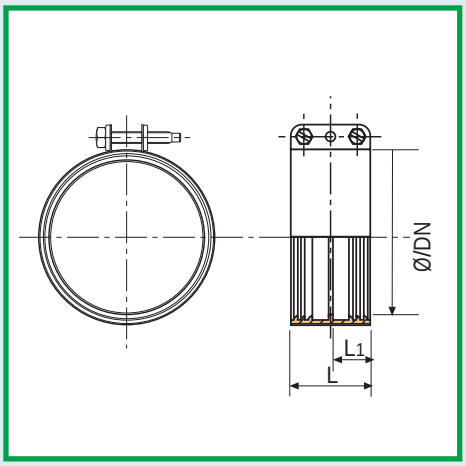
Ø	DN	CODE	D_1	D_2	H	L	Quantity
58	50	261005	59	64	5.5	50	20
78	70	261007	79	84	5.5	50	20
90	80	261009	91	95	5.5	55	20
110	100	261011	111	116	5.5	66	20
135	125	261013	136	141	5.5	66	20
160	150	261015	161	166	5.5	55	20

FIRE STOP



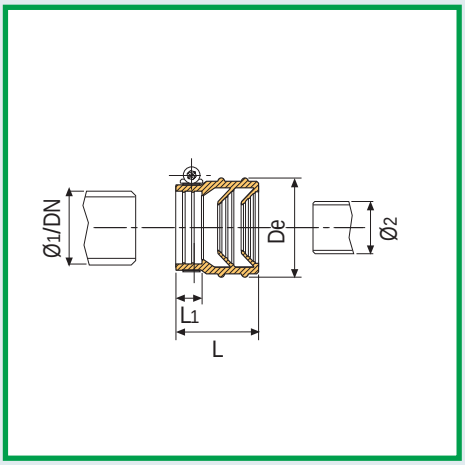
Ø	DN	CODE	D_1	D_E	C	Quantity
58	50	270005	65	95	80	1
78	70	270007	95	140	80	1
90	80	270011	117	166	100	1
110	100	270012	130	180	100	1
135	125	270013	144	195	110	1
160	150	270015	166	215	120	1

PIPE BRACKET



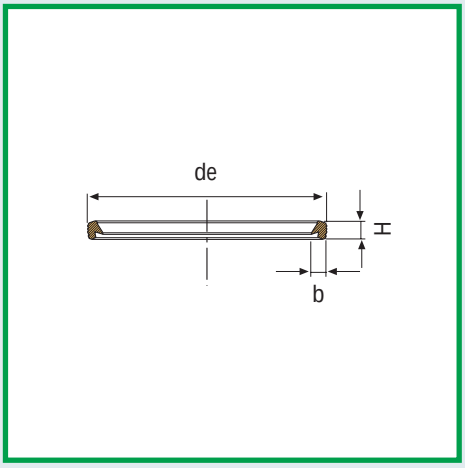
Ø	DN	CODE	L_1	L	Kg	Quantity
58	50	**271005**	20.5	44	0.15	20
78	70	**271007**	22.5	48	0.19	20
110	100	**271011**	25.5	55	0.22	20
135	125	**271013**	28	60	0.30	10
160	150	**271015**	30	65	0.36	10

FIX CONNECTING SLEEVE



$Ø_1$	DN	CODE	$Ø_2$	De	L_1	L	Kg	
58	50	**272005**	40/56	77	20	63	0.15	
78	70	**272007**	56/75	97	20	77	0.23	
110	100	**272011**	104/110	133	20	95	0.40	

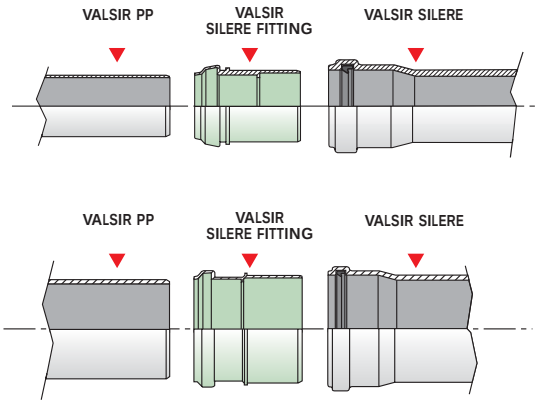
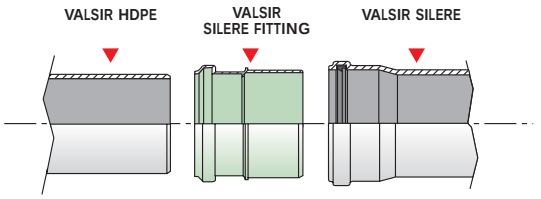
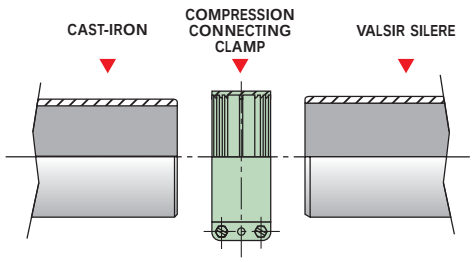
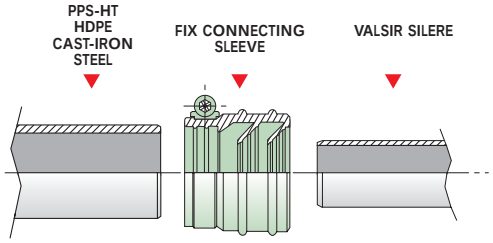
1 - LIP SEAL HS



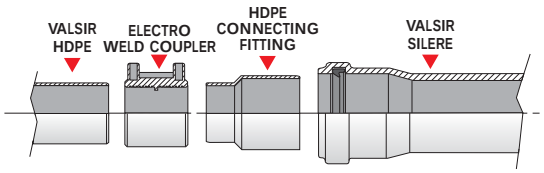
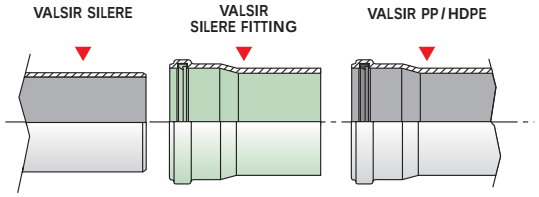
Ø	DN	CODE	de	H	b	Quantity
40	**40**	**391003**	51	8	7	50
50	**50**	**391005**	61	8	7	50
58	**50**	**262005**	70	9	7	20
75	**70**	**391011**	86	8	7	50
78	**70**	**262007**	90	9	7	20
90	**80**	**391013**	104	9	7	20
110	**100**	**391015**	124	9	8	20
125	**125**	**391017**	142	10	9	20
135	**125**	**262013**	152	12	9.5	20
160	**150**	**391019**	180	12	11	20

FOR EQUIPMENT AND ACCESSORIES SEE "VALSIR EQUIPMENT" CATALOGUE

CONNECTION OF SLEEVE WITH PIPES IN DIFFERENT MATERIALS

MATERIAL TO BE CONNECTED	CONNECTING SYSTEM	SILERE CODE	CONNECTABLE DIMENSIONS	
PPS-HT ABS PVC			PPS-HT ABS - PVC Ø / DN	VALSIR SILERE Ø / DN
		231001	40/40	58/50
		231003	50/50	58/50
		231005	50/50	78/70
		231007	75/70	78/70
		231013	125/125	135/125
HDPE			HDPE Ø / DN	VALSIR SILERE Ø / DN
		231001	40/32	58/50
		231003	50/40	58/50
		231005	50/40	78/70
		231007	75/70	78/70
		231013	125/125	135/125
CAST-IRON SML			CAST-IRON - SML Ø / DN	VALSIR SILERE Ø / DN
		271005	58/50	58/50
		271007	75/70	78/70
		271011	110/100	110/100
		271013	135/125	135/125
		271015	160/150	160/150
PPS-HT HDPE CAST-IRON STEEL			PPS - HT - HDPE CAST-IRON STEEL Ø / DN	VALSIR SILERE Ø / DN
		272005	50/50	58/50
		272007	75/70	78/70
		272011	110/100	110/100

CONNECTION OF SLEEVE WITH PIPES IN DIFFERENT MATERIALS

MATERIAL TO BE CONNECTED	CONNECTING SYSTEM	SILERE CODE	CONNECTABLE DIMENSIONS	
			HDPE	VALSIR SILERE
			Ø / DN	Ø / DN
HDPE		**336061**	56/50	58/50
		336063	63/50	78/70
			PPS - HT - HDPE PVC	VALSIR SILERE
			Ø / DN	Ø / DN
PPS-HT HDPE PVC		**237003**	50/50	58/50
		237007	75/70	78/70
		237013	125/125	135/125

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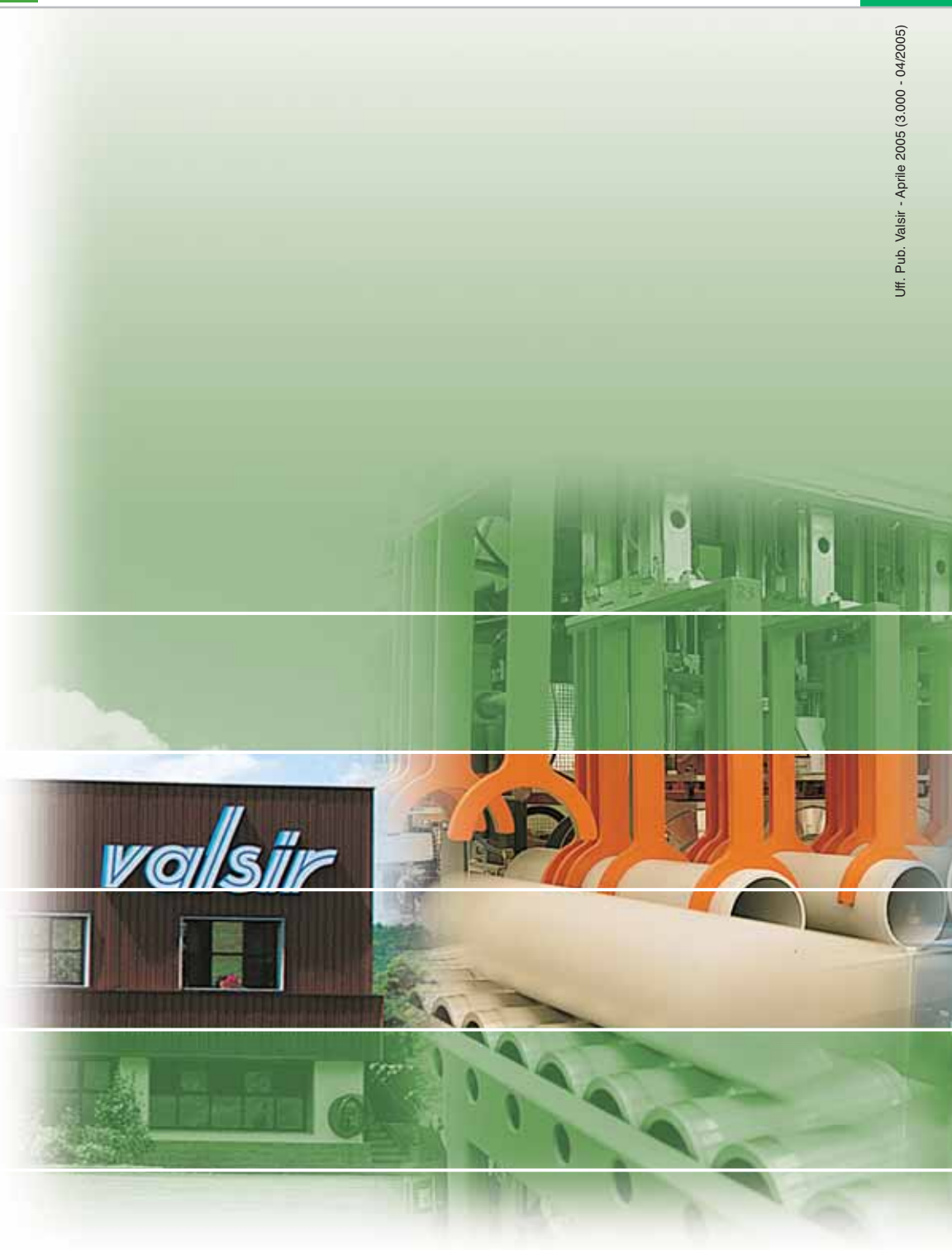

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