

## PE100 TELECOMMUNICATION CABLE DUCT PIPES

Polyethylene pipes for applications in the telecommunication industry are used to lead the telecommunication and optical cables in the local and inter-city telecommunication network. Pipes are produced from high density polyethylene types PE100.

### *Colour and Markings*

Pipes are made in black colour with identification lines in orange or other colour upon customer's request. The inside of pipes may be smooth or grooved.

Ends are clearly cut at right angles, and they are covered with yellow caps.

In production program of HIP-Petrohemija a.d. – Petroplast Plant, diameters of cable duct pipes are: Ø 32, 40, 50 up to pressures 10 bar.

PE100 cable duct pipes dimensions (in accordance with the standard EN 12201-2)

| Nominal outside diameter and allowable tolerances (mm) |      | Nominal wall thickness (e) and wall thickness tolerances ( $\Delta de$ ) (mm) |             | Allowable auality |
|--|------|---|-------------|-------------------|
|  |      | Pipe series (SDR) and nominal pressure (PN)                                   |             |                   |
|  |      | SDR 17  | PN 10       |                   |
|  |      | e   | $\Delta de$ |                   |
| 32   | +0,3 | 2,3   | +0,4        | 1,3               |
| 40   | +0,4 | 2,4   | +0,4        | 1,4               |
| 50   | +0,5 | 3,0   | +0,5        | 1,4               |

### *Packaging and Storage*

Pipes are produced wound into coils of 500 meter pipe length or length upon customer's demand.

### *Marking*

Cable duct pipes are visivly marked at intervals of one meter with nonerasable mark.

### *Handling Polyethylene Pipes*

#### *Transportation*

Transportation means for polyethylene pipes should be selected based on criteria that straight pipes and those in coils do not get damaged or deformed during transportation. It is necessary that pipes be laid in their entire length during transportation. A special attention should be paid whilst loading and unloading, so as not to scratch the pipes against the vehicle surfaces. Fittings are individually packed in transparent packages, for protection purposes. For easier transportation and handling during storage, several units are packed together in a cardboard box.

#### *Pipes Laying*

Polyethylene pipes can be laid under ground, above ground and under water. For underground laying the depth of the channel is within the range of 0.8 up to 1m, depending on the terrain configuration. In case of intersection of the pipeline with a line of communication, the depth is adjusted accordingly. If a protective pipe is used, the laying depth can go up to two meters. In case of channel laying, the coil should be unwound at least 24 hours in advance. In case of outside temperatures around 0°C, heating with hot air is highly recommended. Also, for laying purposes, the coefficient of linear thermal expansion should be taken into consideration which in case of polyethylene is  $2 \times 10^{-4} \text{ } ^\circ\text{C}^{-1}$  or 0.2 mm per each meter of pipe length, at 1°C change in temperature. When the route direction is changed, the minimum allowed bending diameters for different temperatures should be taken into consideration:

$$R_{\text{min.}} = 50 \text{ d at } 0^\circ\text{C} \quad R_{\text{min.}} = 35 \text{ d at } 10^\circ\text{C} \quad R_{\text{min.}} = 20 \text{ d at } 20^\circ\text{C}$$

#### *Jointing of Polyethylene Pipes*

Polyethylene pipes are jointed using separable connection (metal couplers, PE and PP couplers, flanges) or inseparable (fixed) connection – by welding. It is strongly recommended that activities of pipe laying be entrusted to experts specialized in these jobs.

#### *Pipe Welding and Assembly Team*

Petroplast Plant is in possession of up-to-date computerized equipment for butt welding of pipes and fabricated fittings. Specially trained teams and a high-quality equipment represent a guarantee for safe assembly.

#### **CONTACT:**

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