



Peeling and blowing SFU cable

Installation instruction ACE-II-2005

Article nr. / Id : 2005

Version : 03

Date of issue : 11-6-2014

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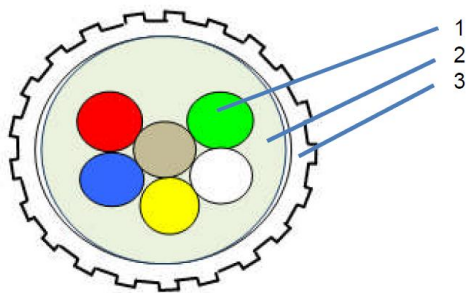
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1 Introduction

The Smooth Fibre Unit (SFU) is built up with several individual fibres which are surrounded by an acrylic layer. Around this layer a polyethylene outer shield has been extruded.

The PE coating has grooves that provides the SFU a low friction surface. In relation with the inner surface of the micro tube this results in an excellent blowing performance.
The SFU can be blown with specific equipment as described in chapter 2.

1.1 Construction of the SFU



1. Optical Fibre
2. Acrylic layer
3. PE coating

1.2 Document historie

Versie	Datum	Wijzigingen
01	16-02-2011	First release
02	18-11-2011	Fixation SFU in ACE splice tray added
03	11-06-2014	Changed stripping tools

2 Blowing equipment

The SFU shall be installed by means of the blowing technique.

Tests that have been carried out proved a blowing distance of about 1400 metres for the 2-f and 4-f SFU. The blowing distance of the 6-f SFU was 1200 meters. As for the 8-f and 12-f SFU a length of 800 metres was blown.

Blowing trails were performed on the test tracé at the TKF premises with the blowing machines listed below:



BT - Equipment

This machine prevents damage of the SFU by a buckle detector in the blowing head.

Maximum pressure 16 bar



Pneumatic microjet PRM 196 (Plumettaz)

When installing the SFU the magnetic clutch must be used together with the plastic gear wheel and the rubber tyre. The pushing force can be limited by the magnetic clutch.

Remark: Adjustment of the push force must be done before the blowing is started (see installation instruction of Plumettaz PRM 196).

Maximum pressure 16 bar



Electric microjet EM 25

By installing the SFU the magnetic clutch must be used together with the plastic gear wheel and the rubber tyre. The pushing force can be limited by the magnetic clutch.

Remark: Adjustment of the push force must be done before the blowing is started (see installation instruction of Plumettaz EM 25).

Maximum pressure 16 bar



Culebra Fx 01

This machine prevents damage of the SFU by a laser detection in the blowing head. The pushing force is limited to prevent damage at the cable.

Maximum pressure 16 bar

3 Installation

3.1 Tools



- Miller wrench type 101-s



- Alcohol – min. 96% ethanol, standard distillation

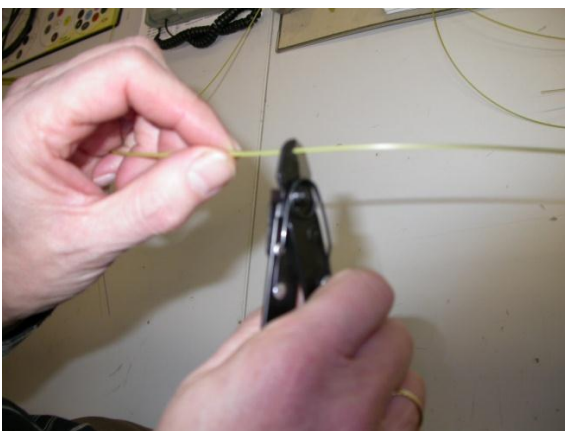
- Cleaning tissues

- Cleaning sponge

3.2 Precautions

- Wear safety glasses or goggles.
- Fibres can easily break down. Look out for small fibre waste, clean the work area.
- Never look into a fibre. Laser light can damage your eyes.

3.3 Divided the Smooth Fibre Unit



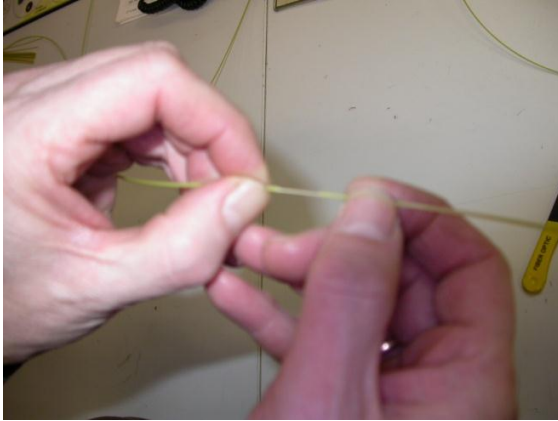
Verify and secure that the maximum cutting depth of the miller wrench.

For the 2-f, 4-f and 6-f the depth is max 1,1mm, meaning the opening has a minimum diameter of 1,1mm.

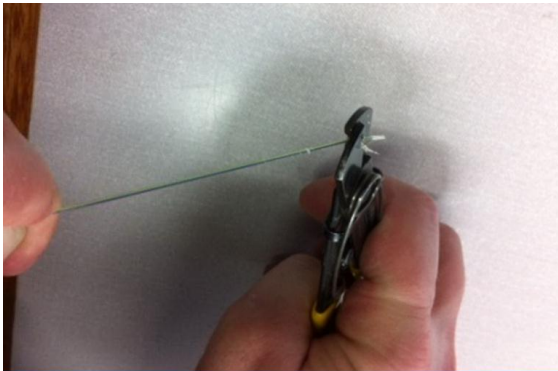
The 8-f and the 12-f SFU has a max of 1,4 mm.

Cut the outer sheath (PE) with the miller tool.
The inner coating should not be touched nor damaged

Remark: The inner layer must not be twisted or damaged.

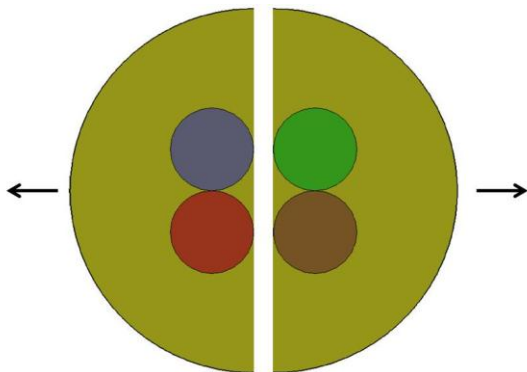


Remove the sheath by hand.



Verify and secure that the maximum cutting depth of the miller wrench. The cutting depth must be reduced, but must not damage the fibres.

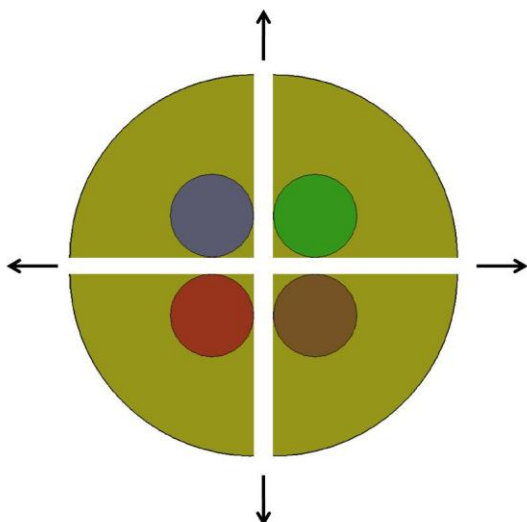
Remove a short length (approx. 2 or 3 mm) of the acrylate coating at the end of the SFU using the miller wrench.



Divide the total number of fibres of a fibre bundle in two halves and take one bundle in one hand and the other bundle in the other.

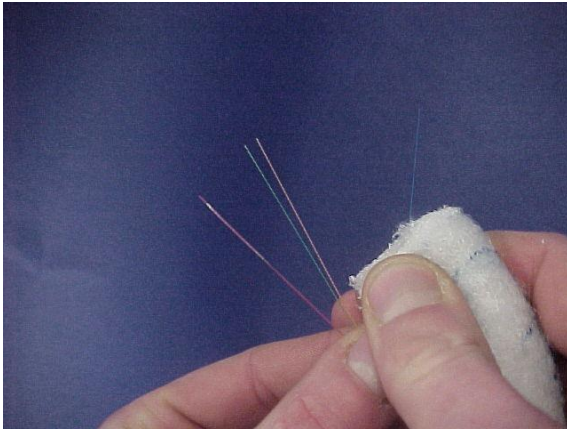
Peel slowly the 2 bundles from each other as far as needed.

Remark: Keep the SFU under tension during this action.



Divide the two bundles in two halves and peel slowly the individual fibres from each other.

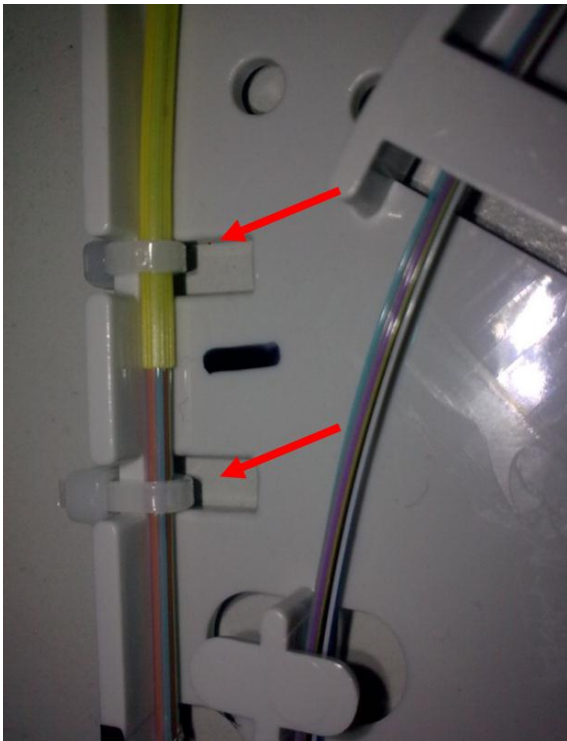
Repeat these steps until the fibers are fully separated.



Remove the acrylate that is left behind on the fibres, with the cleaning sponge.

Clean the fibres using alcohol and a cleaning tissue.

3.4 Fixation SFU in a splice tray



A minimum risk exists that the sheath of the SFU shrinks due to temperature variations.

As a consequence the Fibre Unit (FU) will extend in a splice tray with regard to the PE outer sheath.

To prevent problems that might occur due to the shrinkage of the outer sheath it is recommended that both the FU and the outer sheath of the SFU are fixed in the splice tray (as shown in the picture).

Fixation can be performed with two small cable ties. Mind that the head of the cable tie should be positioned at the outer side of the tray.

Remark: tight the fibre unit and the SFU against the splice tray, without kinking the fibres.

End of this document