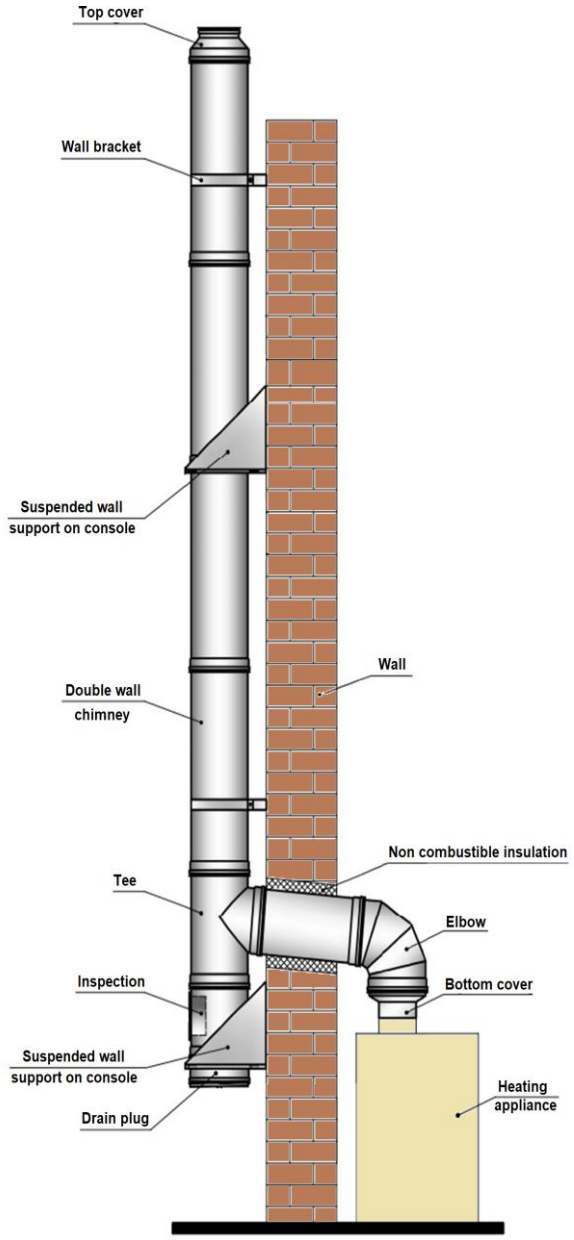
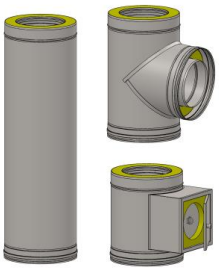
DOUBLE WALL SYSTEM CHIMNEY DW50 AND DW50-M INSTALLATION MANUAL v. 2022-05



1. Checking before installation

Before installing the chimney, a product verification must be carried out in order to assess whether all chimney products required according to the design specification are completed. Any product which is damaged or not as specified should be rejected



2. Joining the chimney components

When the diameter of the outer pipe the chimney is D ≤ 450 mm, chimney joints are secured by locking bands, which cover the joint. In this case riveting is not necessary.

When the diameter of the outer pipe the chimney is D ≥ 500 mm, stainless steel rivets of 4x8 are necessary for the installation. Each joint requires a number of rivets indicated below. When riveting is finished, chimney joints are secured by locking bands.

Outer pipe diameter, mm	Number of rivets in a joint
500 - 600	8
650-700	16

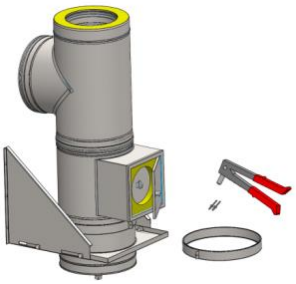
3. Chimney installation

Double wall chimney is started to be mounted to the wall when a connecting flue pipe is derived to the outside.

3.1.

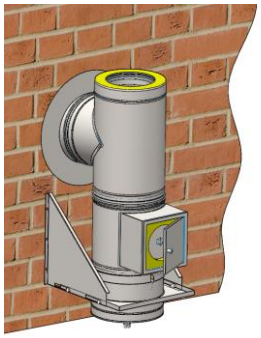
The chimney can be placed on a support, suspended wall support or base plate. If the attachment to a suspended wall support is chosen, firstly, join tee and inspection components, wall support and drain plug. Rivet the joints, if necessary, secure joints by locking bands.

The flow direction of combustion products is indicated on the product marking stickers



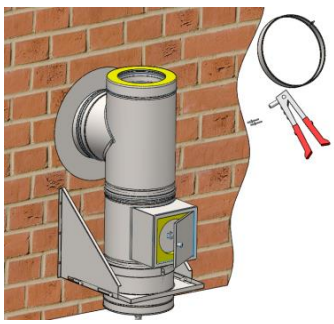
3.2.

Pull connected components over the connecting flue pipe branch, mark points of attaching console to the wall. Attach the console with suspended wall support to the wall. The installer selects the method of attaching bearing elements to the wall.



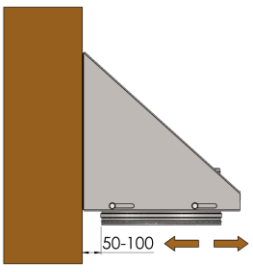
3.3.

Rivet the joint of connecting flue pipe and tee branch, if necessary, secure joint by locking band.



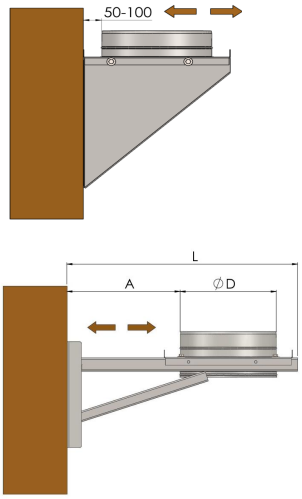
3.4.

Recommended distance between the outer wall of chimney and building wall is 100 mm. If a chimney is placed on a console with suspended wall support, an adjustment range of the distance between the chimney and building wall is from 50 to 100 mm.

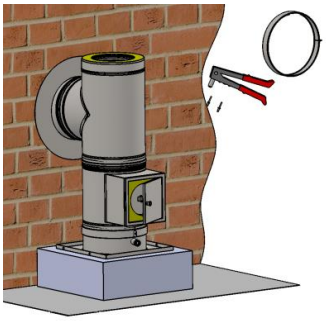


3.5.

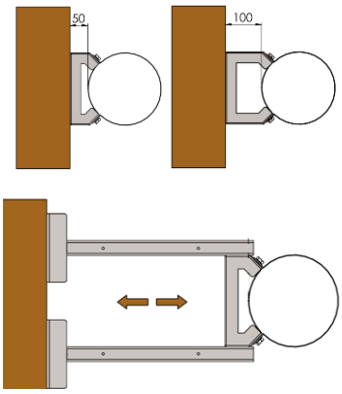
Other methods of mounting the supports on the consoles are given in Appendix No.1 to this manual.



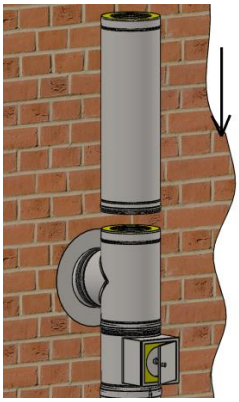
3.6.
The chimney can also be placed on a prepared basis. The height and position of the basis must be calculated, dependent on a position of connecting flue pipe outlet and the height of connected base plate, inspection and tee components.



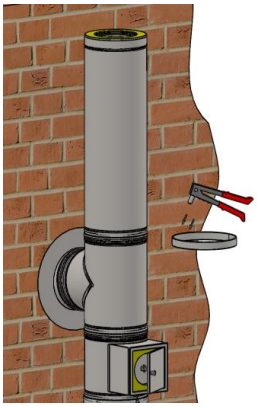
3.7.
The installer selects the method of attaching wall brackets to the wall. If a distance from the outer wall of chimney to the building wall is 100 mm, only wall brackets L-100 must be used. If a distance is larger, wall bracket elongations are also required. Other brackets and mounting methods for wall brackets elongation elements are given in Annex 1 to this manual.



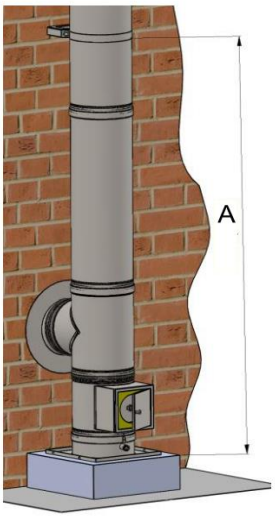
3.8.
Further, mount chimney sections on the tee.



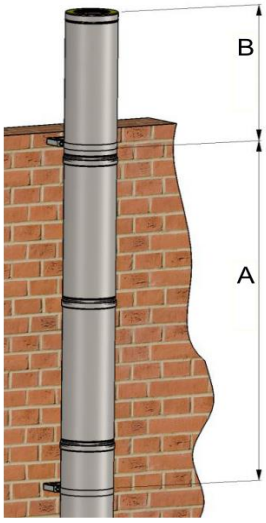
3.9.
Rivet the joints, if necessary, secure joints by locking bands.



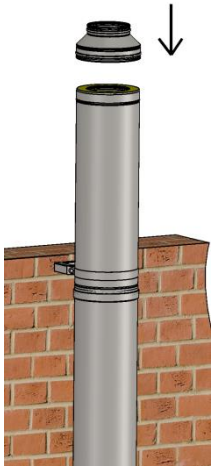
3.10.
Regardless of the fact whether the chimney is placed on the suspended wall support or prepared basis, it is necessary to keep a distance not larger than A from the base plate to the wall bracket. Distances A are indicated in a section of this installation manual titled "Wind load resistance".



3.11.
Distance between wall brackets must not exceed distance A, and free standing length of the chimney must not be longer than distance B. Distances A and B are indicated in a section of this installation manual titled "Wind load resistance".



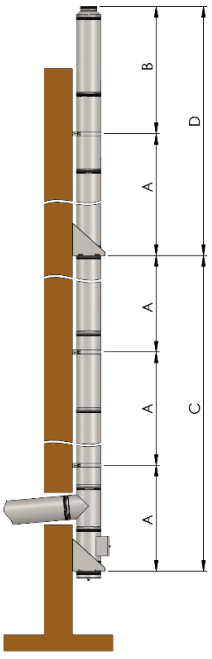
3.12.
The top cover must be placed on the top of chimney. Rivet the joints, if necessary, secure joints by locking bands. Rain caps, spark catchers, etc. can be mounted on the top of chimney, but it is necessary to consider whether this does not contradict the legal requirements.



4. Wind load resistance
The chimneys are attached to the wall or bearing construction modules using fixing elements (wall brackets, supports), they can be placed on a support, suspended wall support or base plate. Distances between fixing elements is given in the Table below. Bearing construction modules, supports for the chimneys shall be designed and installed according to national legal acts.

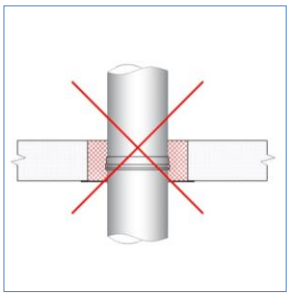
dn, mm	A, m.	B, m.	C, m.	D, m.
80-200	≤3,0	≤2,5	≤12,0	≤12,0
250-300	≤2,5	≤1,5	≤8,0	≤8,0
350	≤2,5	≤1,5	≤5,0	≤8,0
400-550	≤2,5	≤1,0	≤5,0	≤8,0
600-700	≤2,0	≤0,6	≤5,0	≤8,0

A - wall bracket separation distance, B – free standing length, C - distance between supports, D – distance between supports without tee ecomponent in between



5. Non-vertical installation
If the length of non-vertically mounted double wall chimney or connecting flue pipe is exceeding 2,0 m, additional supports must be used. The distance between additional supports should not exceed 2,0 m. Minimal double wall chimney or connecting flue pipe inclination to horizontal shall be ≥3°.

6. Wrong position of the joints of chimney sections



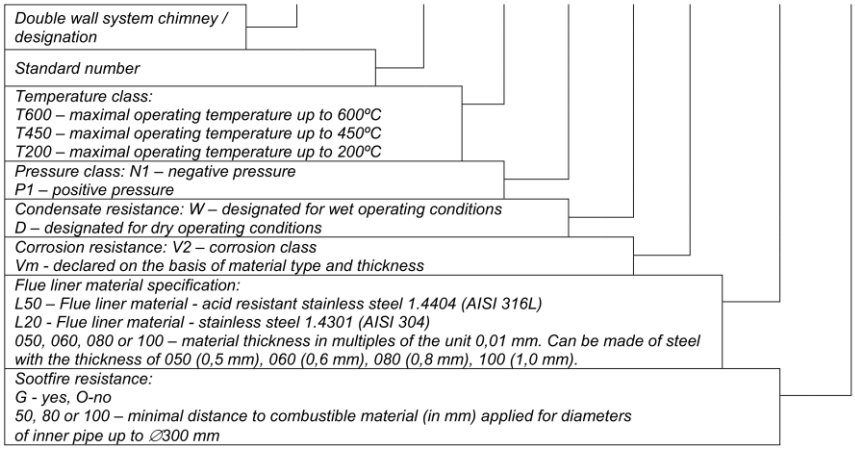
The joints of chimney sections in locations where it passes through a floor, roof or wall are not allowed

7. Compressive strength
Compressive strength of double wall chimney:
when dn from 80 to 200 mm – 12 m double wall chimney sections.
when dn from 250 to 300 mm – 8 m double wall chimney sections.
when dn from 350 to 700 mm – 5 m double wall chimney sections (applicable for a tee component).
when dn from 350 to 700 mm – 8 m double wall chimney sections

8. Chimney system DW50 and DW50-M designation

System chimney suitability for particular cases must be decided taking into consideration the documentation of the heating appliance manufacturer, this installation manual and national legal acts.

Double wall system chimney DW50							
Designation 1	EN 1856-1	T600	N1	W	V2	L50050	G50
Designation 2	EN 1856-1	T450	N1	W	V2	L50060	G80
Designation 3 (with silicone gaskets)	EN 1856-1	T200	P1	W	V2	L50080	O50
Designation 4	EN 1856-1	T600	N1	W	V2	L50100	G100
Double wall system chimney DW50-M							
Designation 1	EN 1856-1	T600	N1	D	Vm	L20050	G50
Designation 2	EN 1856-1	T450	N1	D	Vm	L20060	G80
Designation 3 (with silicone gaskets)	EN 1856-1	T200	P1	D	Vm	L20080	O50
Designation 4	EN 1856-1	T600	N1	D	Vm	L20100	G100



DW50 Designation 1
EN 1856-1 T600-N1-W-V2-L50xxx-G50

This double wall chimney system is designated to exhaust combustion products by natural draught (N1) from the heating appliances burning gas, liquid or solid fuel. This chimney system is designated for internal and external use. The system is sootfire resistant (G), it is designated for wet operating conditions (W), and its maximal working temperature (T600) is 600 °C. Chimney is mounted leaving not less than 50* mm between the outer surface of a chimney and combustible materials, if national legal acts do not indicate a bigger distance. The system is tested non-enclosed and with free ventilated open floor penetration, therefore, when the chimney crosses building constructions, one must follow the information provided in a section of this manual titled “Installation of the chimney crossing building constructions“. The inner pipe is made of acid resistant stainless steel 1.4404 (L50), the thickness of mineral wool layer is 50 mm.

DW50 Designation 2
EN 1856-1 T450-N1-W-V2-L50xxx-G80

This double wall chimney system is designated to exhaust combustion products by natural draught (N1) from the heating appliances burning gas, liquid or solid fuel. This chimney system is designated for internal and external use. The system is sootfire resistant (G), it is designated for wet operating conditions (W), and its maximal working temperature (T450) is 450 °C. Chimney is mounted leaving not less than 80* mm between the outer surface of a chimney and combustible materials, if national legal acts do not indicate a bigger distance. The system is tested non-enclosed and with insulated floor penetration, therefore, when the chimney crosses building constructions, one must follow the information provided in a section of this manual titled “Installation of the chimney crossing building constructions“. The inner pipe is made of acid resistant stainless steel 1.4404 (L50), the thickness of mineral wool layer is 50 mm.

DW50 Designation 3
EN 1856-1 T200-P1-W-V2-L50xxx-050

With silicone gaskets

This double wall chimney system is designated to exhaust combustion products by positive draught (P1, ≤200 Pa) from the heating appliances burning gas or liquid fuel, which doesn‘t produce soot. This chimney system is designated for internal and external use. The system isn‘t sootfire resistant (O), it is designated for wet operating conditions (W), and its maximal working temperature (T200) is 200 °C. Chimney is mounted leaving not less than 50* mm between the outer surface of a chimney and combustible materials, if national legal acts do not indicate a bigger distance. In order to reach sufficient tightness of chimney system, silicone gaskets are mounted in the joints of components. To facilitate the connection of components, a lubricant provided by the manufacturer of chimneys must be used. The system is tested non-enclosed and with insulated floor penetration, therefore, when the chimney crosses building constructions, one must follow the information provided in a section of this manual titled “Installation of the chimney crossing building constructions“. The inner pipe is made of acid resistant stainless steel 1.4404 (L50), the thickness of mineral wool layer is 50 mm.

DW50 Designation 4
EN 1856-1 T600-N1-W-V2-L50xxx-G100

This double wall chimney system is designated to exhaust combustion products by natural draught (N1) from the heating appliances burning gas, liquid or solid fuel. This chimney system is designated for internal and external use. The system is sootfire resistant (G), it is designated for wet operating conditions (W), and its maximal working temperature (T600) is 600 °C. Chimney is mounted leaving not less than 100* mm between the outer surface of a chimney and combustible materials, if national legal acts do not indicate a bigger distance. The system is tested non-enclosed and with insulated floor penetration, therefore, when the chimney crosses building constructions, one must follow the information provided in a section of this manual titled “Installation of the chimney crossing building constructions“. The inner pipe is made of acid resistant stainless steel 1.4404 (L50), the thickness of mineral wool layer is 50 mm.

DW50-M Designation 1
EN 1856-1 T600-N1-D-Vm-L20xxx-G50

This double wall chimney system is designated to exhaust combustion products by natural draught (N1) from the heating appliances burning gas, liquid fuel (sulphur content ≤ 0,2 mass %) or firewood (moisture content ≤ 20 %). This chimney system is designated for internal and external use. The system is sootfire resistant (G), it is designated for dry operating conditions (D), and its maximal working temperature (T600) is 600 °C. Chimney is mounted leaving not less than 50* mm between the outer surface of a chimney and combustible materials, if national legal acts do not indicate a bigger distance. The system is tested non-enclosed and with free ventilated open floor penetration, therefore, when the chimney crosses building constructions, one must follow the information provided in a section of this manual titled “Installation of the chimney crossing building constructions“. The inner pipe is made of stainless steel 1.4301 (L20), the thickness of mineral wool layer is 50 mm.

DW50-M Designation 2
EN 1856-1 T450-N1-D-Vm-L20xxx-G80

This double wall chimney system is designated to exhaust combustion products by natural draught (N1) from the heating appliances burning gas, liquid fuel (sulphur content ≤ 0,2 mass %) or firewood (moisture content ≤ 20 %). This chimney system is designated for internal and external use. The system is sootfire resistant (G), it is designated for dry operating conditions (D), and its maximal working temperature (T450) is 450 °C. Chimney is mounted leaving not less than 80* mm between the outer surface of a chimney and combustible materials, if national legal acts do not indicate a bigger distance. The system is tested non-enclosed and with insulated floor penetration, therefore, when the chimney crosses building constructions, one must follow the information provided in a section of this manual titled “Installation of the chimney crossing building constructions“. The inner pipe is made of stainless steel 1.4301 (L20), the thickness of mineral wool layer is 50 mm.

DW50-M Designation 3
EN 1856-1 T200-P1-D-Vm-L20xxx-050

With silicone gaskets

This double wall chimney system is designated to exhaust combustion products by positive draught (P1, ≤200 Pa) from the heating appliances burning gas or liquid fuel (sulphur content ≤ 0,2 mass %), which doesn‘t produce soot. This chimney system is designated for internal and external use. The system isn‘t sootfire resistant (O), it is designated for dry operating conditions (D), and its maximal working temperature (T200) is 200 °C. Chimney is mounted leaving not less than 50* mm between the outer surface of a chimney and combustible materials, if national legal acts do not indicate a bigger distance. In order to reach sufficient tightness of chimney system, silicone gaskets are mounted in the joints of components. To facilitate the connection of components, a lubricant provided by the manufacturer of chimneys must be used. The system is tested non-enclosed and with insulated floor penetration, therefore, when the chimney crosses building constructions, one must follow the information provided in a section of this manual titled “Installation of the chimney crossing building constructions“. The inner pipe is made of stainless steel 1.4301 (L20), the thickness of mineral wool layer is 50 mm.

DW50-M Designation 4
EN 1856-1 T600-N1-D-Vm-L20xxx-G100

This double wall chimney system is designated to exhaust combustion products by natural draught (N1) from the heating appliances burning gas, liquid fuel (sulphur content ≤ 0,2 mass %) or firewood (moisture content ≤ 20 %). This chimney system is designated for internal and external use. The system is sootfire resistant (G), it is designated for dry operating conditions (D), and its maximal working temperature (T600) is 600 °C. Chimney is mounted leaving not less than 100* mm between the outer surface of a chimney and combustible materials, if national legal acts do not indicate a bigger distance. The system is tested non-enclosed and with insulated floor penetration, therefore, when the chimney crosses building constructions, one must follow the information provided in a section of this manual titled “Installation of the chimney crossing building constructions“. The inner pipe is made of stainless steel 1.4301 (L20), the thickness of mineral wool layer is 50 mm.

* The distance to combustible material determined for d200 mm diameter of inner pipe during the tests. The distance to combustible material for chimneys larger than that tested shall be increased by a factor. For d201-300mm the factor shall be 1 time the distance to combustible material determined for d200 mm, for d301-450mm - 1.5, d451-600mm – 2.

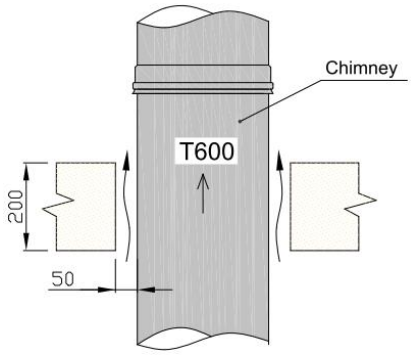
When accidental human contact of a chimney is possible, the chimney shall be covered with a hood or a mesh!

9. Installation of the chimney passing through the building constructions

The actual minimum distance to combustible material from the outer surface of a chimney must be defined according to the designation of the chimney, as described in their marking, and national legal acts. If the legal acts and chimney designation indicate different admissible distances to the combustible materials it is necessary to follow a bigger distance.

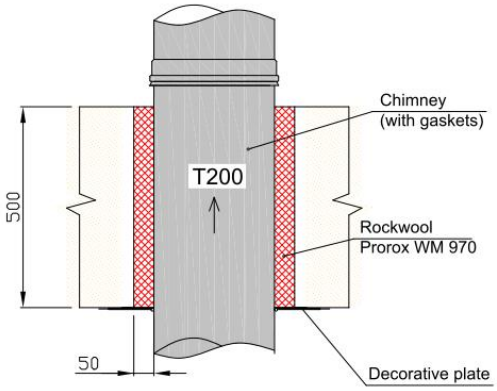
The distance to combustible material determined for d200 mm diameter of inner pipe during the tests. The distance to combustible material for chimneys larger than that tested shall be increased by a factor. For d201-300mm the factor shall be 1 time the distance to combustible material determined for d200 mm, for d301-450mm - 1.5, d451-600mm - 2, above d600 mm – 4.

DW50 Designaton 1. EN 1856-1 T600-N1-W-V2-L50xxx-G50
DW50-M Designation 1. EN 1856-1 T600-N1-D-Vm-L20xxx-G50



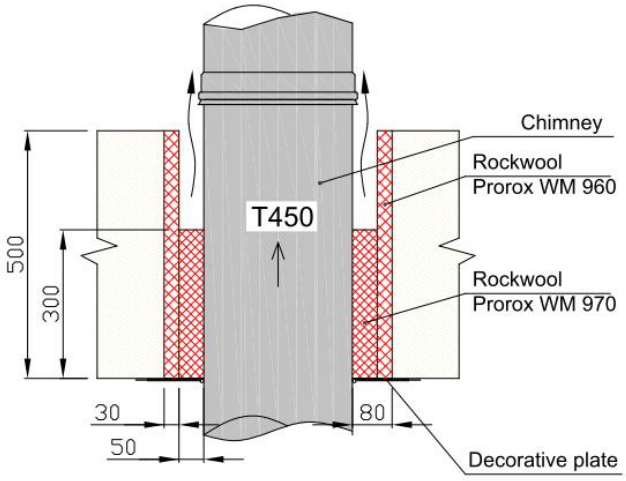
These systems were tested non-enclosed and with free ventilated open floor penetration. The minimal distance declared by the manufacturer of these systems to combustible materials (mm) is 50 mm. When mounting the chimney next to combustible constructions (e.g. walls), ≥50 mm distance to combustible materials must always be maintained. A gap between the combustible wall and chimney must be ventilated. In a case the chimney crosses combustible building constructions (e.g. floor), they must be equipped with holes of adequate size, which would allow to maintain a safe distance from a surface of the chimney to combustible materials. The thickness of crossed combustible construction must not be larger than 200 mm, a gap between the outer wall of the chimney and combustible materials must be ventilated.

DW50 Designation 3. EN 1856-1 T200-P1-W-V2-L50xxx-O50
DW50-M Designation 3. EN 1856-1 T200-P1-D-Vm-L20xxx-O50



These systems were tested non-enclosed and with insulated floor penetration. The minimal distance declared by the manufacturer of these systems to combustible materials (mm) is 50 mm. When mounting the chimney next to combustible constructions (e.g. walls), ≥50 mm distance to combustible materials must always be maintained. A gap between the combustible wall and chimney must be ventilated. In a case the chimney crosses combustible building constructions (e.g. floor, roof), they must be equipped with holes of adequate size, which would allow to maintain a safe distance from a surface of the chimney to combustible materials. When a thickness of crossed construction is not larger than 500 mm, a gap from the outer wall of the chimney to combustible materials is fully filled with insulation materials indicated in the drawing.

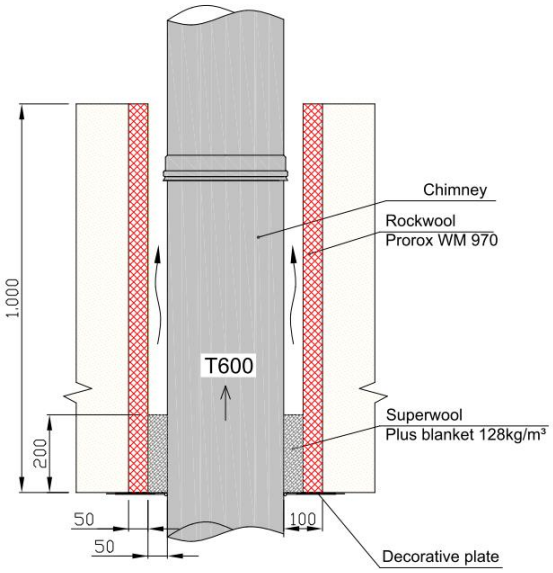
DW50 Designation 2. EN 1856-1 T450-N1-W-V2-L50xxx-G80
DW50-M Designation 2. EN 1856-1 T450-N1-D-Vm-L20xxx-G80



These systems were tested non-enclosed and with insulated floor penetration. The minimal distance declared by the manufacturer of these systems to combustible materials (mm) is 80 mm. When mounting the chimney next to combustible constructions (e.g. walls), ≥80 mm distance to combustible materials must always be maintained. A gap between the combustible wall and chimney must be ventilated. In a case the chimney crosses combustible building constructions (e.g. floor, roof), they must be equipped with holes of adequate size, which would allow to maintain a safe distance from a surface of the chimney to combustible materials.

When a thickness of crossed construction is not larger than 300 mm, a gap from the outer wall of the chimney to combustible materials is fully filled with insulation materials indicated in the drawing. If the thickness of crossed combustible construction is from 300 mm to 500 mm, a gap of 300 mm height in the lower part of crossed construction between the chimney and combustible materials is fully filled with insulation materials indicated in the drawing, the rest part is filled with an insulation material indicated in the drawing, but air gap of 50 mm must be left around the chimney

DW50 Designation 4. EN 1856-1 T600-N1-W-V2-L50xxx-G100
DW50-M Designation 4. EN 1856-1 T600-N1-D-Vm-L20xxx-G100

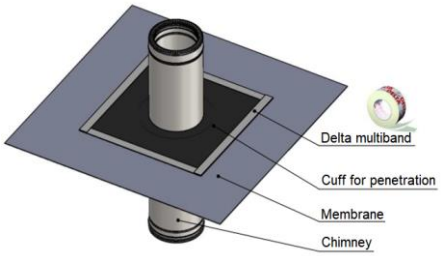


These systems were tested non-enclosed and with insulated floor penetration. The minimal distance declared by the manufacturer of these systems to combustible materials (mm) is 100 mm. When mounting the chimney next to combustible constructions (e.g. walls), ≥100 mm distance to combustible materials must always be maintained. A gap between the combustible wall and chimney must be ventilated. In a case the chimney crosses combustible building constructions (e.g. floor, roof), they must be equipped with holes of adequate size, which would allow to maintain a safe distance from a surface of the chimney to combustible materials.

When a thickness of crossed construction is not larger than 200 mm, a gap from the outer wall of the chimney to combustible materials is fully filled with insulation materials indicated in the drawing. If the thickness of crossed combustible construction is from 200 mm to 1000 mm, a gap of 200 mm height in the lower part of crossed construction between the chimney and combustible materials is fully filled with insulation materials indicated in the drawing, the rest part is filled with an insulation material indicated in the drawing, but air gap of 50 mm must be left around the chimney

10. Installation of the cuff for penetration

Cuffs for penetration must be used to seal the membranes in the building structures (vapor barrier, diffusive membrane). When installing the cuff for penetration, an opening of appropriate diameter is made in the membrane so that the distance from the membrane to the outer pipe of the chimney is not less than the declared distance from the chimney to the combustible material. Cuff for penetration of appropriate size is placed on the chimney and placed on top of the membrane. Using an adhesive tape Delta Multi Band the cuff for penetration and the membrane are glued together around the perimeter of the cuff for penetration.



11. Chimney plate

The installer who has installed the chimney and connected it to the heating appliance must fill in the chimney plate in accordance with the manufacturer's instruction on how to complete the data of the chimney plate

12. Chimneys shall be designed, installed and operated in accordance with the national legislation and the requirements set out in this installation manual. If requirements in national legislation and this installation manual vary, it is necessary to follow the more stringent requirements.

Health and safety precautions.
Special care must be taken when installing the chimney such that the requirements of the health and safety at work acts are met. The requirements of the Health and Safety at Work Ets Act 1974 shall be met in the United Kingdom.
Handling. Adequate facilities must be available for loading, unloading and site handling.
Fire Cement. Some types of fire cement are caustic and should not be allowed to come into contact with the skin. In case of contact wash immediately with plenty of water.
Asbestos. This chimney contains no asbestos. If there is a possibility of disturbing any asbestos in the course of installation, then please seek specialist guidance and use appropriate protective equipment.
Metal Parts. Care should be taken to avoid the possibility of personal injury when installing this chimney system. Where appropriate equipment to protect against sharp edges and any other hazards where necessary.

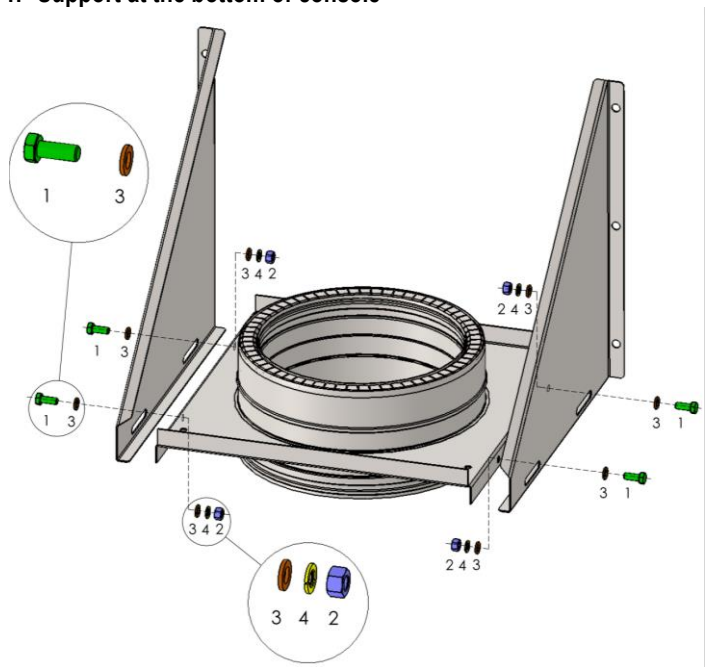
Occupational safety. During installation and exploitation, strictly follow the requirements of occupational safety. During installation use a personal protective equipment.

Chimney plate. The installer who has installed the chimney and connected it to the heating appliance must fill in the chimney plate in accordance with the manufacturer's instruction on how to complete the data of the chimney plate

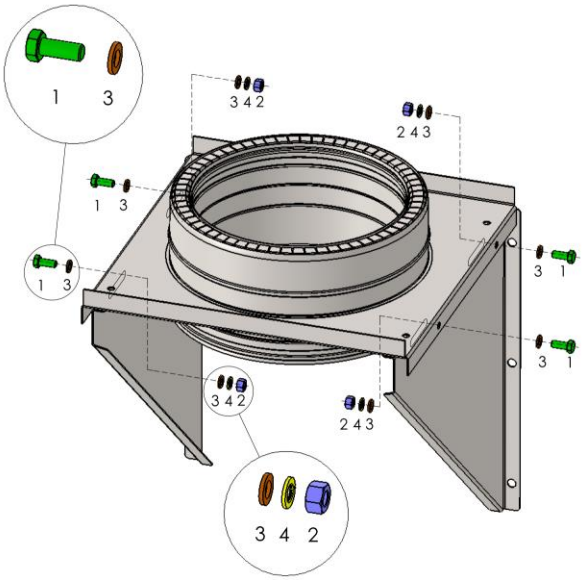
Exploitation of a chimney system. The double wall system chimney shall be exploited according to their designation. It is not recommended to burn waste of wood industry, which contains cohesive materials; the cohesive materials emit aggressive materials when burning. It is strictly prohibited to fire materials unsuitable for burning (litter, plaster, rubber, etc.). It is prohibited to keep and store chemical materials (such as aerosol, paint, dissolvent, cleaning materials, glue, varnish, petrol and etc.) in the boiler-rooms, as certain concentrations of these materials can be sucked in together with combustion air. These materials can cause chimney as well as boiler corrosion. In enterprise such as hairdressers, dye-house or woodwork shop, cleaning shops and etc., heating appliance should be installed in separate room that combustion air would be free of the materials mentioned before.
Chimneys should be cleaned not less than once every three months during a heating season, and before a heating season. Special tools made of stainless steel or polymeric materials should be used to clean chimneys.
In order to evaluate the state of the chimney and supporting elements during the operation it is required to perform external inspections at least every six months. Detected loose screws of bearing elements shall be tightened.
We draw your attention to the fact that uncleaned chimneys are dangerous to the exploitation of a building, as it may cause fire.

ANNEX 1
INSTALLATION TYPES OF SUPPORTS ON CONSOLES

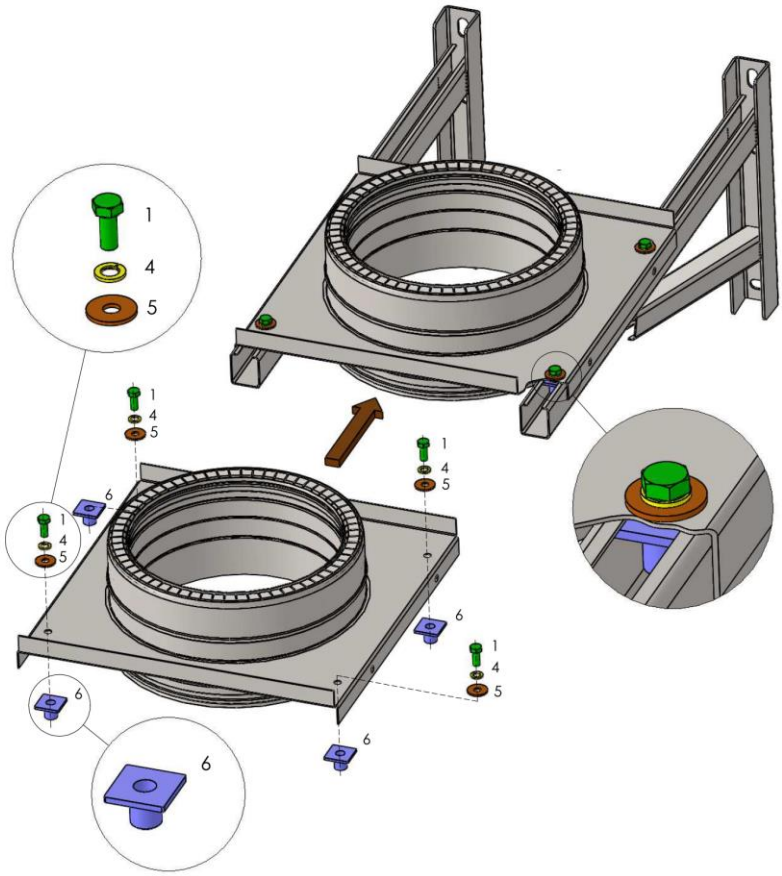
1. Support at the bottom of console



2. Support on the top of console. Applicable for chimneys, which outer D ≤ 550 mm.



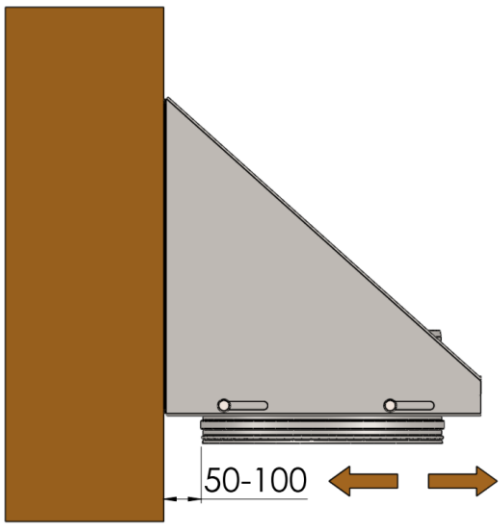
3. Support on console L-720 or L-1000. Applicable for chimneys, which outer D ≤ 550 mm.



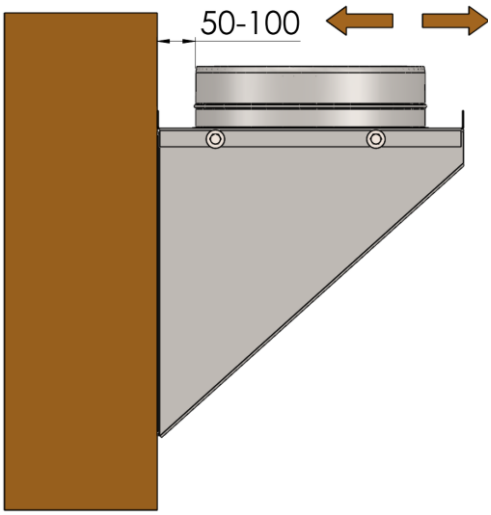
Fasteners: 1 -Bolt, 2 – Nut, 3 – Small washer, 4 – Spring washer, 5 – Big washer, 6 – Fastening plate 30x30.

POSSIBLE DISTANCES FROM THE OUTER PIPE OF THE CHIMNEY TO THE WALL

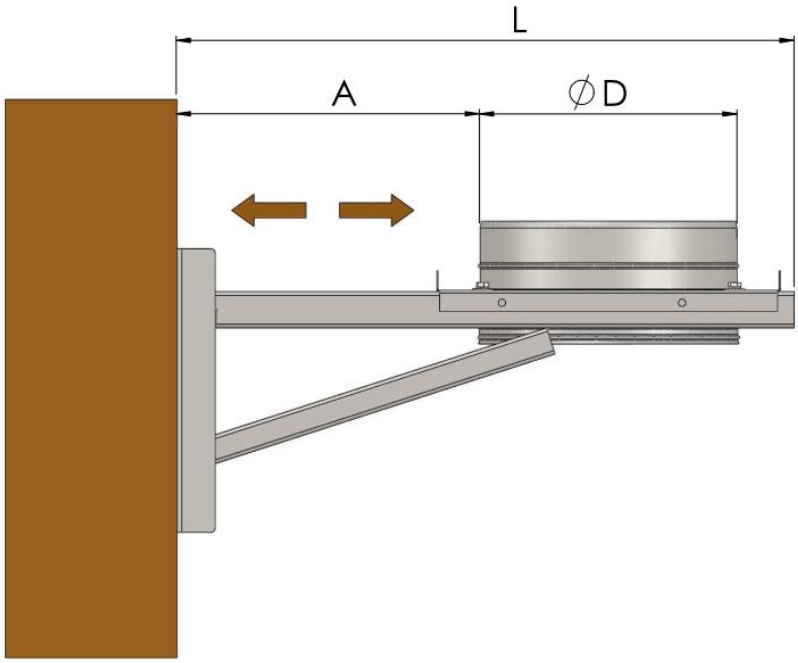
1. Support at the bottom of console



2. Support on the top of console. Applicable for chimneys, which outer D ≤ 550 mm.



3. Support on console L-720 or L-1000. Applicable for chimneys, which outer D ≤ 550 mm.

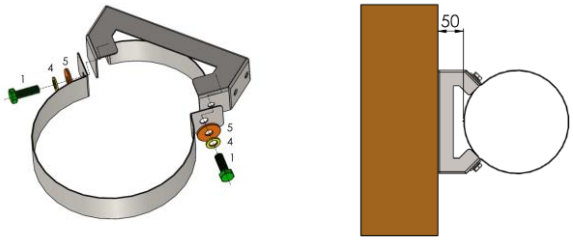


ØD	A_{max}	
	L-720	L-1000
130	530	810
150	510	790
160	500	780
180	480	760
200	460	740
210	450	730
215	445	725
230	430	710
250	410	690
260	400	680
280	380	660
300	360	640
350	310	590
400	260	540
450	210	490
500	160	440
550	110	390

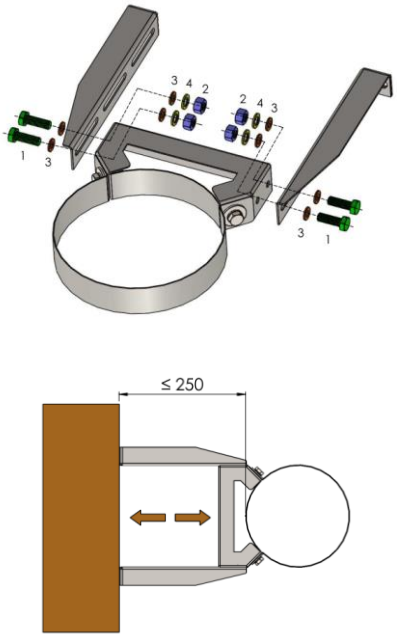
A_{min} = 100 mm

INSTALLATION TYPES OF WALL BRACKETS AND ELONGATIONS

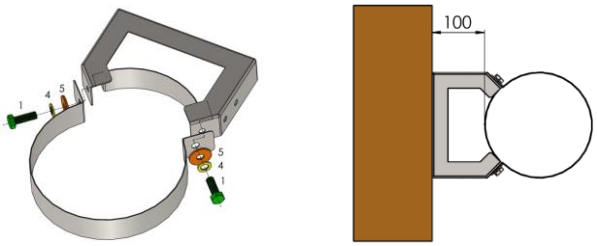
1. Wall bracket L-50 mm



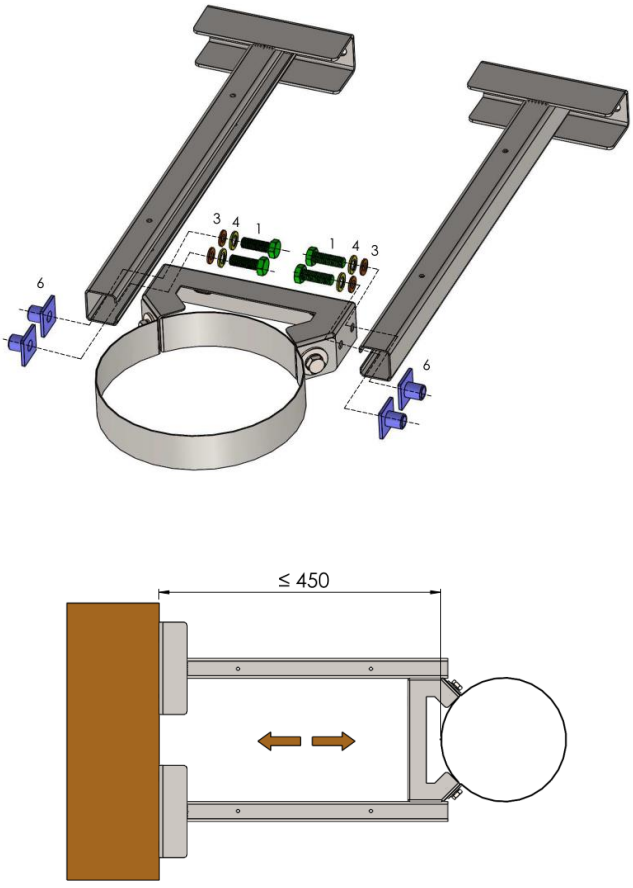
2. Wall bracket elongation L-250 mm with Wall bracket L -50 mm. Applicable for chimneys, which outer D ≤ 450 mm.



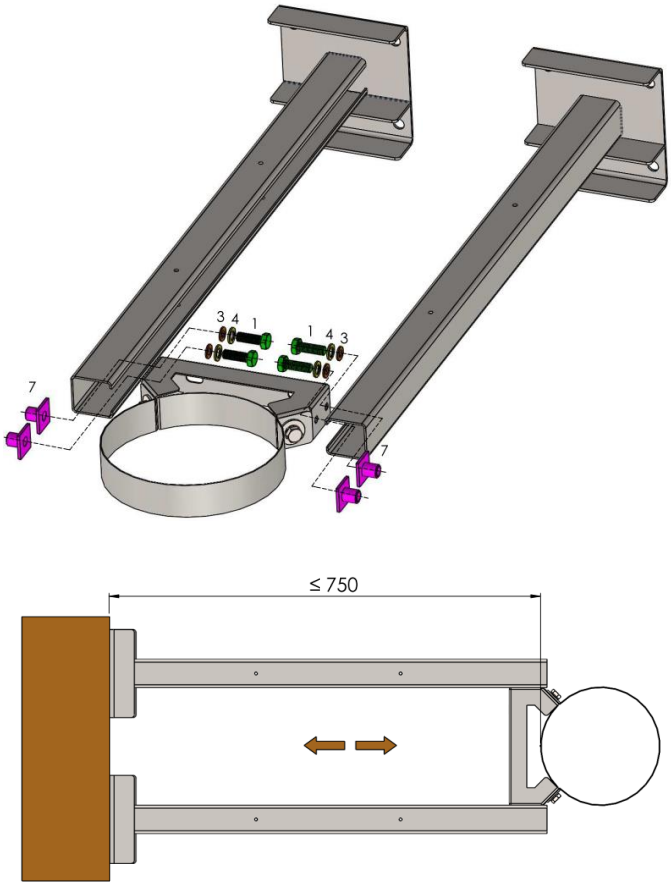
3. Wall bracket L-100 mm



4. Wall bracket elongation L-450 mm and Wall bracket L-50mm. Applicable for chimneys, which outer D ≤ 450 mm.



5. Wall bracket elongation L-750 mm with Wall bracket L -50 mm. Applicable for chimneys, which outer D ≤ 450 mm.



Fasteners: 1 -Bolt, 2 – Nut, 3 – Small washer, 4 – Spring washer, 5 – Big washer, 6 – Fastening plate 30x30, 7 – Fastening plate 40x40.