



### A.10.2.

Mechanical laying of HDPE ducts in rural area  
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**Abstract:** In order to develop the laying of cables in rural area, RTE used an innovative technique : the mechanical laying of HDPE ducts. The paper presents a description of the different operations and exposes the advantages of this technique in comparison with the traditional techniques. It also examines the limits of the technique and a real example of a 63 kV underground line built in 2002 illustrates the paper.

**Keywords:** HDPE ducts, mechanical laying

**Résumé:** Afin de développer la pose des câbles souterrains en domaine rural, RTE utilise une technique innovante : la pose mécanisée de fourreaux PEHD. L'article présente les phases de la réalisation et montre les avantages de cette technique par rapport aux modes de pose traditionnels. Il met également en relief les limites de la technique et s'appuie sur un exemple de réalisation pour une ligne souterraine 63 kV réalisée en 2002.

**Mots clés** fourreaux PEHD, pose mécanisée

#### 1. Introduction

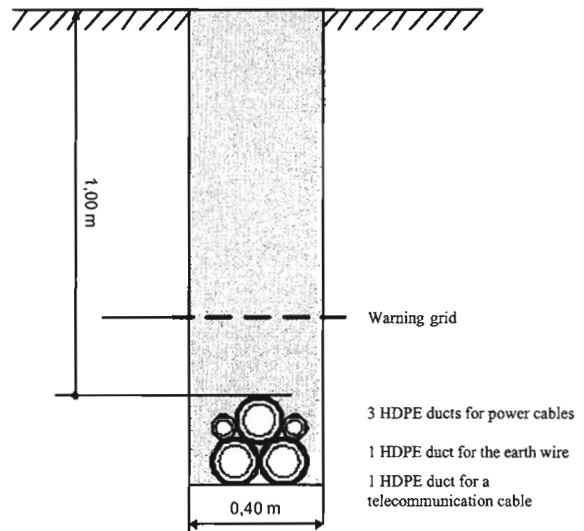
The agreement between the French state and RTE ("Electric Networks and Environment" for the period 2001 – 2003) states that at the national level 25 % of the new 63 and 90 kV electrical lines should be buried. However, the cost of the underground lines remains high. Moreover, the use of the public roads can lead to some technical problems : over-length of cables, difficulties due to other networks, constraints of traffic on the working site,...

In order to develop the laying of cables in the private land (essentially in rural area), and in order to reduce the constraints of traffic during the works, RTE has used an innovative technique which allows to get the acceptance of the route by the public more easily : the mechanical laying of HDPE ducts.

#### 2. Description of the technique

The technique, directly inspired from the laying of the telecommunication cables, is based on the use of a laying "train" which allows the mechanisation of the main phases of the works: trench opening with a trenchdigger, laying of the three ducts for power cables (beforehand strapped) with the drum-carrier and the cubicle tray and then backfilling of the trench with the excavated earth.

The transversal section of the final work is described hereafter.



#### 3. Description of the main elements

##### 3.1 HDPE ducts

HDPE is a material which is mainly used to date for the construction of water and gas networks. The tests made by the EDF Division "Research and

