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Method of innovating installation allowing the insertion of energy cables in conduits using permanent lubrication with water being the carrying fluid

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A technical and industrial collaboration between Pirelli Cables & Systems, Novoplastic (tubes), EHTP (civil engineering) and Plumettaz(machines) allowed the development of a innovating method of installing of Energy cables.

This method consists in using ducts made of PE with permanent lubrication to considerably lower friction. The water is inject under pressure which controls the speed and carriage of the cable whilst limiting the heating by friction. The cable is push by caterpillars and according to the type of cable, to pulled gentle by means of a head which includes a pipe cleaner.

The advantages are as follows:

- Insertion of the cables becoming independent of the civil engineering: reduced impact on construction sites and the vicinity thanks to mobility, duration and decreased width.
- Bigger lengths of the cables can be installed in one go: less joints, therefore requiring less working room.
- In practice less efforts and stress for installation (in pushing and pulling): risk damage under installation considerably reduced

Perhaps much more complex routes possible: skirting obstacles, other utilities. The possibility of the application of directional drilling is heightened.

The tests carried out and actual installations carried out during this collaboration are:

- Cables 20 Kv one phase per duct
- Twisted cables 20 Kv 3 phases per duct
- Cables High Voltage One phase per duct
- Cables for street lighting
- Low Voltage Cables

This method should lead to a lowering of the total costs for cable installations and the possibility use a route which was not achievable by today's conventional method of installation (multiple turns on Tight curves) or wherever the costs is considerable and senseless.