L'EXPÉRIENCE TERRAIN

IMPLEMENTATION MANUEL

BATIFIBRE SN4

Made in France

Draining fondations
WITHOUT GRAVEL

UNDER TECHNICAL ADVICE
N° 17.2/16-317_V4

VERSION 09/2023 – INVALIDATES AND REPLACES ALL PREVIOUS BÄTIFIB RE-SN4 INSTALLATION MANUALS

The application, the use and/or the transformation of the products escape our responsibility of control and, consequently cannot engage the responsibility of the company A.T.E., but that of the user and/or that of the transformer.

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DESIGNING THE DRAIN NETWORK

Outlying drainage systems for buildings aim to remove excess water in the ground, which is right next to the foundations.
Surface water (roof and runoff) should be managed by a specific network.

Outlying drainage should always be located below the deepest section of pavement.

Refer to the **DESIGN GUIDE FOR OUTLYING DRAINAGE USING** for designing your outlying drain work.

IMPLEMENTATION DEPTH

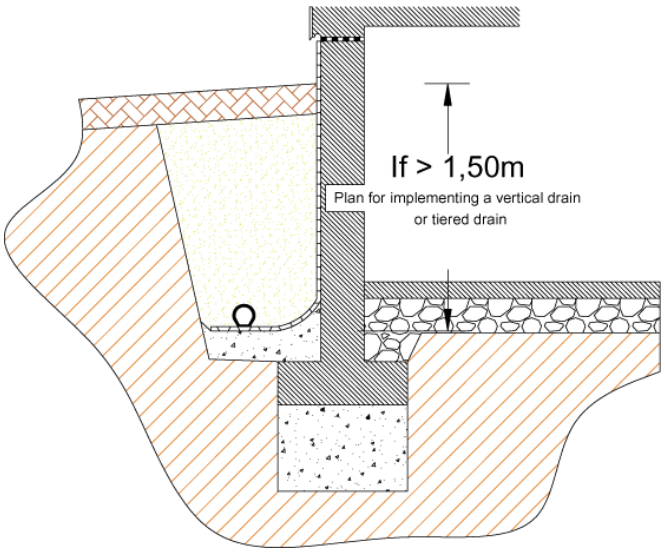


FIGURE No. 1: MAXIMUM DEPTH WITHOUT ANCILLARY VERTICAL DRAINAGE

The BATIFIBRE SN4 drain can be positioned:

- A minimum of 40cm from the surface to avoid roots interfering with the product and to limit loss of effectiveness
- Up to 3m deep along the length of the foundation,
- Up to 5m away from the foundation while complying with the requirements set out in SECTION 70.

If the BATIFIBRE SN4 drain is positioned at least 60cm under light rolling loads or 100cm under heavy rolling loads, mechanical protection should be installed in order to protect the drain mechanically.

However, beyond a depth of 1.5m, in order to collect percolated water as best as possible and to limit the amount of hydrostatic pressure on the structure, the BATIFIBRE SN4 drain must be connected to:

- Vertical drainage,
- tiered drains.

PREPARATION

The excavation and laying of any drain takes place from the low point (outlet) towards the high point of the drain. This method ensures that the gradient is appropriately taken into consideration and helps to avoid water stagnating in the

OUTLET

FIGURE No. 1: CONNECTING THE DRAIN NETWORK TO AN OUTLET

Connect the drainage system outlet to:

- a pit,
- a waterway,
- the public network,
- etc.

Maximum water level, to the outlet level

If, during the excavation period, the laying of the foundations period or the drain installation period, the connection to an outlet is not possible, create a water recovery pit near to its future location and ensure this is at least three meters (3.00m) from the work.

A temporary lifting pump will be installed in this pit to stop water from entering.

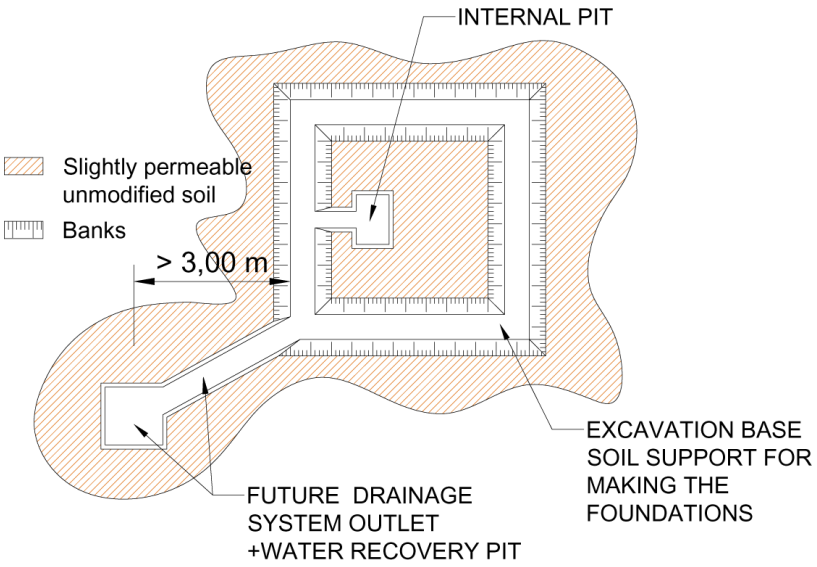


FIGURE No. 2: PRINCIPLE OF A WATER COLLECTION PIT DURING THE CONSTRUCTION PERIOD

OPENING THE TRENCHES (RENOVATION)

If renovation work needs to be carried out, clear the area surrounding the work. In order to allow water to flow, the bottom of the trench will be made with an initial slope (the base will be rectified afterwards). Most of the excavation work can be done using an excavator, but the finishing touches and adjustments to the slope can be done more accurately using

FIGURE No. 3: REMOVING THE FOUNDATIONS USING AN EXCAVATOR AND FINISHING OFF USING A HAND SHOVEL

FIGURE No. 4: CLEANING OFF THE SURFACES USING A HIGH-PRESSURE CLEANER.

Next, clean the surfaces using a high-pressure cleaner.

Fill in any holes, cracks, etc.

In some cases, it may be necessary to reinforce the foundation (re-doing the underpins, ...).

FIGURE No. 5: RE-POINTING THE FOUNDATION FACING

LAY THE LENGTH OF THE FOUNDATION

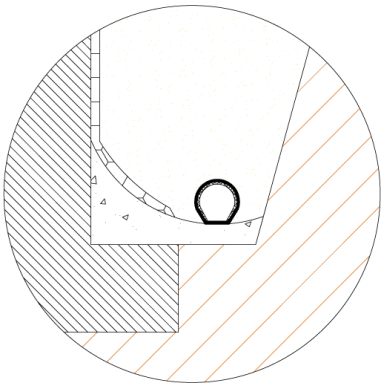


FIGURE No. 6: CUTTING PRINCIPLE FOR VERGES & CHANNELS

When the drain is located right next to the foundations, it should be positioned on a thin concrete channel. This channel allows you to create the slopes needed to ensure the water collected flows well

If a protective or draining complex is required, or you make the choice to install one, and in order to prevent them from rupturing and to aid the removal of water from the structure, the channel will be extended along the foundation wall by creating a verge.

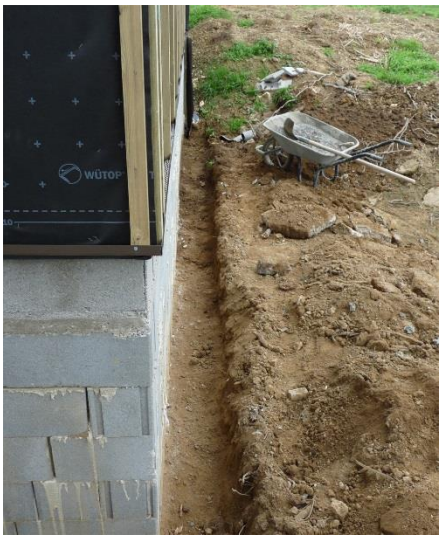


FIGURE No. 7: CLEANING AND WIDENING THE TRENCH

FIGURE No. 8: CREATING THE THIN CONCRETE CHANNEL & CHECKING THE SLOPES

FIGURE No. 9: CHANNEL

SHIFTING THE FOUNDATION

If it is not possible to install a BATIFIBRE SN4 drain right next to the foundations, for the following reasons in particular:

- Clay soil is susceptible to risk of sinking or expanding,
- the foundation is not very deep,
- etc.,

position the drain around two meters from them.

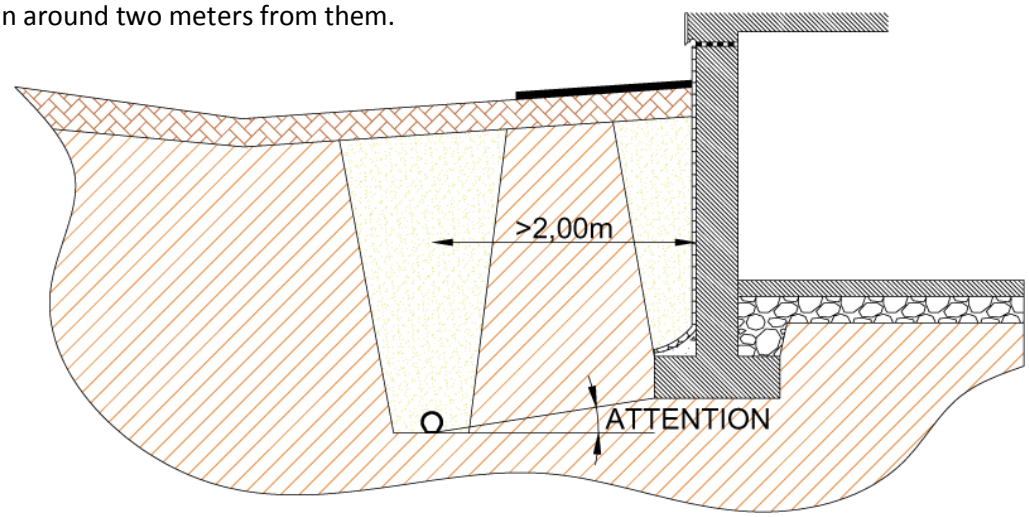


FIGURE No. 10: POSITIONING AWAY FROM THE FOUNDATIONS

WATERPROOFNESS OF THE WALLS

Apply a surface waterproofing product over all the parts that have been buried up to 20cm above the final level of the ground.

Please refer to the chosen product's instructions for use according to the nature of the buried wall.

FIGURE No. 11: IMPLEMENTING A WATERPROOFING PRODUCT

FIGURE No. 12: USING AN EMBOSSED FILM TO PROTECT THE SEAL

Use an embossed plastic film to protect the seal against punching.

The film should come up close to the drain.

Some conditions will require this protection to be connected to a vertical drain.

IMPLEMENTING

BEARING SURFACE

Before installing the BATIFIBRE SN4 drain, check the slopes from the outlet to the high point.

If it is necessary to raise them, in order to achieve the gradient required while ensuring not to "lay bare" the foundation (see **DESIGN GUIDE FOR OUTLYING DRAINAGE SYSTEM USING A BATIFIBRE SN4**).

FIGURE No. 13: CHECKING THE GRADIENTS BEFORE INSTALLING THE BATIFIBRE SN4 DRAIN AWAY FROM THE FOUNDATIONS

Scrape the channel or the base clean to remove any traces of mud, stones, waste, etc.

FIGURE No. 14: MUD REMOVED FROM A BEARING SURFACE BEFORE IMPLEMENTING A BATIFIBRE SN4

INSTALLING THE

Place the flat side of the BATIFIBRE SN4 drain on the thin concrete channel or on the base of the trench

FIGURE No. 15:

The junction between two BATIFIBRE SN4 drains is achieved by an adapted interlocking pipe. The connection is held in position by lugs that prevent it from breaking.

Each BATIFIBRE SN4 bar is fitted with a coupler.

FIGURE No. 16: COUPLING THE DRAINS BY INTERLOCKING

CHANGING DIRECTION / JOINING MULTIPLE DRAINS

To carry out changes in direction or connecting multiple drains, you can use inspection boxes made of concrete or plastic.

Choose products that have an interior section of at least 300mm x 300mm or Ø300mm, so as to have space to put inspection or maintenance tools.

Likewise, the chosen product must allow a connection between the inspection box and the BATIFIBRE SN4 drain, preventing any breakages during the backfilling or during the lifespan of the work.

FIGURE No. 18: CHANGING DIRECTION USING AN INSPECTION BOX

FIGURE No. 19: CHANGING DIRECTION USING TWO 45° BENDS PVC Ø100

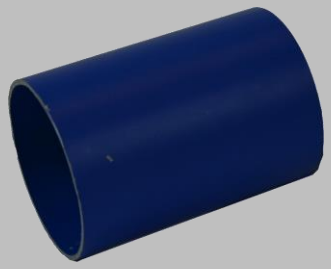
Changing directions can be achieved using PVC Ø100 sticking accessories, thanks to the BATIFIBRE SN4 pipe.

If you choose this solution, you must:

- Place and inspection box or dredging shaft at both changes of direction,
- Ensure elements are connected together using glue in accordance with the recommendations in DTU (building code) 60.33,
- Changes of direction > 45° should be carried out using at least two accessories.

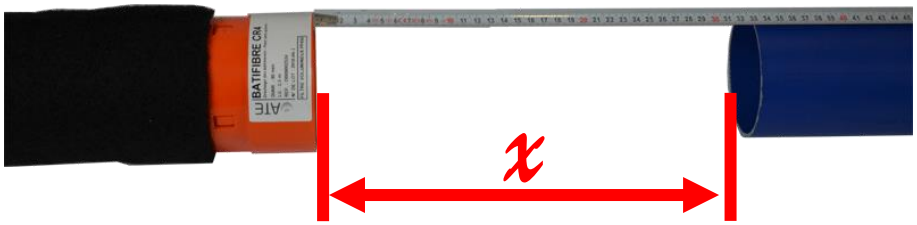
The inspection boxes or dredging shafts must not be more than 15m away so as to allow the system to be maintained properly in future.

To ensure the connections between the different accessories in the drain network, plan to use PVC Ø100 CR4 tube sleeves that are around 10cm long.



CONNECTING & LENGTH OF

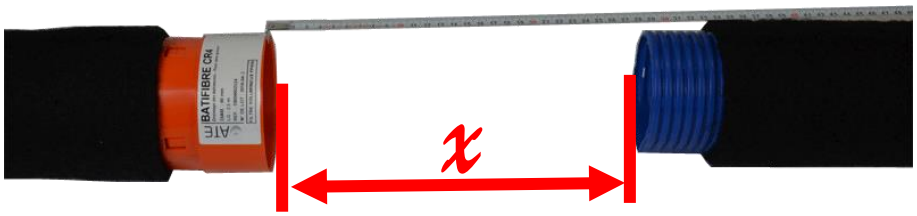
DETERMINING THE LENGTH REQUIRED



Length between a BATIFIBRE SN4 drain and a PVC Ø100 SN 4 smooth tube :

Measure the distance x between the edge of the pipe and the edge of the tube.

L = x + 5 cm



Length between two BATIFIBRE SN4 drains M/F :

Measure the distance x between the edge of the pipe and the edge of the drain.

L = x + 9,5 cm

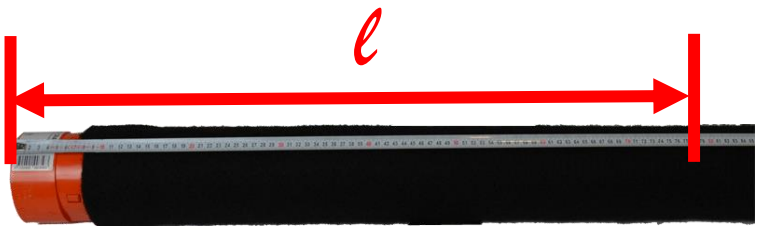
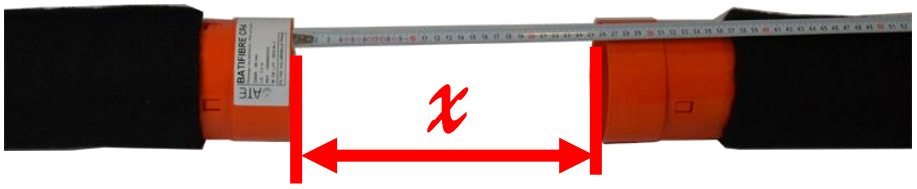


FIGURE No. 14: Measure the length required for a BATIFIBRE SN4 drain with pipe to connect a BATIFIBRE SN4 drain with a smooth tube BATIFIBRE SN4 drain that does not have a pipe



Length between two BATIFIBRE SN4 drains F/F :

Measure the distance x between the sides of the pipes

L = x + 19 cm

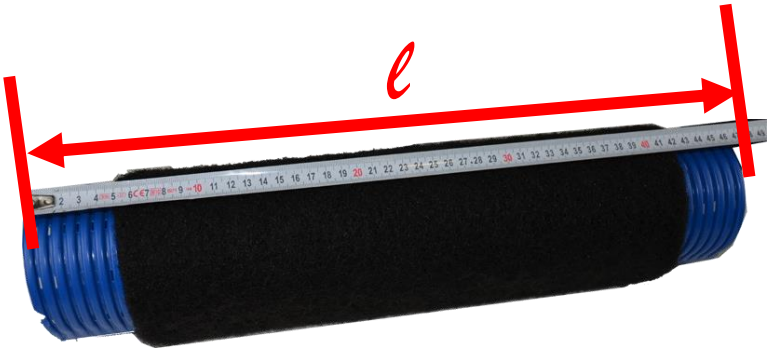
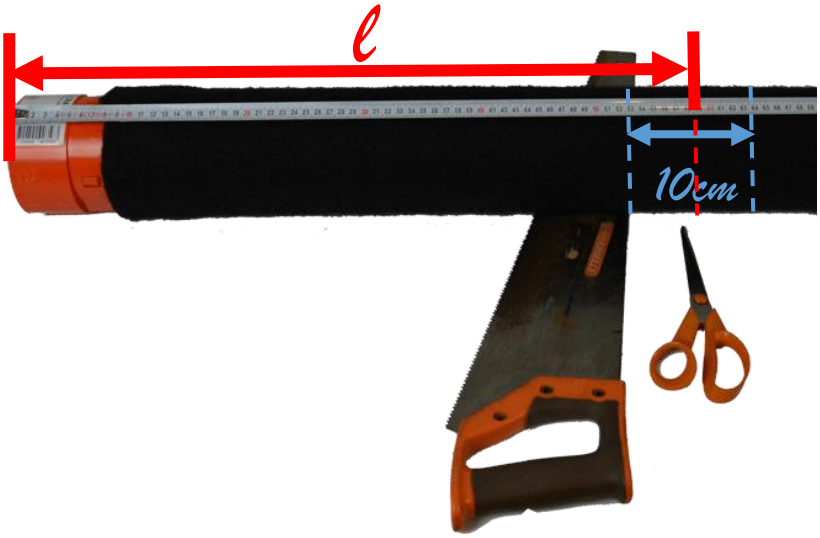


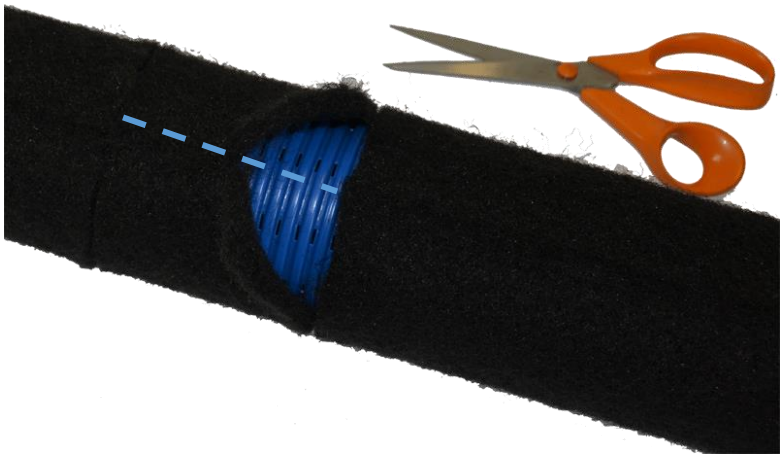
FIGURE No. 20: Measure the length required for a BATIFIBRE SN4 drain without a pipe to connect the two BATIFIBRE SN4 drains with pipes

CUTTING THE LENGTH OF



1. Measure the desired length.

2. Cut out the sheet using a pair of scissors 5cm on both sides (10cm in total) of the desired length.



3. "Unfasten" the sheet on the 10cm concerned.

4. Remove the piece of sheet.

5. Cut out the length of the tube using a hacksaw, a jigsaw or a small-tooth handsaw.

FIGURE No. 21: PROTOCOL FOR CUTTING THE DESIRED BATIFIBRE SN4 DRAIN LENGTH

POSITIONING THE SLEEVE

In order to install the BATIFIBRE SN4 sleeve on to the drain, position the flat part of the sleeve so that it is aligned with the drain channel, as shown in figure 17.

Next, lift the sleeve to join it to the drain, then slide it up to the internal stop.

FIGURE No. 22: POSITIONING THE CONNECTOR BEFORE DEFINITIVELY INTERLOCKING IT

CONNECTING TO Ø100 PVC ACCESSORIES

Connecting the BATIFIBRE SN4 drain to smooth Ø100 PVC is done using a male accessory or a tube.

In order to carry out a change of direction (between two inspection boxes or shafts, use MF accessories with a tube sleeve around 10cm in length.

FIGURE No. 23: CONNECTING THE BATIFIBRE SN4 DRAIN WHEN CHANGING DIRECTION BY 90° USING TWO MF PVC Ø100 45° ACCESSORIES

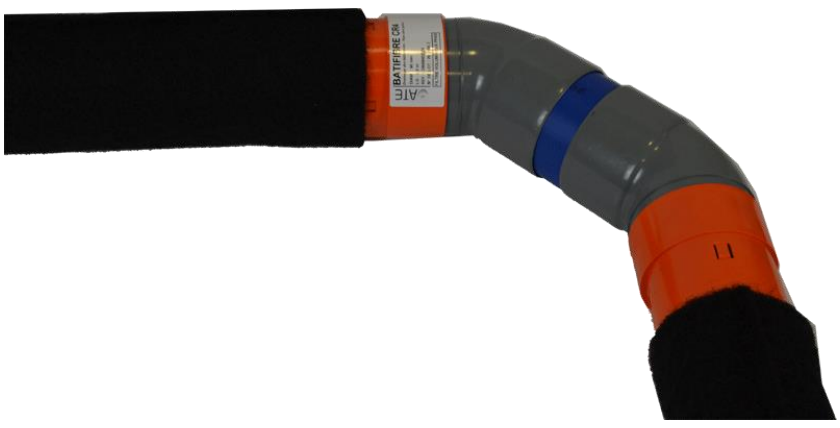


FIGURE No. 24: OTHER SLEEVE POSITIONS POSSIBLE WHEN CHANGING THE DIRECTION BY 90°

BACKFILLING

FIGURE No. 25: PRESENCE OR NON-PRESENCE OF MUD IN THE BACKFILL

The land used for backfilling must be free from mud and impurities.

If backfilling the network takes several days following the excavation, cover the backfill to limit any changes to the level of humidity in the soil.

The soil is considered to be sufficiently dried out (dry), to be implemented when the soil does not stick to the shovel or to your hand.

FIGURE No. 26: MANUAL DAMAGE TO THE LAYERS OF BACKFILL

Backfilling occurs in layers of no more than 20 - 30cm. Each layer is packed down by hand or mechanically.

FIGURE No. 27: USING A WARNING MESH

The drainage network must be marked 20cm above the drain by a brown warning mesh to facilitate future action and to limit the risk of damage.

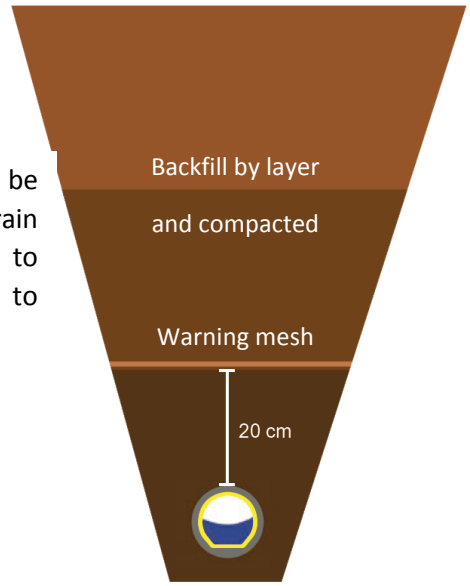


FIGURE No. 28: CUTTING PRINCIPLE FOR MARKING NETWORKS

MAINTAINING THE DRAIN NETWORK

In order to guarantee the effectiveness of the drainage system in the long term, you must inspect and dredge the system:

- When construction has ended,
- After the first six months of use,
- Then a maximum of once every two years.

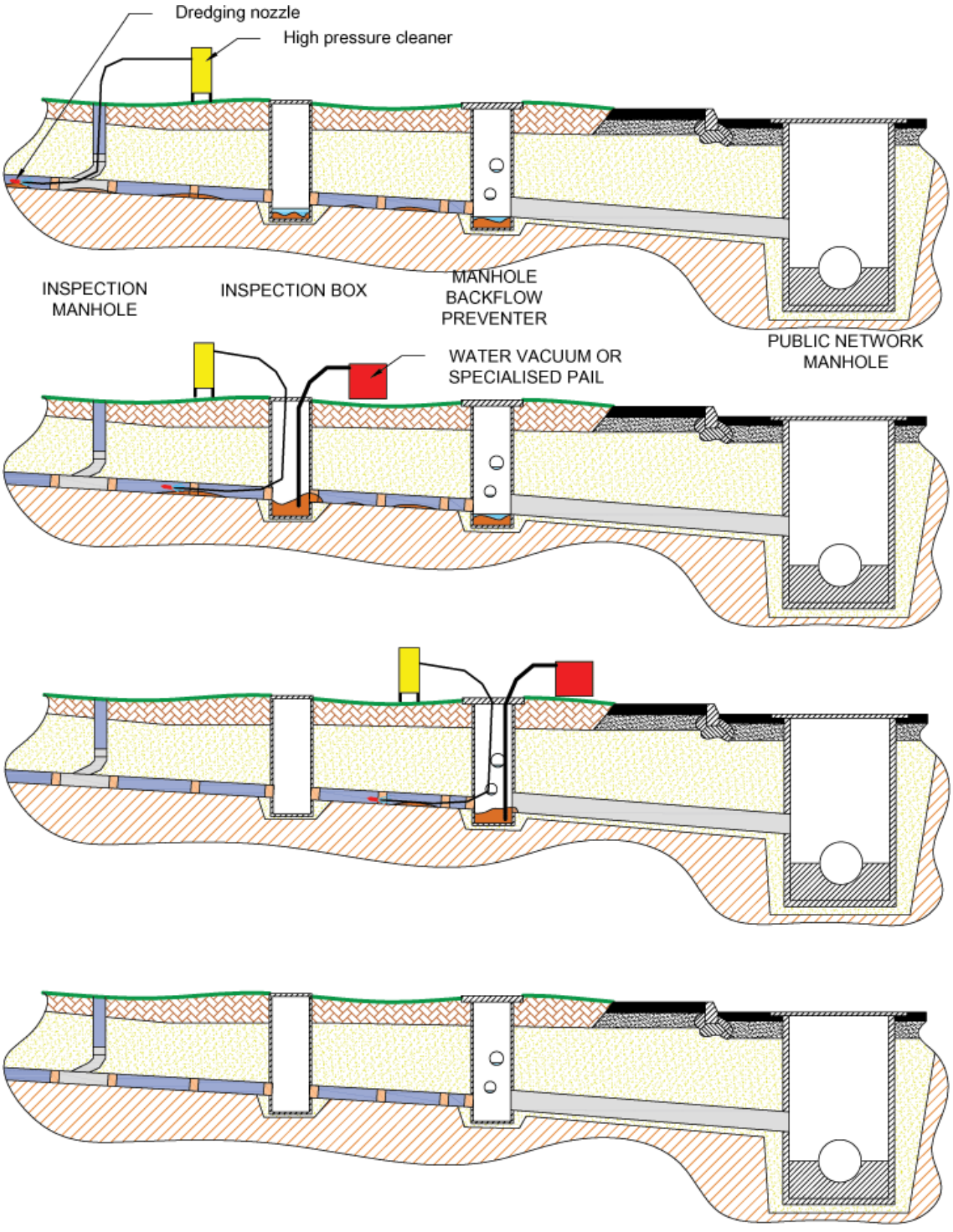


FIGURE No. 25: DREDGING A DRAINAGE NETWORK USING A DREDGING KIT FOR PIPELINES

NOTES

OPERATIONAL EXPERTISE

GROUND EXPERIENCE

A.T.E. is a French industrial SME founded and located in Château-Gontier, in Mayenne (53), which has specialised in drainage, water infiltration and rainwater management since 2001. For more than 15 years, A.T.E. and its teams have been known and recognised for the quality of their production, their commitment to innovation and the development of new products that are increasingly adapted for installers.

Since 2009, A.T.E. has developed, marketed, installed and helped installers to use BATIFIBRE SN4. Thick filter technology made from pure and/or recycled polypropylene fibres developed more than 40 years ago in the Netherlands to address a shortage of gravel and the clogging of drainage products by fine clay and silt soils.

Today, this amounts to several hundreds of thousands of metres that have already been installed in France and across Europe. The effectiveness and innovation of the product have been recognised by being awarded Technical Advice No. 17/16-317_V4

MORE INFORMATION. BATIFIBRE SN4