



Process air technology

Products and components
for industry



Products and components for industry

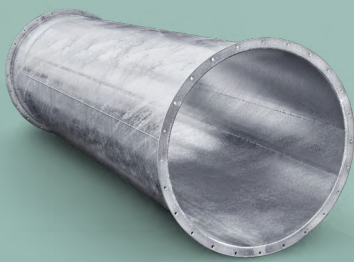
FROM PRODUCT TO SYSTEM.

BerlinerLuft. manufactures and supplies specific components and systems for ventilation and air conditioning. Both for non-residential buildings and industrial plant construction.

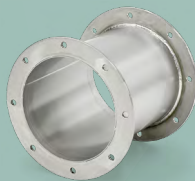
A public building requires a different air treatment to that needed for an industrial production process. We develop solutions and products for industrial production processes in various industries.

For example, our devices and systems provide for clean removal of hot, toxic or aggressive media used for drying or dust removal.

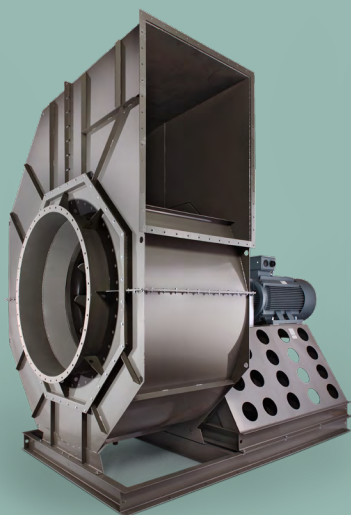
For regenerative exhaust systems, we provide components adapted to the specific needs and develop acoustic solutions to reduce noise.



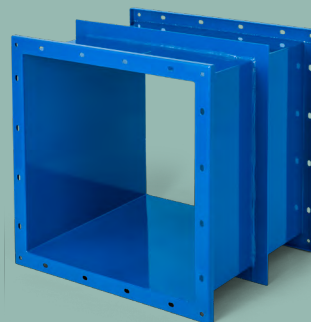
Ventilation components and parts
in folded and welded design



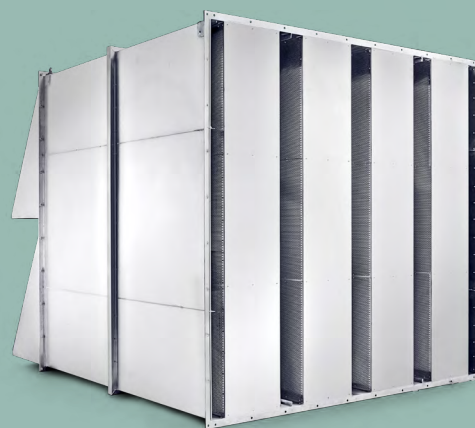
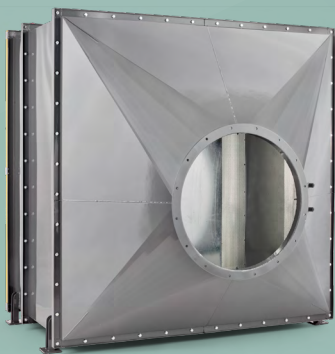
Ventilation towers and
steel chimneys



High-performance fans and special fans



Protection against corrosion by coating the components
according to requirement profile



Industrial silencers, sound enclosures, splitters and welded custom products



Folded ducting components in airtightness classes A, B and C according to DIN EN 1505,
Welded ducting components up to airtightness class D according to DIN EN 1505



Multi-leaf dampers for industrial requirements

Service

OUR SERVICES

Design, manufacture and delivery of fans and sound insulation solutions tailored to the customer's needs

Manufacture and delivery of ducting systems and associated components

Production of special components according to the design drawing

Coordination and assembly of the system components

Technical support for the design of ducting systems

Project and detail design according to design plans

Extended service work such as conversion and conversion/replacement of existing systems.

Preparation of technical documentation

THE ADVANTAGES FOR YOU

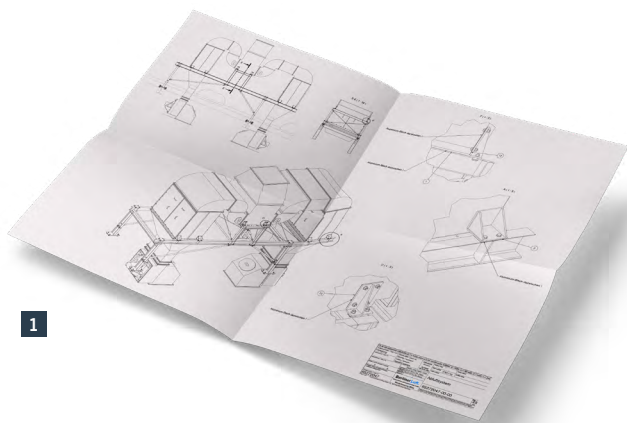
Industry-specific ventilation technology products and components for industrial applications

Easing the burden of project management and advantages in purchasing

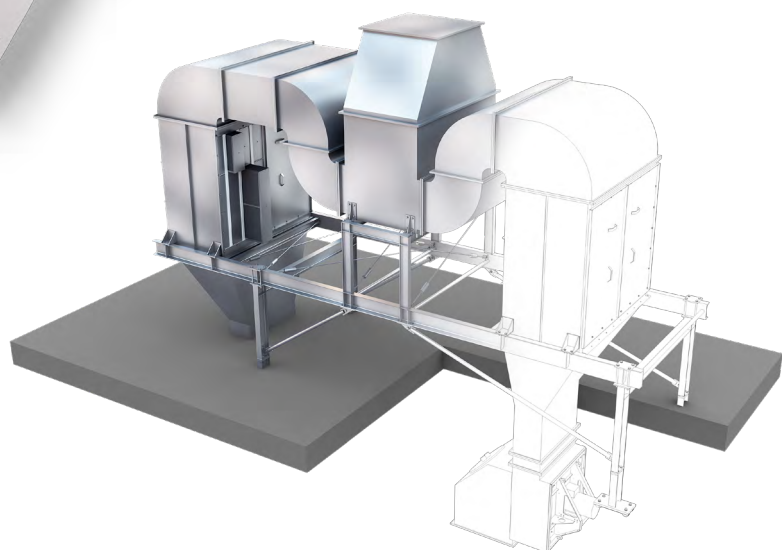
Customer-optimised and plant-specific solutions

Avoidance of additional interfaces

Support of the value creation process



1



2

1 | Design drawing

2 | Example of a regenerative ventilation system

GENERAL MANUFACTURING OPTIONS

Sheet metal processing:

Laser cutting, edging, circular bending, crimping, welding

Materials:

Black steel, Sendzimir galvanised steel, hot-dip aluminised steel (FAL), stainless steel, aluminium

Wall thicknesses:

1.5 mm to 20 mm

Dimensions:

Round up to diameter 2500 mm, single piece

Larger possible in segment design

Rectangular up to edge length 3000 mm

Surface treatments:

Sandblasted, primed, painted, powder-coated, hot-dip galvanised, stained, bead-blasted, brushed

Welded assemblies up to 15 m in length and 8 t in weight

CERTIFICATIONS AND SERVICES FOR WELDED PRODUCTS

Certified according to DIN EN 1090-2 to EXC 3

Certified according to DIN EN ISO 3834-2

Certified welding supervisors (SFM/SFI)

Tested welding personnel according to DIN EN ISO 9606

Procedure qualifications according to DIN EN ISO 15614

Non-destructive testing of welded joints (ZfP)

Special tests according to the Inspection and Test Plan (ITP) or similar are possible by arrangement

APPLICATIONS AND INDUSTRIES

Process air technology, process technology

Supply air, exhaust air

Extraction, dust removal

Welding fumes

Kitchen exhaust air

Laboratories

Hospitals

Clean rooms

Chemistry

Semiconductor industry

Automotive industry

Power generation

Steel production/foundries

Environmental engineering

Recycling

Building materials

Metal processing

Pharmaceutical industry

Food

Wood processing

Bulk materials industry

Project examples



Pipelines

Application: Exhaust air and supply air duct for sewage sludge drying (waste recycling)

Material: 1.4301, welded s= 2.00 – 3.00 mm

Diameter: DN 710 - 1250 mm

Surface treatment: stained and passivated

Other services: Pipe statics

Pipelines

Application: Feed collector of resin-contaminated air in the emery cloth coating

Material: galvanised sheet steel, welded s= 2.00 mm

Other services: Planning, quantity survey and assembly support



Pipelines/ductwork and fittings

Application: Sewage sludge drying plant in a disposal plant

Material: Stainless steel 1.4301, s= 1.50 mm

Surface treatment: stained and passivated

Ducting components

Welded



Welded ducting components

For applications with more stringent requirements for leak-tightness and/or pressure

WELDED DUCTING COMPONENTS – STAINLESS STEEL

Welded sheet metal ducts and fittings with rectangular cross section as per DIN EN 1505, 1507 and DIN 18379

Material: Stainless steel sheet

Grade: 1.4301 (V2A) or 1.4404 or 1.4571 (V4A) (surface 2B as per DIN EN 10088)

Surface (inside and outside) stained and passivated, welded seams brushed

Pressure range: +6000 / -2500 Pa

Airtightness classes: D as per DIN EN 1507

Turning vanes as per DIN EN 1505

Cross connection via angle frame or formed backward fold with perforation according to factory standard (hole spacing 125 mm)

Additional reinforcement according to BerlinerLuft. Technik GmbH factory standard

FIXED DUCT LENGTHS

depending on the frame connection

For angle frame W1, flush	1500 mm
---------------------------	---------

30/15 mm formed backward fold	1380 mm
-------------------------------	---------

40/20 mm formed backward fold	1350 mm
-------------------------------	---------

60/30 mm formed backward fold	1300 mm
-------------------------------	---------

80/40 mm formed backward fold	1200 mm
-------------------------------	---------

STANDARD HEIGHT

for formed backward fold (modular edging)

depending on the edge lengths

40/20 mm up to edge length 1000 mm

60/30 mm > edge length 1000 to 2000 mm
--

80/40 mm > edge length 2000 to 3000 mm
--



Welded duct with modular edging made of stainless steel, surface stained

WELDED DUCTING COMPONENTS – SHEET STEEL

Welded sheet metal ducts and fittings with rectangular cross section as per DIN EN 1505, 1507 and DIN 18379

Material: black or Sendzimir galvanised sheet steel

Grade: Black sheet S 235 JRG2 according to DIN EN 10025, galvanised DX51D + Z275MA-C (DIN EN 10346 and DIN EN 10143)

Pressure range: +6000 / –2500 Pa

Airtightness classes: D as per DIN EN 1507

Turning vanes as per DIN EN 1505

Cross connection via angle frame or formed backward fold with perforation according to factory standard (hole spacing 125 mm)

Additional reinforcement according to BerlinerLuft. Technik GmbH factory standard

FIXED DUCT LENGTHS

depending on the frame connection

For angle frame W1, flush	1500 mm
30/15 mm formed backward fold	1380 mm
40/20 mm formed backward fold	1350 mm
60/30 mm formed backward fold	1300 mm
80/40 mm formed backward fold	1200 mm

STANDARD HEIGHT

for formed backward fold (modular edging)

depending on the edge lengths

40/20 mm up to edge length 1000 mm
60/30 mm > edge length 1000 to 2000 mm
80/40 mm > edge length 2000 to 3000 mm



Welded duct with modular edging made of steel, surface untreated

Welded ducting components

WELDED DUCTING COMPONENTS – ALUMINIUM

Welded sheet metal ducts and fittings with rectangular cross section as per DIN EN 1505, 1507 and DIN 18379

Material: Aluminium

Grade: Al 99.5 h or AlMg3

Surface: untreated

Pressure range: +6000 / -2500 Pa

Airtightness classes: D as per DIN EN 1507

Turning vanes as per DIN EN 1505

Cross connection via angle frame or formed backward fold with perforation according to factory standard (hole spacing 125 mm)

Additional reinforcement according to BerlinerLuft. Technik GmbH factory standard

FIXED DUCT LENGTHS

depending on the frame connection

For angle frame W1, flush	1500 mm
---------------------------	---------

30/15 mm formed backward fold	1380 mm
-------------------------------	---------

40/20 mm formed backward fold	1350 mm
-------------------------------	---------

60/30 mm formed backward fold	1300 mm
-------------------------------	---------

80/40 mm formed backward fold	1200 mm
-------------------------------	---------

STANDARD HEIGHT

for formed backward fold (modular edging)

depending on the edge lengths

40/20 mm up to edge length 1000 mm

60/30 mm > edge length 1000 to 2000 mm
--

80/40 mm > edge length 2000 to 3000 mm
--



Welded duct with modular edging made of aluminium

COMPONENT OVERVIEW

Ducts and fittings with rectangular cross section are available as standard, similar to the dimensions from DIN EN 1505 and with individual dimensions and geometries according to customer requirements.

Standard components as per DIN EN 1505:

Straight duct	Symmetrical transition
Duct with damper	Asymmetrical transition
Duct connector	Symmetrical square to round transition
Sliding connector	Asymmetrical square to round transition
Transition connector	Symmetrical offset
Round connector	Asymmetrical offset
Bend	Straight T-piece
Transition bend	Diagonal T-piece
Symmetrical square bend	Y-piece
Square transition bend	Base
Combined bend/duct	Rectangular cut-out
Combined bend/bend	Round cut-out



1

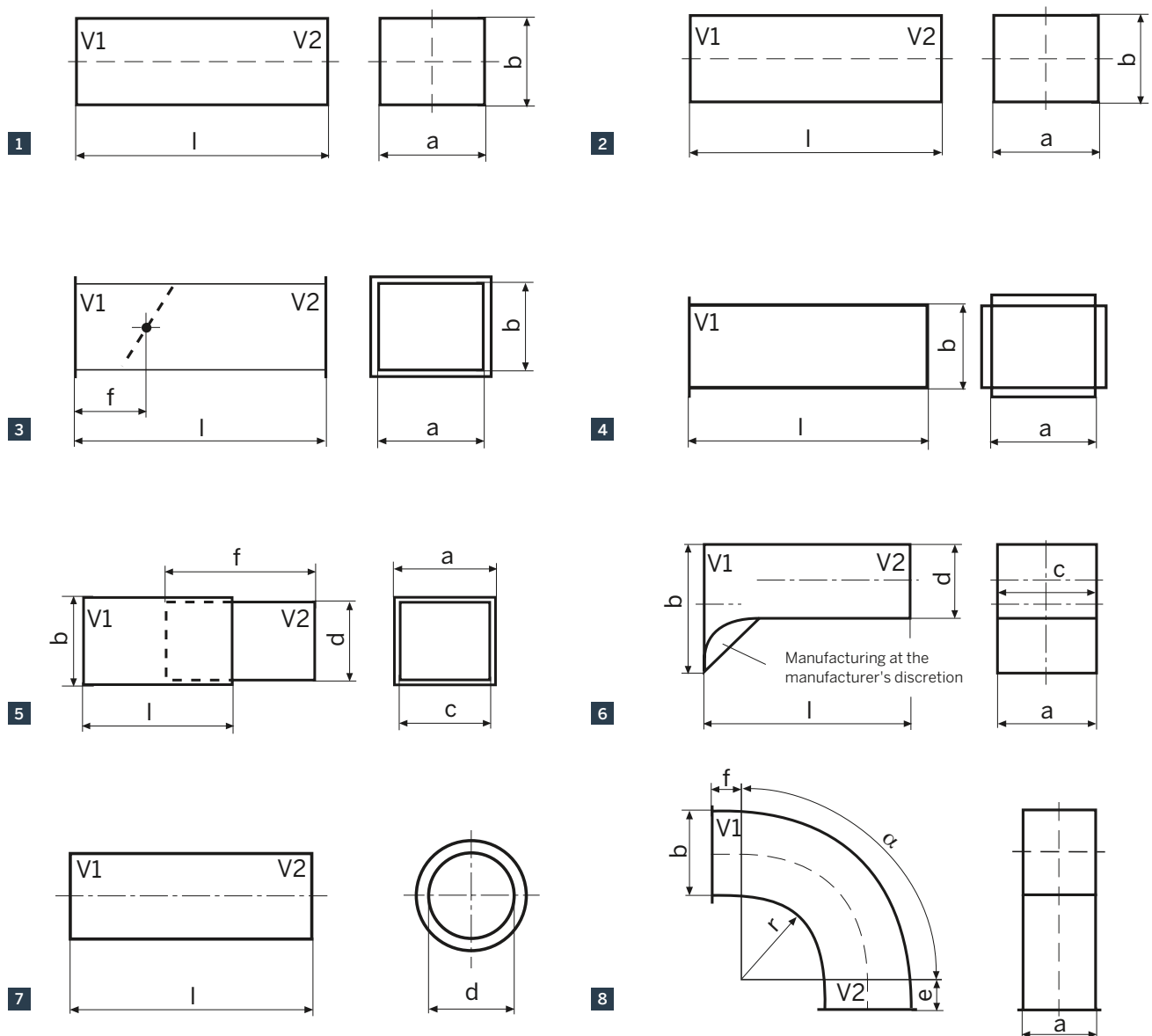


2

- 1 | Welded air duct with folded frame (modular edging)
- 2 | Version with welded angle flange

Sheet metal ducts and fittings

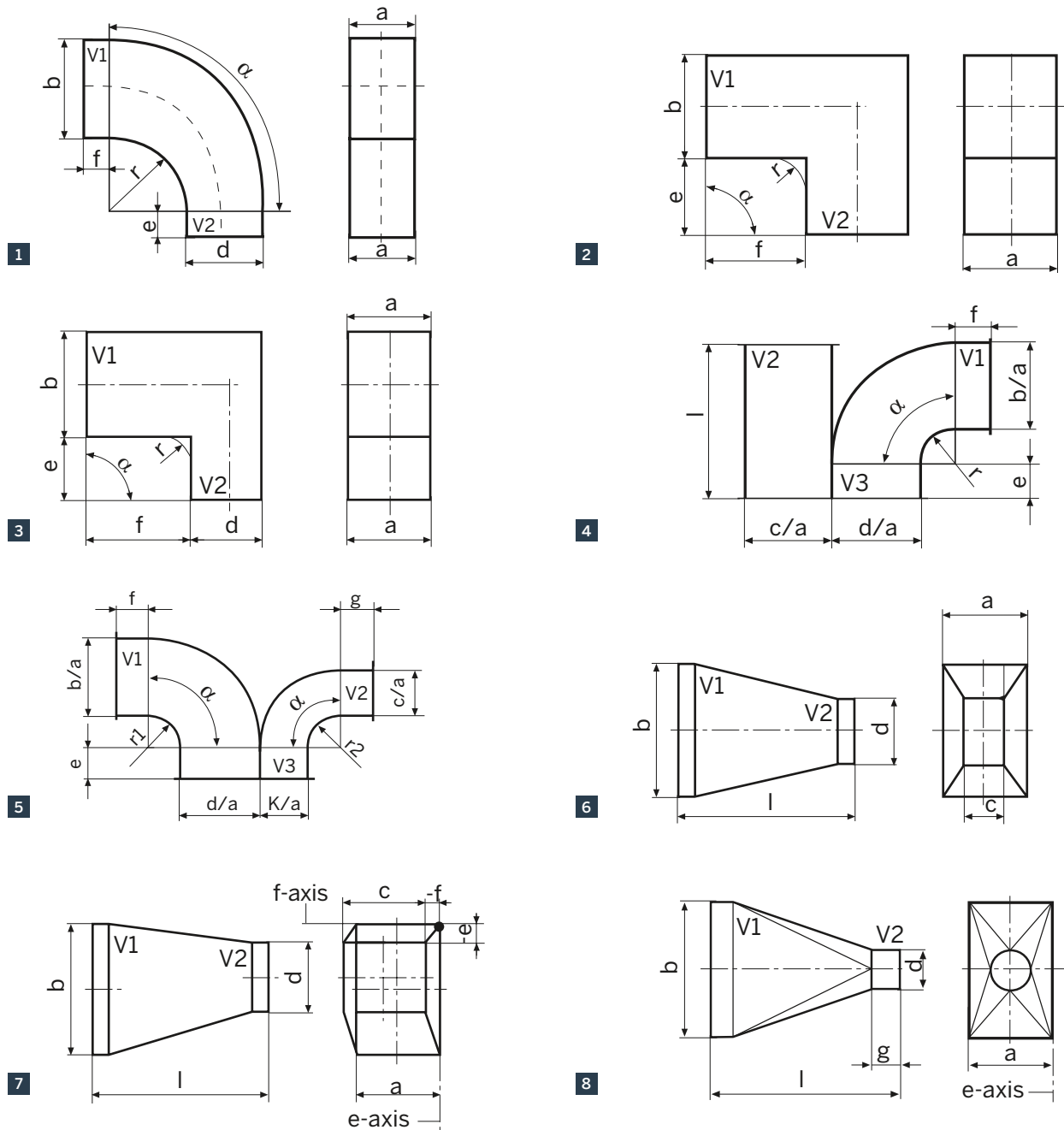
AS PER DIN EN 1505, 1507 AND DIN 18379



- 1 | K – Duct $l > 900$
- 2 | KT – Duct section $l \leq 900$
- 3 | KD – Duct with damper
- 4 | KS – Duct connector

- 5 | SS – Sliding connector
- 6 | SU – Transition connector
- 7 | SR – Round connector
- 8 | BS – Bend

AS PER DIN EN 1505, 1507 AND DIN 18379



1 | BA – Transition bend

2 | WS – Symmetrical square bend

3 | WA – Square transition bend

4 | KOM – Combined bend/duct

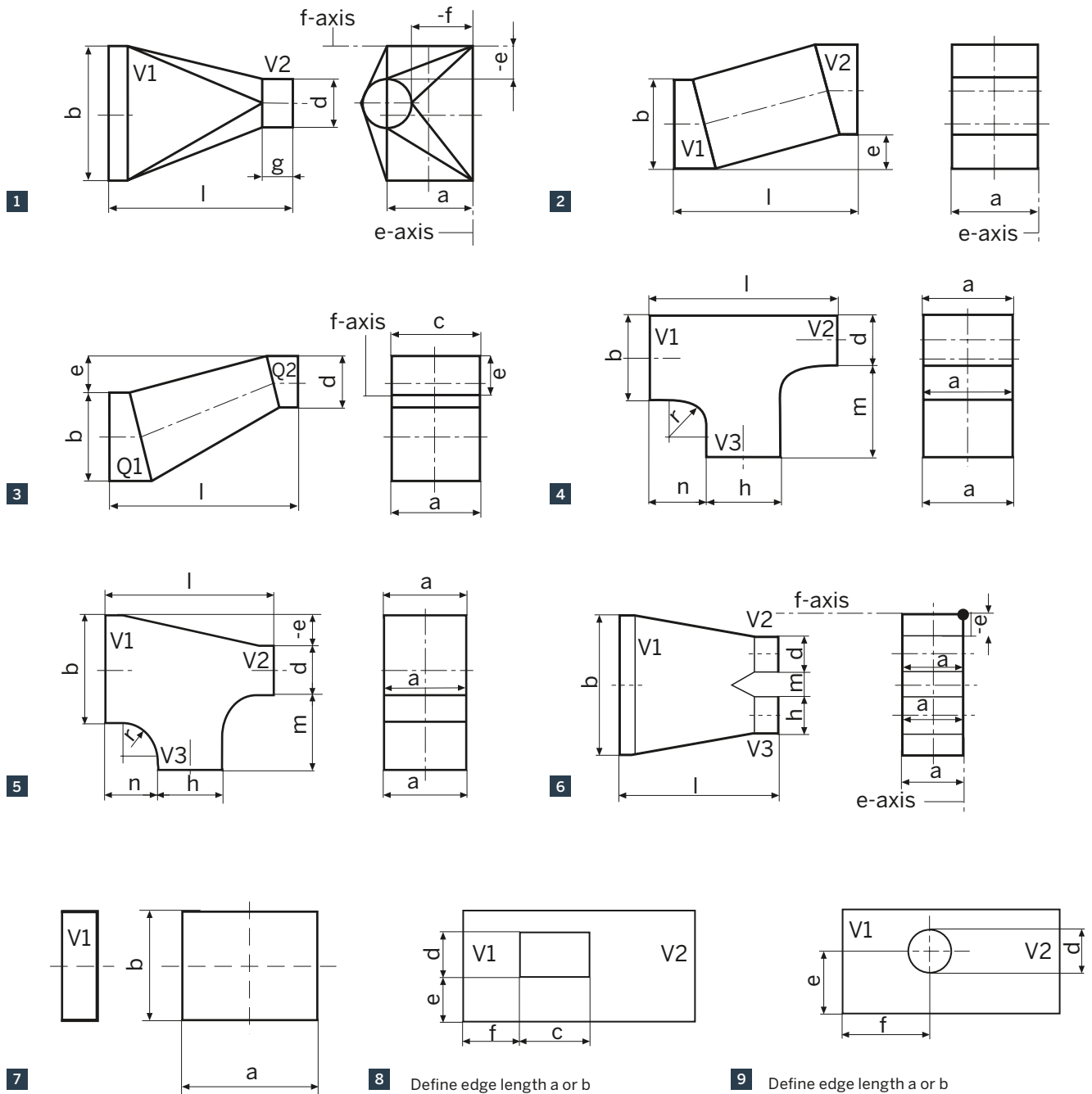
5 | KOM – 3 combined bend/bend

6 | US – Symmetrical transition

7 | UA – Asymmetrical transition

8 | RS – Symmetrical square to round transition

Sheet metal ducts and fittings



- 1 | RA – Asymmetrical square to round transition
- 2 | ES – Symmetrical offset
- 3 | EA – Asymmetrical offset
- 4 | TG – Straight T-piece
- 5 | TA – Diagonal T-piece

- 6 | HS – Y-piece
- 7 | BO – Base
- 8 | AE – Rectangular cut-out
- 9 | AR – Round cut-out

Materials

METALLIC MATERIALS

Ducting can be made from different metallic materials, depending on the application.

FOLDED AND WELDED DESIGN

Material type	Grade	Standard	t _{max} (°C)
Galvanised steel (Sendzimir galvanised fine sheet steel)	DX51D + Z275 MA-C	DIN EN 10346 DIN EN 10143	+ 200°C
Stainless sheet steel (surface 2 B)	1.4301 (V2A) 1.4404 (V4A) 1.4571 (V4A)	DIN EN 10088	+ 550°C
Aluminium	ALMg 3	DIN EN 485 DIN EN 573-3	+ 160°C
FAL (hot-dip aluminised sheet steel)		DIN EN 1396	+ 700°C
Black sheet steel (welded ducting only)	S 235 JRG 2	DIN 10130	+ 250°C

SURFACE FINISH

Ducting can be made from different metallic materials, depending on the application. The surface finish and corrosion protection depend on the requirements.

The necessary coating thickness depends on the application and must be specified by the user, taking into account the relevant corrosion protection guidelines. The surfaces are treated with black and galvanised sheet steel materials.

Black and galvanised sheet steel

Surface preparation/washing and passivation

Undercoat or primer

Painting

Powder coating

EPD coating (see page 67)

Stainless steel

Staining and neutralisation

Blasting

Grinding

Brushing

Component joints — maximum and minimum dimensions

WELDED VERSION

Connection type	Formed backward fold			Angle frame welded flush (W1)		
Material	Sheet steel	Stainless steel	Aluminium	Sheet steel	Stainless steel	Aluminium
Pressure range or sheet thickness	+6000 / –2500 Pa					
edge length	[mm]					
100 to 425	40 / 20	40 / 20	On request	30 × 3	30 × 3	On request
426 to 1000				40 × 4	40 × 4	
1001 to 1500	60 / 30	60 / 30		60 × 6	60 × 6	
1501 to 1900				60 × 8	60 × 8	
1901 to 2000						
2001 to 2240 ¹	80 / 40	80 / 40				

¹ Components with edge lengths of > 2000 mm are outside the standard and are manufactured as special components. The type of component joint must be specified by the user according to the requirements of use.

COMPONENT REINFORCEMENTS

The reinforcements on duct walls are based on the component requirements in DIN EN 1507 as regards limit values for rigidity and stability of form.

The specific requirements are compiled in an internal factory standard.

Generally, the following types of reinforcement are used. Walls of duct and fittings up to a sheet thickness of 1.25 mm generally have a trapezoidal corrugated profile.

BerlinerLuft. trapezoidal corrugations have profile depths and

flank angles that optimise flow and are classified as smooth-walled according to VDI 6022.

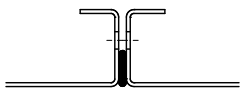
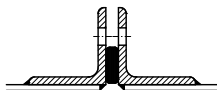
For certain pressure ratings and component dimensions, additional side wall reinforcements are required. These take the form of

Internal tubular supports

Internal or external sheet metal rails

External ribs (only on welded ducting when necessary)

FLANGE CONNECTIONS

Flange designation	Code	Diagram	Connection ¹ through	Standard duct component length [mm]
Welded components Folded flange, modular edging, corners closed	WA		Bolted joint Hole spacing 125 mm or special hole spacing	1350 at 40/20 mm forward/backward fold
Angle flange welded flush	W 1		Bolted joint Hole spacing 125 mm or special hole spacing	1500

¹ observe the assembly recommendation

Tender specification texts

WELDED DUCTS AND FITTINGS

Welded ventilation ducts and fittings as per DIN EN 1505, DIN EN 1507 and VDI 3803 made of

galvanised steel with cold galvanised welds

Stainless steel 1.4301, 1.4404 or 1.4571; welded seams brushed

Aluminium AlMg 3

Welded seams must not be ground for static reasons.

Pressure range +6000/-2500 Pa

Sheet thickness appropriate for the pressure level specified above and component cross-sections (see BerlinerLuft. documentation); however, must be at least 1.5 mm

Components suitable for the production of air ducts in airtightness class D according to DIN EN 1507 (welded seams are impervious to condensate, grease and aerosols)

Duct flange connections W1 and WA with 125 mm hole spacing as standard or special hole spacing.

External duct wall reinforcement depending on pressures stated in factory standard.

Additional requirements (as necessary)

All components must be coated on the outside and/or inside with chemically resistant paint.

Colour RAL , Coating thickness µm

To ensure the cleanliness of air ducts in accordance with VDI 6022 Part 1 (as of Jan 2018) and DIN EN 15780 (as of Jan 2012)

CLEANLINESS

Low PDI:

delivery without packaging or transport protection, protection during storage, cleaning, openings of risers closed

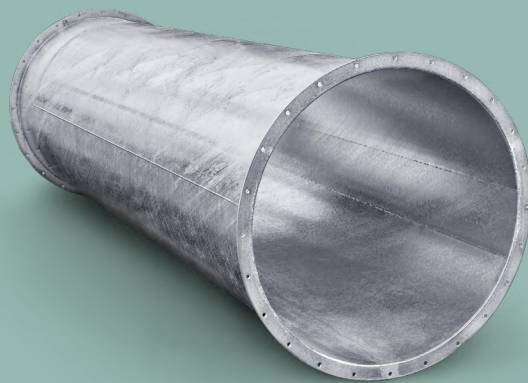
Minimum requirement or medium PDI:

delivery without packaging or transport protection, protection during storage, cleaning before assembly, openings sealed

Recommendation or high PDI:

delivery with packaging (e.g. ends closed) and transport protection, protection during storage, cleaning before assembly, openings sealed

Welded **pipelines and components**



Welded pipelines and components

PRODUCT DESCRIPTION

Welded pipelines and fittings are used in ventilation systems with stringent leak-tightness requirements to convey air for ventilation, extraction, dust removal or exhaust air purification.

Available in more than 30 sizes, the pipelines can be optimally adapted to the respective application or use.

Material quality, design, wall thickness and surface treatment depend on the specific application or use.

As a supplement to the standard range, additional dimensions and special components can be manufactured from rounded, edged and/or welded sheet metal individually and specifically for the application.

PERFORMANCE OVERVIEW

Longitudinally and circumferentially welded tubes and fittings

Diameter: 100 – 2500 mm

Wall thickness: 1.5 – 5 mm¹

Maximum single length: up to 3000 mm (up to 12,000 mm with circumferential weld)

Materials: Black steel, Sendzimir galvanised steel, stainless steel, aluminium, FAL

Surface treatment: primed, painted, powder-coated, hot-dip galvanized, stained, brushed, bead-blasted

Connections: Loose flange behind board, fixed flange, board, smooth

Pressure range¹: from max. –50,000 Pa to max. +50,000 Pa differential pressure

Temperature range¹: up to +700°C

Airtightness class: D as per DIN EN 12237



Welded tube V2A (1.4301) with welded flat flanges as per DIN 24154 R2



Welded steel pipe (hot-dip galvanised according to DIN EN ISO 1461)

¹ The detailed application limits depend, among other things, on the choice of material, length, diameter and wall thickness. More information is available in the technical documentation and on request.

Welded pipelines and components

STANDARDS AND GUIDELINES

Materials, surfaces and tolerances

Material type	Short name	Material number	Standard	max. operating temperature ¹ [°C]	Order code (abbreviation)
Black steel ²	S235 JR	1.0038	DIN 10025	+ 450	S
	DC01	1.0330	DIN 10130	+ 450	
	DD11	1.0332	DIN 10111	+ 450	
Steel, Sendzimir galvanised	DX51D+Z275 MA-C	1.0226	DIN 10346	+200	Sv
Steel, hot-dip aluminised	DX51D AS 120 CO	1.0226	DIN 10346	+700	FAL
Stainless steel ³	X5CrNi18-10	1.4301	DIN 10088	+ 550	1.4301
	X2CrNiMo17-12-2	1.4404	DIN 10088	+ 550	1.4404
	X6CrNiMoTi17-12-2	1.4571	DIN 10088	+ 550	1.4571
Aluminium	AlMg3	3.3535	EN 485	+300	AL

Note: The materials listed in the standard are used for the production of BerlinerLuft. pipes and fittings. Processing of other materials is possible on request.

¹ Limit values for short-term operation, no continuous load. Individual design in terms of material, wall thickness, temperature and operating pressures on request

² Without special requests, the black steel is selected by the manufacturer based on availability.

³ Please specify the desired material number or material short name when ordering/requesting

SURFACES

Different surface treatment methods are possible for all pipes and fittings. These are carried out in accordance with the table below and must be specified with the request or order.

Material type	Surface	Order code (abbreviation)
Black steel	Untreated after processing.	U
	Primer inside and outside, average coating thickness 40 µm. Colour grey, temperature-resistant up to max. 120°C.	NL1
	Primer and final paint on the inside and outside. Total coating thickness at least 120 µm. Unless otherwise specified, colour tone based on RAL 9006, semi-gloss. Temperature-resistant up to max. 120°C.	NL2
	Coating system according to DIN EN ISO 12944-5 for corrosiveness category C ____ according to DIN EN ISO 12944-2 and protection duration ____ according to DIN EN ISO 12944-1, temperature-resistant up to ____°C, colour tone based on RAL ____ (please complete as appropriate).	NL3 ⁵
	Powder coating, medium coating thickness 80 µm. Unless otherwise specified, colour tone based on RAL 9006, semi-gloss. Temperature-resistant up to max. 120°C.	P
	Hot-dip galvanisation according to DIN EN ISO 1461, coating thickness at least 45 µm, temperature-resistant up to 200°C.	VZF
Steel, Sendzimir galvanised	Welded seams cold galvanised, otherwise untreated after processing. ⁴ Temperature-resistant up to max. 80°C.	U
	Welded seams cold galvanised on the inside, primed and painted on the outside ⁶ . Total coating thickness at least 120 µm. Unless otherwise specified, colour tone based on RAL 9006, semi-gloss. Temperature-resistant up to max. 80°C.	NL2
	Coating system according to DIN EN ISO 12944-5 for corrosiveness category C ____ according to DIN EN ISO 12944-2 and protection duration ____ according to DIN EN ISO 12944-1, temperature-resistant up to ____°C, colour tone based on RAL ____ (please complete as appropriate).	NL3 ⁵
	Powder coating, medium coating thickness 80 µm. Unless otherwise specified, colour tone based on RAL 9006, semi-gloss. Temperature-resistant up to max. 120°C.	P
FAL	Welded seams cold aluminised, otherwise untreated after processing. ⁴ Temperature-resistant up to max. 700°C.	U
Stainless steel	Stained	BZ
	Bead-blasted	GG
	Longitudinally brushed, welded seams brushed	LG
Aluminium	Untreated after processing. ⁴	U

⁴ Only suitable for visible areas to a limited extent, as processing traces and colour differences are possible as a result of the process. For installation in visible areas, we recommend an additional surface coating with wet coating (NL).

⁵ For surface NL3. When requesting or ordering, please specify the desired corrosiveness category (C2-CX), protection duration (short, medium, long), temperature resistance and colour tone.

⁶ Process-related paint mist possible on the inside.

Welded pipelines and components

COMPONENT CONNECTIONS

BerlinerLuft pipes and fittings are available with the following component ends:

Design Component end	Connection Components ¹	Possible Seals ¹	Order code
smooth	Welding	–	G
with board	Clamping ring or welding	On-board sealing ring	B
Loose flange row 1 behind board (DIN24154 R1) ²	Bolting	On-board sealing ring, flat gasket, sealing tape	LF1
Loose flange row 2 behind board (DIN24154 R2) ³	Bolting	On-board sealing ring, flat gasket, sealing tape	LF2
Fixed flange flush + welded around the outside ³	Bolting	Flat gasket, sealing tape	FF1
Fixed flange welded around the inside ³	Bolting	Flat gasket, sealing tape	FF2
Fixed flange welded around the inside and outside ³	Bolting	Flat gasket, sealing tape	FF3

Tolerances:

Roundness: The tolerance for pipe diameter and roundness in relation to the outer diameter is $\pm 1\%$ or ± 1 mm (the greater value is decisive), except for the area of the welded seam.

Length and angle dimensions: Tolerance class D according to DIN EN ISO 13920-1996.

Wall thicknesses:

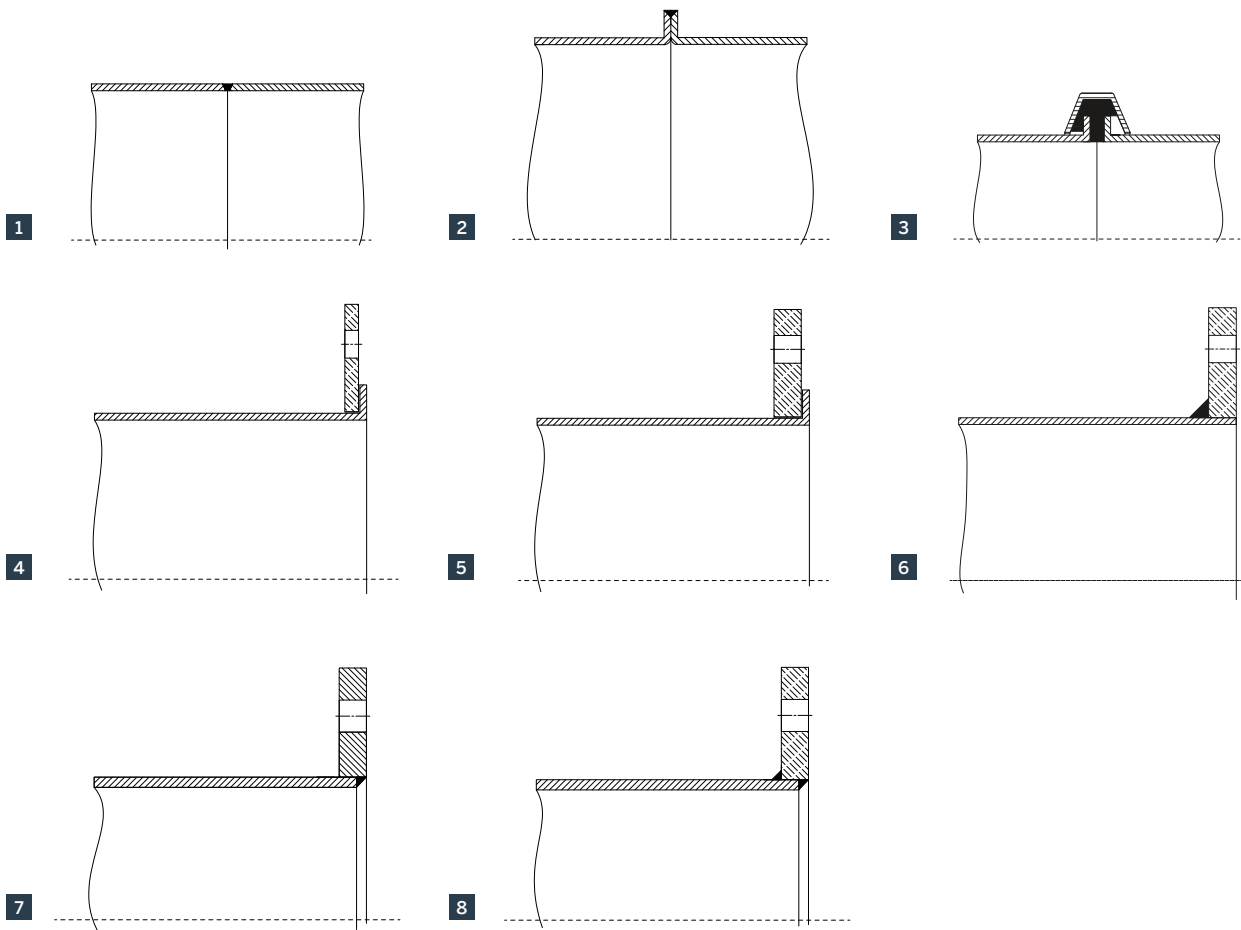
Wall thickness can be changed in drawn or ground sections.

Board height ± 1 mm

¹ Seals and connecting materials are not included in the scope of delivery.

² Flange dimensions as standard similar to DIN 24154 R1 – July 1990 issue (exception: DN 1500)

³ Flange dimensions as standard similar to DIN 24154 R2 – July 1990 issue (exception: DN 1500); version from DN 2200 similar to DIN 28031 form A – September 2013 issue (exception: DN 2500)



- 1 | Component end G – smooth – welded
- 2 | Component end B – with board – welded
- 3 | Component end B – with board – clamping ring

- 4 | Component end LF1 – loose flange (similar to DIN 24154 R1) behind board – bolted
- 5 | Component end LF2 – loose flange (similar to DIN 24154 R2) behind board – bolted
- 6 | Component end FF1 – fixed flange flush and welded around the outside

- 7 | Component end FF2 – fixed flange welded around the inside
- 8 | Component end FF3 – fixed flange welded around the inside and outside

Welded pipelines and components

PRESSURES

Welded pipelines and fittings, manufactured according to BerlinerLuft. factory standard, can be used for steel and stainless steel materials for the pressure loads specified in the table. The diameter series of the BerlinerLuft. work standard are based, among other things, on DIN 24151 (April

1990 issue) and DIN EN 1506:2007. The specified pressures apply to welded pipes in ventilation systems for air without the addition of aggressive vapours or solids that are conducive to wear in the temperature range of 0°C – 50°C for non-reinforced pipe lengths.

PERMISSIBLE PRESSURES

for pipe length L= 3000 mm

Nominal diameter DN d1 [mm]	Vacuum [Pa]	Overpressure [Pa]	Min. wall thickness [mm]	Vacuum [Pa]	Overpressure [Pa]	Min. wall thickness [mm]
100	–	–	–	–3800		1.5
125						
140						
150						
160						
180						
200						
224						
250						
280						
300	–1250			–3500	6000	2
315						
355						
400						
450						
500						
560						
600						
630						
710						
800	–1000	3250	1.5	–3200		3
900						
1000						
1120						
1250						
1400						
1500						
1600						
1800						
2000						

Permissible pressures depending on nominal diameter and wall thickness for non-reinforced pipe length 3000 mm

Note: Pipes and fittings for critical application conditions with stringent requirements for pressure, temperature or wear in consultation with BerlinerLuft., in order to optimally match the material selection and component geometry to the application.

PERMISSIBLE PRESSURES
for pipe length L= 2000 mm

Nominal diameter DN d1 [mm]	Vacuum [Pa]	Overpressure [Pa]	Min. wall thickness [mm]	Vacuum [Pa]	Overpressure [Pa]	Min. wall thickness [mm]	
100	-	-	-			1.5	
125							
140							
150							
160							
180							
200							
224							
250							
280	-1600	6300	1.5	-6300	10000	2	
300							
315							
355							
400							
450							
500							
560							
600							
630							
710							
800							
900							
1000							
1120				-5000		3	
1250							
1400							
1500							
1600							
1800							
2000							

Permissible pressures depending on nominal diameter and wall thickness for non-reinforced pipe length 2000 mm

Welded pipelines and components

DIMENSIONS - MATERIALS

DN d1 [mm]	Possible wall thickness s depending on the material [mm]																		
	Steel, black (S)					Steel, Sendzimir galvanised (Sv)					FAL		Stainless steel (1.4301, 1.4404, 1.4571)					AlMg3	
	1.5	2	3	4	5	1.5	2	3	4	5	1.5	2	1.5	2	3	4	5	2	3
100	•	•				•	•				•	•	•	•				•	
125	•	•				•	•				•	•	•	•				•	
140	•	•				•	•				•	•	•	•				•	
150	•	•				•	•				•	•	•	•				•	
160	•	•				•	•				•	•	•	•				•	
180	•	•				•	•				•	•	•	•				•	
200	•	•	•			•	•	•			•	•	•	•	•			•	•
224	•	•	•			•	•	•			•	•	•	•	•			•	•
250	•	•	•			•	•	•			•	•	•	•	•			•	•
280	•	•	•			•	•	•			•	•	•	•	•			•	•
300	•	•	•			•	•	•			•	•	•	•	•			•	•
315	•	•	•			•	•	•			•	•	•	•	•			•	•
355	•	•	•			•	•	•			•	•	•	•	•			•	•
400	•	•	•	•		•	•	•	•		•	•	•	•	•	•		•	•
450	•	•	•	•		•	•	•	•		•	•	•	•	•	•		•	•
500	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
560	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
600	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
630	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
710	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
800	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
900	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1000	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1120	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1250	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1400	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1500	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1600	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1800	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2000	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2200		•	•	•	•		•	•	•	•		•		•	•	•	•	•	•
2400		•	•	•	•		•	•	•	•		•		•	•	•	•	•	•
2500		•	•	•	•		•	•	•	•		•		•	•	•	•	•	•

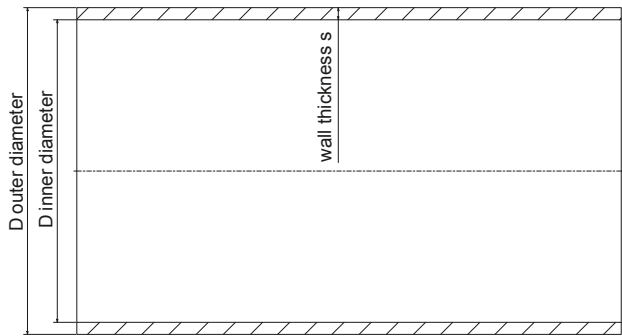
• = standard dimensions that can be ordered (further dimensions available on request)

Note: Abbreviations of surface treatments on page 54

The outer diameter (D_{outer}) and inner diameter (D_{inner}) of the respective nominal diameter (DN) are manufactured according to the table below, depending on the wall thickness and the component connection.

Individual dimensions on request.

Component connection	Actual diameter depending on nominal diameter (DN)
Smooth (G)	$DN = D_{\text{inner}}$ as per DIN EN 1506:2007
Board (B)	D_{outer} is functionally adapted to BerlinerLuft. clamping rings and sealing rings (dimensions on page 50)
Loose flange behind board (LF1, LF2)	D_{outer} is functionally adapted to BerlinerLuft. Flanges (dimensions on page 46 – 49)
Fixed flange (FF1, FF2, FF3)	D_{outer} is functionally adapted to BerlinerLuft. Flanges (dimensions on page 46 – 49)



Pipe cross-section

Welded pipelines and components

SURFACE FINISH

DN d1 [mm]	Steel, black (S)				Steel, Sendzimir galvanised (Sv)			FAL	Stainless steel (1.4301, 1.4404, 1.4571)			AlMg3
	Surface finish											
	U	NL1 NL2 NL3	P	VZF	U	NL2 NL3	P	U	BZ	GG	LG	U
100	•	•	•	•	•	•	•	•	•	•	•	•
125	•	•	•	•	•	•	•	•	•	•	•	•
140	•	•	•	•	•	•	•	•	•	•	•	•
150	•	•	•	•	•	•	•	•	•	•	•	•
160	•	•	•	•	•	•	•	•	•	•	•	•
180	•	•	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•	•	•	•	•	•	•	•	•
224	•	•	•	•	•	•	•	•	•	•	•	•
250	•	•	•	•	•	•	•	•	•	•	•	•
280	•	•	•	•	•	•	•	•	•	•	•	•
300	•	•	•	•	•	•	•	•	•	•	•	•
315	•	•	•	•	•	•	•	•	•	•	•	•
355	•	•	•	•	•	•	•	•	•	•	•	•
400	•	•	•	•	•	•	•	•	•	•	•	•
450	•	•	•	•	•	•	•	•	•	•	•	•
500	•	•	•	•	•	•	•	•	•	•	•	•
560	•	•	•	•	•	•	•	•	•	•	•	•
600	•	•	•	•	•	•	•	•	•	•	•	•
630	•	•	•	•	•	•	•	•	•	•	•	•
710	•	•		•	•	•		•	•	•	•	•
800	•	•		•	•	•		•	•	•	•	•
900	•	•		•	•	•		•	•	•	•	•
1000	•	•		•	•	•		•	•	•	•	•
1120	•	•		•	•	•		•	•	•	•	•
1250	•	•		•	•	•		•	•	•	•	•
1400	•	•		•	•	•		•	•	•	•	•
1500	•	•		•	•	•		•	•	•	•	•
1600	•	•			•	•		•	•	•	•	•
1800	•	•			•	•		•	•	•	•	•
2000	•	•			•	•		•	•	•	•	•
2200	•	•			•	•		•	•		•	•
2400	•	•			•	•		•	•		•	•
2500	•	•			•	•		•	•		•	•

• = standard dimensions that can be ordered (further dimensions available on request)

Note: Abbreviations of surface treatments on page 54

COMPONENT ENDS

DN d1 [mm]	Smooth (G)	Board (B)	Loose flange behind board (LF)			Welded flange (FF)		
		B = 6 mm	B = 6 mm	B = 10 mm	B = 16 mm	(FF1)	(FF2)	(FF3)
	s = 1.5 – 5 mm	to s = 2 mm	to s = 2 mm	to s = 3 mm	s = 4 mm	s = 1.5 – 5 mm	s = 1.5 – 5 mm	s = 1.5 – 5 mm
100	•	•	•			•	•	•
125	•	•	•			•	•	•
140	•	•	•			•	•	•
150	•	•	•			•	•	•
160	•	•	•			•	•	•
180	•	•	•			•	•	•
200	•	•	•			•	•	•
224	•	•	•			•	•	•
250	•	•	•			•	•	•
280	•	•	•			•	•	•
300	•	•	•			•	•	•
315	•	•	•			•	•	•
355	•	•	•			•	•	•
400	•	•		•	•	•	•	•
450	•	•		•	•	•	•	•
500	•	•		•	•	•	•	•
560	•	•		•	•	•	•	•
600	•	•		•	•	•	•	•
630	•	•		•	•	•	•	•
710	•	•		•	•	•	•	•
800	•	•		•	•	•	•	•
900	•			•	•	•	•	•
1000	•			•	•	•	•	•
1120	•			•	•	•	•	•
1250	•			•	•	•	•	•
1400	•			•	•	•	•	•
1500	•			•	•	•	•	•
1600	•			•	•	•	•	•
1800	•			•	•	•	•	•
2000	•			•	•	•	•	•
2200	•					•	•	•
2400	•					•	•	•
2500	•					•	•	•

• = standard dimensions that can be ordered (further dimensions available on request)

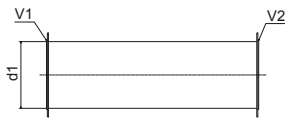
Note: Abbreviations of surface treatments on page 54

Welded pipelines and components

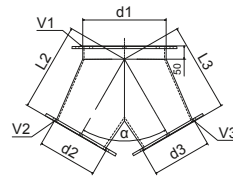
OVERVIEW OF COMPONENTS

According to the factory standard of BerlinerLuft. Technik GmbH

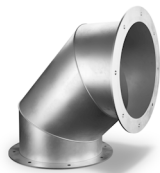
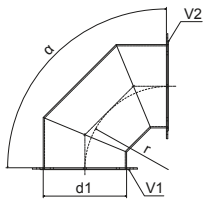
Tube



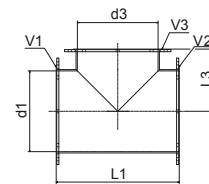
Y-piece



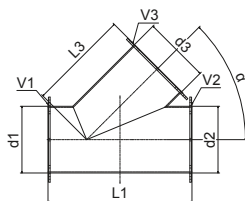
Segment curve



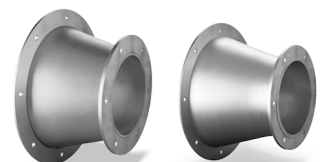
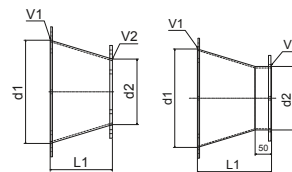
T-piece



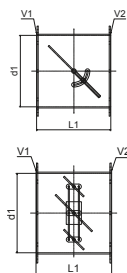
Junction



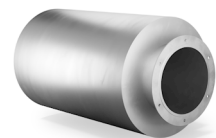
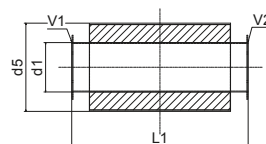
Reduction



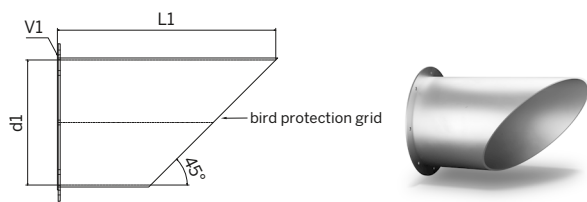
Throttle damper



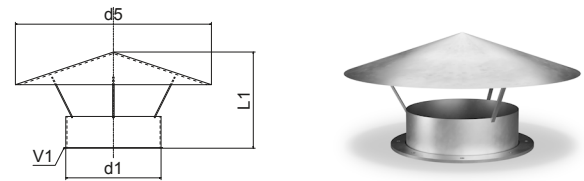
Sound insulation



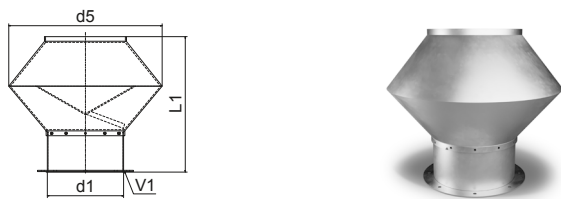
Discharge outlets



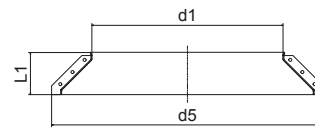
Rain cowl



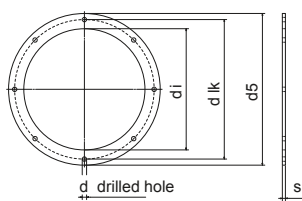
Deflector hood



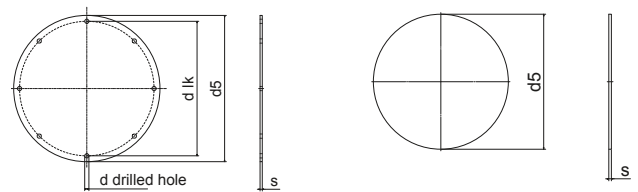
Rain collar



Flange



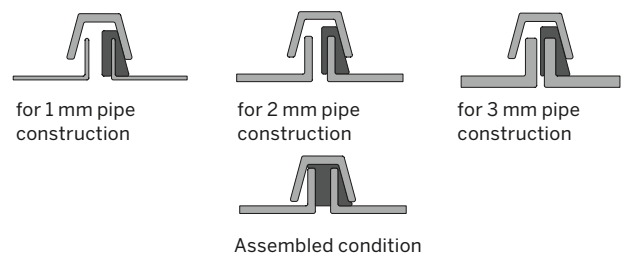
End cover



Clamping ring



Seal



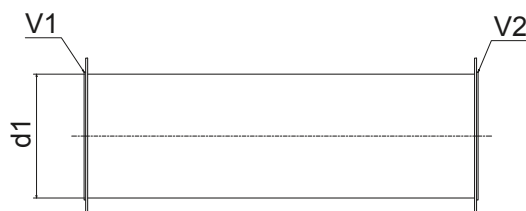
Welded pipelines and components

TUBE

DN d1 [mm]	Length L1 [mm]							Weight ¹ for s = 2 mm [kg / running m]
	100	250	450	950	1450	1950	2950	
100	•	•	•	•				5.0
125	•	•	•	•				6.3
140	•	•	•	•				7.0
150	•	•	•	•	•			7.5
160	•	•	•	•	•			8.0
180	•	•	•	•	•			9.0
200	•	•	•	•	•			10.0
224	•	•	•	•	•	•		11.2
250	•	•	•	•	•	•		12.4
280	•	•	•	•	•	•		13.9
300	•	•	•	•	•	•	•	14.9
315	•	•	•	•	•	•	•	15.6
355	•	•	•	•	•	•	•	17.6
400	•	•	•	•	•	•	•	19.8
450	•	•	•	•	•	•	•	22.3
500	•	•	•	•	•	•	•	24.8
560	•	•	•	•	•	•	•	27.7
600	•	•	•	•	•	•	•	29.7
630	•	•	•	•	•	•	•	31.2
710			•	•	•	•	•	35.1
800			•	•	•	•	•	39.6
900			•	•	•	•	•	44.5
1000			•	•	•	•	•	49.4
1120			•	•	•	•	•	55.3
1250			•	•	•	•	•	61.8
1400			•	•	•	•	•	69.2
1500			•	•	•	•	•	74.1
1600			•	•	•	•	•	79.0
1800			•	•	•	•	•	88.9
2000			•	•	•	•	•	98.7
2200			•	•	•	•	•	108.5
2400			•	•	•	•	•	118.4
2500			•	•	•	•	•	123.4

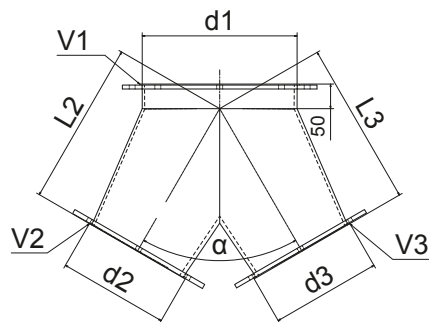
• = standard dimensions that can be ordered. Further dimensions on request.

¹ Specified weights apply to component connection (G) Smooth



Y-PIECE

DN d1 [mm]	90°			60°		
	d2 / d3 [mm]	α [°]	L2 / L3 [mm]	d2 / d3 [mm]	α [°]	L2 / L3 [mm]
100						
125						
140	100	90	185	100	60	185
150	100	90	185	100	60	185
160	100	90	185	100	60	185
180	125	90	215	125	60	215
200	140	90	230	140	60	230
224	160	90	255	160	60	255
250	180	90	280	180	60	280
280	200	90	310	200	60	310
300	200	90	310	200	60	310
315	224	90	335	224	60	335
355	250	90	365	250	60	365
400	280	90	400	280	60	400
450	315	90	440	315	60	440
500	355	90	490	355	60	490
560	400	90	550	400	60	550
600	400	90	550	400	60	550
630	450	90	610	450	60	610
710	500	90	670	500	60	670
800	560	90	740	560	60	740
900	630	90	825	630	60	825
1000	710	90	920	710	60	920
1120	800	90	1030	800	60	1030
1250	900	90	1150	900	60	1150
1400	1000	90	1280	1000	60	1280
1500	1000	90	1280	1000	60	1280
1600	1120	90	1460	1120	60	1460
1800	1250	90	1640	1250	60	1640
2000	1400	90	1800	1400	60	1800
2200						
2400						
2500						



Welded pipelines and components

SEGMENT CURVE

DN d1 [mm]	Angle α [°]													
	90°			60°			45°			30°			15°	
	Radius r =													
	1D	1.5D	2D	1D	1.5D	2D	1D	1.5D	2D	1D	1.5D	2D	1.5D	2D
100	•	•	•	•	•	•	•	•	•	•	•	•		•
125	•	•	•	•	•	•	•	•	•	•	•	•		•
140	•	•	•	•	•	•	•	•	•	•	•	•		•
150	•	•	•	•	•	•	•	•	•	•	•	•		•
160	•	•	•	•	•	•	•	•	•	•	•	•		•
180	•	•	•	•	•	•	•	•	•	•	•	•		•
200	•	•	•	•	•	•	•	•	•	•	•	•		•
224	•	•	•	•	•	•	•	•	•	•	•	•	•	•
250	•	•	•	•	•	•	•	•	•	•	•	•	•	•
280	•	•	•	•	•	•	•	•	•	•	•	•	•	•
300	•	•	•	•	•	•	•	•	•	•	•	•	•	•
315	•	•	•	•	•	•	•	•	•	•	•	•	•	•
355	•	•	•	•	•	•	•	•	•	•	•	•	•	•
400	•	•	•	•	•	•	•	•	•	•	•	•	•	•
450	•	•	•	•	•	•	•	•	•	•	•	•	•	•
500	•	•	•	•	•	•	•	•	•	•	•	•	•	•
560	•	•	•	•	•	•	•	•	•	•	•	•	•	•
600	•	•	•	•	•	•	•	•	•	•	•	•	•	•
630	•	•	•	•	•	•	•	•	•	•	•	•	•	•
710	•	•	•	•	•	•	•	•	•	•	•	•	•	•
800	•	•	•	•	•	•	•	•	•	•	•	•	•	•
900	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1000	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1120	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1250	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1400	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1500	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1600	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1800	•			•			•	•	•	•	•	•		
2000	•			•			•	•	•	•	•	•		
2200	•			•			•	•	•	•	•	•		
2400	•			•			•	•	•	•	•	•		
2500	•			•			•	•	•	•	•	•		

• = standard dimensions that can be ordered. Further dimensions on request.

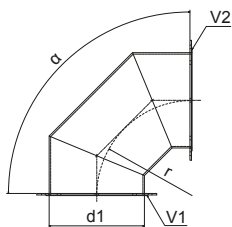
Angle α [°]	Radius r					
	1 D		1.5 D		2 D	
	Number of segments					
	Type 1 (B1)	Type 2 (B2)	Type 1 (B1)	Type 2 (B2)	Type 1 (B1)	Type 2 (B2)
90	3	4	4	5	4	6
60	3	3	3	4	3	4
45	2	3	3	4	3	4
30	2	2	2	2	2	3
15	2	2	2	2	2	2

The number of segments per bend depends on the type (B1 or B2) and is listed in the overview above.

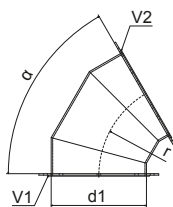
Type 1 (B1) – for simple applications without the need for optimised flow conditions

Type 2 (B2) – for applications requiring optimised flow conditions

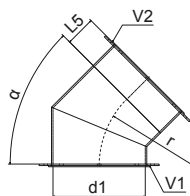
Segment bend (type 1)



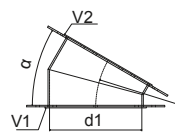
90°, r=1 D



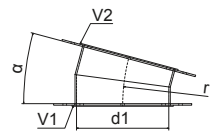
60°, r=1 D



45°, r=1 D Example of a special version with extension L5 at connection V2



30°, r=1 D



15°, r=2 D

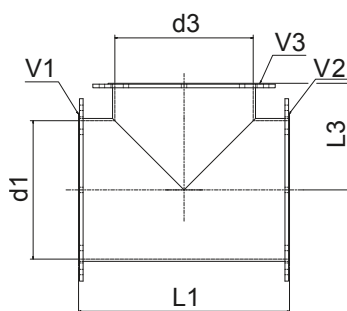
Welded pipelines and components

T-PIECE

DN d1	d3	L1	L3	Weight ¹ for s = 2 mm	d3	L1	L3	Weight ¹ for s = 2 mm	d3	L1	L3	Weight ¹ for s = 2 mm
[mm]	[mm]			[kg / pc]	[mm]			[kg / pc]	[mm]			[kg / pc]
100	100	190	95	1.3	80	170	95					
125	125	215	110	1.8	100	190	110	1.5				
140	140	240	120	2.3	125	215	115	1.9	100	190	115	1.7
150	150	250	140	2.5	125	215	120	2.0	100	190	120	1.8
160	160	260	130	2.8	150	250	130	2.7	100	190	125	1.9
180	180	280	140	3.4	160	260	140	3.1	150	250	140	3.0
	140	240	140	2.8	125	215	135	2.4	100	190	135	2.1
200	200	330	165	4.3	180	280	150	3.7	160	260	150	3.4
	150	250	150	3.2	125	215	145	2.6	100	190	145	2.3
224	224	355	180	5.1	200	330	180	4.7	180	280	165	4.0
	150	250	165	3.5	125	215	160	2.9	100	190	160	2.5
250	250	380	190	6.0	224	355	190	5.6	200	330	190	5.2
	180	280	175	4.4	150	250	175	3.9	100	190	170	2.8
280	280	430	215	7.8	250	380	205	6.7	224	355	205	6.2
	200	330	205	5.7	150	250	205	4.3	100	190	185	3.1
300	300	450	235	8.7	280	430	235	8.3	250	380	215	7.1
	224	350	215	6.5	200	330	215	6.1	100	190	195	3.3
315	315	465	235	9.4	300	450	235	9.1	280	430	235	8.6
	250	380	225	7.4	200	330	225	6.3	100	190	205	3.5
355	355	525	265	11.8	315	465	255	10.4	300	450	255	10.1
	250	380	245	8.2	200	330	245	7.0	100	190	225	3.9
400	400	570	285	14.3	355	525	285	13.1	315	465	275	11.6
	300	450	275	11.2	200	330	265	7.8	100	190	245	4.3
450	450	620	310	17.4	400	570	310	15.9	355	525	310	14.5
	300	450	300	12.4	200	330	290	8.7	100	190	270	4.8
500	500	680	340	21.0	450	620	335	19.1	400	570	335	17.4
	355	525	335	16.0	200	330	315	9.6	100	190	295	5.3
560	560	740	370	25.6	500	680	370	23.3	450	620	365	21.1
	400	570	365	19.3	355	525	365	17.7	200	330	345	10.7
600	600	780	390	28.8	560	740	390	27.2	500	680	385	24.8
	450	620	385	22.5	355	525	385	18.8	200	330	365	11.4
630	630	810	405	31.3	600	780	405	30.1	560	740	405	28.5
	500	680	405	25.9	400	570	400	21.5	200	330	380	12.0
710	710	890	445	38.6	630	810	445	34.9	560	740	445	31.7
	500	680	445	28.9	400	570	440	24.0	250	380	420	15.6
800	800	980	490	47.6	710	890	490	43.0	630	810	490	39.0
	560	740	490	35.4	400	570	485	26.9	250	380	465	17.5
900	900	1080	540	58.7	800	980	540	53.1	710	890	540	48.0
	630	810	540	43.5	500	680	540	36.1	315	465	525	24.3

¹ Specified weights apply to component connection (G) Smooth

DN d1	d3	L1	L3	Weight ¹ for s = 2 mm	d3	L1	L3	Weight ¹ for s = 2 mm	d3	L1	L3	Weight ¹ for s = 2 mm
[mm]		[mm]		[kg / pc]		[mm]		[kg / pc]		[mm]		[kg / pc]
1000	1000	1180	590	71.0	900	1080	590	64.8	800	980	590	58.6
	710	890	590	53.0	500	680	590	39.8	315	465	575	26.9
1120	1120	1300	650	87.8	1000	1180	650	79.0	900	1080	650	72.1
	800	980	650	65.2	630	810	650	53.4	500	680	650	44.3
1250	1250	1430	715	107.3	1120	1300	715	97.3	1000	1180	715	87.6
	900	1080	715	79.9	630	810	715	59.3	500	680	715	49.2
1400	1400	1600	800	133.7	1250	1430	790	119.4	1120	1300	790	108.3
	1000	1180	790	97.6	800	980	790	80.5	630	810	790	66.1
1500	1500	1700	850	151.8	1400	1600	850	142.7	1250	1430	850	127.5
	1000	1180	850	104.2	800	1000	850	86.0	630	810	850	70.6
1600	1600	1800	900	171.2	1400	1600	900	151.7	1250	1430	890	135.6
	1000	1180	890	110.8	800	980	890	91.5	630	810	890	75.1
1800	1800	2000	1000	213.3	1600	1800	1000	191.6	1500	1700	1000	180.7
	1250	1430	990	151.8	1000	1180	990	124.1	800	980	990	102.5
2000	2000	2200	1100	260.0	1800	2000	1100	236.0	1500	1700	1100	200.0
	1250	1430	1090	168.0	1000	1180	1090	137.4	800	980	1090	113.5
2200	2200	2400	1200		1800	2000	1200		1120	1300	1200	
2400	2400	2600	1300		2000	2200	1300		1250	1430	1300	
2500	2500	2700	1350		2000	2200	1350		1400	1600	1350	



¹ Specified weights apply to component connection (G) Smooth

Welded pipelines and components

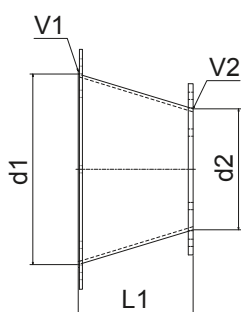
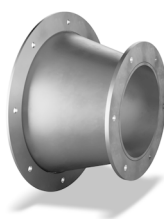
REDUCTION

DN d1 [mm]	d2 [mm]	L1 ²	Weight ¹ for s = 2 mm [kg / pc]	d2 [mm]	L1 ²	Weight ¹ for s = 2 mm [kg / pc]	d2 [mm]	L1 ²	Weight ¹ for s = 2 mm [kg / pc]
100									
125	100	60	0.4						
140	125	50	0.3	100	80	0.5			
150	140	50	0.4	125	70	0.5	100	100	0.7
160	150	50	0.4	140	60	0.5	125	80	0.6
							100	110	0.7
180	160	60	0.5	150	70	0.6	140	90	0.7
				125	110	0.9	100	140	1.0
200	180	60	0.6	160	80	0.7	150	100	0.9
	140	110	1.0	125	130	1.1	100	170	1.3
224	200	60	0.7	180	90	0.9	160	120	1.2
	150	130	1.3	125	160	1.5	100	200	1.7
250	224	70	0.8	200	100	1.2	180	130	1.4
	180	130	1.4	150	170	1.8	100	240	2.2
280	250	70	0.9	224	110	1.4	200	140	1.7
	180	170	2.0	150	210	2.4	100	280	2.8
300	280	60	0.9	250	100	1.4	224	140	1.9
	200	170	2.2	150	240	2.8	100	310	3.3
315	300	50	0.8	280	80	1.2	250	120	1.7
	200	190	2.5	150	260	3.2	100	330	3.6
355	315	90	1.5	300	110	1.8	280	140	2.3
	250	180	2.8	200	250	3.6	150	310	4.1
400	355	100	1.9	315	150	2.8	300	170	3.1
	280	200	3.5	250	240	4.1	150	380	5.5
450	400	100	2.2	355	170	3.5	315	220	4.4
	280	270	5.1	250	310	5.7	150	450	7.1
500	450	110	2.7	400	170	4.0	355	240	5.3
	315	290	6.2	280	340	6.9	250	380	7.4
560	500	120	3.3	450	190	5.0	400	260	6.5
	355	320	7.6	315	380	8.7	250	470	9.9
600	560	90	2.7	500	180	5.1	450	250	6.8
	400	320	8.3	355	380	9.4	315	430	10.3
630	600	80	2.5	560	140	4.3	500	220	6.4
	450	290	8.1	400	360	9.6	355	420	10.8
710	630	150	5.2	560	250	8.2	500	330	10.4
	450	400	12.1	400	470	13.6	355	530	14.7
800	710	170	6.6	630	280	10.4	560	380	13.4
	500	460	15.6	450	530	17.3	355	660	19.9
900	800	190	8.3	710	310	12.9	630	420	16.7
	560	520	19.8	500	600	21.9	450	670	23.6
1000	900	290	13.8	800	420	19.2	710	520	22.8
	630	600	25.3	560	660	26.8	500	710	27.9
1120	1000	320	17.1	900	460	23.6	800	590	29.0
	710	690	32.6	630	770	35.0	560	830	36.4

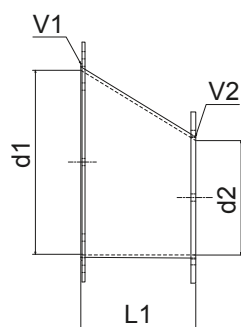
DN d1 [mm]	d2 [mm]	L1 ²	Weight ¹ for s = 2 mm [kg / pc]	d2 [mm]	L1 ²	Weight ¹ for s = 2 mm [kg / pc]	d2 [mm]	L1 ²	Weight ¹ for s = 2 mm [kg / pc]
1250	1120	320	19.1	1000	510	29.2	900	650	35.8
	800	780	41.1	710	880	44.6	630	960	46.9
1400	1250	310	20.9	1120	530	34.1	1000	720	44.3
	900	860	50.9	710	1090	59.6	630	1170	61.8
1500	1400	150	11.3	1250	450	31.7	1120	680	45.7
	1000	870	55.9	800	1130	67.2	710	1240	71.1
1600	1400	300	23.4	1250	590	43.3	1120	820	57.4
	1000	1010	67.7	800	1280	79.5	710	1380	82.8
1800	1600	325	27.5	1500	370	32.5	1250	880	69.4
	1120	1110	83.7	1000	1300	94.1	800	1560	105.2
2000	1800	325	30.4	1600	420	41.4	1500	650	60.2
	1250	1160	97.8	1120	1390	112.3	1000	1580	122.8
2200	2000	325	35.0	1800	550	54.0	1600	820	76.0
2400	2200	325	38.0	2000	550	59.0	1800	820	85.0
2500	2400	325	40.0	2200	420	48.0	2000	690	76.0

¹ Weights apply to the version without extension L1 by 50 mm and component connection (G) Smooth.

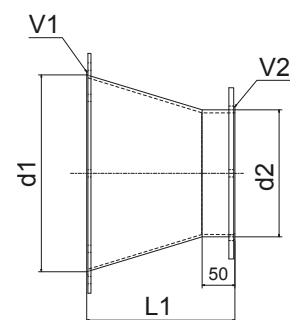
² Dimensions L1 apply to the smooth version and the version with welded flanges. In the version with board or loose flange, L1 is extended by 50 mm.



Type S (symmetrical)



Type A (asymmetrical)

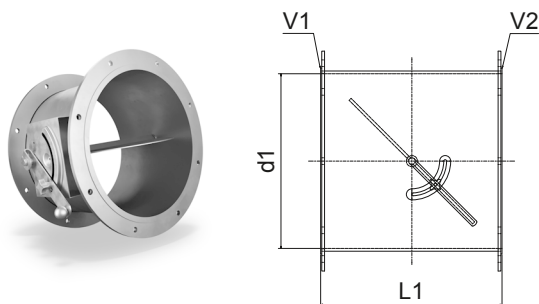


Example: Type S (symmetrical) with extension L1 by 50 mm for version with loose flange or board

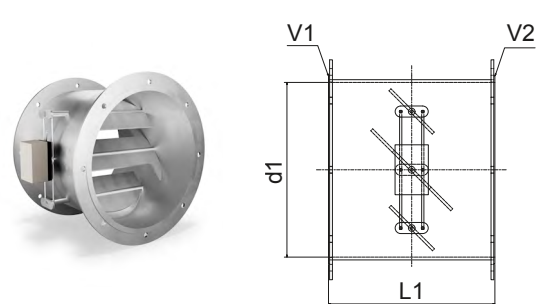
Welded pipelines and components

THROTTLE DAMPER

DN d1 [mm]	Inner flap, single piece		Inner flap, divided	
	Long type (EL)	Short type (EK)	Long type (GL)	Short type (GK)
	L1 [mm]			
100	160			
125	160			
140	160			
150	160			
160	170			
180	190			
200	210			
224	234			
250	260			
280	290			
300	310			
315	325			
355	365	300		
400	410	300		
450	460	300		
500	510	300	350	300
560	570	300	400	300
600	610	300	450	300
630	640	300	450	300
710	720	300	500	300
800	810	300	550	300
900		300	650	300
1000		300	700	300
1120		300	750	300
1250		300	850	300
1400			950	300
1500			1050	300
1600			1100	300



Design example:
Damper – inner flap, single piece – long type (type EL) and hand lever with locking (H actuation).



Design example:
Damper - inner flap, divided - long type (type GL) and electric drive 24 V DC/AC (E24 actuation).

TYPES:

EL	Inner flap, single piece – long type – inner flap in open position inside the housing.
EK	Inner flap, single piece – short type – inner flap protrudes from the housing in the open position.
GL	Inner flap, divided – long type – multi-part inner flap for optimised flow conditions. Inner flap in open position inside the housing.
GK	Inner flap, divided – short type – multi-part inner flap for optimised flow conditions. Inner flap protrudes from the housing in the open position.

SEAL¹:

N	Inner flap not sealed
MD	Inner flap metallic sealing

¹ Sealed to the outside according to DIN EN 12237, airtightness class D, leakage according to DIN EN 1751 class O.

ACTUATION:

H	Hand lever with lock
P24	Pneumatic (control voltage 24 V DC)
P230	Pneumatic (control voltage 230 V AC)
E24	Electrical (voltage 24 V DC/AC)
E230	Electrical (voltage 230 V AC)

Note: Flaps with a drive are closed de-energised and/or depressurised as standard. Further versions on request. Possible materials and surfaces: Steel (black, painted, powder-coated), stainless steel (stained, bead-blasted), aluminium

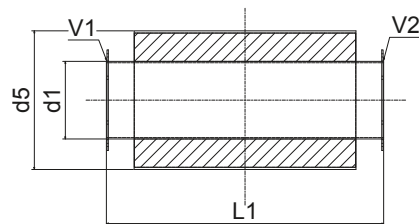
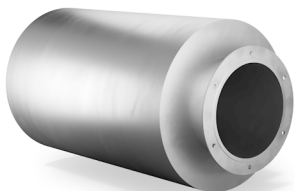
Welded pipelines and components

PIPE SILENCER – WITHOUT CORE

Type RSDIX

Attenuation length		500 mm		1000 mm		1500 mm	
DN d1 [mm]	d5 [mm]	L1 [mm]	Attenuation at 250 Hz [dB]	L1 [mm]	Attenuation at 250 Hz [dB]	L1 [mm]	Attenuation at 250 Hz [dB]
80	285	620	25	1120	50		
100	305	620	18	1120	36		
125	330	620	13	1120	27	1620	34
140	345	620	11	1120	23	1620	30
150	355	620	11	1120	22	1620	28
160	365	620	10	1120	20	1620	26
180	385	620	9	1120	18	1620	23
200	405	620	8	1120	17	1620	21
224	429	620	7	1120	15	1620	20
250	455	620	7	1120	14	1620	18
280	485	620	6	1120	13	1620	17
300	505	620	6	1120	13	1620	17
315	520	620	6	1120	13	1620	16
355	560	620	6	1120	12	1620	16
400	605	620	6	1120	12	1620	15
450	655	620	6	1120	12	1620	15
500	705	620	6	1120	12	1620	15
560	765	620	5	1120	10	1620	13
600	805	620	4	1120	9	1620	12
630	835	660	4	1160	9	1660	12

PIPE SILENCER, WELDED, IN INDUSTRIAL DESIGN



Pipe silencer (RSDIX – without core), packing thickness 100 mm, housing welded to cover, wall thickness at least 2 mm

PIPE SILENCER – WITH CORE

Type RSKIX

Attenuation length			500 mm		1000 mm		1500 mm	
DN d1 [mm]	Free ø similar to DN ¹	d5 [mm]	L1 [mm]	Attenuation at 250 Hz [dB]	L1 [mm]	Attenuation at 250 Hz [dB]	L1 [mm]	Attenuation at 250 Hz [dB]
250	200	455	620	12	1120	23	1620	30
280	224	485	620	10	1120	20	1620	26
300	250	505	620	10	1120	18	1620	24
315	250	520	620	9	1120	18	1620	23
355	280	560	620	8	1120	16	1620	21
400	315	605	620	7	1120	14	1620	19
450	355	655	620	7	1120	13	1620	17
500	400	705	620	6	1120	13	1620	16
560	450	765	620	6	1120	12	1620	15
600	500	805	620	5	1120	11	1620	14
630	500	835	660	5	1120	11	1620	14
710	560	915	660	5	1160	10	1660	14
800	630	1005	660	5	1160	10	1660	14
900	710	1105	660	5	1160	10	1660	13
1000	800	1205	660	5	1160	10	1660	13
1120	900	1325	660	5	1160	10	1660	13
1250	1000	1455	700	5	1200	10	1700	13

¹ Free RSKIX cross-section is similar to pipeline with DN specified in column.

Application conditions:

Dry air

Maximum permissible temperature of insulation material: 200°C

Maximum permissible temperature for the pipe and housing depending on the material selection

Maximum air speed 35 m/s

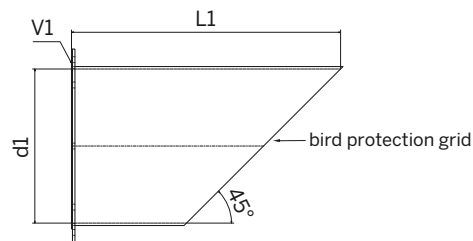
The permissible pressure depends on the diameter and wall thickness of the housing

In order to achieve higher attenuation performance with the same attenuation length, the pipe silencer with core (RSKIX) can be used. In order to ensure constant air speeds, we recommend using a pipe silencer with core (RSKIX) for larger nominal diameters, which has a similar free cross-section ¹ to the connected air duct. The connection to the air duct can be easily established by means of BerlinerLuft. reductions (pages 38 – 39).

For higher attenuation performance, we recommend BerlinerLuft. splitter silencers, which can be easily fitted into the pipeline using adapters. See also the "Silencing systems" section of the catalogue

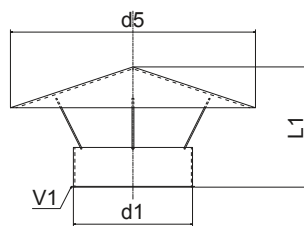
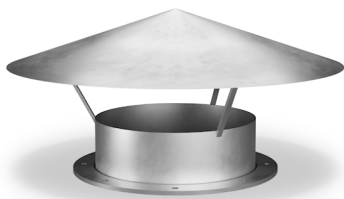
Welded pipelines and components

DISCHARGE OUTLETS

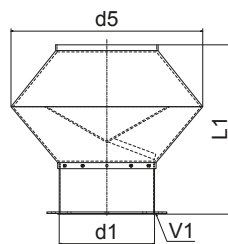


45° discharge outlet with bird screen

EXTERNAL AIR HOODS

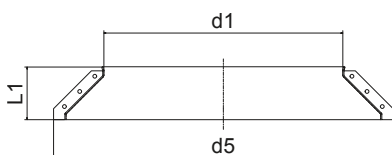


Rain cowl



Deflector hood

RAIN COLLAR



Rain collar - split into two

DN d1 [mm]	Discharge outlets		Rain cowl ²		Deflector hood		Rain collar ³	
	Length L1 [mm]	Weight ¹ for s = 2 mm [kg / pc]	Length L1 [mm]	d5 [mm]	Length L1 [mm]	d5 [mm]	Length L1 [mm]	d5 [mm]
100	200	2.0	185	200	235	200	140	360
125	200	2.4	200	250	270	250	140	385
140	200	2.5	210	280	290	280	140	400
150	275	2.7	215	290	305	300	140	410
160	275	2.9	220	310	315	320	140	420
180	275	3.4	230	350	345	360	140	440
200	275	4.0	245	380	370	400	140	460
224	375	4.4	260	440	450	448	140	484
250	375	5.0	275	500	490	500	140	510
280	375	5.6	290	540	530	560	140	540
300	375	6.0	300	540	555	600	140	560
315	550	13.0	315	625	575	630	140	575
355	550	14.0	340	700	680	710	140	615
400	550	16.0	370	800	740	800	140	660
450	750	18.0	395	900	810	900	140	710
500	750	20.0	425	1000	875	1000	140	760
560	750	22.0	460	1100	1005	1120	140	820
600	750	24.0	480	1150	1060	1200	140	860
630	750	26.0	500	1200	1100	1260	140	890
710			700	1400	1210	1420	140	970
800			760	1500	1380	1600	140	1060
900			790	1800	1515	1800	140	1160
1000			870	2000	1650	2000	140	1260
1120			950	2240	1860	2240	140	1380
1250							140	1510
1400							140	1660
1500							140	1760
1600							140	1860
1800							140	2060
2000							140	2260
2200								
2400								
2500								

¹ Weights apply to component connection (G) Smooth

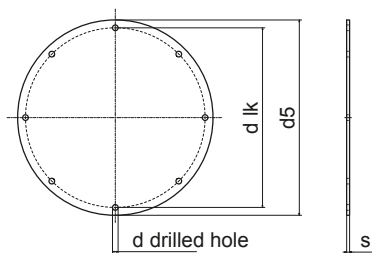
² Tapered rain cowl depending on the nominal diameter partly in an edged version.

³ Rain collar must be sealed between the pipe and the rain collar as well as between the flanges with suitable sealant after installation. Inner diameter depends on the outer diameter of the pipe (please specify when ordering).

Welded pipelines and components

FLANGE AND END COVER

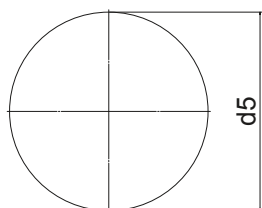
DN d1 [mm]	Flange - row 1 (R1)					Flange - row 2 (R2)				
	d5 [mm]	d LK [mm]	Amount Holes	d hole [mm]	Weight ¹ [kg / pc]	d5 [mm]	d LK [mm]	Amount Holes	d hole [mm]	Weight ¹ [kg / pc]
100	152	132	4	9.5	0.28	160	139	4	9.5	0.32
125	177	157	4	9.5	0.39	185	165	4	9.5	0.42
140	192	172	6	9.5	0.45	210	182	8	11.5	0.54
150	202	185	6	9.5	0.50	220	191	8	11.5	0.60
160	212	192	6	9.5	0.55	230	200	8	11.5	0.65
180	232	212	6	9.5	0.66	250	219	8	11.5	0.77
200	253	233	6	9.5	0.79	270	241	8	11.5	0.90
224	277	257	6	9.5	0.95	294	265	8	11.5	1.07
250	303	283	6	9.5	1.13	320	292	8	11.5	1.26
280	343	317	8	9.5	1.45	360	332	8	11.5	1.60
300	363	339	8	9.5	1.62	380	349	8	11.5	1.78
315	378	352	8	9.5	1.76	395	366	8	11.5	1.92
355	418	392	8	9.5	2.15	435	405	8	11.5	2.33
400	464	438	8	9.5	2.65	480	448	12	11.5	2.84
450	514	488	8	9.5	3.26	530	497	12	11.5	3.46
500	564	538	8	9.5	3.92	580	551	12	11.5	4.15
560	634	600	12	9.5	4.96	660	629	16	14	5.37
600	675	641	12	9.5	5.62	700	665	16	14	6.04
630	704	670	12	9.5	6.11	730	698	16	14	6.57
710	784	750	12	9.5	7.58	810	775	16	14	8.09
800	874	840	16	9.5	9.42	900	861	24	14	9.99
900	974	940	16	9.5	11.70	1000	958	24	14	12.33
1000	1075	1041	16	9.5	14.25	1100	1067	24	14	14.92
1120	1205	1169	24	9.5	17.90	1240	1200	32	18	18.96
1250	1335	1299	24	9.5	21.98	1370	1337	32	18	23.14
1400	1485	1449	24	9.5	27.19	1520	1475	32	18	28.49
1500	1585	1549	24	9.5	30.98	1620	1575	32	18	32.36
1600	1685	1649	24	9.5	35.01	1720	1675	40	18	36.48
1800	1885	1849	24	9.5	43.81	1920	1875	40	18	45.46
2000	2085	2049	24	9.5	53.60	2120	2073	40	18	55.42
2200										
2400										
2500										



¹ Weight for wall thickness 2 mm

End cover for flange

DN d1 [mm]	Smooth pipe		Board		
	d5 ² [mm]	Weight ¹ [kg / pc]	d5 [mm]	s [mm]	Weight ¹ [kg / pc]
100		0.1	112	1.5	0.1
125		0.2	137	1.5	0.2
140		0.2	152	1.5	0.2
150		0.3	162	1.5	0.2
160		0.3	172	1.5	0.3
180		0.4	192	1.5	0.3
200		0.5	212	1.5	0.4
224		0.6	236	1.5	0.5
250		0.8	262	1.5	0.6
280		1.0	292	1.5	0.8
300		1.1	312	1.5	0.9
315		1.2	327	1.5	1.0
355		1.6	367	2	1.7
400		2.0	412	2	2.1
450		2.5	462	2	2.6
500		3.1	512	2	3.2
560		3.9	572	2	4.0
600		4.4	612	2	4.6
630		4.9	642	2	5.1
710		6.2			
800		7.9			
900		10.0			
1000		12.3			
1120		15.5			
1250		19.3			
1400		24.2			
1500		27.7			
1600		31.6			
1800		40.0			
2000		49.3			
2200					
2400					
2500					



¹ Weight for wall thickness 2 mm

² d5 of the end cover for smooth pipe depends on the wall thickness of the pipe and is identical to the outer diameter of the pipe d5.

Note: End cover for smooth pipe not available in Sendzimir galvanised or hot-dip galvanised version. End cover for board not available in hot-dip galvanized version.

End cover for smooth pipe and board

Welded pipelines and components

FLANGES

Type, series 1

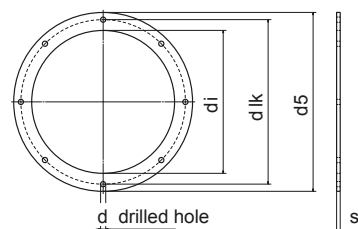
DN d1 [mm]	di [mm]	d LK [mm]	d5 [mm]	Amount Holes	Width B [mm]	Width s [mm]	d hole [mm]	Required Screws	Weight [kg / pc]
71	73	103	123	4	25	3	9.5	M8	0.17
80	82	112	132	4	25	3	9.5	M8	0.19
90	92	122	142	4	25	3	9.5	M8	0.21
100	102	132	152	4	25	3	9.5	M8	0.23
112	114	144	164	4	25	3	9.5	M8	0.25
125	127	157	177	4	25	3	9.5	M8	0.27
140	142	172	192	6	25	4	9.5	M8	0.40
150	152	185	202	6	25	4	9.5	M8	0.42
160	162	192	212	6	25	4	9.5	M8	0.45
180	182	212	232	6	25	4	9.5	M8	0.50
200	203	233	253	6	25	4	9.5	M8	0.55
224	227	257	277	6	25	4	9.5	M8	0.61
250	253	283	303	6	25	4	9.5	M8	0.67
280	283	317	343	8	30	4	9.5	M8	0.91
300	303	339	363	8	30	4	9.5	M8	0.97
315	318	352	378	8	30	4	9.5	M8	1.01
355	358	392	418	8	30	4	9.5	M8	1.13
400	404	438	464	8	30	4	9.5	M8	1.27
450	454	488	514	8	30	4	9.5	M8	1.41
500	504	538	564	8	30	4	9.5	M8	1.56
560	564	600	634	12	35	4	9.5	M8	2.04
600	605	641	675	12	35	4	9.5	M8	2.19
630	634	670	704	12	35	4	9.5	M8	2.28
710	714	750	784	12	35	4	9.5	M8	2.56
800	804	840	874	16	35	4	9.5	M8	2.86
900	904	940	974	16	35	4	9.5	M8	3.21
1000	1005	1041	1075	16	35	4	9.5	M8	3.56
1120	1125	1169	1205	24	40	5	9.5	M8	5.68
1250	1255	1299	1335	24	40	5	9.5	M8	6.32
1400	1405	1449	1485	24	40	5	9.5	M8	7.06
1500	1505	1549	1585	24	40	5	9.5	M8	7.60
1600	1605	1649	1685	24	40	5	9.5	M8	8.05
1800	1805	1849	1885	24	40	5	9.5	M8	9.03
2000	2005	2049	2085	24	40	5	9.5	M8	10.02

Material grades

BerlinerLuft. Flanges (type, series 1+2) are available in the following material grades:

Steel: black, wet-coated or hot-dip galvanised

Stainless steel (1.4301, 1.4571)

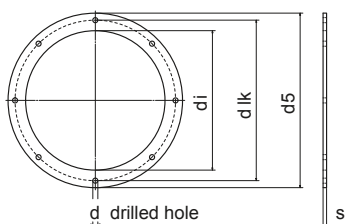


Type, series 1:
Version up to DN 2000 similar to DIN 24154 series 1 - July 1990 issue (exception: DN 1500)

FLANGES

Type, series 2

DN d1 [mm]	di [mm]	d LK [mm]	d5 [mm]	Amount Holes	Width B [mm]	Width s [mm]	d hole [mm]	Required Screws	Weight [kg / pc]
71	73	110	133	4	30	6	9.5	M8	0.4
80	82	118	142	4	30	6	9.5	M8	0.5
90	92	128	152	4	30	6	9.5	M8	0.5
100	102	139	162	4	30	6	9.5	M8	0.6
112	114	151	174	4	30	6	9.5	M8	0.6
125	127	165	187	4	30	6	9.5	M8	0.7
140	142	182	212	8	35	6	11.5	M10	0.9
150	152	191	222	8	35	6	11.5	M10	0.9
160	162	200	232	8	35	6	11.5	M10	1.0
180	182	219	252	8	35	6	11.5	M10	1.1
200	203	241	273	8	35	6	11.5	M10	1.2
224	227	265	297	8	35	6	11.5	M10	1.3
250	253	292	323	8	35	6	11.5	M10	1.5
280	283	332	363	8	40	8	11.5	M10	2.5
300	303	349	383	8	40	8	11.5	M10	2.7
315	315	366	395	8	40	8	11.5	M10	2.8
355	358	405	438	8	40	8	11.5	M10	3.1
400	404	448	484	12	40	8	11.5	M10	3.4
450	454	497	534	12	40	8	11.5	M10	3.8
500	504	551	584	12	40	8	11.5	M10	4.2
560	564	629	664	16	50	8	14	M12	5.9
600	605	665	705	16	50	8	14	M12	6.3
630	634	698	734	16	50	8	14	M12	6.6
710	714	775	814	16	50	8	14	M12	7.4
800	804	861	904	24	50	8	14	M12	8.2
900	904	958	1004	24	50	8	14	M12	9.2
1000	1005	1067	1105	24	50	8	14	M12	10.2
1120	1125	1200	1245	32	60	10	18	M16	16.9
1250	1255	1337	1375	32	60	10	18	M16	18.8
1400	1405	1475	1525	32	60	10	18	M16	21.0
1500	1505	1575	1625	32	60	10	18	M16	22.5
1600	1605	1675	1725	40	60	10	18	M16	23.8
1800	1805	1875	1925	40	60	10	18	M16	26.8
2000	2005	2073	2125	40	60	10	18	M16	29.8
2200	2203	2270	2323	72	60	30	23	M20	94.0
2400	2403	2475	2523	72	60	30	23	M20	102.0
2500	2503	2575	2623	72	60	30	23	M20	110.4



Type, series 2:

Version up to DN 2000 similar to DIN 24154 series 2 - July 1990 issue (exception: DN 1500), version from DN 2200 similar to DIN 28031 form A - September 2013 issue (exception: DN 2500)

Welded pipelines and components

CLAMPING RING

DN d1 [mm]	Design				Weight [kg / pc]
	2-piece without lever (OH)		With lever (MH)		
	Galvanised (Sv)	Stainless steel (V2A)	Galvanised (Sv)	Stainless steel (V2A)	
80	•	•	•	•	0.25
100	•	•	•	•	0.31
125	•	•	•	•	0.34
140	•	•	•	•	0.35
150	•	•	•	•	0.36
160	•	•	•	•	0.38
180	•	•	•	•	0.40
200	•	•	•	•	0.42
224	•	•	•	•	0.45
250	•	•	•	•	0.48
280	•	•	•	•	0.52
300	•	•	•	•	0.54
315	•	•	•	•	0.56
355	•	•	•	•	0.60
400	•	•	•	•	0.66
450	•	•	•	•	0.71
500	•	•	•	•	0.77
560	•	•	•	•	0.84
600	•	•	•	•	0.88
630	•	•	•	•	0.92

• = standard dimensions that can be ordered

Material

Galvanised clamping ring (Sv):

Galvanised steel

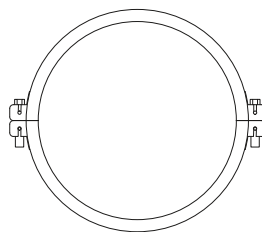
Stainless steel clamping ring (V2A):

1.4301

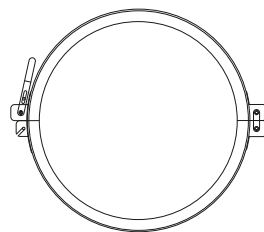
Note

Clamping rings can be used for pipes with 6 mm high board with 1 mm, 1.5 mm, 2 mm and 3 mm wall thickness.

For optimum tightness, the clamping ring must be used in conjunction with the sealing ring.



2-piece clamping ring
without lever

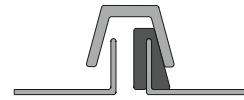


Clamping ring with lever

SEALING RINGS FOR CLAMPING RING

Material	NBR / nitrile rubber	Silicone	EPDM	FKM / Viton
Order abbreviation	NBR	SI	EPDM	FKM
T _{max.}	130°C	200°C	150°C	200°C
T _{min.}	– 40°C.	– 60°C.	– 40°C.	– 20°C.
Electrically conductive	Yes	No	Yes	No
FDA-compliant	No	Yes	Yes	No
Wall thicknesses	1, 2, 3 mm	1, 2, 3 mm	1, 2, 3 mm	1, 2 mm

When ordering, please specify the material selection for the sealing ring.



Use sealing ring for 1 mm pipe construction
up to the total wall thickness of the pipe
parts to be connected of 3 mm
(e.g. 1.5 mm + 1.5 mm).



Use sealing ring for 2 mm pipe construction
total wall thickness of the pipe parts to be
connected from 3.5 mm to 5 mm
(e.g. 2 mm + 3 mm).



Use sealing ring for 3 mm pipe construction
total wall thickness of the pipe parts to be
connected from 5.5 mm to 6.5 mm
(e.g. 3 mm + 3 mm).



Assembled condition

Resistances^{1,2}

Ageing		+	+	+
Weather	–	+	+	+
Ozone	–	+	+	+
Oil, grease – mineral	+	–	–	+
Oil, grease – organic	+	(+)		+
Water, cold		+	+	
Steam (up to 120°C)		+	+	
Acetone	–	+	+	–
Ammonia	+	+	+	–
Acids	–	–	(+)	+
Alkalies		+	+	+
Chlorinated carbon hydrogen	+		–	+
Heptane	+	–	–	+
Pentane	+		–	
Methyl ethyl ketone	–		+	–
Fuels		–	–	+

¹Resistances: + = well suited | (+) = most suitable | – = not suitable

²Notes: The specified temperatures refer to the manufacturer's specifications for the raw material. The maximum temperature for the bonding points is 130°C. The seal bonding point should be aligned with the highest point of the line during installation.

The specified resistances are non-binding and must be tested by the user for sufficient resistance to the actual prevailing operating conditions. BerlinerLuft. assumes no liability for the selection of sealing materials.

Requests/orders

Product requests or orders by form or type code. Online order form at www.berlinerluft.de/Downloads

ORDER FORM FOR COMPONENTS WITH STANDARD DIMENSIONS

Number [pcs.]	Version ¹	Component	Material ²	Surface ²	Wall thickness s [mm]	Colour ³ RAL	DN d1 [mm]	Length L1 [mm]	Angle [°]	Radius r	d2 [mm]	d3 outlet [mm]	Type ²	Seal ² N - without / MD - metallic	Drive ²	Connection ² V1 + V2 + V3
	G	Tube														
	G	Segment curve														
	G	T-piece														
	G	Junction														
	G	Y-piece														
	G	Reduction														
	G	End cover														
	G	Throttle damper														
	G	Discharge outlets														
	G	Rain cowl														
	G	Deflector hood														
	G	Rain collar														
	G	Tube silencer														
	G	Flange														
	G	Clamping ring														
	G	Sealing ring														

Please fill in the highlighted fields for requests/orders. Additional dimensions as specified in the catalogue.

ORDER FORM FOR COMPONENTS WITH SPECIAL DIMENSIONS

Material ²	Surface ²	Wall thickness	Colour ³
			RAL

Number [pcs.]	Version ¹	Component	DN d1 [mm]	Length L1 [mm]	Angle [°]	Radius r	d2 [mm]	d3 outlet [mm]	Type ²	Seal ² N - without / MD - metallic	Drive ²	Connection ²			Length		Extension at	
												V1	V2	V3	L2 [mm]	L3 [mm]	V1 / L4 [mm]	V2 / L5 [mm]
	GX	Tube																
	GX	Segment curve																
	GX	T-piece ⁴																
	GX	Junction ⁴																
	GX	Y-piece																
	GX	Reduction																
	GX	Damper ⁵																
	GX	Discharge outlets																
	GX	Tube silencer																

Please fill in the highlighted fields for requests/orders.

Fields that are not completed are fulfilled in accordance with the catalogue specifications or the BerlinerLuft. standard.

¹ G = welded version - standard dimensions
GX = welded version - special dimensions

² See selection options, page 27

³ Only necessary if a colour is desired.
Components without colouring are named "RAL X" in the type code.

⁴ Without extension at V1 or V2, the position of the outlet d3 is centred on length L1

⁵ Without extension at V1 or V2, the position of the damper blade is centred on length L1.

Glossary for abbreviations

MATERIAL

	Abbreviation	Material
For component	S	Steel
	Sv	Steel, Sendzimir galvanised
	FAL	Steel, hot-dip aluminised
	1.4301	1.4301
	1.4404	1.4404
	1.4571	1.4571
	AL	Aluminium
For clamping ring	Sv	Galvanised
	V2A	Stainless steel 1.4301
For sealing ring	NBR	NBR / nitrile rubber
	SI	Silicone
	EPDM	EPDM
	FKM	FKM / Viton

SURFACE

	Abbreviation	Surface
For component	U	Untreated
	NL1	Primed 40 µm
	NL2	Final paint 120 µm
	NL3	C____, k-m-l, ____°C
	P	Powder-coated
	VZF	Hot-dip galvanised
	BZ	Stained
	GG	Bead-blasted
	LG	Longitudinally brushed

DESIGN

	Abbreviation	Design
For segments	B1	Type 1
	B2	Type 2
For reduction	S	Symmetrical
	A	Asymmetrical
For damper	EL	Inner flap, single piece - long type
	EK	Inner flap, single piece - short type
	GL	Inner flap, divided - long type
	GK	Inner flap, divided - short type
For pipe silencers	RSDIX	Without core
	RSKIX	With core
For flange end cover	R1	Row 1
	R2	Row 2
for flange	R1	Row 1
	R2	Row 2
For clamping ring	OH	2-piece without lever
	MH	With lever

DAMPERS

	Abbreviation	Design
For sealing the inner flap	N	Without inner flap sealing
	MD	Inner flap with metallic sealing
For drive	HV	Hand lever
	P24	Pneumatic (control voltage 24 V DC)
	P230	Pneumatic (control voltage 230 V AC)
	E24	Electrical (voltage 24 V DC/AC)
	E230	Electrical (voltage 230 V AC)

CONNECTION

	Abbreviation	Design
For component connections	G	Smooth
	B	Board
	LF1	Loose flange row 1 behind board
	LF2	Loose flange row 2 behind board
	FF1	Flange welded flush on the outside
	FF2	Flange welded inside
	FF3	Flange welded inside and outside

Type codes

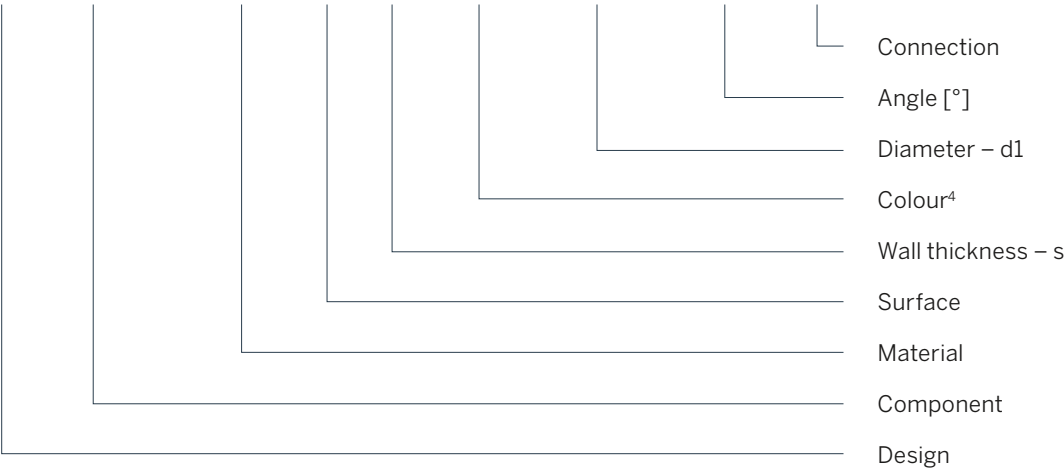
TUBE

G - Pipe - 1.4301 - BZ - s3 - RAL X - DN560 - L2950 - FF2



Y-PIECE

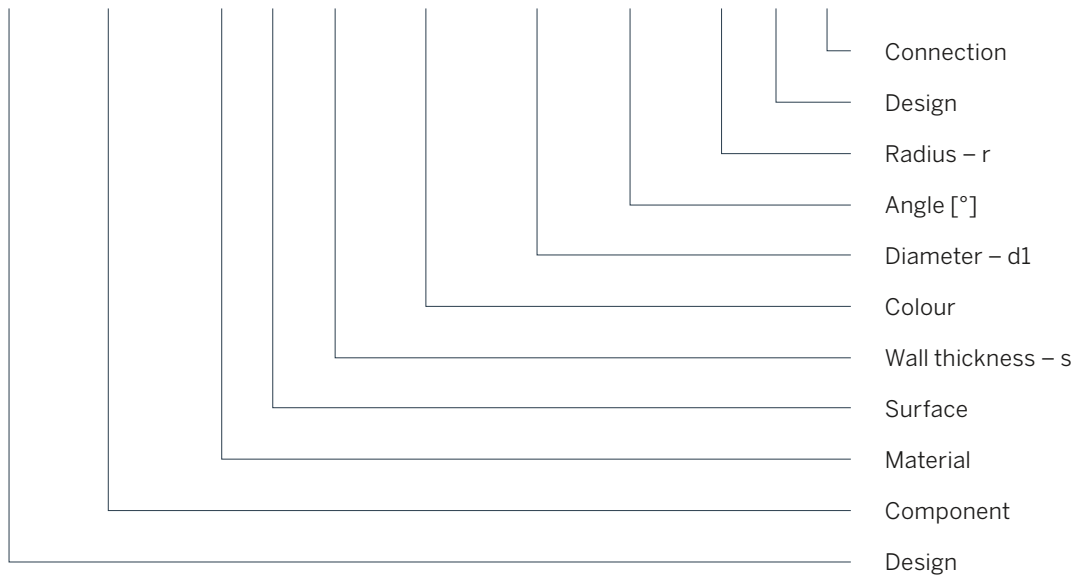
G - Y-piece - 1.4404 - BZ - s3 - RAL X - DN1000 - 45 degrees - FF1



Note: Selection options in the glossary, page 54
 Online order form at www.berlinerluft.de/Downloads

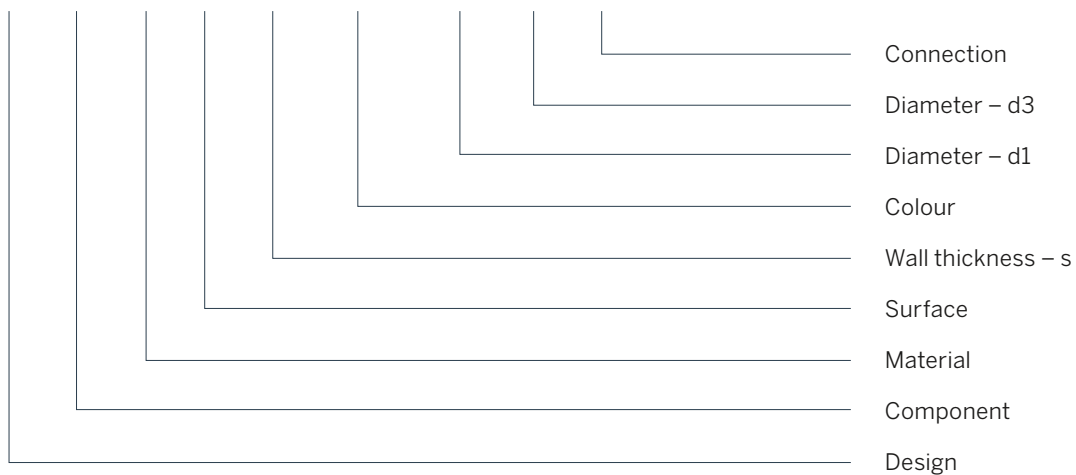
SEGMENT CURVE

G - Segment curve - S - NL1 - S1,5 - RAL 9006 - DN355 - 90 degrees - R2D - B2 - LF2



T-PIECE

G - T-piece - Sv - NL2 - S1,5 - RAL 9010 - DN630 - D3 400 - G



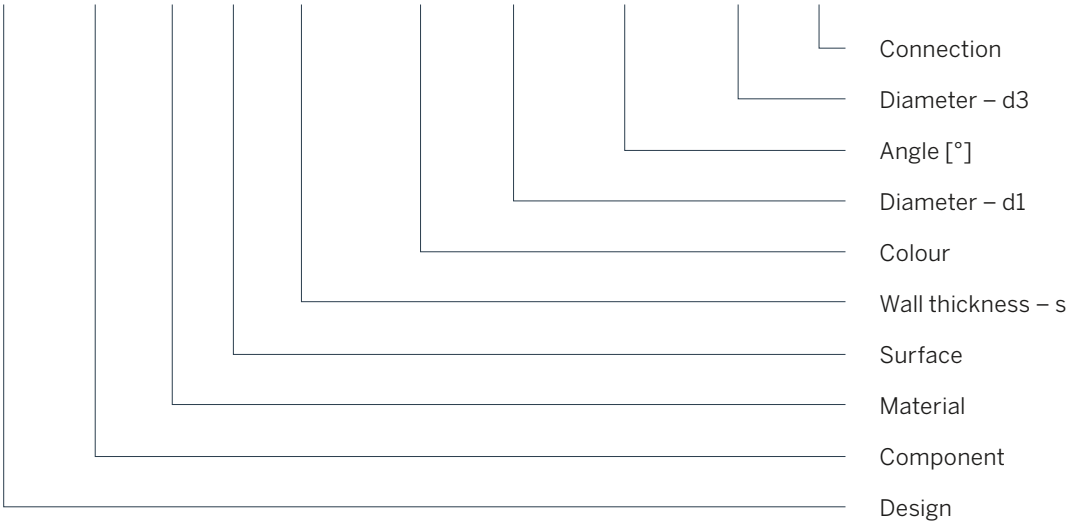
Note: Selection options in the glossary, page 54

Online order form at www.berlinerluft.de/Downloads

Type codes

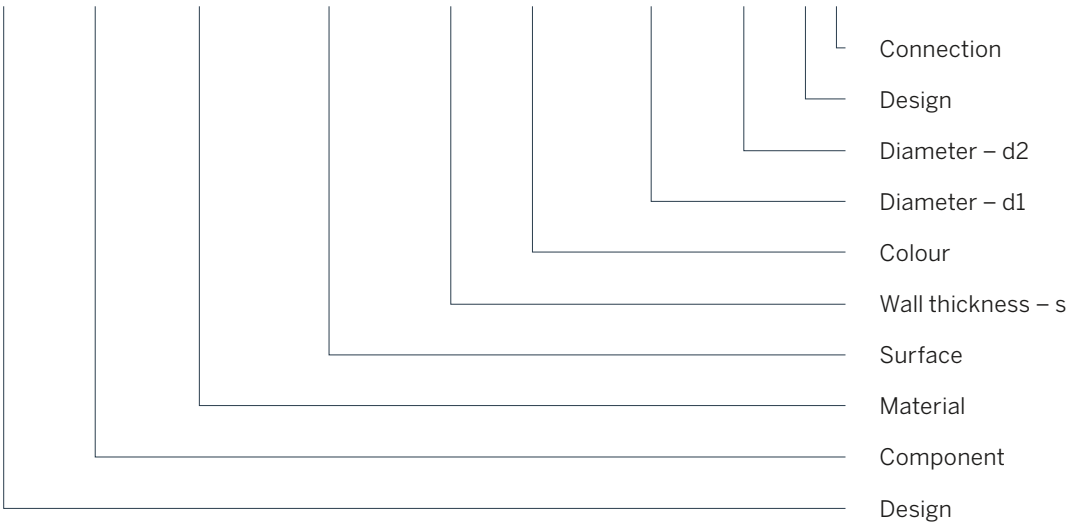
JUNCTION

G - Junction - S - VZF - S1,5 - RAL X - DN560 - 45 degrees - D3 355 - LF1



REDUCTION

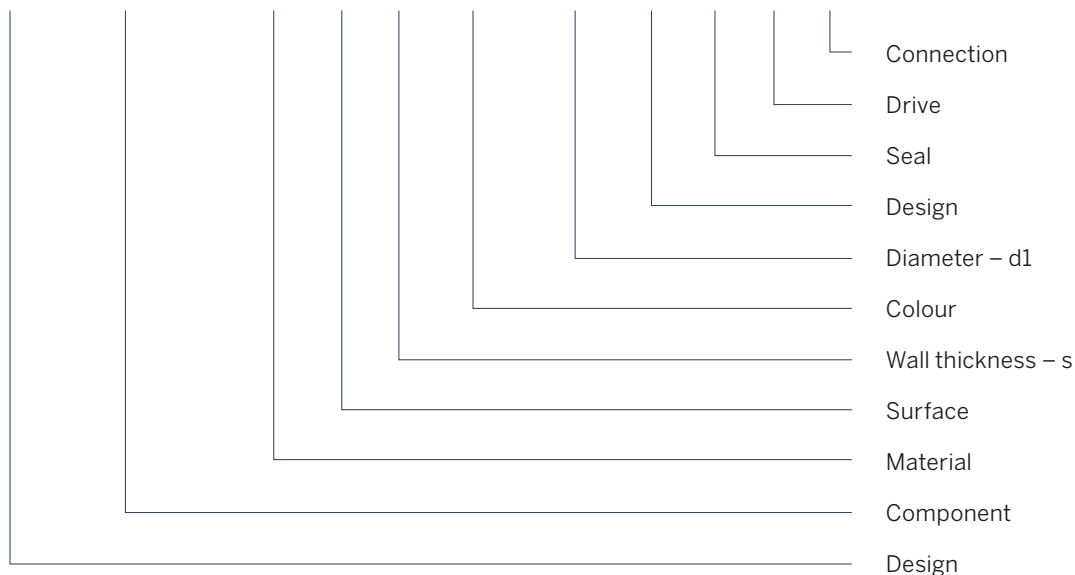
G - Reduction - Sv - NL3 (C4-m-80°C) - s2 - RAL 7035 - DN 560 - D2 355 - S - B



Note: Selection options in the glossary, page 54
 Online order form at www.berlinerluft.de/Downloads

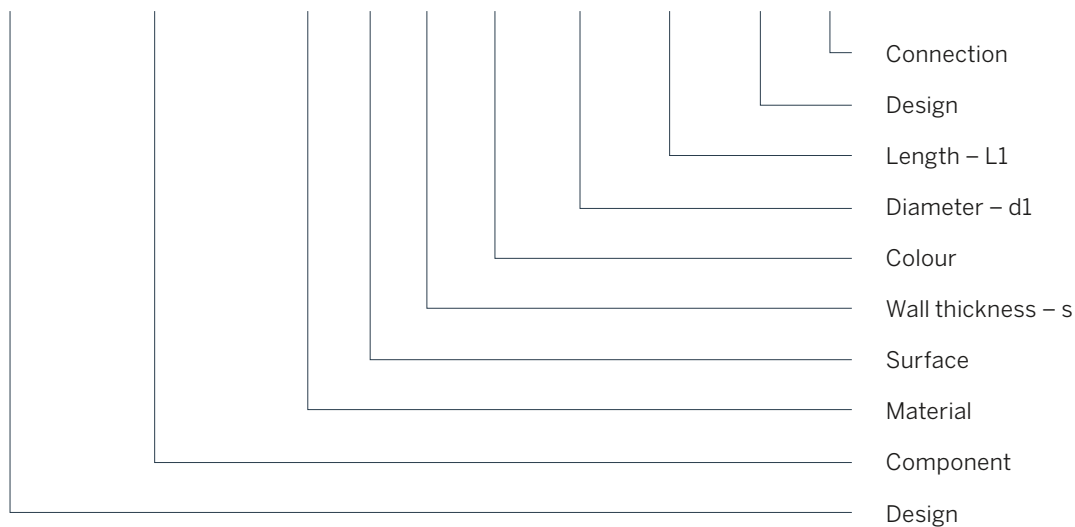
THROTTLE DAMPER

G - Throttle damper - 1.4301 - GG - s3 - RAL X - DN560 - GL - MD - HV - FF1



TUBE SILENCER

G - Tube silencer - 1.4301 - BZ - s2 - RAL X - DN560 - L1120 - RSDIX - FF1



Note: Selection options in the glossary, page 54

Online order form at www.berlinerluft.de/Downloads

Type codes

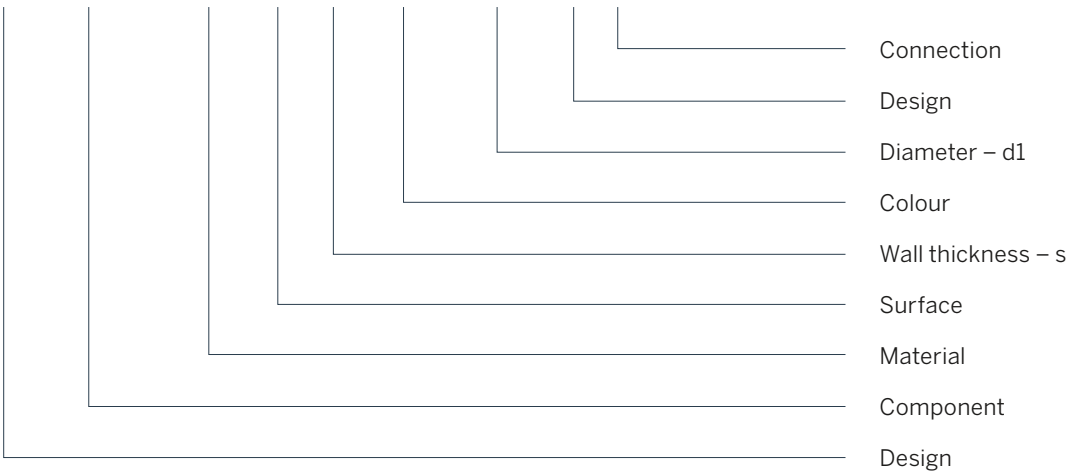
DEFLECTOR HOOD

G - Deflector hood - Sv - NL2 - s2 - RAL 9006 - DN560 - FF1



END COVER

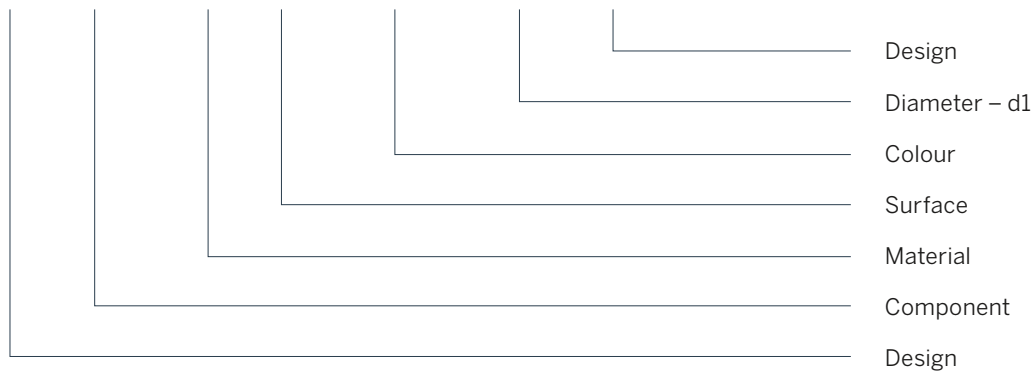
G - End cover - 1.4571 - BZ - s3 - RAL X - DN560 - R2 - F



Note: Selection options in the glossary, page 54
Online order form at www.berlinerluft.de/Downloads

FLANGE

G - Flange - S - VFZ - RAL X - DN1120 - R1



CLAMPING RING

G - Clamping ring - Sv - DN224 - OH



SEALING RING

G - Sealing ring - EPDM - s2 - DN150



Note: Selection options in the glossary, page 54

Online order form at www.berlinerluft.de/Downloads

Tender specification texts

WELDED PIPELINES

Item	Description of the range of service	Quantity unit	EP	GP
	Longitudinally and circumferentially welded pipes and fittings for use in ventilation systems. Quality requirements according to DIN EN ISO 3834-2. Design and dimensions according to BerlinerLuft. factory standard (including the diameter series of DIN EN 1506 and DIN 24151). Airtightness class D according to DIN EN 12237. Nominal diameter DN 100 to DN 2500.			
	Material Black sheet steel Untreated With primer inside and outside (coating thickness 40 µm), colour grey With final paint inside and outside (coating thickness 120 µm), colour similar to RAL _____ With coating system according to DIN EN 12944-5: Corrosiveness category C. ; protection duration (short, medium, long); temperature-resistant up to °C, colour tone similar to RAL . With powder coating, coating thickness 80 µm, colour tone similar to RAL _____. Hot-dip galvanised Steel, Sendzimir galvanised Welded seams cold galvanised Welded seams cold galvanised on the inside and with final paint outside (coating thickness 120 µm), colour tone similar to RAL _____. With coating system according to DIN EN 12944-5: Corrosiveness category C _____; protection duration _____ (short, medium, long); temperature-resistant up to _____ °C, colour tone similar to RAL _____. With powder coating, coating thickness 80 µm, colour tone similar to RAL _____. Hot-dip aluminised steel (FAL) Welded seams cold aluminised Stainless steel 1.4301, 1.4404, 1.4571 (stained, bead-blasted or longitudinally brushed; please delete as appropriate) Aluminium (AlMg3) Untreated			
	Wall thicknesses 1.5 mm / 2 mm / 3 mm / 4 mm / 5 mm (please enter as appropriate) Up to DN _____ mm – s = _____ mm From DN _____ mm – s = _____ mm			

Item	Description of the range of service	Quantity unit	EP	GP
	Connection Up to DN _____ From DN _____ (Please enter as appropriate) Smooth with board Loose flange behind board (DIN 24154 row 1) Loose flange behind board (DIN 24154 row 2) Fixed flange flush + welded around the outside Fixed flange welded around the inside Fixed flange welded around the inside and outside Temperature range: from – ____ °C to + ____ °C Pressure range: from – ____ Pa to + ____ Pa			
	Make and type BerlinerLuft. Technik GmbH			

Tender specification texts

WELDED COMPONENTS

Item	Description of the range of service	Quantity unit	EP	GP
	Welded tube DN _____ Length L1 = _____ mm			
	Welded segment bend DN _____ Angle = _____ degrees R = _____ D Type 1 / Type 2 (please delete as appropriate)			
	T-piece, welded DN _____ DN outlet _____			
	Junction, welded DN _____ Outlet angle = _____ degrees DN outlet _____			
	Y-piece, welded DN _____ Angle = _____ degrees DN outlet _____			
	Reduction, welded DN _____ DN outlet _____ Version: symmetrical/asymmetrical (please delete as appropriate)			
	End cover DN _____ Connection: Smooth/board/flange row 1/row 2 (please delete as appropriate)			
	Discharge outlet, welded, 45 degrees, with bird screen DN _____			
	Pipe silencer, welded Without core/with core (please delete as appropriate) DN _____ Attenuation length L = _____ mm			

Item	Description of the range of service	Quantity unit	EP	GP
	Damper, welded DN _____ Design: Single-piece long / single-piece short / divided long / divided short (please delete as appropriate) Sealing: Without sealing / inner flap with metallic sealing (please delete as appropriate) Actuation: Hand lever with pneumatic locking (control voltage 24 V DC) pneumatic (control voltage 230 V AC) electrical (voltage 24 V DC/AC) electrical (voltage 230 V AC) (please delete as appropriate)			
	Rain cowl, welded DN _____			
	Deflector hood, welded DN _____			
	Rain collar in two parts DN _____			
	Flange DN _____ Material: _____ Design: R 1 / R 2 (please delete as appropriate)			
	Clamping ring DN _____ Material: _____ Design: _____			
	Sealing ring DN _____ Material: _____ For wall thickness: _____			
	Make and type BerlinerLuft. Technik GmbH			

Corrosion protection and coating

Parts and components for industrial use can retain their long-term functionality by treating and coating the surface appropriately.

They offer protection against

Adhesions

Material buildup

Soiling

Corrosion

Acids and alkalis

STANDARD SURFACE TREATMENT

Galvanisation

Wet coating

Powder coating

Staining

Brushing

In addition, the following coating variants can be used to prevent corrosion damage, adhesion and wear caused by industrial processes:

HALAR® ECTFE coating

PTFE coating

KTL coating

HALAR® ECTFE COATING

ECTFE (ethylene chlorotrifluoroethylene), also known as Halar®, is used as a coating against many organic media, especially acids and bases, because of its very good chemical resistance. Due to the presence of fluorine compounds, Halar® ECTFE forms a very smooth surface and has good non-stick properties. The coating is temperature-resistant up to 150 °C and also has very high impact strength.

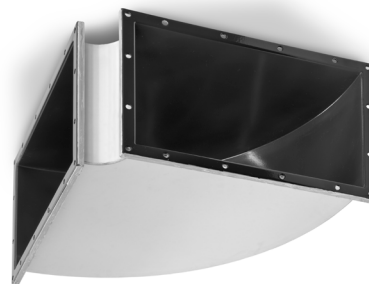
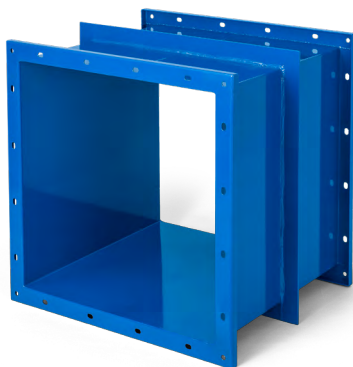
Process

Halar® ECTFE is applied by electrostatic powder spraying. In this process, the coating is applied in several layers, which means that the final layer thickness is variable. Depending on the application, an optimum layer thickness can be selected.

Uses

This coating is recommended for applications in the semiconductor and solar industry.

- 1 | Welded high-pressure ducting components with EPD primer and powder top coating (RAL 5010) inside and outside
- 2 | Welded duct bend with Halar® ECTFE coating
- 3 | Coated duct bend 600 × 600 mm
- 4 | Welded stainless steel ducting components, Halar®-coating on the inside



PTFE COATING

PTFE coatings have become widely known as non-stick coatings for pans under the brand name Teflon®.

In addition to the anti-corrosion properties, the very low coefficient of friction of PTFE is particularly appreciated in the industrial sector. This offers advantages in industrial applications wherever adhesion, encrustation or contamination is to be avoided.

Process

Following mechanical and/or chemical pre-treatment, the PTFE coating is applied by means of an electrostatic or wet coating process. The coated component is then subjected to heat treatment to achieve the desired technical properties of the coating.

Uses

The PTFE coating is mainly used when very good anti-adhesion or sliding properties are required. These requirements exist mainly in the product-carrying sector in the food and chemical industries. Further advantages are the high temperature resistance of the coating (up to 260°C) and the physiological harmlessness in contact with food.

EPD COATING

Cathodic dip coating is a special process for coating aluminium and steel alloys. The coating provides a high level of protection and thus a long service life for the components. It is also ideal as a primer.

Process

The coating cross-links in the immersion bath to form a homogeneous, closed film. This creates a surface resistant to solvents and corrosion.

Uses

The coating is suitable for applications in the chemical industry. In addition, the system is also used in the commercial vehicle and agricultural machinery industries. It protects structures exposed to maritime climates as well as structures immersed in sea and brackish water. To achieve UV resistance, an additional powder coating is necessary.

Furthermore, the system is also particularly suitable for the internal coating of media-carrying ducting with high corrosion resistance requirements. Recommended for applications in the chemical, pharmaceutical, semiconductor and solar industries.

Suitable for environmental conditions of corrosiveness category C5-M according to ISO 12944-6 The coating can be applied to both folded and welded components.



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