SuperFGD box status

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SuperFGD Mechanics meeting
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The sFGD box plate structure

- Swivel hoist ring for lifting
- US Face
- Mounting bracket
- DS Face

Mass of the box with cubes (no lift lugs): 2,715 kg
Mass of the empty box (no lift lugs): 536 kg
The sFGD box plate structure

Example of box plate composition (Upstream)

- Some box plates don’t have the “datum” plate
sFGD box production chain

The production is divided into the following steps

1) The following should happen in parallel…

- Production of the fiberglass plates @NEXUS (Spain)
- Production of CF-Foam sandwich @CompositeDesign (Switzerland)

✦ The fiberglass is produced at NEXUS
✦ Machining (cutting and milling) is done by a company in Spain subcontracted by NEXUS → achieve the designed tolerance

✦ Aluminum bars provided by ETHZ
✦ CompositeDesign procure CF and Foam and glue them

Eventually fiberglass and CF sandwich are at CompositeDesign for final gluing
sFGD box production chain

2) Gluing of fiberglass to CF sandwich at @CompositeDesign

Then, the box plate is sent to CIMFORM for the final machining

3) Final drilling and machining @CIMFORM

The plate is ready for mounting the box
- After each step above, QA is done in order to proceed to the step after
DownStream Panel

• Ready for the box mounting
Remaining Fiberglass @NEXUS

- All the plates have been machined but some plates to match the target tolerance
  - Some delay because NEXUS didn’t have capacity for metrology

<table>
<thead>
<tr>
<th>Pos</th>
<th>Quantity</th>
<th>Part Name</th>
<th>Material</th>
<th>Status</th>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Downstream Panel</td>
<td>Black Pigmented Fiber Glass</td>
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<tr>
<td>2</td>
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<td>Machined</td>
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<tr>
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<tr>
<td>5</td>
<td>1</td>
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<td>9</td>
<td>1</td>
<td>Top Panel MPPPC</td>
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</tbody>
</table>

- Datum plates are more critical because inside the box and may prevent to close it
  - More checks are ongoing and if too far from tolerance the plate will be laminated and milled again
- Panels #6 and #8 look OK (see next slide)
  - They will be sent to CompositeDesign
  - Proceed with gluing of Panel #8 (Right box plate) and machining @CIMFORM
Remaining Fiberglass @NEXUS

- Panel #8 - Right plate
Remaining Fiberglass @NEXUS

• Panel #6 - Left plate
Next steps

• Both #6 and #8 fiberglass plates look good
  ✦ they will be sent soon to CompositeDesign

• Proceed with final gluing and machining of Right Plate

• Meanwhile we will decide how to proceed with the other fiberglass plates
  ✦ We have time (~2-3 weeks) while the Right plate will be completed

• Checking with CompositeDesign and CIMFORM about time needed to complete the Right Plate (need to see their current production capacity)
  ✦ Mechanics time schedule will be updated accordingly