Vacuum comments
ESS-Bilbao visit for MEBT

Minutes

Meeting Date 3rd -5th June **Location: ESS-Bilbao, Bilbao**

Attendee for vacuum system:

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1. Main goals for vacuum:
   - Mechanical and vacuum discussion for design, production and fabrication,
   - Vacuum equipment specification for ESS – Bilbao Vacuum lab,
   - Define the ESS-Bilbao out gassing test stand.

3rd June

Visit to site and vacuum laboratory. Points to be worked by ESS-Bilbao to be able to build and assemble the MEBT chambers:

- Build a clean room, soft wall tent with filter blowing from the top of the room big enough to handle the MEBT assembling,
- Find a solution to have clean dry N_2 for venting (5.0 level),
- Have available dry leak detector and dry turbo pump systems in number for the assembling and test of the MEBT parts,

It was discussed the vacuum simulation for the mechanical design proposed by ESS-Bilbao, what means the pump size and locations need to be evaluated against the operation gas flow and gas load from the instruments.

A list of document with draft version for the procedures and test was created and need to be finished (tested by testing at ESS-Bilbao and ESS, Lund) and submitted to ESS for approval before to be use for ESS MEBT parts.

It was found oil-baking pumps what need to be substituted by dry versions.

Basic vacuum hardware needs to be easy available as hexagonal SS bolts, washers, UHV clean Aluminum foils, white papers for wiping, etc.

Aitor and I will keep working on an outgassing test stand for ESS-Bilbao to be able to qualify parts and pieces using a ESS pre-approved cleaning procedure using you facility in Victoria. For quantitative values samples need to be submitted to ESS Lund for evaluation.

4th and 5th June

The vacuum requirements on DOORS will be reviewed to clarify some of the interfaces and the acceptance test necessary.

It's expected to have a CDR for the MEBT what should include the vacuum simulations and the procedure for assembling at the ESS-Bilbao site the vacuum chambers for MEBT.

Any fabrication process of vacuum related part shall be send to ESS vacuum group for cross checking an approval.

The mechanical vacuum related layout shall preserve the lattice layout.

All parts at the MEBT shall follow the ESS Vacuum Handbook.

The Vacuum Group and the mechanical engineering from ESS will provide a suggestion for the buncher design to optimize fabrication process.

The Vacuum Group can provide expertise to create a ceramic RF coupler.