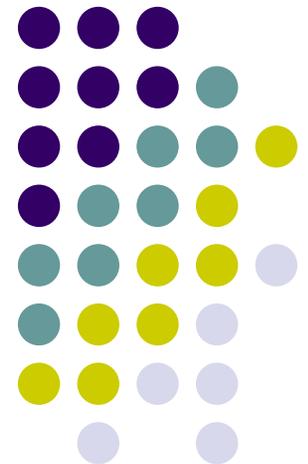
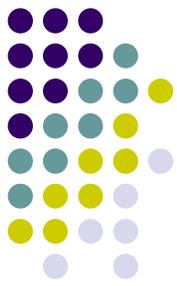


Polishing the Ferrules

Howard Budd
Sep 13 2007





Polishing Epoxy on the Ferrule

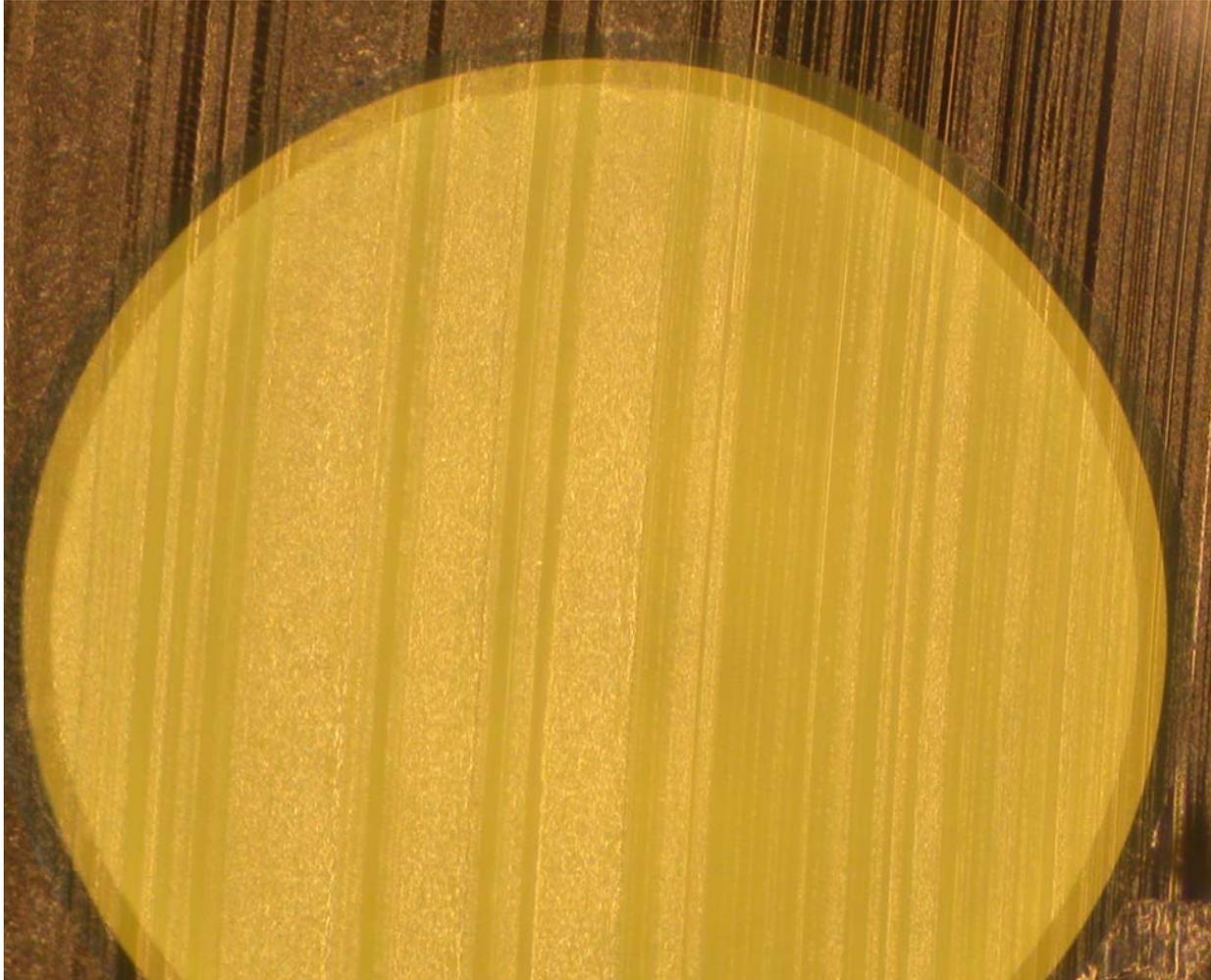
- We glued fibers in the 10 ferrules that Dave Warner gave us
- One problem was that for 3 of the ferrules the epoxy backflowed onto the outer edge of the nipple.
 - When it does this the epoxy will flow up to the flat part of the bottom part of the connectors.
 - This means the ferrule will not be positioned correctly in the polisher
- The epoxy does not chip off easily
 - It does chip off easily for DDK connectors and Minerva single fiber ferrules (which is delrin, and they are machined.)
- In thinking about this getting we want a reasonably tight fit of the fiber in the hole to prevent this
 - This is opposite to trying to get good epoxy flow around the fiber



Epoxying of the 40 ferrules

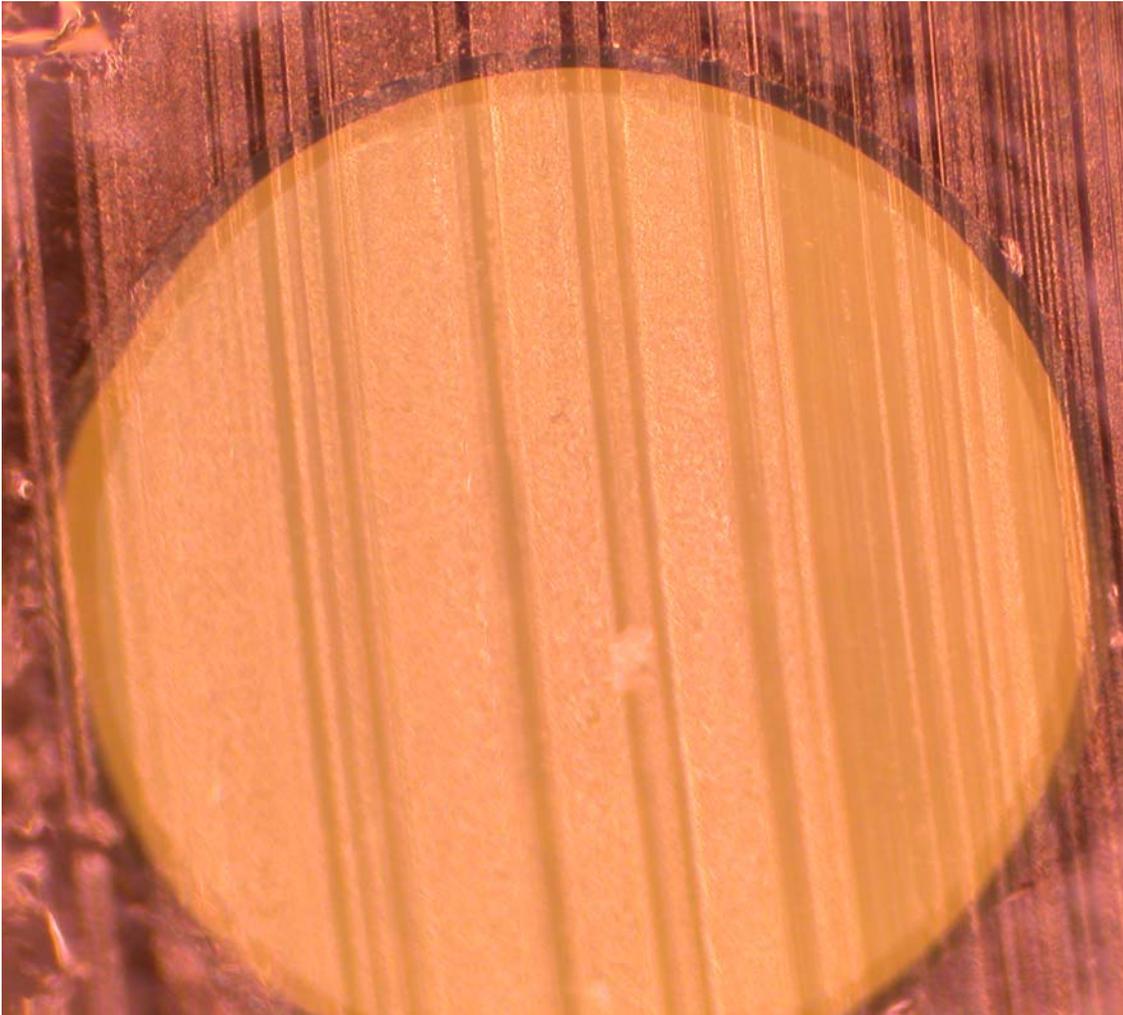
- As stated in the P0D meeting we glued 40 ferrules on 40 fibers
 - The nipples were 2.5 mm
 - These epoxied OK
 - For these there was no backflow onto the side of the ferrule and no back flow onto the flat part of the ferrule where the nipple comes out
 - For many of the ferrules the bottom part of the ferrule was completely filled with epoxy, but no flowing up the nipple
 - Maybe with more flow it might have flowed up
 - I think that there was no movement of the fiber in the ferrule after the epoxy was put in the ferrule to enhance epoxy flow since for these we were not interested in doing that

Epoxy Polish



- We cut the WLS fiber in the back of the this pigtail to try to get the illumination from the from
 - We don't have any clear 1mm fiber
- Diamond seems to have sustained damage polishing the Vectra

Epoxy Polish



- Diamond damage seen



Discussion of Issue

- Steve, Kevin and I discussed the issues
- We will likely try other epoxies
 - Need large sample of ferrule, they do not have to be cut back, but we need some cut back since we need to look at the polish
 - We will try to get the epoxy used at FiberFin
 - Note we can't just order epoxy, but we need to give ESH the MSDS before the epoxy comes on site
 - Take 3-4 weeks to finish
- We will try to epoxy with another set of ferrules and not move the fibers after the epoxy is in the ferrule
- We will immediately get a new diamond and relap the old diamond on the machine



Discussion of Issues

- With the new diamond
 - Study the polish to insure its OK
 - Start polishing a large number of Prototype #1 pigtails with the new diamond
 - We will only polish the ferrules without backflow
 - We might have some significant wastage factor
 - We might chew through a significant number of ferrules and fiber
 - We might have to order more fiber for Prototype #2