Installing instructions

CE -certificated double wall flue system **TEC-LS-F**

General technical approval Z-7.1-3114/ Z-7.4-3398

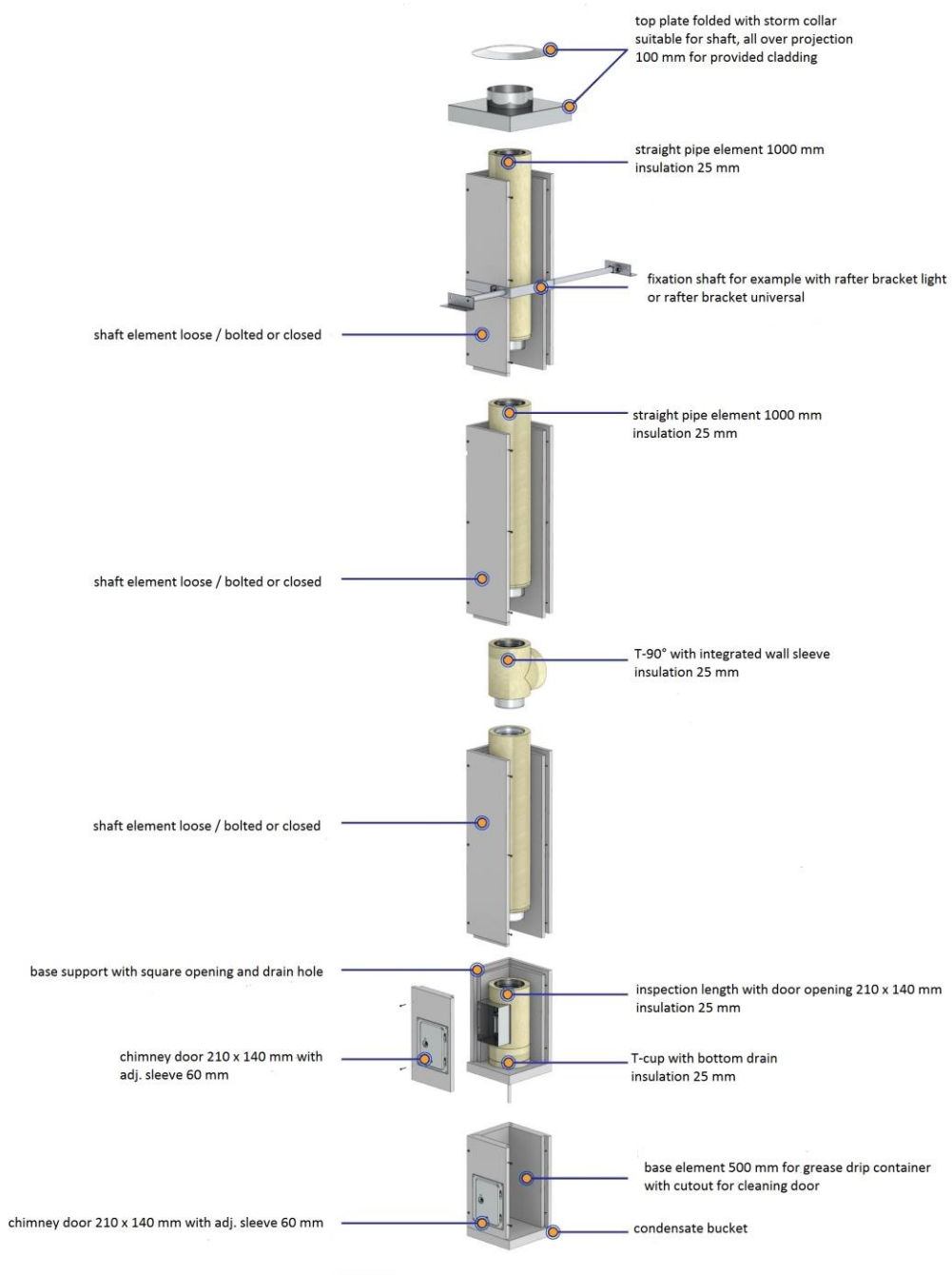
For installation inside Germany

CE-Certification number 0036 CPR 91323 032

For installation outside Germany

(further Information: see Declaration of Performance No. 91323 032 DoP 2024-05-15)

1) System construction variant



2) Minimum distance to combustible materials

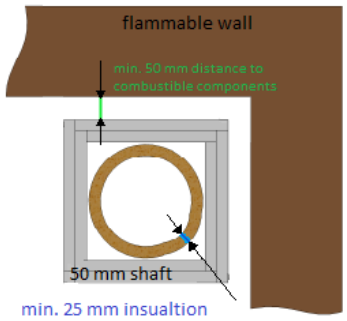
For installation outside Germany (according to CE-Zertifikat 0036 CPR 91323 032):

0.1	Used as **system chimney (solid fuel)** Inner pipe: **TEC-EW-CLASSIC** or **TEC-EW-COMPLETE** **with 25 mm insulation, wall thickness shaft 50 mm** **up to 400°C, operation mode in negative pressure** **No annular gap needed.**	EN 1856-1	T400 – N1 – D – V3 – L50050	G50 (= **50mm**) G75 (= **75mm**)	**Ø 80 – 300** **Ø 350 – 450**
0.2	Used as **exhaust gas line (oil, gas)** Inner pipe: **TEC-EW-CLASSIC** or **TEC-EW-COMPLETE** **with 25 mm insulation, wall thickness shaft 50 mm** **up to 400°C, operation mode in negative pressure** **Between insulation and inside shaft an annular gap of min. 20 mm is necessary!**	EN 1856-1	T400 – N1 – W – V2 – L50050	G50 (= **50mm**) G75 (= **75mm**)	**Ø 80 – 300** **Ø 350 – 450**
0.3	Used as **system chimney (solid fuel)** Inner pipe: **TEC-EW-CLASSIC** or **TEC-EW-COMPLETE** **with 25 mm insulation, wall thickness shaft 60 mm** **up to 600°C, operation mode in negative pressure** **Between insulation and inside shaft an annular gap of min. 20 mm is necessary!**	EN 1856-1	T600 – N1 – D – V3 – L50050	G50 (= **50mm**) G75 (= **75mm**)	**Ø 80 – 300** **Ø 350 – 450**
0.4	Used as **exhaust gas line (oil, gas)** Inner pipe: **TEC-EW-CLASSIC** or **TEC-EW-COMPLETE** **with 25 mm insulation, wall thickness shaft 60 mm** **up to 600°C, operation mode in negative pressure** **Between insulation and inside shaft an annular gap of min. 20 mm is necessary!**	EN 1856-1	T600 – N1 – W – V2 – L50050	G50 (= **50mm**) G75 (= **75mm**)	**Ø 80 – 300** **Ø 350 – 450**

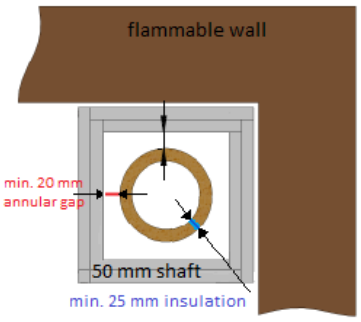
The distance has to be rear ventilated or flush closed with mineral insulation (90-117kg/m³) or customized plate of shaft material.

For installation within Germany (according to the general technical approval Z-7.1-3114 und Z-7.4-3398)

Solid fuel:
Inner pipe: CE-certified
with 25 mm insulation, wall thickness shaft 50 mm
For temperature level T400 a distance to combustible materials of min. 50 mm is considered (vertical flue gas evacuation).
The distance has to be rear ventilated or flush closed with mineral insulation (90-117kg/m³) or customized plate of shaft material.
No annular gap needed!



Oil / gas:
Inner pipe: CE-certified
with 25 mm insulation, wall thickness shaft 50 mm
For temperature level T200 there is no distance to combustible materials considered (vertical flue gas evacuation).
Between insulation and inside shaft an annular gap of min. 20 mm is necessary!



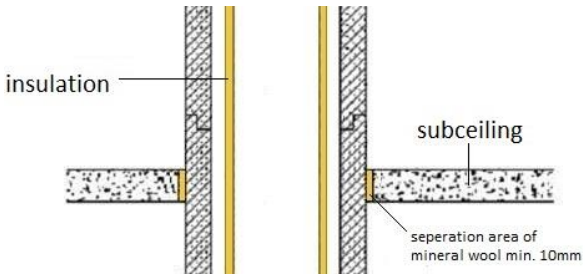
3) Installation outside and inside of buildings

The flue gas system may be installed inside and outside of buildings. Outside, the surface of the flue gas system must be protected against environmental influences and humidity (see DIN V 18160-1, Section 6.11)
Note: The shaft should be primed before plastering!
If installing inside buildings: The baffle (usually provided by the customer) can be stuck directly to the outer surface of the Furado shaft. It should be noted that the surface of the shaft must be primed, at least in this area.

4) Lateral buckling

Inside the building, the shaft must be secured at least every 5 m (e.g. to solid ceiling or wall mount) to protect it against lateral buckling. Moreover, it must be allowed to stretch vertically in the ceiling area (e.g. with circumferential edge insulation strips made of non-flammable mineral wool).

The shaft outside the building must be attached to the wall at least every 3 m
With wall mounts.

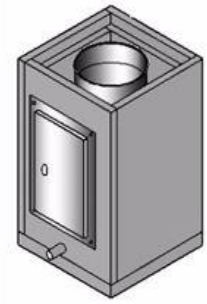


5) Mounting hights

Exhaust gas-carrying pipe (DN 80- 300): up to 27 m
Exhaust gas-carrying pipe (DN 350- 450): up to 21 m
Shaft (for all cross sections): up to 25 m

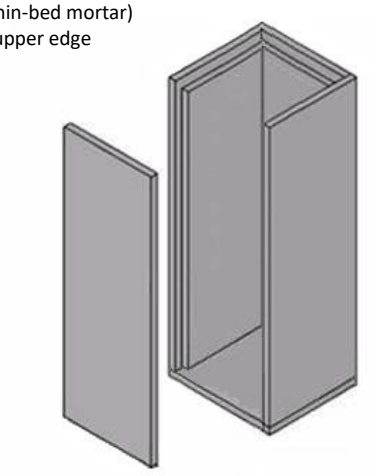
6) Mounting

Condition and subfloor of the location: non-flammable, load-bearing, free of dust, dry
Attach the base element to the location (e.g. with thin-bed mortar)
If installing outside: Base min. 500 mm above area upper edge

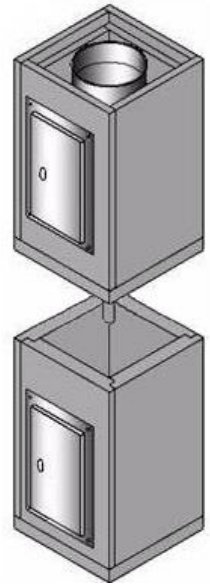


500 mm base element with cutout for cleaning hatch and side condensate drain

(Illustration without the necessary insulation lagging)



1000 mm „long“ base element, loose / screwed on incl. base plate



500 mm base element for condensate drip container with cutout for cleaning hatch

Combined with:

500 mm base element with cutout for cleaning hatch and drill hole at the bottom for condensate drain

7) Bonding the shaft elements

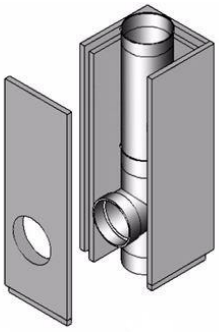
Knead well (homogeneous) the supplied adhesive prior to opening. Then apply the Fire-proof adhesive evenly on the rebated edge.

The area to be bonded must be dry and free of dust / grease!
Remove any dust from the area to be bonded with a broom or vacuum cleaner

8) Fireplace connection

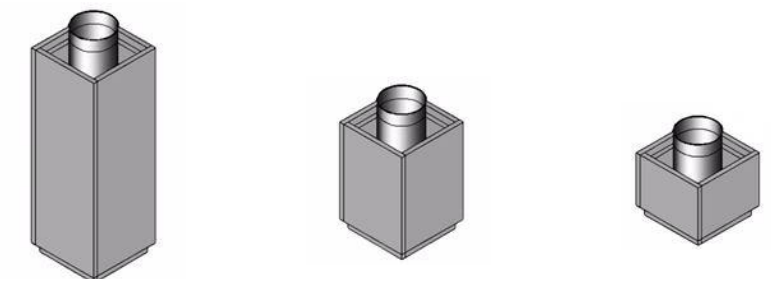
The shaft element used has an open baseplate. The front panel of this element is not Bonded but screwed on. The screws on the front panel must be loosened. The fireplace Connection can then be attached to the front panel at the desired height. Please note: an insulation thickness of 2 x 25 mm must be added for the T-connection piece. Now, the opening can be cut off with a jigsaw, for instance.

(Illustration without the necessary insulation lagging)



9) Shaft elements

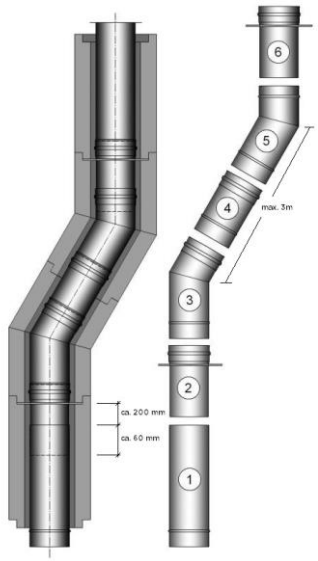
(Illustration without the necessary Insulation lagging)



Length shaft elements and inner pipes	1000	500	250
Working length shaft	975	475	225
Working length inner pipes	940	440	190
Working length insulation	1000		

10) Inclined run

According to DIN V 18160-1 / FeuVO, a max. bend of 30° is allowed for solid fuels, however a bend of 45° is possible if approved by the building authority Z-7.1-3114 und Z-7.4-3398.



6. Top intermediate supports for expansion compensation with a shorter neck according to bend

5. Top angle 15°, 30°, 45°

4. Straight pipe element 250mm/500mm/1000mm can be shortened

3. Bottom angle 15°, 30°, 45°

2. Bottom filler connection for expansion compensation is required before 2nd T-connection and before 2nd Cleaning element with box

1. Remove the sleeve of the pipe coming from the bottom – if necessary also shorten the pipe connection of the intermediate support (2) and insert at least 60 mm in the pipe coming from the bottom. Also ensure that you keep to the dimensions given in the illustration on the left (provide 200 mm for linear expansion).

(Illustration without the necessary insulation lagging)

All vertical and horizontal forces on the shaft must be safely dissipated by appropriate safeguards in the building!

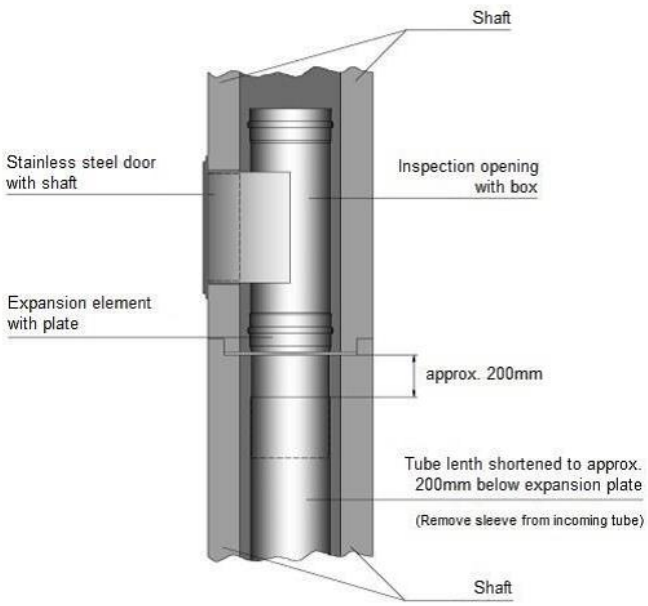
11) Installation of a 2nd cleaning Element with box / Fireplace connection

Intermediate support to compensate expansion including support plate

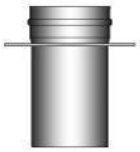
(Illustration without the necessary insulation lagging)

Installation of expansion element beneath the 2nd cleaning element

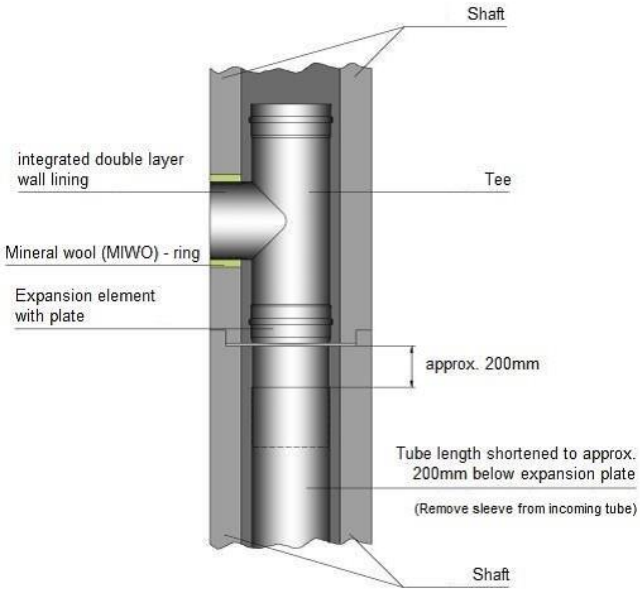
This element must be installed in the rebated edge before the top cleaning element!



Installation of expansion element beneath the 2nd cleaning element



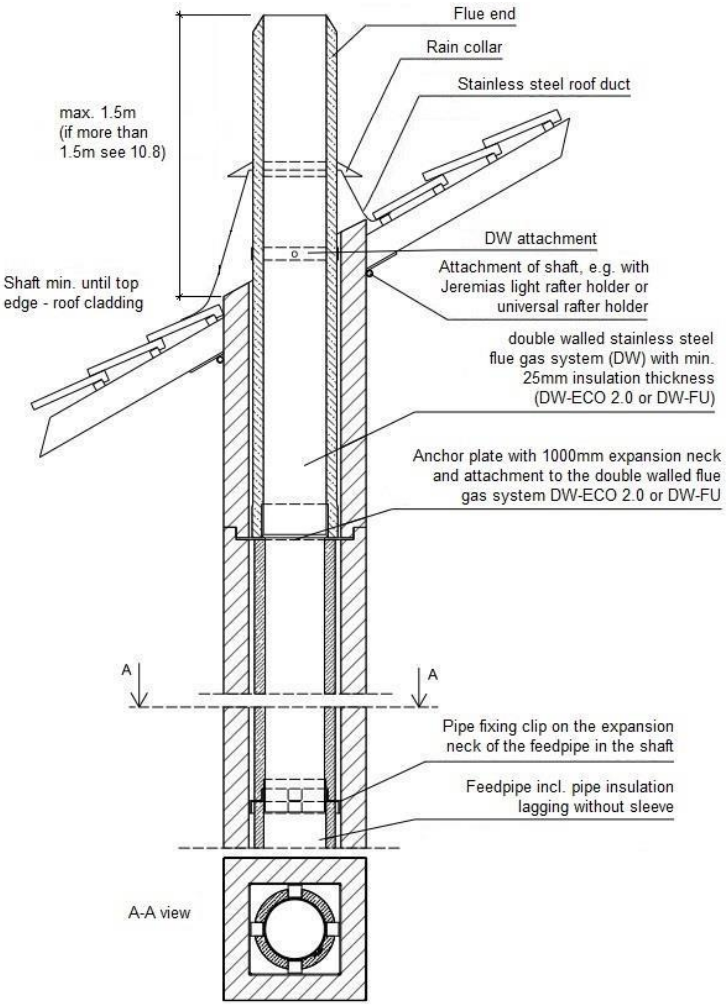
This element must be installed in the rebated edge before the tee!



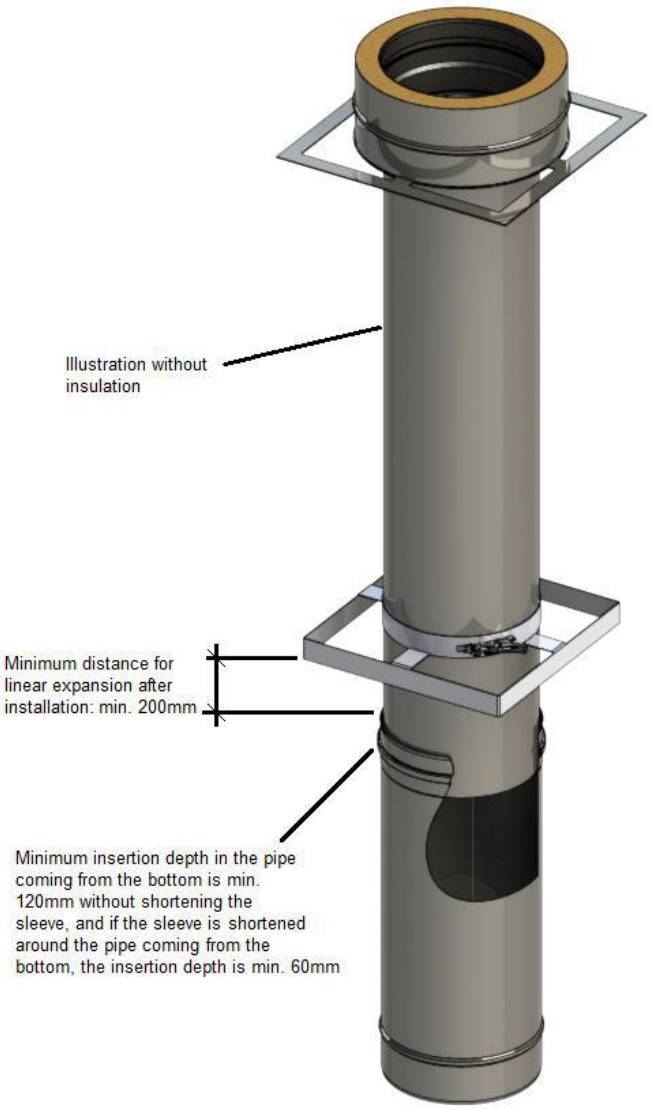
Note: It is also possible to order / deliver cleaning elements without box.
In the cleaning element without box model, there is no need of an additional expansion element as illustrated.

12) DW Model above roof

Furado attachment to DW above roof



There are two different models for above roof applications
1. Variant: Model with TEC-DW-CLASSIC (32mm insulation)
2. Variant: Model with TEC-DW-STANDARD (25mm insulation)

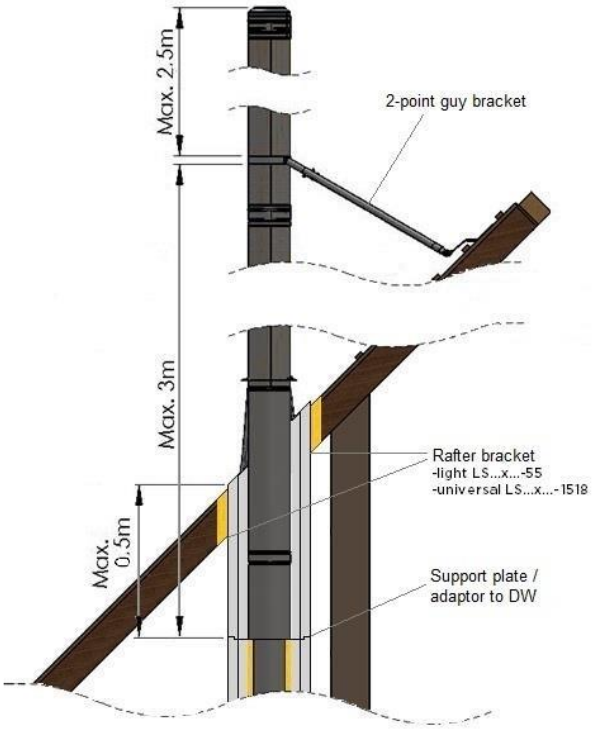


13) Maximum hight above roof with TEC-DW-CLASSIC/ TEC-DW-STANDARD

Without bracing max. 1.5 m with TEC-DW-Classic / TEC-DW-Standard above roof (2.5 m from the anchor plate).

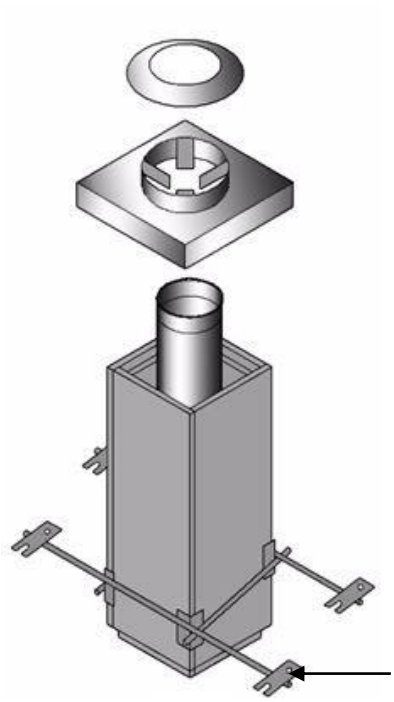
With type-tested bracing up to max. 4.5 m above roof (5.5 m from anchor plate)

See illustration below:
Not more than 3 m from anchor plate to the 2-point bracing clamp attachment and maximum height of 2.5 m above 2 point bracing clamp.

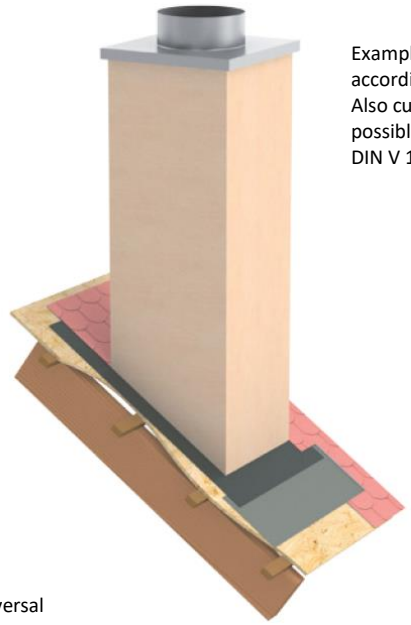


14) Version with shaft above roof

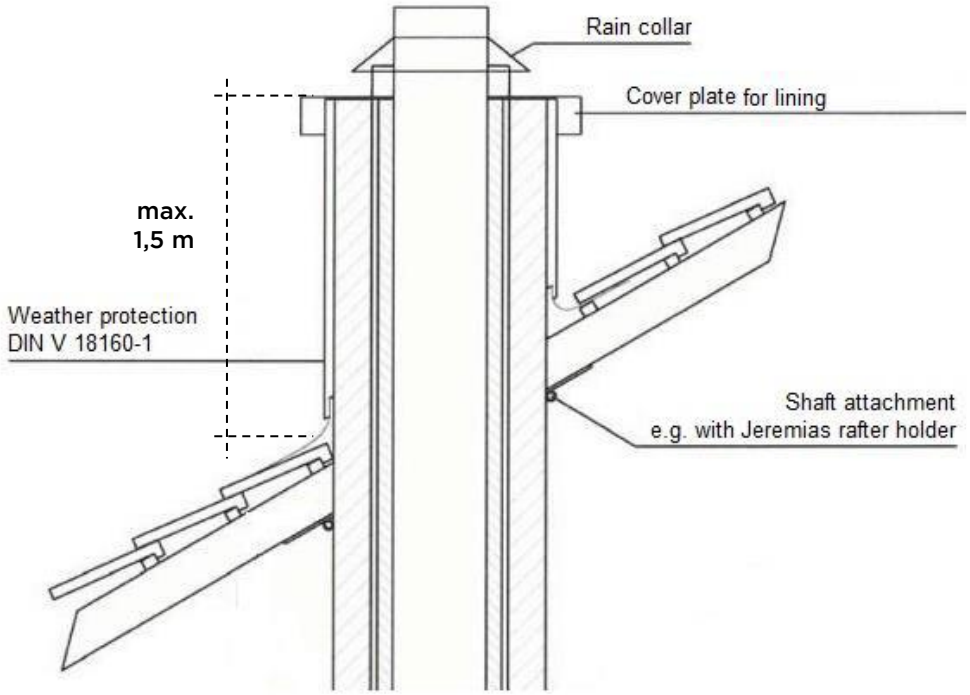
LS50 or LS60: Shaft above roof



e.g. rafter bracket universal
5H - LS

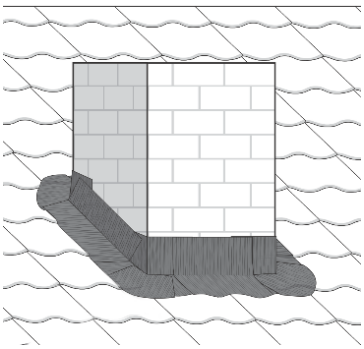


Example of a chimney lining according to Jeremias price list. Also customer provided lining possible in accordance with DIN V 18160-1



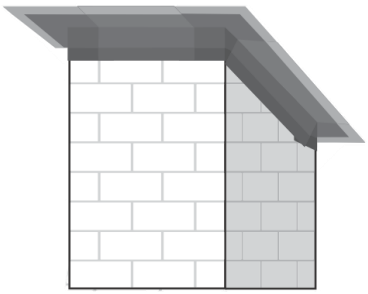
Shaft sealing over roof

The sealing of the shaft against the penetration of rainwater in the area of the roof penetration, near the classical chimney shaft can be done by lead-roll seal or also with the outside sealing corners for shafts for successful shaft seal.



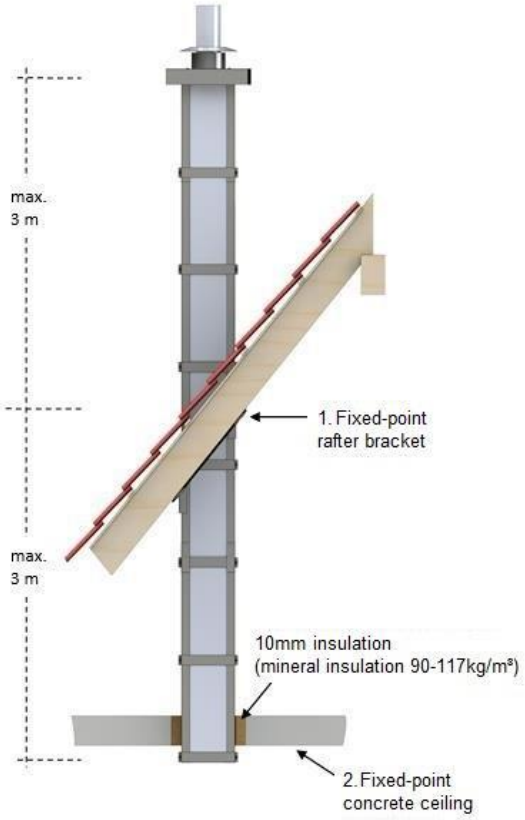
Shaft sealing under the roof (in the building)

If high impermeability requirements are there for the building (blower door test) or if there is already a vapour brake on site, the leaks can be closed again with the aid of the shaft seal under the roof. The seal also has a plaster carrier, so platering is possible.



15) Shaft model with static set above roof

In the shaft model with static set above roof you have to ensure that the length of the static set outside has the same length as the static set inside the building (see illustration). The max. installation height outside the building is 3 m measured from the long side of the shaft which is present outside (see below). Two fixing points are also required, e.g. 1st fixing point – rafter holder 2nd fixing point below or above the ceiling. If installing through a concrete ceiling, it is enough if you provide 10 mm thick insulation around the opening (90-117 kg/m³ non-flammable mineral wool according to building material class A1). If installing through a flammable ceiling, you have to provide enough clearance for 50 mm thick insulation around the opening (90-117 kg/m³ non-flammable mineral wool according to building material class A1).

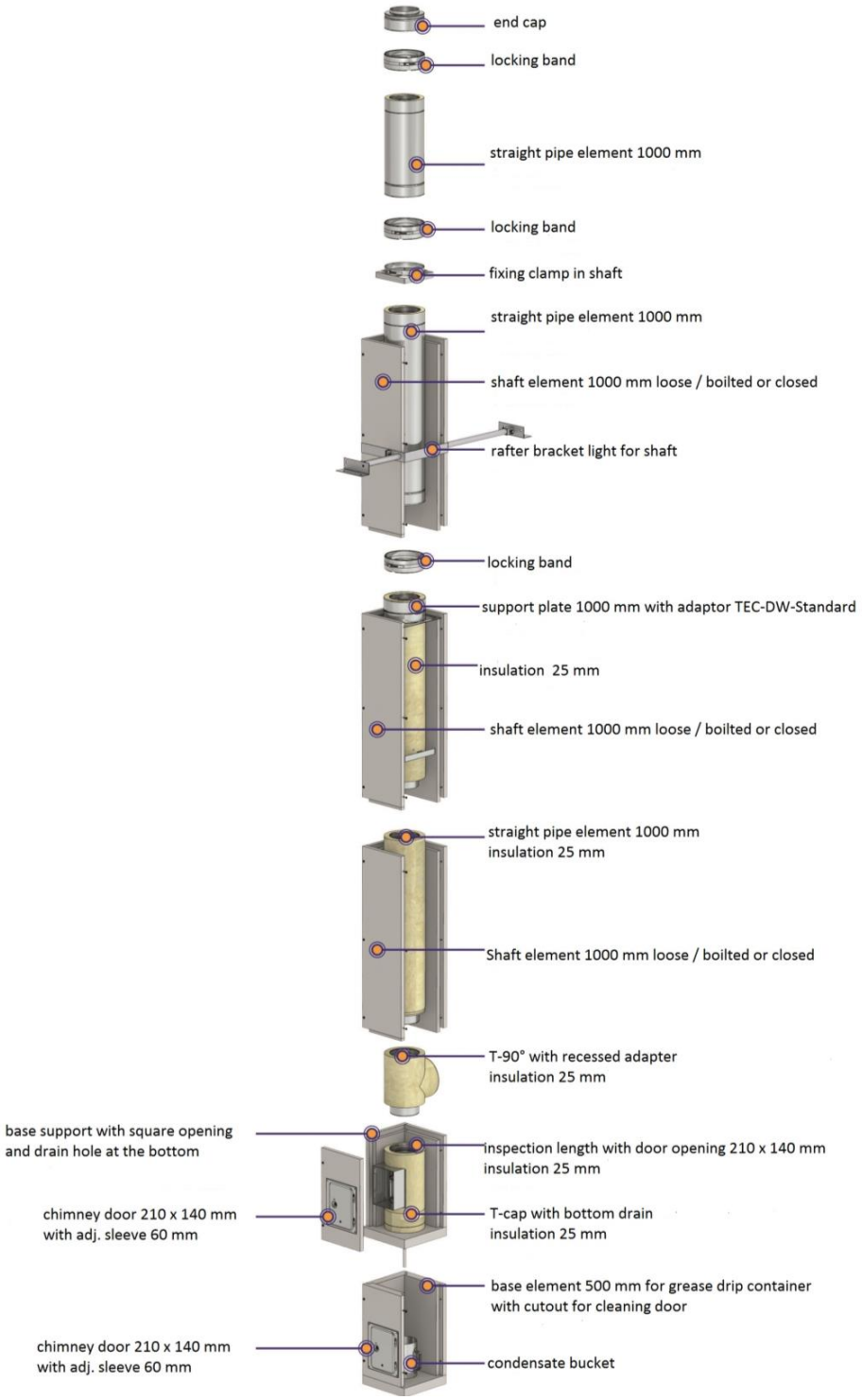


16) Model examples

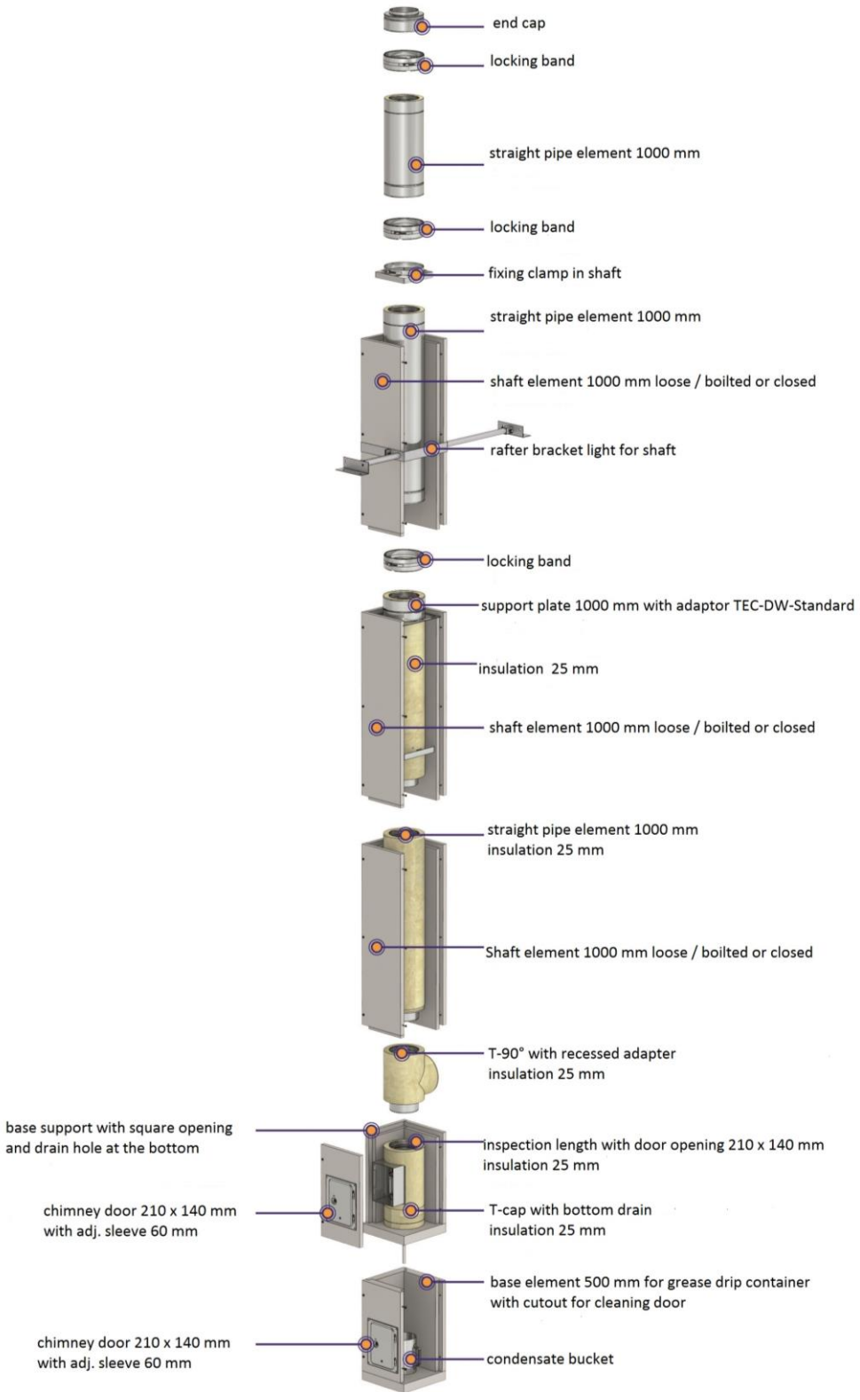
LS 50: Shaft above roof (see System construction variant Page 1)

LS 50: TEC-DW-STANDARD above roof with 25mm insulation

For a better view – illustration of the shaft elements shown in the image without front panel



LS 50: TEC-DW-CLASSIC above roof with 32mm insulation



For a better view – illustration of the shaft elements shown in the image without front panel!

Technical changes and errors are subject to change.

Ungetsheim 16 · 91555 Feuchtwangen
Tel.: +49 (0) 37600 56398 0 · Fax: +49 (0) 37600 56398 2
mail@tecnovis.de · www.tecnovis.de