KOPOS

INSTALLATION INSTRUCTIONS

PROTECTIVE PIPES KOPOFLEX® AND KOPODUR®

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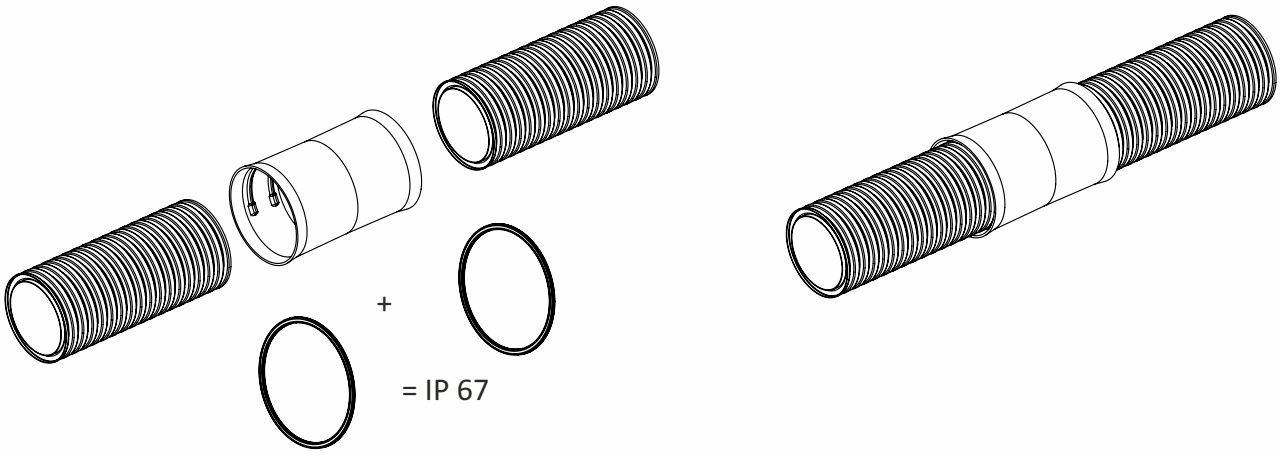
1. Joining protective pipes

The protective pipes are connected using the 02xxx_FA coupling. The coupling is part of every coil (KOPOFLEX®) or rod (KOPODUR®). Insert the end of the protective pipe as far as it will go into the coupling. This connection guarantees IP 40 protection. Two 16xxx_FB sealing rings must be used for the watertight connection of the protective pipes. Lubricate the sealing ring with a lubricant and insert it into the second groove at the end of the protective pipe. We will do the same at the end of the second one. Insert the end of the protective pipe with the sealing ring as far as they will go into the coupling. This connection guarantees IP 67 protection. We offer sealing rings up to a diameter to 160 mm.



2. Laying of protective pipes

It is recommended to cover KOPOFLEX® and KOPODUR® protectors with soil with grains up to a size of 50 mm in a volume of max. 10% in the soil. Detailed conditions are set by the ČSN EN 1610 standard, which replaces the no longer valid ČSN 73 30 50. We present the description of the soil according to the already invalid standard, because it well describes the character of the soil:

a) cohesive, soft consistency. e.g. topsoil, clay, sandy clay, loamy sand

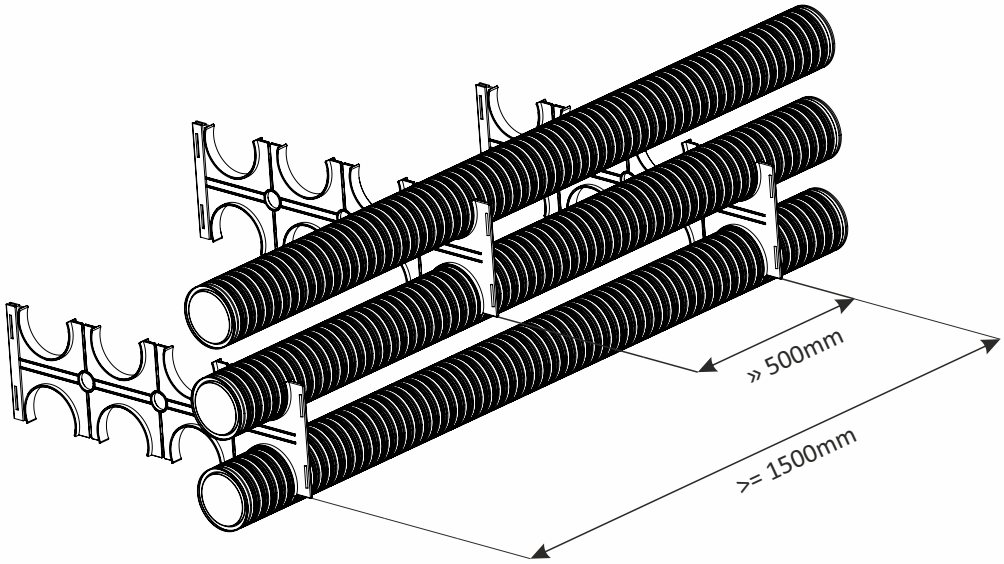
b) incoherent, loose grains up to 20 mm with grains over 20 to 50 mm in a volume of up to 10% of the total volume of 1st class soil, e.g. sand, sand with gravel, sandy gravel, small and medium gravel, or gravel with stones

c) construction waste and weighing of a similar nature as soils included in the 1st class

Sprinkle the protective pipe on both sides, compactable with soil without stones, in layers of max. 30 cm. The protective pipes must not be pushed to the sides during compaction. For multi-layer laying in the excavation, we place each layer of protectors separately (fill and compact), only then can we lay another layer. When concreting, we pay attention to the watertight connection of the protective pipes (using sealing rings inserted into the second groove) and secure the protectors against buoyancy! We choose such aids to ensure to prevent damage protective pipe.

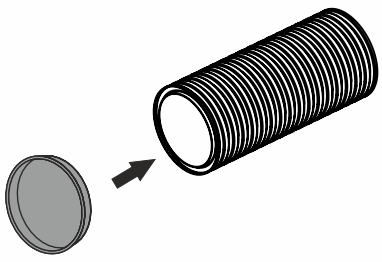
3. Spacers

In the case of a multi-layer arrangement of protective pipes in the excavation, we install spacers for fixing the pipes. We recommend installing spacers up to a maximum of 1.5 m. When we use spacers, we have to use a sand bed and we have to cover all the layers of the protective pipes with sand in order to compact the layers. There must be no air pockets between the individual layers, otherwise the protective pipes would be deformed during compaction. Spacers can be connected horizontally. In the vertical direction, the spacers cannot be connected, but we solve this by moving the spacers by about 0.5 m and then installing another layer of protectors - it is always necessary to cover the protectors with sand.



4. Plugs

The plugs are intended for blinding backup lines or for temporary blinding of guards during installation.



5. Stretching string

The supplied stretching blue string in the KOPOFLEX® protective pipe is used to pull in the wire, resp. cable of the retracted cable. Before laying the protective pipes, always loosen the end of the string attached to the protector. If we do not need a stretching string, we will pull it out of the protective pipe before its assembly.

6. **Bending radius of protectors**

KOPOFLEX®	Outer diameter (mm)	Inner diameter (mm)	Minimum bending radius (mm)
KF 09040	40	32	230
KF 09050	50	41	350
KF 09063	63	52	350
KF 09075	75	61	350
KF 09090	90	75	400
KF 09110	110	94	400
KF 09125	125	108	500
KF 09160	160	136	650
KF 09200	200	176	850

The materials for designing the protective pipes are listed in the gray CABLE PROTECTION DUCTS catalogue.