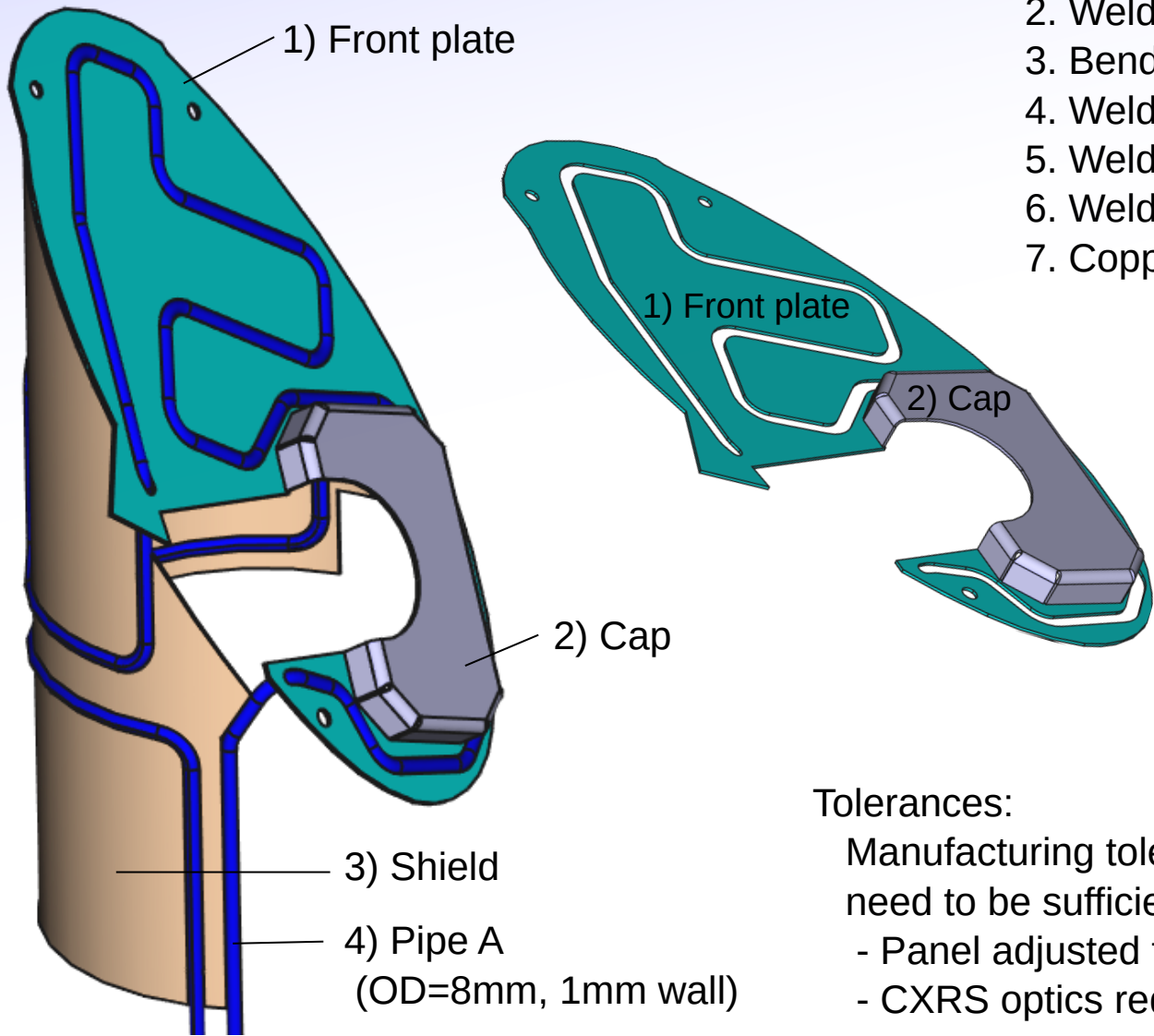


AEM21 port protection - construction

Port protection assembled from 3 distinct parts:



1. Manufacture front plate, cap, shield (+ Manufacture aluminium dummy FP)
2. Weld cap to front plate
3. Bend pipe sections
4. Weld together pipe sections
5. Weld pipe into front plate
6. Weld shield parts to pipe
7. Copper plating

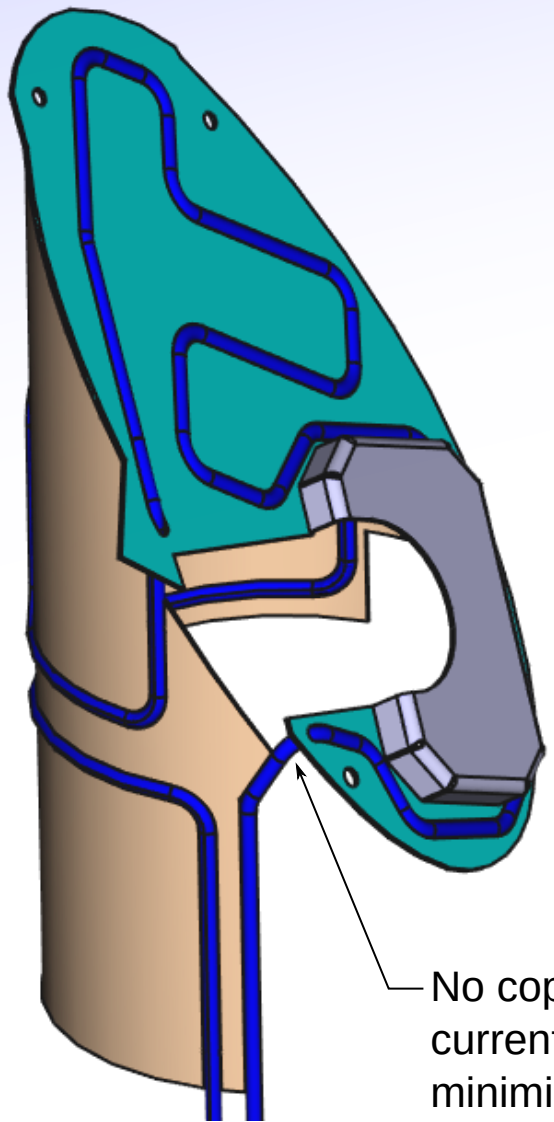
Tolerances:

Manufacturing tolerances will not be high, but only need to be sufficient to fit shield in port without stress.

- Panel adjusted to other panels during installation
- CXRS optics require only ~ +/- 5mm.

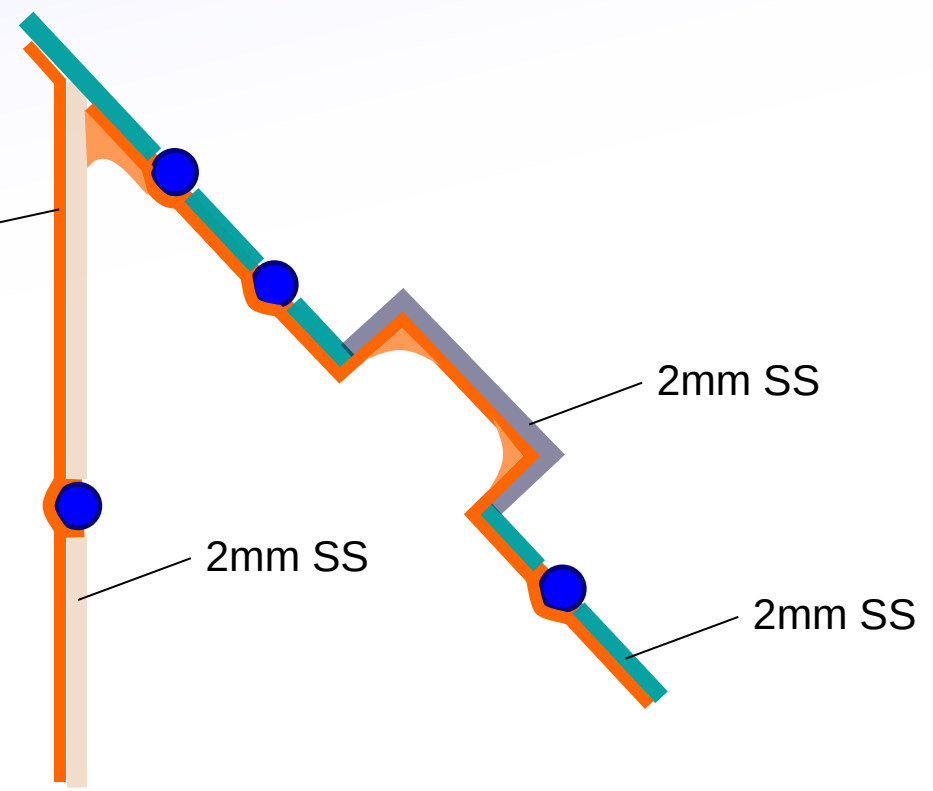
AEM21 port protection - copper plating

Copper plating to increase thermal conductivity to SS cooling pipes.
Apply copper to back of front plate and cap and back side of shield.



No copper to avoid current loop and minimise forces.

?mm copper plating



Copper plating expertise by Galvano-T.
- CTS Plugin for ECRH - (Delivered)
- AEA21 front plate (In discussion)
- Initial assessment by Galvano-T as feasible but copper thickness may vary significantly as difficult to work in corners.

AEM21 port protection - Mounts

- Front plate mounted on two bolts and one metal bracket:
- Bolts and bracket to be installed before re-installation of surrounding panels (~Feb 21)
- Discussed with AS-Tech:
 - Need to provide bolts and brackets.
 - Panel mount pieces available from AS.
 - Precise positions/vectors to be provided to AS.
- Manufacture an aluminium 'dummy' front plate to assist/test mounts.

Head-on view (looking up at port from inside vessel):

