

FIBRE HANDLING FOR PHOTOELECTRON STATION

A. Heinrichs, Z. Papandreou and A. Semenov

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1. The cardboard box containing the fibres tested at the attenuation length station is moved from that station and placed inside the Npe black box (a.k.a. 'coffin').
2. A second, empty box is laid next to the box with the fibres. Fibres are moved from the first box to the test station trough and after testing placed into the second box.
3. Person 1 chooses a fibre from untested fibre boxes and holds it so that Person 2 can reach it. Then both carefully place the fibre in the testing trough.
4. Person 1 greases the polished end of the fibre with a small amount of optical grease, enough to just cover the tip.
5. To insert fibre against the Hamamatsu PMT, the greased fibre is threaded through the Plexiglas guide's tapered hole and felt for buckling and the helical twisting of the fibre upon hitting the end.
6. Person 1 holds down the fibre in this position and communicates to Person 2 to press down the fibre at a location near the trigger PMT with one hand, while with the other hand to place the collimator and source on top of the fibre (and trigger scintillator) such that the groove at the bottom of the collimator mates to the fibre so as to prevent the fibre from being tugged out of the PMT. The fibre is kept as straight as possible while in the testing trough.
7. Upon a signal from Person 1, Person 2 places the source on the fibre, Person 1 then checks again to make sure that the fibre is making contact with the PMT.
8. To test if the source was placed on correctly, the collimator is slightly rotated to see if the fibre moves in sync with it.
9. Upon signal from Person 2 that the source has been correctly laid, Person 1 lets go of the fibre and both lids of the coffin are closed and the test commences.
10. The data are monitored using an online PAW script, which indicates graphically the acceptable data limits.
11. If the test was successful, Person 2 then removes the source while Person 1 pulls the fibre out of the PMT and wipes off optical grease with a Kim Wipe.
12. Similarly, if the test was unsuccessful, the source is removed and the fibre is wiped, re-greased, re-inserted. Retesting is done until data fall within the acceptable limits or up to a maximum of three times before abandoning further testing for this fibre.
13. After a successful test, the fibre is removed from the cardboard track and carefully moved by both people to the tested fibre eaves trough.
14. Once finished testing, the tested fibre eaves trough is moved and the fibres are transferred into the fully tested fibre box to put onto the shelf.
15. Run numbers and relevant information is recorded in the dedicated logbook.
16. At the end of each shift a 'shift summary' is entered into the Elog.
17. Every week, the tapered hole of the Plexiglas rod and PMT window should be cleaned thoroughly.

Note: All fibre handling is done while wearing cotton gloves, with the exception of the hand that is used to clean and/or grease the fibre's end.