

Installation and laying of Kabelflex cable conduit

Kabelflex cable conduit should be laid in accordance with the specification SANS 1200 LB referring specifically to the requirements for flexible pipes. If in doubt, refer to the SANS specification.

Trenching

When Kabelflex cable conduit is correctly bedded and side filled, together with the surrounding soil, it forms a complete soil-conduit system. The narrower the trench the more effective the soil-conduit system.

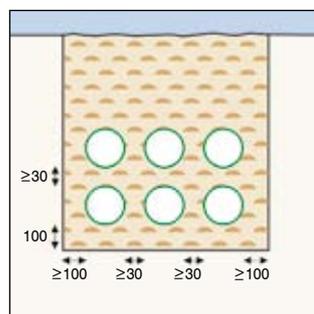
However for a single conduit installation the width of the trench should not be narrower than the diameter of the conduit plus 200mm to allow for adequate working space and the initial compaction around the conduit.

On very hot days and for long conduit runs the conduit should be laid into the shadow at the bottom of the trench and allowed to cool and contract before backfilling.

Laying of Kabelflex cable conduit

Cable conduits should be laid as straight as possible between manholes and drawpits. The coiled conduits are very flexible and should be anchored with a heap of soil at one end of the trench, pulled in a straight line, and then backfilled.

In multi-conduit systems the conduits should have a minimum spacing horizontally and vertically of 30mm, or one third of outside diameter, whichever is greater.



Joining and cutting

Kabelflex cable conduit is easily joined by means of push fit couplings. The conduit should be pushed fully home to the end stop in the middle of the coupling. The couplings are sand tight. The conduit can be cut by means of a hacksaw, Stanley knife, or special cutting tool. The cut should be in the corrugation valley to ensure a square conduit end.

Sealing rings

For joints that are watertight to a 2m head of water, profiled rubber sealing rings are required. The seals should be stretched over the end of the conduit and placed in the third corrugation valley from the end of the conduit. For size DN75 conduit the seal should be placed in the fourth corrugation valley.

The seal should not be twisted and should be properly and evenly seated in the corrugation valley. A thin film of the lubricant, supplied with the seals, should be spread on the clean inside



bore of the coupling. The conduit with seal is then pushed into the lubricated coupling with a wiggling motion until the conduit reaches the end stop.

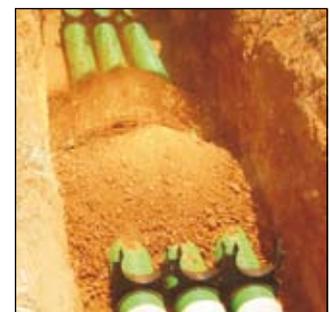
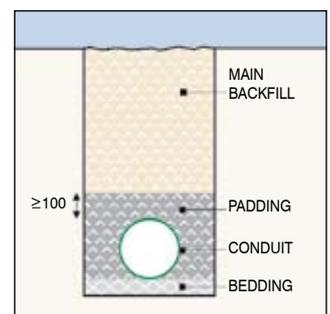
Bedding, padding and main backfill materials

The 3 layers of material in the backfilled trench are classified as bedding, padding, and main backfill.

The bedding and padding material should not be too fine, and should be free of large stones (*it shall be evenly graded between 0,6mm and 19mm*). **Clay type material is not suitable** (*the PI should not exceed 12 and compactibility factor should not exceed 0,4*).

The in-situ material is not always suitable for bedding and padding and imported material may have to be used.

The material excavated from the trench can be used as main backfill if it is free from stones



greater than 150mm diameter and if the possible subsidence of the trench is not important. If it is an issue then selected imported materials may have to be used.

Compaction of bedding, padding and backfill material

The correct compaction of the bedding and padding material is absolutely critical to ensure the integrity of the soil-conduit system. If the compaction process is not done properly conduit deformation can occur.

The conduit must be supported on a continuous bed compacted to a depth of not less than 100mm over the full width of the trench. A vibratory plate compactor can be used for compacting the bedding. The padding must then be placed in layers not exceeding 75mm thick and compaction must be executed manually using suitable tamping tools. See the photographs opposite. A standard vibratory plate compactor cannot be used for this compaction step, as it will not properly compact the material between the conduits and side wall of the trench. Simultaneous filling and even manual compaction must take place on either side of the conduit.

The padding procedure must continue above the conduit to a depth equal to the diameter of the conduit but not less than 100mm above the conduit. The compaction of the main backfill can be done with a vibratory plate compactor in layers not exceeding 300mm thick.

The main backfill can be stabilised with cement under road crossings. *(The degree of compaction for bedding, padding and main backfill shall be 90% of modified AASHTO maximum density. The optimum moisture content should not vary by more than 2% to achieve maximum density).*



Depth of cover over conduit

A minimum of 450mm depth is required from the crown of the conduit to ground level. At road crossings the minimum cover over conduit should be 750mm.

Handling Kabelflex cable conduit

Kabelflex cable conduit is flexible, strong, durable, and has excellent impact strength.

Sizes DN75, 110, and 160 are supplied in 6m lengths and may be supplied palletised with wooden frames. A forklift, or a crane using protected slings, can be used to handle a conduit pallet. Careful handling will result in no breakages. Conduit sizes DN50, 75, 110 are also supplied in 50m coils, DN160 in 25m coils.

Storage

The storage area for conduit should be level and free from any sharp objects that may cause damage to the conduit.

Coils of conduit can be stacked four high. Pallets of conduit can be stacked three pallets high, but ensure that the wooden frames line up to prevent damage to the conduit. The pallet dimensions are 1.2m wide, 1.0m high, and 6.1m long.

If loose lengths of conduit are stacked longitudinally then side supports should be provided at intervals of not more than 2m. Unpalletised conduit should not be stacked more than 1.8m high. The conduit and couplings are UV stabilised and can be stored outdoors for up to one year.

