

Proximus Reference Offer for Duct Access in GPON Underground Deployments

Annex B Technical Specifications

Table of contents

Table of contents.....	2
1. Introduction.....	3
2. Specifications of Proximus network elements	3
3. Cable capacity specification.....	3
4. Cable blowing performance	4
5. Sub-annexes to Annex B.....	5

1. Introduction

1. This annex describes the technical specifications related to the Proximus Reference Offer for Duct Access, as are known at this stage of the learning process at Proximus in this regard.
2. In order to safeguard the integrity of the subducts of Proximus, Beneficiaries must notify their acceptance of and willingness to comply with the Proximus technical requirements before they can be supplied with a subduct.
3. Conformity with the Proximus technical requirements is essential for an efficient and safe installation of fibre cables in Proximus subducts minimizing the risk for problems or damages.
4. This document contains a general description of the requirements that cables must meet to be suitable for use in Proximus subducts and it gives the technical specifications of the concerned Proximus network elements.
5. More additional details might further be provided to the Beneficiary at the time that a specific concrete project will occur. These details will be worked out in the elaboration of the detailed processes in the context of a concrete project whereby a concrete access is provided in response to a reasonable request for access from a concrete wholesale customer.

2. Specifications of Proximus network elements

6. The Beneficiary undertakes it will be using only cables that are compatible with the concerned Proximus network elements, e.g. subducts, L-branches, T-branches. For example, the diameter of the cables that the Beneficiary will blow into the subducts of Proximus must be sufficiently smaller than and suitable for the inner diameter of the subduct.
7. Therefore Proximus puts at the disposal of the Beneficiary the following technical documentation:
 - Annexe 5.1 gives, as an example, the technical specifications of the SRV's currently used in the Proximus network. They consist of 7 inner subducts of 12 mm outer diameter and 8 mm inner diameter and 2 outer subducts of 10 mm outer diameter and 6 mm inner diameter:
 - Annexe 5.2 gives, as an example, the technical specifications of the L- and T-branches currently used in the Proximus network.
 - Annexe 5.3 gives, as an example, the technical specifications of the connectors, connecting two identical subducts, currently used in the Proximus network.

3. Cable capacity specification

8. Before starting the cable blowing performance test, the Beneficiary supplies Proximus with the vendor datasheet of the cable that the Beneficiary would like to install.
9. Annexe 5.4 gives, as an example, the vendor datasheet of a cable containing 24 fibres that is currently used in the Proximus GPON distribution network.

4. Cable blowing performance

10. Before installing any cable type in any Proximus subduct the Beneficiary needs to have the cable's blowing performance validated by Proximus at Proximus's own test site in Liedekerke.
11. The cable's blowing performance differs strongly between vendors and between cable types of the same vendor. The cable's blowing performance needs to be validated to prevent the usage of cables with inferior blowing performance.
12. The cable's blowing performance is validated by the same testing protocol as Proximus uses for its own fibre distribution cables, for example for deciding on the supplier in RFQ's and for regular quality check tests to control the quality and conformity of the cables supplied. It will be set out in more detail in Annex E Testing protocol and pricing for new fibre cable types.
13. The test is executed by Proximus. The cost of this test will be at the Beneficiary's expense.
14. The test site of Proximus is located in Liedekerke. It consists of an underground loop of 295 m distance with the following infrastructures regarding to SRV infrastructure:
 - 1 SRV with 7 subducts of outer diameter of 12 mm and inner diameter of 8 mm and 2 subducts of outer diameter of 10 mm and inner diameter of 6 mm.
 - 1 SRV with 7 subducts of outer diameter of 12 mm and inner diameter of 8 mm and 2 subducts of outer diameter of 10 mm and inner diameter of 6 mm and 7 DTP-X's in order to test the cable blowing in an SRV that connects customers.

Figure 1 schematically depicts the Proximus test site regarding SRV's at Liedekerke.

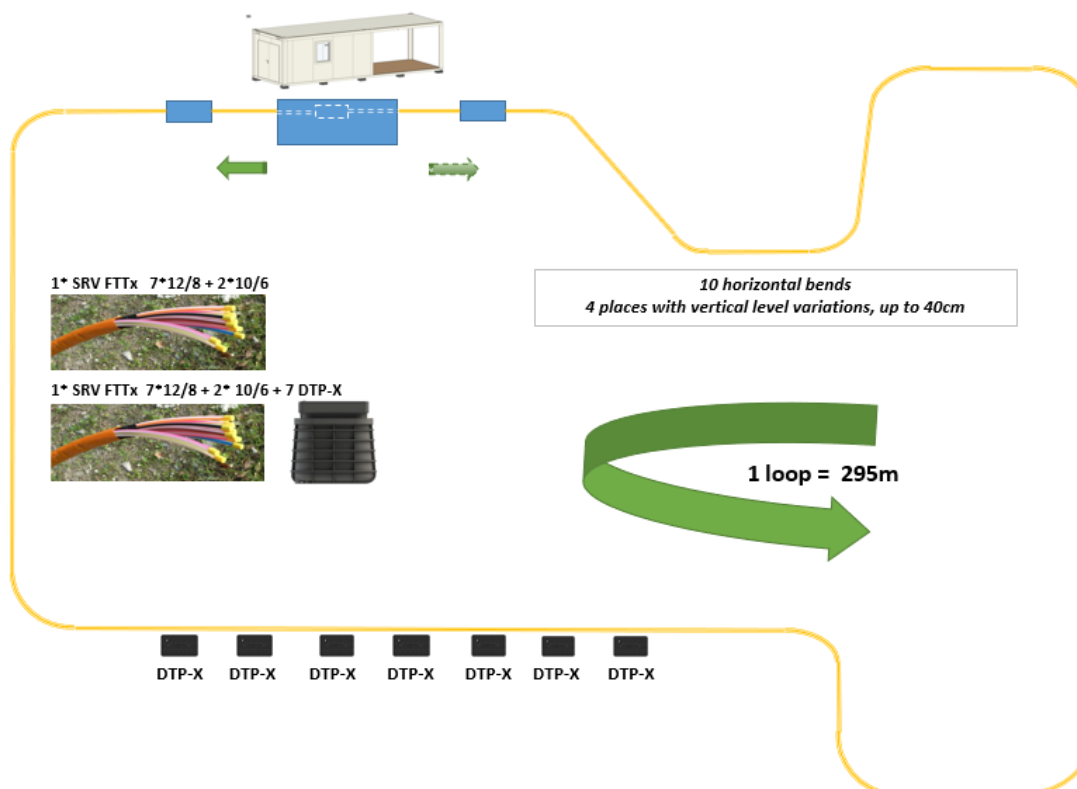


Figure 1: Test site for cable's blowing performance in SRV's of Proximus

15. The following acceptance criterium is applied: when blown inside an 8 mm inner diameter subduct, the cable has to reach the minimum distance of 1.000 meters within a maximum time of 50 minutes with a minimum blowing speed of 10 meters/minute and a maximum air pressure of 14 bar.

5. **Sub-annexes to Annex B**

- 5.1. Technical vendor datasheet of SRV with 7 inner subducts of 12 mm diameter and 2 outer subducts of 10 mm diameter.
B.5.1. Technical vendor datasheet – SRV-G 50 7x12+2x10 tc.pdf
- 5.2. Technical vendor datasheet of L-and T-branches.
B.5.2. Technical vendor datasheet - TBS and LBS.pdf
- 5.3. Technical vendor datasheet of connectors.
B.5.3. Technical vendor datasheet - DSM 7, 10, 12, 14 permanent.pdf
- 5.4. Technical vendor datasheet of multi micro-tubes cable (SP 1822) containing 24 fibers.
B.5.4. Technical vendor datasheet – Multi Micro-Tubes Cable SP1822 – 24 fibres.pdf