

Steps to wrap FDD modules

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19/12/2018

List of materials

- Fishing line
- Scintillator
- WLS bars
- Glue, Araldite: Two parts
- Mylar
- Aluminium foil
- Scalpel
- Kapton tape (1 cm width approx.)

Steps

- USE GLOVES FREE OF DUST.
- Roll up the fishing line (**FL**) around the WLS bars, at least 3 turns.
- The FL must be in such way that the WLS bar is parallel to the scintillator.
- In order to fix the FL, I recommend first to roll up around a similar geometry but metallic and put into the oven located for 4 hours and at 80 Celsius degrees. In this way the FL will be easily fixed and glued.

- Once the FL is fixed with 3 or 4 points, accommodate the WLS bar and put on top a small and heavy (>300 gr) to avoid separations.
- Wait for 12 hours.
- Next step, cut the aluminium foil (AF), with a scalpel and roll up the scintillator parallel to the WLS bars.
- Use kapton to fix the AF.

- Cut the Mylar, using the dimensions given by Jean-Pierre. It could be a good idea to leave the folds slightly larger, 2 or 3 mm.
- Accommodate the Mylar on top of WLS bars and fix to the AF with kapton.
- The end of the WLS must be also wrapped with mylar. Use a small piece and fix it with kapton.
- After this, the module will be ready to be optically isolated, the last prototype was isolated with a Sheet of Aluminium (SA), around each side.

- Fix each SA using Aluminium tape, this will be enough to keep optically isolated. At the end, make sure you do not have light leak.
- At the end, couple the fibres to the end of WLS bars using the black connectors. Make sure to use the 4 screws. Otherwise the connector will be unbalanced.

- Cautions:

1. Use the araldite glue as soon as possible.
2. Use a small piece of FL to take a small drop of glue, and put between the FL and scintillator. 6 points on the sides could be enough.
3. Change the gloves every time you use glue. One pair (at least) to mix the parts, one pair to glue the FL to the scintillators, and one pair to manipulate the scintillator after glue the FL.

Thank you