



Silicon HDPE DUCT for Optical Fiber Cable Deployment

The Silicon HDPE Duct is a new type of composite pipe with a silicone solid lubricant on the inner wall. Simultaneous extrusion and compounding by two plastic extruders, the main raw material is high-density polyethylene, and the core layer is a solid lubricant silica gel with the lowest friction coefficient. Therefore, the silicon core tube has many characteristics unmatched by other products in terms of physical properties, service life, comprehensive cost, and optical fiber cable construction.

Physical, mechanical and electrical properties

| | Test Method | Acceptance Criteria |
|--|--|--|
| Drop hammer impact | GB/T14152 | 10/10 not broken |
| Ring stiffness | GB9647 | $\geq 30\text{KN/m}^2$ |
| Flat test | GB5836-86 | does not break |
| Friction coefficient of inner wall of HDPE | Flat plate method | ≤ 0.20 |
| | Round drum method | ≤ 0.15 |
| Recovery rate | | When the vertical direction is pressed to 70% of the original outer diameter, the load is immediately unloaded, the sample is not broken, no delamination, and the outer diameter can naturally recover to more than 90% |
| Tensile strength | GB8804.2 | $\geq 18\text{Mpa}$ |
| Elongation at break | GB8804.2 | $\geq 380\%$ |
| Longitudinal retraction rate | GB6671.2 | $\leq 3.0\%$ |
| Connecting point pulling force | | $\geq 4300\text{N}$ |
| Maximum traction load | Speed 50mm/min | 10000N |
| Low temperature drop test | Temperature -30°C , 1m height | does not crack |
| Connection sealing test | Temperature 20°C , Pressure 0.15MPa, 15min | no change in pressure |
| Power frequency breakdown strength | | $\geq 15\text{KV/mm}$ |
| Minimum bending radius | | $\leq 625\text{mm}$ |
| Density of HDPE | ASTM D792 | 0.940 to 0.958g/cm ³ |