Applications Engineering Notes

Document Title	Generic US Conec Baseline MT Ferrule Polishing Process Charts
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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_2O_3 Flock 5413 3M 298X Polishing Film	Distilled or De-Ionized Water Approximately 2 ml	120 seconds	0 seconds	0.50 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	0.50 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_2O_3 Flock 5413 3M 298X Polishing Film	Distilled or De-Ionized Water Approximately 2 ml	120 seconds	0 seconds	1.00 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	1.00 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	25 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_2O_3 Flock 5413 3M 298X Polishing Film	Distilled or De-Ionized Water Approximately 2 ml	120 seconds	0 seconds	1.00 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	1.00 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: 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.