

## Creating a work window in the wall of the existing sewer pipe

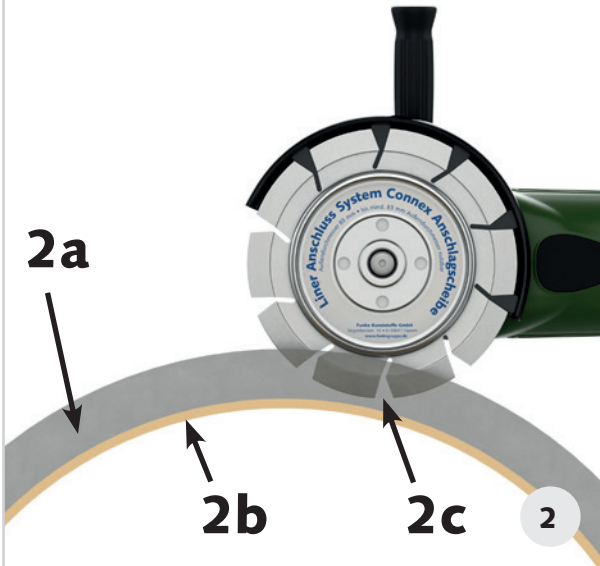
for the Pipe Liner Lateral Connection System Connex and HS-Adhesive Saddle for liners



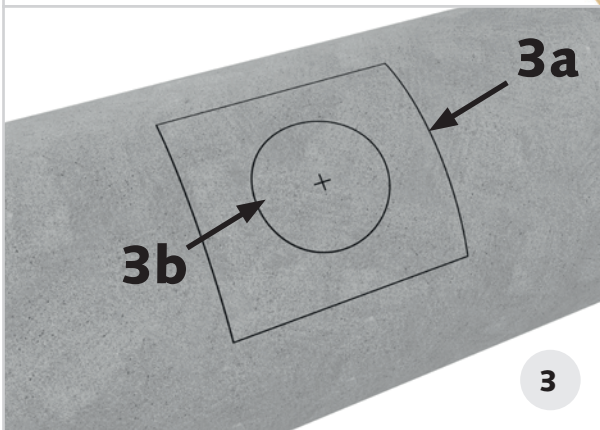
Built-in Pipe Liner Lateral Connection System Connex



1



2



3

The creation of the 'work window' in the wall of the existing pipe is an important task that must be undertaken with the utmost care.

This work window should be approx. 300 x 280 mm in size and be installed in the direction of flow, at right angles to the pipe axis, directly on the liner **(1)**.

**IMPORTANT:** Never attempt to cut a work window into the wall of an existing pipe using an angle grinder without a cutting depth limiter. Attempting to do so carries a high risk of cutting into or through the liner.

### Determining the wall thickness of the existing pipe wall:

- Consult the plans and/or product documentation for information
- Measure the wall thickness close to the damage on the existing pipe. Has the existing pipe already been knocked out of shape to allow the integration of an old connection pipe?

In every scenario, it is a good idea to perform test cuts in the area you will subsequently be drilling into in order to ensure that there will be no damage to the liner (see 'Performing test cuts').

### Select the tools for making the fitting window

**2a** – Existing pipe wall/wall thickness?

**2b** – Inliner (GRP/needle-felt)

**2c** – A clearance of approx. 5 mm must be maintained between the cutting wheel and the liner at all times. Up to 15 mm is OK.

The maximum cutting depth can be calculated as follows:

Existing pipe wall thickness – approx. 5 mm.

**Example:** Existing pipe wall thickness = 28 mm.

28 mm – 5 mm = max. cutting depth 23 mm.





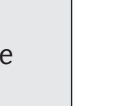

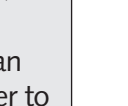
As you can see in Table 1, version 2 should be selected for this cutting depth (125 mm cutting wheel with Funke stop washer plate).

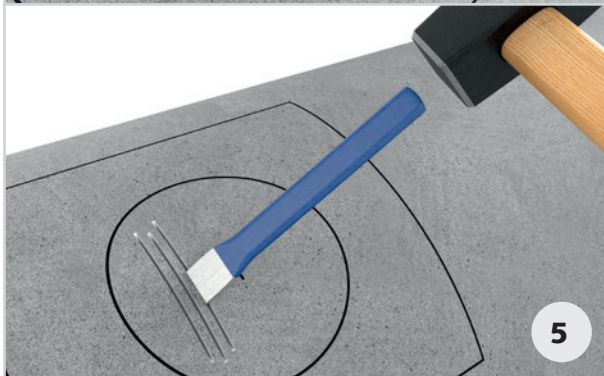
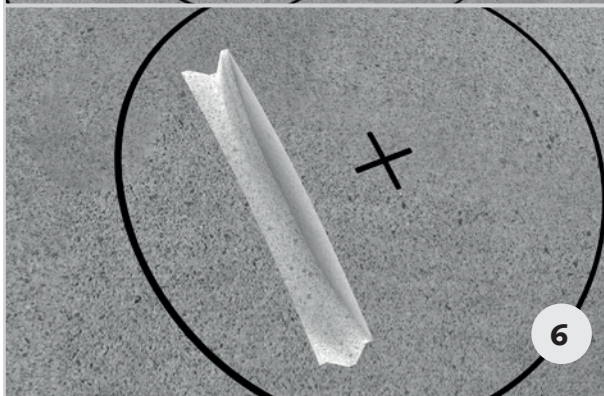
Cutting into the wall of the existing pipe will create a target breaking point. If a residual wall thickness of up to approx. 15 mm remains once the cut has been made, this is OK.

### Mark the work window (3a) and the position of the connection on the outside of the existing pipe (3b).

The spacer ring or collar of the connection, which will touch the liner later on, should have a clearance of at least 15 mm from the wall of the existing pipe all the way round.

**Table 1**

Version	Existing pipe wall thickness	Recommended tool	Cutting depth	
1	20 - 25 mm	Angle grinder with <b>115 mm cutting wheel</b> and <b>Funke Limit Stop Washer (85 mm)</b>	15 mm	
2	25 - 30 mm	Angle grinder with <b>125 mm cutting wheel</b> and <b>Funke Limit Stop Washer (85 mm)</b>	20 mm	
3	30 - 40 mm	Angle grinder with <b>115 mm cutting wheel</b> ; depth limited by the angle grinder's <b>gearbox housing</b>	approx. 25 mm	
4	35 - 45 mm	Angle grinder with <b>125 mm cutting wheel</b> ; depth limited by the angle grinder's <b>gearbox housing</b>	approx. 30 mm	
5	35 - 45 mm	Angle grinder with <b>180 mm cutting wheel</b> and <b>Funke Limit Stop Washer (120 mm)</b>	30 mm	
6	60 - 70 mm	Angle grinder with <b>230 mm cutting wheel</b> and <b>Funke Limit Stop Washer (120 mm)</b>	55 mm	
7	≥ 35 mm	Angle grinder with adjustable <b>depth limiter</b>	variable	

**4****5****6****Performing test cuts**

We recommend making 2–3 test cuts within the area where the connection will later be positioned **(4)**. These should be as close to the centre of this area as possible. Clearance between cuts: approx. 10 mm.

Any damage to the liner at this point does not matter, as drill holes will be made in this area of the liner later on.

**Chisel out the ridges in the wall of the existing pipe (5).**

The liner must not be visible once chiselling is complete **(6)**. Next, cut into the wall of the existing pipe along the work window marking **(3a)**. If you have a high residual wall thickness (e.g., 10 - 15 mm), it might be useful to make an additional cut in the fitting window. This will make it easier to remove the sections of the existing pipe wall.

Once you have made the cuts **(7)**, hammer at the edge of the fitting window with increasing force, along the section of the existing pipe wall that you wish to remove **(8)**. The noise should tell you when you have broken through the residual wall thickness.

**IMPORTANT:** If using a crowbar or a mounting lever to remove the sections of the existing pipe, **NEVER** brace the crowbar against the liner. This could damage the liner.

Please refer to the installation instructions for the **Pipe Liner Lateral Connection System Connex** for the next steps in the installation process.

**7****8****9****10**