An update of the cavity depth for MPPC64-PCB

7 December 2020

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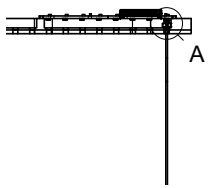
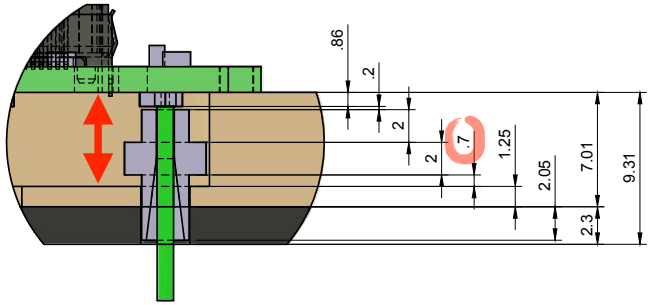
Request to update the cavity depth

A mail to Larry on Nov. 30

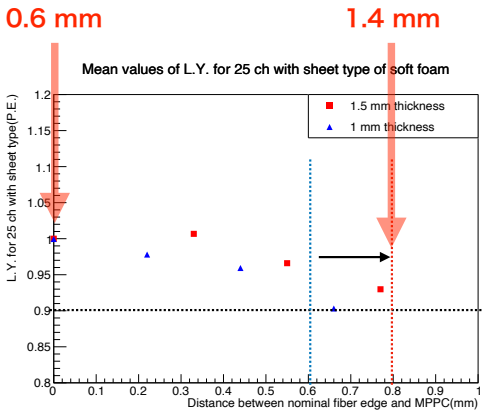
Request to update the cavity depth

- In the current model, depth for the compressed soft foam is 0.7 mm (= Cavity depth is 5.75 mm)





- Report at the mechanics meeting on 31 August by Kuribayashi-san



- We updated the thickness of soft foam from 1.0 mm to 1.5 mm for safety factor.
- [0.6, 1.4] mm is proper range of compressed thickness to provide good optical contacts.
- Center value of **1.0 mm** should be used for the thickness of the compressed soft foam.

We request to update the thickness from 0.7 mm to **1.0 mm (= Cavity depth is 6.05 mm)**, keeping G10 thickness.

Original : 0.86 + 4.2 + 0.7 = 5.76 mm

Previous request : 0.86 + 4.2 + 1.0 = 6.06 mm

Negative tolerance of the connector

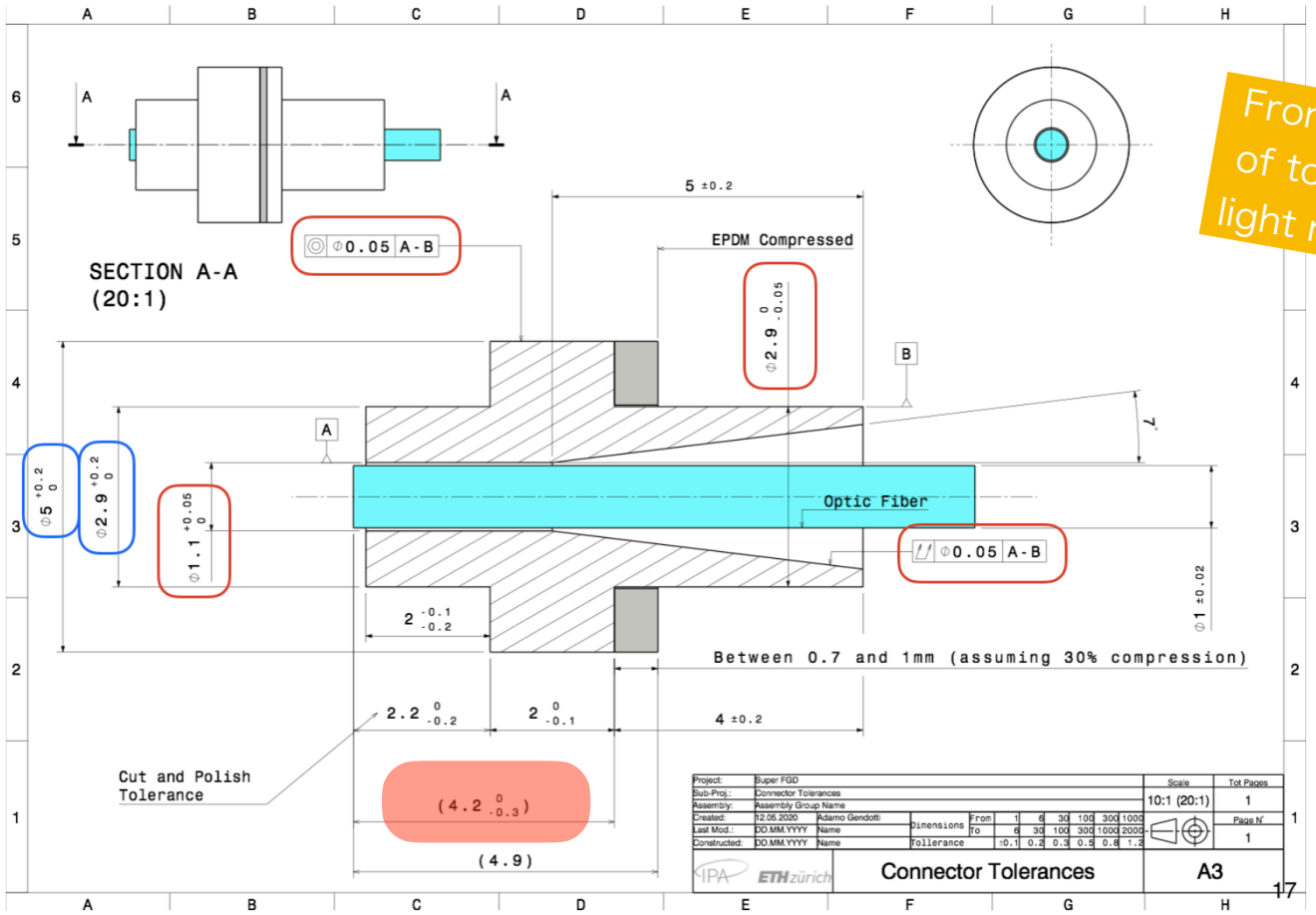
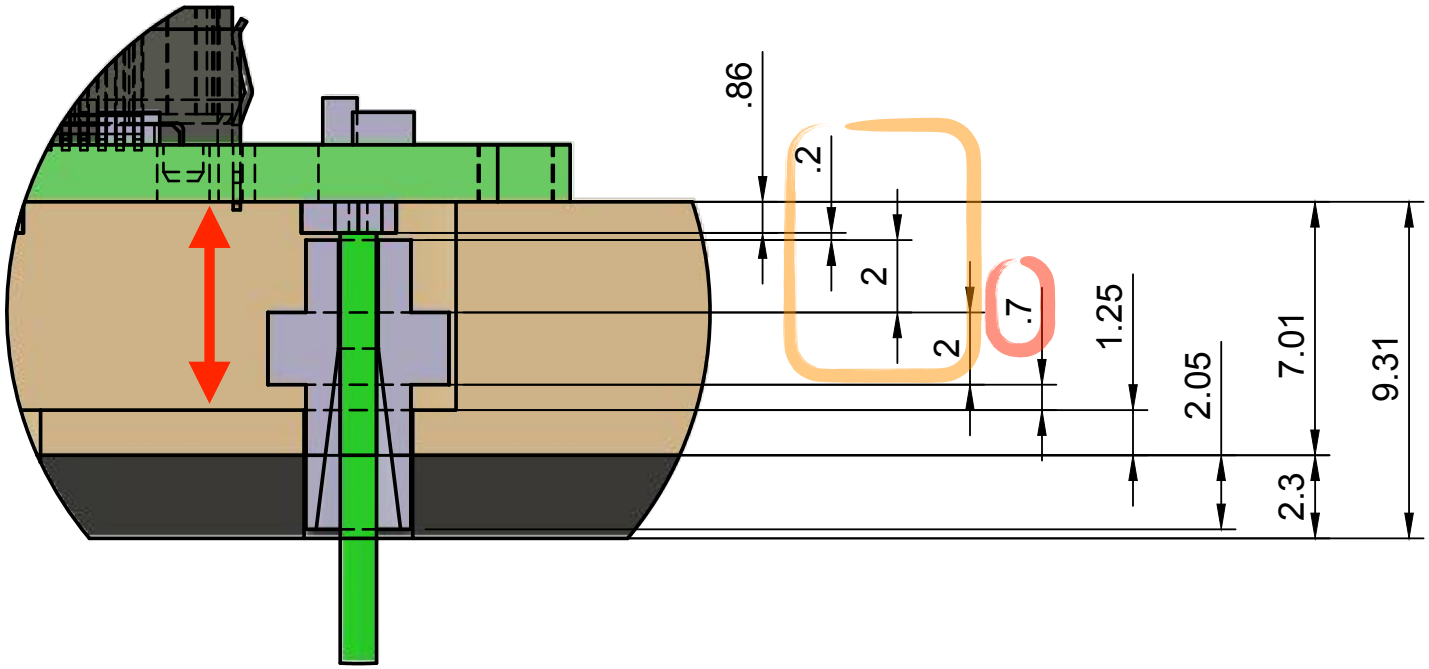


Figure 7: 2D drawing of the optical connector with tolerances on the horizontal plane highlighted in red (critical) and in blue (non-critical). The MPPC sits on the left side of the connector, while the right side cylindrical part is inserted into the readout interface hole.

The negative tolerance (4.2 +0 - 0.3 mm) was not considered…

→ Mean value is 4.05 mm for both sided error (+/- 0.15 mm)

Revised request



Original : 0.86 + 4.2 + 0.7 = 5.76 mm

Previous request : 0.86 + 4.2 + 1.0 = 6.06 mm

Revised request : 0.86 + 4.2 + 0.85 = **5.91 mm** ← this should be final number

(3.9, 4.2) mm

Three cases for example

0 mm (nominal) : 0.86 + 4.20 + 0.85 = 5.91 mm

-0.15 mm (mean) : 0.86 + 4.05 + 1.00 = 5.91 mm

-0.30 mm (min.) : 0.86 + 3.90 + 1.15 = 5.91 mm

0.6 mm <—(0.25)— 0.85 ~ 1.15 mm —(0.25)—> 1.4 mm