

PSB TFB Old System Delay Cables Damage Visual Checks

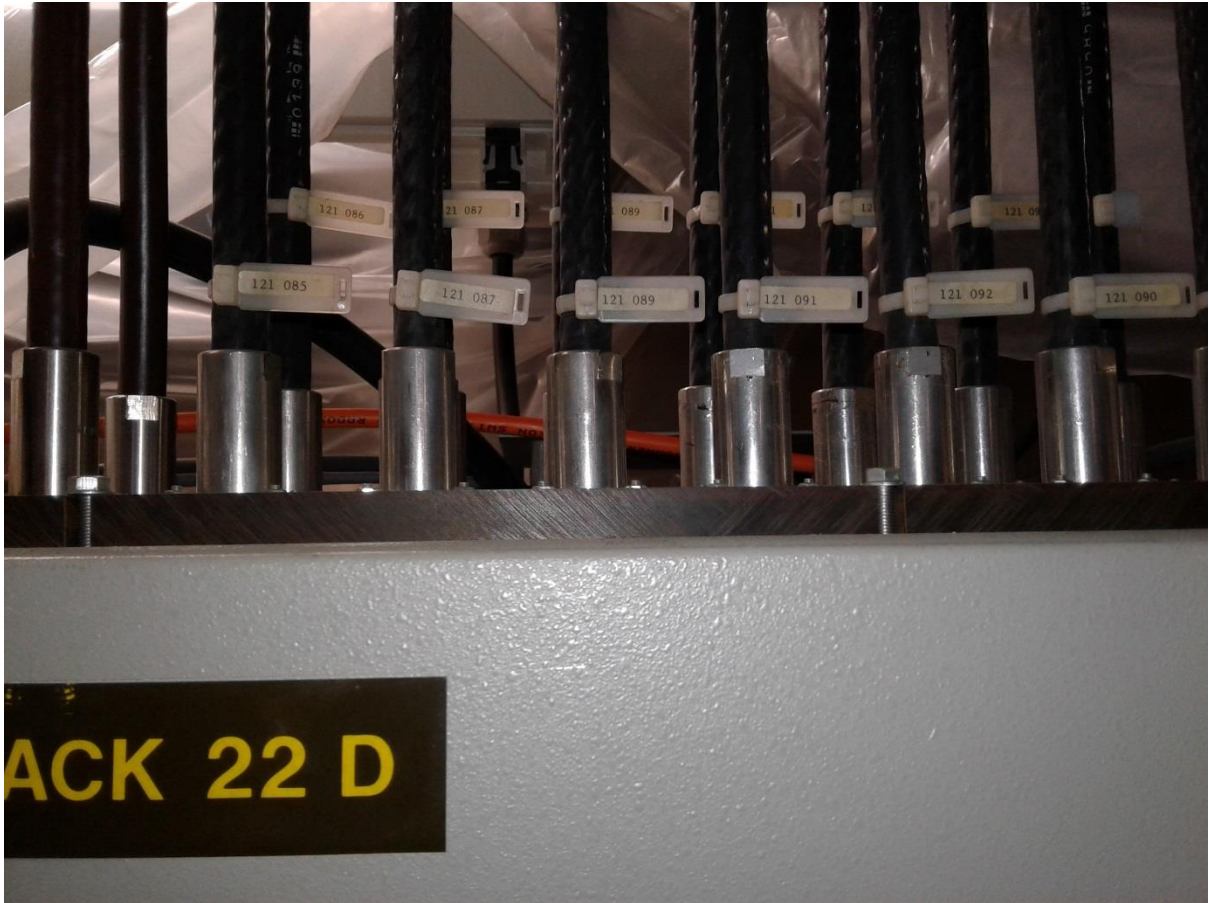
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During the ad-hoc meeting on 29th May 2019(<https://indico.cern.ch/event/824329/>), concerns were raised about the condition of some cables that I later identified as being the delay loop cables for the old TFB system, used to correct for the time of flight. This means that they are “loops” of cable only located in the surface building cable trays, not going into the machine or any other room.

These are old cables that have very probably been in place, at least since the last TFB upgrade many years ago, or perhaps from the original installation before that. An example is that some of these cables for R4 are in the cable number range 121085- 121090, which shows their age.

First checks have shown that these are CK50 type cables and not Flexwell type as feared. The damage seems to be to the insulation of the cables, and most likely due to the age rather than any recent co-activity in the area, at least in the observed area close to the TFB racks. The insulation on some cables (5-6 obvious) has become brittle and is chipping off in a few areas.



R4 delay cable patch in rack 22D.



R4 delay cable patch in rack 22D, both sides.



Obvious insulation degradation on a cable going to R22D patch.



Cable type is CK50.



Similar degradation shown on a cable to R22A patch.



Insulation cracking on a cable going to R21B.



Insulation cracking on a couple of other cables going to R21B.



Delay cables have been moved out of cable tray for CV installation work, cables will have to be check for damage after being re-installed.

Summary:

The cables are used for the old TFB system that should be the back-up for the new system which will be commissioned immediately after LS2. The new system does not require these cables.

The damage appears to be due to the age of the cables, and is only obvious on the external insulation at this point. The system was fully operational with these cables up until the start of LS2.

The system experts should be able to enlighten us as to if these cables need to be replaced.