

Short instruction how to use DieMount POF splices

The DieMount POF splices are destined for the following applications:

- connection of two POF cables with low optical loss and low optical back reflection,
- connection of standard 1x2 POF splitters in order to fabricate more complex splitter structures (e.g. 1x4 splitter with 3 units of 1x2 splitters),
- repair a defect POF cable in the case that the cable was separated unintentionally.

The splice set comprises 2 parts:

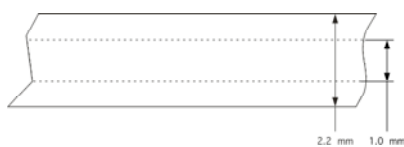
- the transparent 15mm long alignment ferrule (version A: not filled, version B: filled with index matching gel), and
- the metal protection ferrule.

The following instruction describes the necessary process steps:

1. Preparation of POF endfaces

In order to achieve a high quality POF splice it is important to prepare the endfaces of the POF cable as careful as possible. Endface quality will finally determine the splice insertion loss and return loss. We recommend to do the endface preparation either by a diamond polishing machine or by wet polishing.

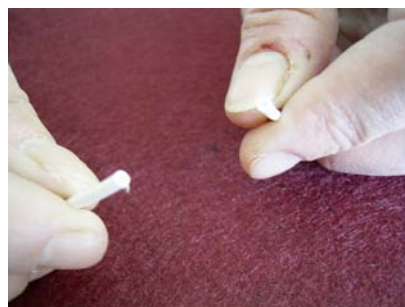
before endface preparation



after endface preparation



Result:



2. Stripping the jacket

Next, the jacket material has to be removed 8mm from the prepared endface.

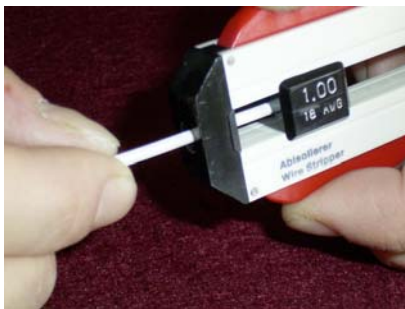
before jacket stripping



after jacket stripping



Process:



Result:



Several suitable stripping tools are available on the market, e.g. the MICRO-STRIPPER AWG18 from cimco.

The jacket free area must be 8mm long!

3. Filling the splice with glue or index matching gel

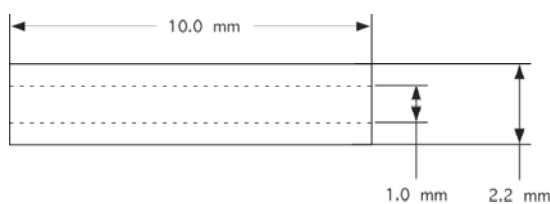
The 15mm long POF splice ferrule may be filled either with

- a UV curing transparent polymer glue (e.g. Vitralit® VBB-1),
- a 2 component transparent epoxy glue (e.g. EPO-TEK® 301-2), or
- an index matching gel.

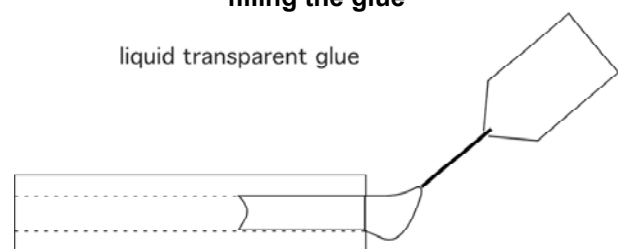
The POF splice set version B comprises an alignment ferrule with index matching gel inside. It needs no extra filling.

The use of index matching gel has the advantage that neither UV-light nor temperature nor time is needed for the hardening process. The splice cannot be separated. The disadvantage of index matching gel is that the connection isn't fixed by glue but by a mechanical crimping only.

POF splice ferrule



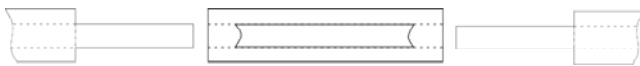
filling the glue



4. Introducing the prepared POF cables

Prior to the following process the metal protection ferrule must be shifted to one cable end. The prepared POF cables according to step 2 are then introduced from both sides to the glue or index matching gel filled POF splice and pressed together till no slot between the POF endfaces is visible.

POF splice ferrule



filling the glue



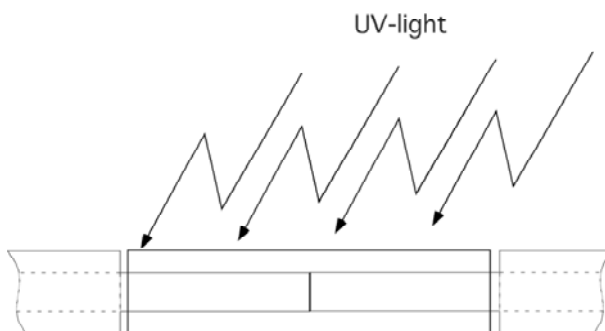
Process steps:



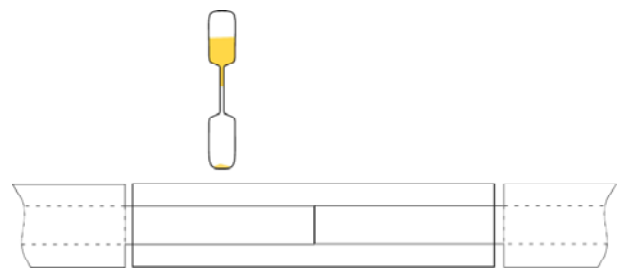
5. Hardening the glue

If glue material is used, a suitable hardening process must follow (UV curing, temperature application, period of hardening).

UV curing glue



2 component epoxy glue



6. Splice protection

Finally a metal splice protection ferrule should (or must in the case of index matching gel) protect the splice mechanically. This 20mm long ferrule may be either glued to the POF cable jacket material or mechanically crimped.

splice protection

