



# Seikoh Giken SFP-550 Polishing Instructions for Pre-Domed or Pre-Angled Zirconia Ferrule Connectors

Fiber Optic Center™, Inc., the global supplier of ANGSTRÖMLAP®, the most widely used lapping film in the world, is also an industry leader in cost effective high performance ultra PC and angled single mode polishing processes for volume assembly production.

Achieving consistent results that meet the demanding technical specifications for single mode systems requires the optimization of many factors throughout the termination and testing process. These include:

- suitable single mode fiber
- suitable epoxy
- proper mixing, application & curing of epoxy
- connector quality & tolerances
- pressure & time of polishing at each step
- lapping film quality & consistency
- lapping film grit sizes & materials
- polishing solutions
- adapter quality & tolerances
- calibration & quality of test instruments & reference cables
- test methods & conditions
- overall cleanliness
- specific cleaning procedures

## Instructions

When used with the SFP-550 and the materials listed below, the UPC and APC polishing processes requires between 5-10 minutes for up to 20 or 32 2.5 mm connectors or up to 24 or 40 1.25 mm connectors:

1. Prior to loading connectors into the polishing fixture, perform a quick de-nubbing or air polish to remove the sharp edges from the fiber and to get the fiber flush with the epoxy. Ten to 15 small circles should be enough, but will vary according to cleave length.
2. Use **70 or 80 durometer** rubber pads for 2.5mm ferruled connectors, p/n PR5X-500-70 or 80, and **90 durometer** rubber pads for the 1.25mm ferruled connectors, PR5X-480-90. Use a separate rubber pad for each step. Using the correct rubber pad will help create the correct Radius of Curvature.
3. Clean rubber pads with at least 99% pure isopropyl alcohol and lint free wipes. ITW Chemtronics 6704 Econowipes or CleanTex 604 lint free wipes are recommended to insure no contamination occurs during the cleaning process.
4. Use a minimal amount of distilled water to adhere lapping films to rubber pads. Make sure air bubbles are kept to minimum, and no debris is trapped between the film and rubber pad. A piece of double sided tape can be used to help keep lapping film on the pads.
5. Between each polishing step flush out connector end-faces, work-holder surface, lapping film surface, bottom of rubber pad, surface rubber pad rests on with de-ionized water. Then wipe with lint-free wipe, and blast with compressed or canned air, p/n ES1217. Proper cleaning will help insure a scratch, pit or defect free end-face.
6. Refer to tables below for recommended process. Please note processes are for pre-angled and pre-domed connectors.

## Technical Specifications

SM UPC Back-Reflection <sup>1</sup>	=	-55dB or less
MM UPC Back-Reflection <sup>1</sup>	=	-35dB or less
SM APC Back-Reflection <sup>1</sup>	=	-70dB or less
SM/MM Insertion Loss <sup>1</sup>	=	0.2db or less
Fiber Height	=	Telcordia GR-326v3
Apex Offset	=	50um or less
Radius of Curvature	=	7-25mm

<sup>1</sup>Typical results for high quality connector. Optical results are dependent on connector quality.

## Polishing Timetables

### 2.5mm Polishing Process - Table 1.1

Polishing Step	Material & Grit Size	Pressure/Pad <sup>1</sup>	Time	Fluid	Usage <sup>2</sup>	Part Number
Epoxy Removal <sup>3</sup>	Gray Silicon Carbide 9 um	PR5X-500-70	15-30 sec.	de-ionized water	1-5	SC9T503N100
Rough Polish	Orange Diamond 5 um	PR5X-500-70	60 sec.	de-ionized water	10-30	D5BF503N1
Medium Polish	Lavender Diamond 1 um	PR5X-500-70	60 sec.	de-ionized water	20-30	D1KT503N1
Final Polish <sup>4</sup>	White SiO <sub>2</sub> , Sub-Micron	PR5X-500-70	60-90 sec.	de-ionized water	3	SEQPPF503N100
Cleaning <sup>5</sup>	Brown Flocked Pile, None	PR5X-500-70	15-20 sec.	de-ionized water	10	ABR60NC502N1

### 1.25mm Polishing Process - Table 1.2

Polishing Step	Material & Grit Size	Pressure/Pad <sup>1</sup>	Time	Fluid	Usage <sup>2</sup>	Part Number
Epoxy Removal <sup>3</sup>	Gray Silicon Carbide 9 um	PR5X-480-90	15-30 sec.	de-ionized water	1-5	SC9T503N100
Medium Polish	Lavender Diamond 1 um	PR5X-480-90	60 sec.	de-ionized water	20-30	D1KT503N1
Final Polish <sup>4</sup>	White SiO <sub>2</sub> , Sub-Micron	PR5X-480-90	60-90 sec.	de-ionized water	3	SEQPPF503N100
Cleaning <sup>5</sup>	Brown Flocked Pile, None	PR5X-480-90	15-20 sec.	de-ionized water	10	ABR60NC502N1

## Final Polish Film Options

As a leader in single mode polishing, Fiber Optic Center,™ Inc. always looks for process improvements. Most innovations occur at the final step. Some other final polish options that achieve superior results are as follows:

### Final Polish Options - Table 2

Polishing Step	Material & Grit Size	Pressure/Pad <sup>1</sup>	Time	Fluid	Usage <sup>2</sup>	Part Number
Final Polish	Translucent SiO <sub>2</sub> , Sub-Micron	PR5X-500-70 (for 2.5 mm) PR5X-480-90 (for 1.25 mm)	60-90 sec.	de-ionized water	1	FOS-01
Final Polish	Translucent SiO <sub>2</sub> , Sub-Micron	PR5X-500-70 (for 2.5 mm) PR5X-480-90 (for 1.25 mm)	60-90 sec.	de-ionized water	1	863XW-503N
Final Polish	Yellow SiO <sub>2</sub> , Sub-Micron	PR5X-500-70 (for 2.5 mm) PR5X-480-90 (for 1.25 mm)	90-120 sec.	de-ionized water	5	ALG15XY503N100
Final Polish	Light Blue AlOx, 0.3 um	PR5X-500-70 (for 2.5 mm) PR5X-480-90 (for 1.25 mm)	15-30 sec.	Ultra Polish Solution	1	CA03F502N100

<sup>1</sup> Pressure is controlled by the thickness of the rubber pad and does not have to be adjusted when polishing differing numbers of connectors.

<sup>2</sup> Usage estimates are conservative, and may vary. Flushing out lapping film with generous amounts of distilled water will increase the life of the film.

<sup>3</sup> Pressure and time will vary. Object is to only remove the epoxy and to stop as soon as epoxy is removed from all connectors.

<sup>4</sup> Please note other final polish film options below. For **Optimum MM polishing** the SEQPPF should still be used, but for a more **Economical MM process**, this step can either be eliminated, or substituted with the AlOx 0.3um film listed below.

<sup>5</sup> Optional, but recommended, cleaning step.

## Ordering Information

For more information on this or other products and their availability, please contact Fiber Optic Center,™ Inc. at (800) 473-4237 or (508) 992-6464, fax at (508) 991-8876, or e-mail at sales@focenter.com.