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User and installation manual
PE Optics access chamber

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User and installation manual.

This manual contain the manufacturer's recommendations for installing optics access chamber in different varieties assortment, made of PE in rotational molding technology.

Table of Contents

Application

Cable trays are used for installation in telecommunication networks, are installed on the course and ends routes telecommunication cables. They are designed for protection against mechanical damage of joints and the necessary excess fiber optic cables laid in cable conduits. They serve as buses, branching points and connectors for any telecommunications cables. Plastic chambers are designed for easy and quick installation thanks to low weight, while providing high strength and durability, resistance to corrosion, and leaks.

Chambers ares used for:

- easy arrangement telecommunication cables and the necessary cable reserve, to allow partial and secure expand in the event of an emergency pull cord on the route.
- insertion and safe to install in the chamber pipe ends of pipeline cable.

Construction

Optic chambers are in the form of vertical box with a circular hatch. It consists of a body, a cover, inner reinforcement pillar and the seal. Chambers can be provided with the place for the cable connector(s).

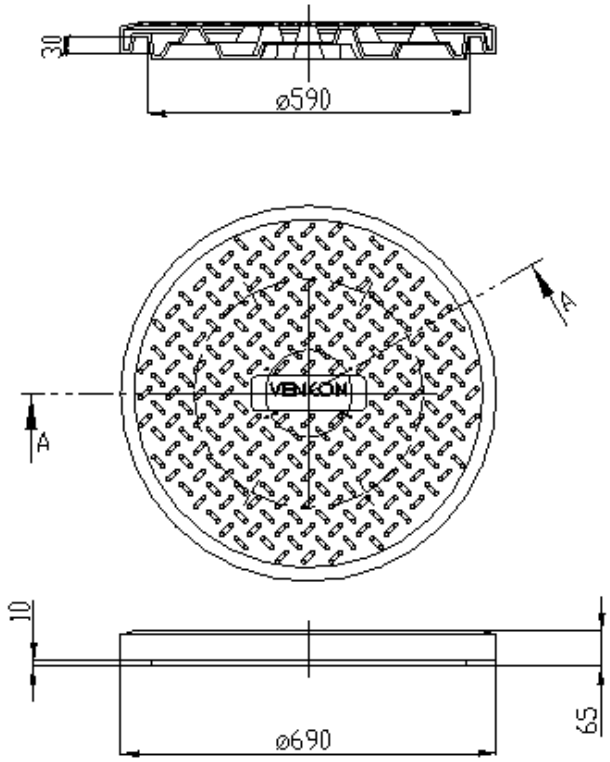

Fig 1. Cover drawing.

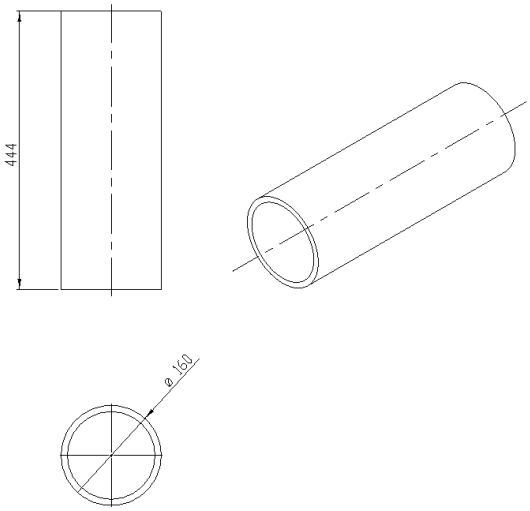

Fig 2. Reinforcing pillar drawing.

Variety of optics access chambers

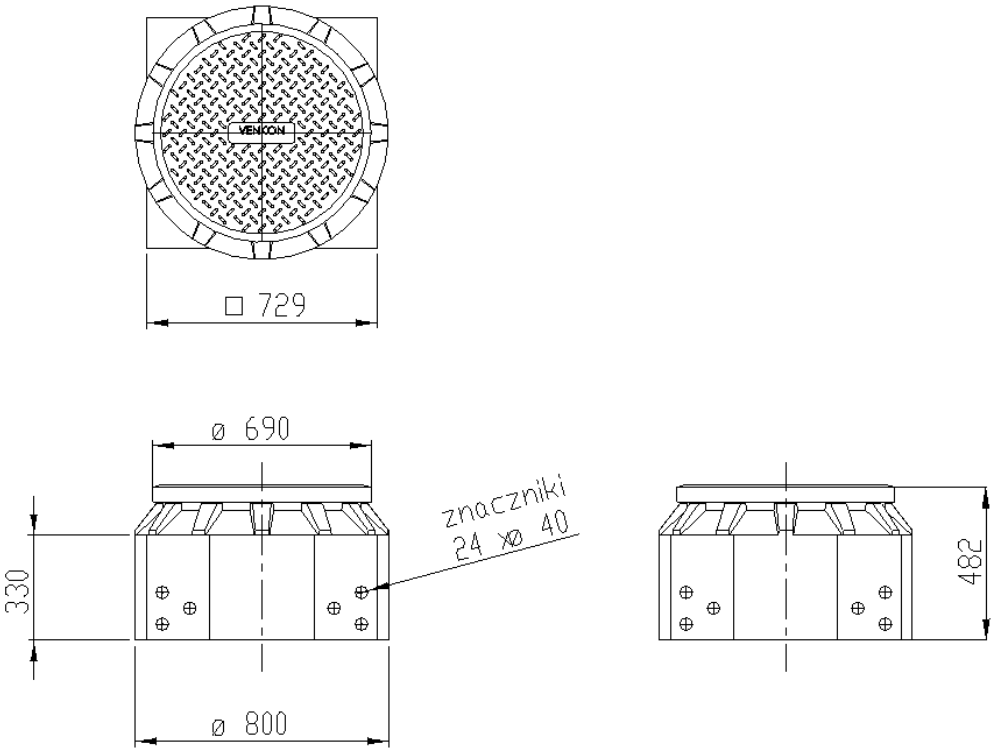

Fig 3. Chamber ZK0 VENKON for cable reserve

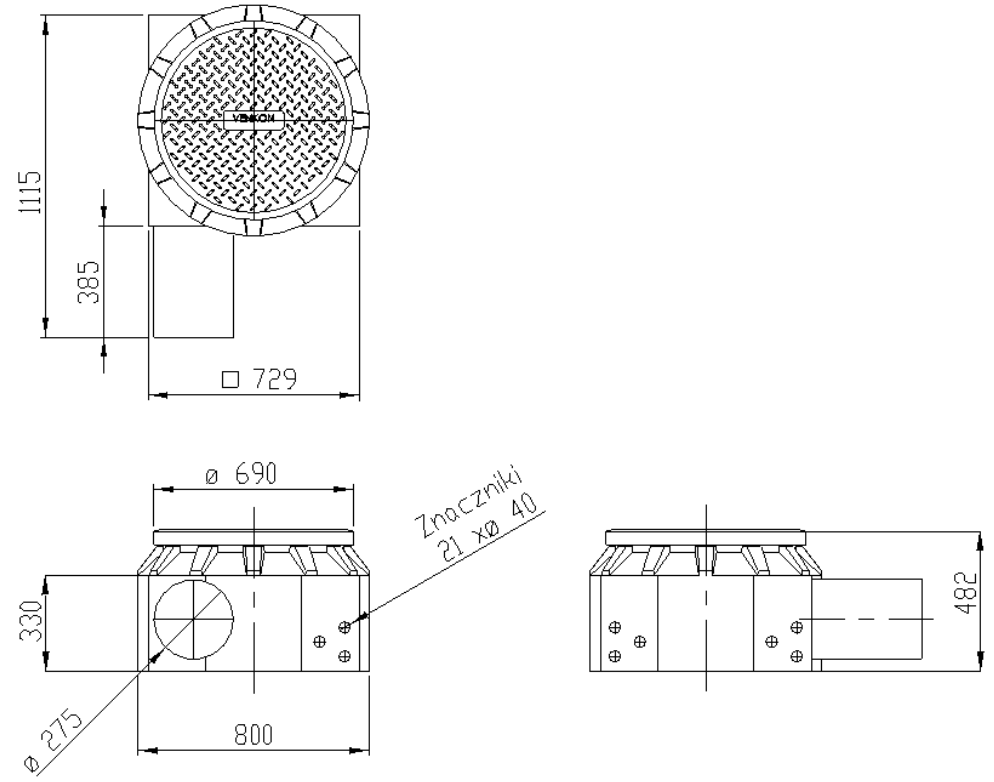

Fig 4. Chamber with a place for cable connector ZK1 VENKON for cable reserve and cable connector protection

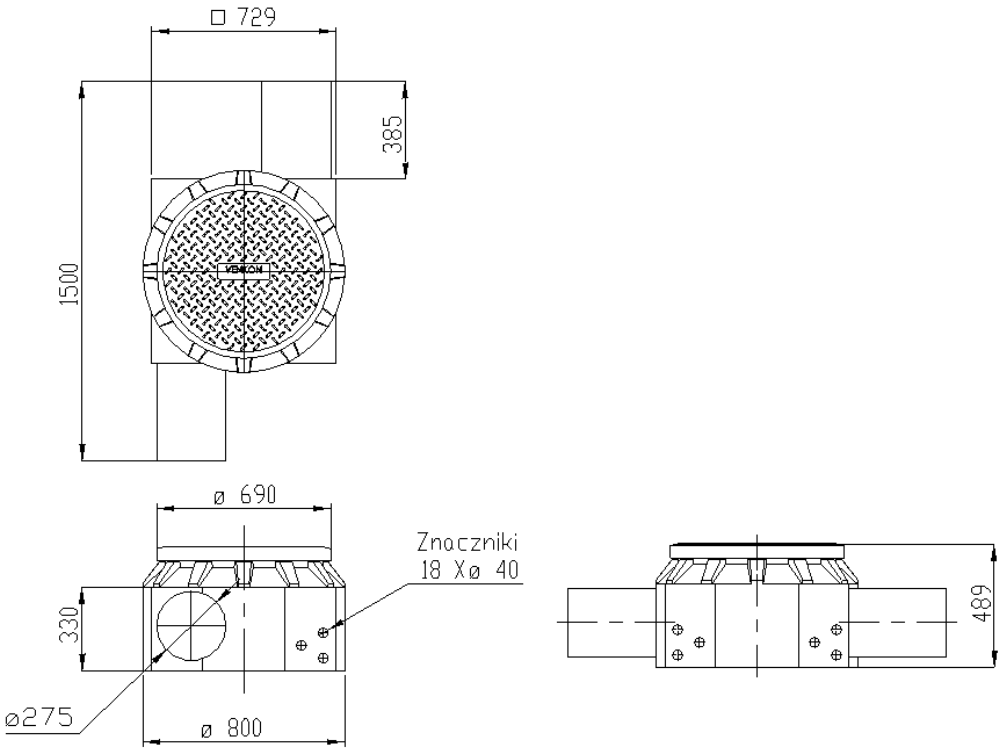

Fig 5. Chamber with two places for cable connectors ZK2 VENKON for cable reserve and cable connectors protection

Installation

Installation conditions

Place the chamber installation should be specified in the construction design, adapted to the technical conditions to be met by telecommunication facilities and its location.

To prevent damage to pipelines and cables as a result of random movements chamber or pipes and cables the chamber must be protected before settling in the ground. The depth of foundation should coincide with a small deviation of 0.2 m in relation to the existing pipeline. All brought to the chamber should be well sealed to protect from damages the inside of the tray. Soil layer covering the tray should be 0.7 - 1.47 m height.

If possible, the trays can be installed in areas with low levels of groundwater, preferably sandy.

Excavation

Excavation under the chamber should be performed at such a depth to the compaction of soil and leveling the bottom was located at a distance of not less than 0.7 m + height of the chamber from the surface of the earth. Excavation should be wider by about half a meter from the chamber. Before the chamber is placed in the excavation, drill inlets of the location markers on the flat parts of the respective corners of the body (the markers are shown on the drawings fig. 3, 4, 5). To make the holes is best to use the appropriate circle-hole saw, selecting the appropriate diameter of the tool to the desired pipe.

Table. 1. Selection of hole diameter to the diameter of the pipe

Pipe diameter [mm]	Hole diameter [mm]
32	37
40	46
50	57
63	72
75	86
90	104
110	123

Cut holes must be provided with suitably matched profiled rubber seals to the outer diameter polyethylene pipe (seals are not standard equipment trays).

Table. 2. Selection of parameters of the rubber seal to the diameter of the pipe

Pipe diameter [mm]	Hole diameter [mm]	External seal diameter [mm]	Seal high [mm]
32	37	55	22
40	46	63	22
50	57	73	22
63	72	96	31
75	86	121	31
90	104	136	31
110	123	156	31

After preparing the chamber body is placed by two workers in a trench. The bottom of the trench should be free of sharp inequalities and pollution in the form of stones, debris, branches, etc ..

Connecting pipes with the chamber body

The ends of the pipes must be feather, and then cleaned in order to facilitate the insertion of pipes into the chamber body. The outer surface of the pipe and seal coat the lubricant (eg. Water with dish-washing liquid or a silicone oil) and then to introduce the pipe into the hole of the seal.

Installation of cable joints inside chamber body

Variety assortment of chamber bodies allow mounting:

- **The cable reserve** - Spare cable arranged in a loop by using figure eight in the chamber, the coil is placed flat on the bottom of the chamber and covered with a sheet of foil with dimensions larger than the area of the chamber. Stocks next cables arranged identically, separat- successive sheets of film. The end of the pipe inside the chamber should be sealed with appropriate gaskets and sealing materials between the pipe and cables, preventing the ingress of water.
- **The cable reserve with connecting breeches** - breeches should be placed in special chamber places. Connecting breeches with the cable reserve must be rolled in a spiral and

place on the bottom of the chamber body. Part coils supply cable must be laid on the first muff and cover a whole sheet of foil or fasten the cable bundle. The second muff is placed in the opposite corner of the chamber, parallel to the first spiral wound with cable inventory, the same as for the first coupling. Additional stocks of cables arranged in layers, separated by sheets of foil or stringing. The ends of the pipes must be sealed as in the above case.

Finishing works

On the top of the placed chamber body with internal elements applied a rubber seal and place the reinforcement pillar on chamber center and then covered by the cover. At the time of applying the cover exert even pressure from top to achieve accurate seating and improve sealing system and maintain it during the execution of the backfilling around the chamber. Properly set up the cover should be based firmly on the upper part of the chamber body.

On the tray, covered with a cover sheet of film decomposes projecting out of the chamber by at least 200 mm. On the surface of this film is laid two 2-meter sections of caution tape.

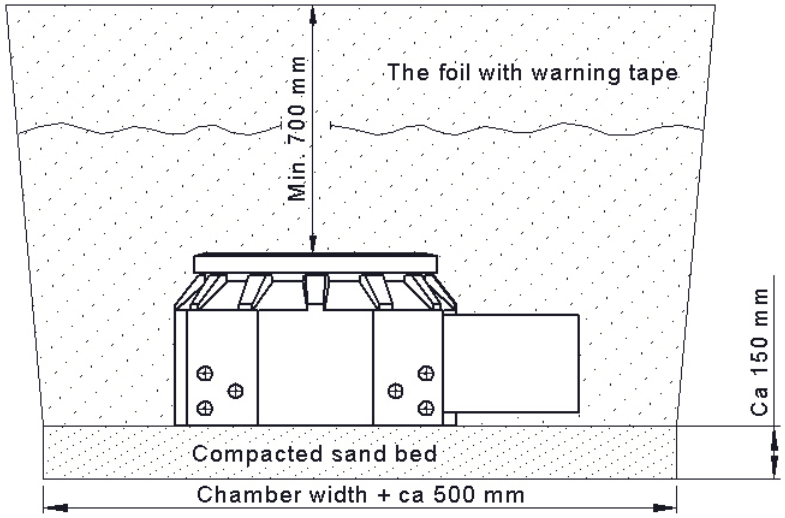

Fig 6. Placing the chamber on the ground.

The final step is backfilling the trench with sand flushed, free of pollution around the chamber at a minimum distance of 30 cm on each side of tray to the edge of the trench (Fig.6). The filling should be done in layers with a height of about 10 cm, compacting the soil mechanically or manually without deforming the chamber. Place of installation should be marked with an appropriate pistil.

Carrying, transport and storage

Transport and handling

Transportation should be planned taking into account the allowable capacity of means of transport. Loading and unloading, due to the relatively low weight of the products can be done manually, so you should execute it in full protective footwear and gloves.

Chambers must be carried on the bottom of the loading platform, which should be clean, protected by synthetic carpets or cardboard. Chambers should be immobilized in a stable and properly secured against shifting during transit.

Chambers should be handled in such a way as not to damage the protruding nipples and lateral surfaces.

Storage

Chambers should be stored in designated areas. They should be protected from additional pressure. It is granted to putting chambers on one another up to 4 pieces.

Products should lie flat on the square, devoid of impurities in the form of hard objects such as branches, debris, bricks, stones, etc. Storing outdoors may last no longer than 4 years from date of manufacture.

Trays stored in warehouses should be protected from direct contact with heat sources.

Remarks

Contractors are obliged to use during the installation of the relevant standards and industry regulations. Compliance with the above is subject to the settlement of all claims. The manual is only a general recommendation.