

**PROCEDURE FOR FUSION SPLICING**

Revision	Date	Paragraph	Description	Changed By
1	8/20/01		Original Issue	James Kraus
2	1/31/07	All	Update and add use of splice sleeves	Don Snyder
3	2/17/09	3.5	Change Splice Sleeve	Don Snyder
4	11/19/12	3	Updated materials and supplies	Don Snyder

1. PURPOSE

This procedure describes the method for fusion splicing fiber onto a Micron Optics component and either recoating the fusion splice or use a splice sleeve.

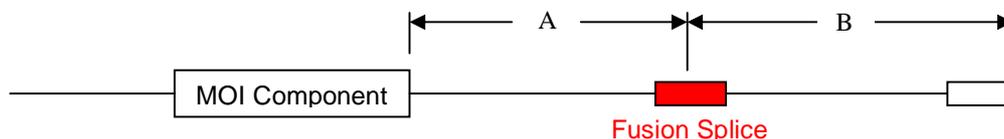
2. SPECIAL EQUIPMENT

- 2.1 Fusion Splicer - Fujikura
- 2.2 Precision Fiber Cleaver - Fujikura
- 2.3 Fiber Recoater Vytran or equivalent

3. MATERIALS AND SUPPLIES

	<u>Item Name</u>	<u>Item Description</u>	<u>Part ID #</u>
3.1	Fiber Stripper	Mechanical Coating Stripper	C00253
3.2	Alcohol	High Purity – Final Assembly	C00284
3.3	Alochol	2-Propanol – Sensor Manufacturing	C00110
3.4	Wipes	Texwipe TX404	C00024
3.5	Splice Sleeve	40 mm	220133
3.6	Splice Sleeve	60 mm	220156
3.7	Patch Cord	900µ buffer with FC/APC connectors	220130 (standard)
3.8	Patch Cord	900µ buffer with SC/APC connectors	221419
3.9	Butane Lighter	for stripping Polyimide coated fibers	C00331
3.10	MOI Component		

4. SETUP



- 4.1
- 4.2
- 4.3 Check work order for dimensions A and B above and the type of connector. If no special instructions cut in half a 1 meter patch cord and fuse to the end of the buffered fiber on the MOI component.
- 4.4 MOI Component should have passed all required testing.
- 4.5 Vytran Recoater

- 4.5.1 Set to proof test at 100 Kpsi.
- 4.5.2 Purge the Vytran Recoater five times prior to recoating a fusion splice. Since this takes about fifteen minutes it is smart to begin this process as the first thing.

## 5. OPERATION

### 5.1 Fusion Splice and Recoat

- 5.1.1 Check work order for any special length requirements.
- 5.1.2 Acrylate Coated Fibers - Use fiber stripper to strip coating from approximately 1 inch of fiber. Strip both fiber ends.
- 5.1.3 Polyimide Coated Fibers – Use butane lighter to quickly burn the coating then wipe with a alcohol soaked wipe. Be sure to use a clean wipe each time.
- 5.1.4 Wipe the stripped fiber with alcohol.
- 5.1.5 Load the fiber in the cleaver and locate the edge of the coating at 18. Cleave the fiber leads.
- 5.1.6 Place the fiber in the fusion splicer.
- 5.1.7 Place a stripped and cleaved length of fiber into the opposite side.
- 5.1.8 Fuse the two fibers together.
- 5.1.9 If the purge operation has not yet finished, it will be necessary to wait for this to be completed.
- 5.1.10 When purging is complete, the V-Groove should be cleaned with alcohol and a cotton swab. The mold that the fiber is held in should be carefully cleaned as well.
- 5.1.11 After cleaning, place the fibers carefully into the recoater; making sure the fiber is seated in the V-Groove properly.
- 5.1.12 Press the “recoat” button and allow the recoater time to complete the recoating process.
- 5.1.13 Remove the fiber and perform a visual inspection.
- 5.1.14 Repeat for other fiber.

### 5.2 Fusion Splice with Heat Shrink Sleeve

- 5.2.1 Check work order for any special length requirements.
- 5.2.2 Obtain proper patch cord.
- 5.2.3 Cut patch cord in half (or as required)
- 5.2.4 Select proper splice sleeve and slide sleeve over end of the patch cord.
- 5.2.5 Acrylate Coated Fibers - Use fiber stripper to strip coating from approximately 1 inch of fiber. Strip both fiber ends.
- 5.2.6 Polyimide Coated Fibers – Use butane lighter to quickly burn the coating then wipe with a alcohol soaked wipe. Be sure to use a clean wipe each time.
- 5.2.7 Wipe the stripped fiber with alcohol.
- 5.2.8 Load the fiber in the cleaver and locate the edge of the coating at 18. Cleave the fiber leads.
- 5.2.9 Place the fiber in the fusion splicer.



- 5.2.10 Place a stripped and cleaved length of fiber into the opposite side.
- 5.2.11 Fuse the two fibers together.
- 5.2.12 Remove from fusion splicer and slide splice sleeve carefully over bare fiber. The sleeve should be centered over the bare fiber and cover the buffer tube on each end by at least 2 mm. If not, break splice and repeat operation.
- 5.2.13 Place in heater compartment and center then close the cover.
- 5.2.14 Turn on heater. Watch the sleeve as it shrinks on the fiber and buffer. Remove the fiber as soon as the sleeve collapses on the fiber completely. Leaving it in too long will cause PVC buffers to shrink and pull back from the sleeve and not provide good mechanical support.

**NOTE: Sections 6 thru 12 are not applicable to this procedure and are intentionally left out.**