



Applications Engineering Notes

Document Title	Generic US Conec Baseline MT Ferrule Polishing Process Charts
Document Number	AEN-1509
Revision Number	2.1
Effective Date	August 15, 2010

THE USE OF SAFETY GLASSES FOR EYE PROTECTION IS RECOMMENDED

1.0 Document Purpose

Currently, there are a number of different manufacturers of fiber optic polishing equipment producing machines that are capable of properly polishing MT ferrules. This document describes US Conec recommended generic baseline MT polishing processes for thermoplastic standard multimode, multimode MT Elite[®], standard single-mode, single-mode MT Elite[®], pre-angled standard single-mode, and pre-angled single-mode MT Elite[®] ferrules in 4, 8, 12, 24, and 48 fiber counts. These processes are to be used as a starting point for developing effective polishing processes for these various manufacturers' machines.

2.0 Polishing Process Charts

Thermoplastic Multimode MT Flat Protruded Flock Cloth Polishing Process

Step	Polishing Plate	Polishing Material US Conec Part Number Manufacturer's Part Number	Polishing Fluid	Polishing Time	Repeat Step	Force per Ferrule
1	Flat Ground Rubber-Backed Glass	30 µm SiC Film MTA-030-SMC-300 Mipox SC-30-F-50-3P	Distilled or De-Ionized Water Approximately 1 ml	30 seconds	10 seconds see Note #1	0.375 lb
2	Flat Ground Rubber-Backed Glass	3 µm SiC Film (non-PSA) 8329 3M 463X Lapping Film	Distilled or De-Ionized Water Approximately 1 ml	60 seconds	0 seconds	0.375 lb
3	Flat Ground Rubber-Backed Glass	1 µm Al ₂ O ₃ Flock 5413 3M 298X Polishing Film	Distilled or De-Ionized Water Approximately 2 ml	120 seconds	0 seconds	0.750 lb
4	Flat Ground Rubber-Backed Glass	0.5 µm CeO Flock 5569 3M 598X Polishing Film	Distilled or De-Ionized Water Approximately 2 ml	120 seconds	30 seconds see Note #2	0.750 lb

Note #1: If necessary, repeat step #1 in 10 second intervals until all epoxy is removed and the ferrules have an even matte finish completely across.

Note #2: If rework is necessary due to visual defects in the fiber tips, repeat step #4 with a new CeO flock film.

Note #3: If, after repeating step #4 per the instructions in note #2, rework is still necessary due to visual defects in the fiber tips, return to step #2 and repeat the process from this point.

Note #4: Thoroughly clean the fixture and ferrules between each step according to US Conec Document # AEN-1512. Removal of ALL contaminants between polishing steps is critical for the success of the process!

Note #5: 3M 15µm silicon carbide film (468X Lapping Film) may be used in place of Mipox 30µm silicon carbide film for step #1.

Thermoplastic Single-mode MT Angled Protruded Flock Cloth Polishing Process

Step	Polishing Plate	Polishing Material US Conec Part Number Manufacturer's Part Number	Polishing Fluid	Polishing Time	Repeat Step	Force per Ferrule
1	Flat Ground Rubber-Backed Glass	30 µm SiC Film MTA-030-SMC-300 Mipox SC-30-F-50-3P	Distilled or De-Ionized Water Approximately 1 ml	30 seconds	10 seconds see Note #1	0.375 lb
Change Ferrules to the 8° Angled Polishing Fixture						
2	Flat Ground Rubber-Backed Glass	30 µm SiC Film MTA-030-SMC-300 Mipox SC-30-F-50-3P	Distilled or De-Ionized Water Approximately 1 ml	45 seconds	5 seconds see Note #2	0.375 lb
3	Flat Ground Rubber-Backed Glass	3 µm SiC Film (non-PSA) 8329 3M 463X Lapping Film	Distilled or De-Ionized Water Approximately 1 ml	60 seconds	0 seconds	0.375 lb
4	Flat Ground Rubber-Backed Glass	1 µm Al ₂ O ₃ Flock 5413 3M 298X Polishing Film	Distilled or De-Ionized Water Approximately 2 ml	120 seconds	0 seconds	0.850 lb
5	Flat Ground Rubber-Backed Glass	0.5 µm CeO Flock 5569 3M 598X Polishing Film	Distilled or De-Ionized Water Approximately 2 ml	120 seconds	60 seconds see Note #3	0.850 lb

Note #1: If necessary, repeat step #1 in 10 second intervals until all epoxy is removed and the ferrules have an even matte finish completely across.

Note #2: If necessary, repeat step #2 in 5 second intervals until the angles extend to the top edge of the guide pin holes.

Note #3: If rework is necessary due to visual defects in the fiber tips, repeat step #5 with a new CeO flock film.

Note #4: Thoroughly clean the fixture and ferrules between each step according to US Conec Document # AEN-1512. Removal of ALL contaminants between polishing steps is critical for the success of the process!

Note #5: 3M 15µm silicon carbide film (468X Lapping Film) may be used in place of Mipox 30µm silicon carbide film for step #1 & step #2.

Thermoplastic Single-mode MT Pre-Angled Protruded Flock Cloth Polishing Process

Step	Polishing Plate	Polishing Material US Conec Part Number Manufacturer's Part Number	Polishing Fluid	Polishing Time	Repeat Step	Force per Ferrule
1	Flat Ground Rubber-Backed Glass	30 µm SiC Film MTA-030-SMC-300 Mipox SC-30-F-50-3P	Distilled or De-Ionized Water Approximately 1 ml	15 seconds	10 seconds see Note #1	0.375 lb
2	Flat Ground Rubber-Backed Glass	3 µm SiC Film (non-PSA) 8329 3M 463X Lapping Film	Distilled or De-Ionized Water Approximately 1 ml	60 seconds	0 seconds	0.375 lb
3	Flat Ground Rubber-Backed Glass	1 µm Al ₂ O ₃ Flock 5413 3M 298X Polishing Film	Distilled or De-Ionized Water Approximately 2 ml	120 seconds	0 seconds	0.850 lb
4	Flat Ground Rubber-Backed Glass	0.5 µm CeO Flock 5569 3M 598X Polishing Film	Distilled or De-Ionized Water Approximately 2 ml	120 seconds	60 seconds see Note #2	0.850 lb

Note #1: If necessary, repeat step #1 in 5 second intervals until all epoxy is removed and the ferrules have an even matte finish completely across the angled area.

Note #2: If rework is necessary due to visual defects in the fiber tips, repeat step #4 with a new CeO flock film.

Note #3: Thoroughly clean the fixture and ferrules between each step according to US Conec Document # AEN-1512. Removal of ALL contaminants between polishing steps is critical for the success of the process!

Note #4: 3M 15µm silicon carbide film (468X Lapping Film) may be used in place of Mipox 30µm silicon carbide film for step #1.

- MTP®, MTP® PRO, MTP Elite®, MTP-16™, MXC®, MT Elite®, PRIZM®, LightTurn®, PRIZM® MT, ELiMENT™, and IBC™ are trademarks or registered trademarks of US Conec, Ltd., Hickory, NC
- FiberChek2™ is a trademark of VIAVI Solutions, Inc., San Jose, CA, formerly JDSU
- Corning® and SMF-28e® are registered trademarks of Corning, Inc., Corning, NY
- EPO-TEK® is a registered trademark of Epoxy Technology, Inc., Billerica, MA
- X-ACTO® is a registered trademark of Elmer's Products, Inc., Atlanta, GA
- IDEAL® is a registered trademark of IDEAL Industries, Inc., Sycamore, IL
- 3M® and Scotch® Magic™ Tape are trademarks or registered trademarks of 3M Company, St. Paul, MN
- Loctite®, Prism®, 4861™, 411™, 4851™, BIPAX®, TRA-BOND™, and F113SC™ are trademarks or registered trademarks of Henkel IP & Holding GmbH, Düsseldorf, Germany
- MicroCare® and Sticklers® are registered trademarks of MicroCare Corporation, New Britain, CT
- Chemtronics® and Techspray® are registered trademarks of Illinois Tool Works, Inc., Glenview IL
- SafetyLok™, Performus™, Nordson®, and EFD® are trademarks or registered trademarks of Nordson Corporation, Westlake, OH
- Clauss® is a registered trademark of Acme United Corporation, Fairfield, CT
- Kimwipes® and Kimberly-Clark® are registered trademarks of Kimberly-Clark Worldwide, Inc., Neenah, WI
- Cole-Parmer® is a registered trademark of Cole-Parmer Instrument Company, LLC, Vernon Hills, IL
- Kevlar® and DuPont™ are trademarks or registered trademarks of E. I. du Pont de Nemours and Company, Wilmington, DE
- Techni-Tool® is a registered trademark of Techni-Tool, Inc., Worcester, PA
- Excelta® is a registered trademark of Excelta Corporation, Buellton, CA
- McMaster-Carr® is a registered trademark of McMaster-Carr Supply Company, Elmhurst, IL
- OptiSaber™ and AbraSave® are trademarks or registered trademarks of Domaille Engineering, LLC, Clayton, MO
- NO-NIK® is a registered trademark of Ripley Tools, LLC, Cromwell, CT
- ICure™ is a trademark of Connected Fibers, LLC, Roswell, GA
- Fibersect.multi® is a registered trademark of Phenix Fiber Optics, LLC, Bozeman, MT
- Interprox® is a registered trademark of DENTAID, S.L., Barcelona, Spain
- Curaprox® is a registered trademark of Curaden AG, Kriens, Switzerland
- TePe® is a registered trademark of TePe Munhygienprodukter AB, Malmö, Sweden
- Jonard® is a registered trademark of Jonard Industries Corp., Tuckahoe, NY
- Ellsworth Adhesives® is a registered trademark of Ellsworth Corporation DBA Ellsworth Adhesives, LLC, Germantown, WI
- SEIKOH GIKEN® is a registered trademark of SEIKOH GIKEN Co., Ltd., Matsudo, Japan
- Mipox® is a registered trademark of Mipox Corporation, Tokyo, Japan
- NTT® is a registered trademark of Nippon Denshin Denwa Kabushiki Kaisha DBA Nippon Telegraph and Telephone Corp., Tokyo, Japan
- Data-Pixel® is a registered trademark of Data-Pixel Corp., Chavanod, France
- FastMT™ is a trademark of FiberQA, Old Lyme, CT
- Norland® is a registered trademark of Norland Products Inc., Cranbury, NJ
- Teflon® and Chemours® are registered trademarks of The Chemours Company FC, LLC, Wilmington, DE
- OptiTap® is registered trademark of Corning Optical Communications, LLC, Hickory, NC
- ZAP-IT® is a registered trademark of Zap-It Corp., Andover, NH
- ÅngströmBond® is a registered trademark of Fiber Optic Center, Inc., New Bedford, MA
- LaserCleave™ is a trademark of OpTek Systems, Abingdon, United Kingdom
- Promet® and FiBO® are registered trademarks of Promet International, Inc., Shoreview, MN
- Sharpie® is a registered trademark of Sanford, L.P. Newell Operating Company, Atlanta, GA
- NEOCLEAN® and CLETOP® are registered trademarks of NTT Advanced Technology Corp., Kawasaki, Japan
- Sumitomo® is a registered trademark of Sumitomo Heavy Industries, Ltd., Tokyo, Japan