pfRICH End Ring and Cobonding updates – general meeting

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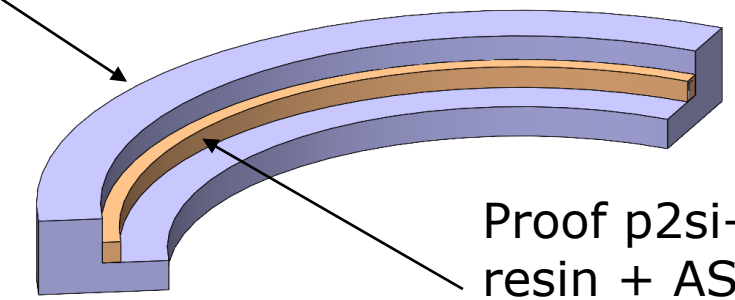
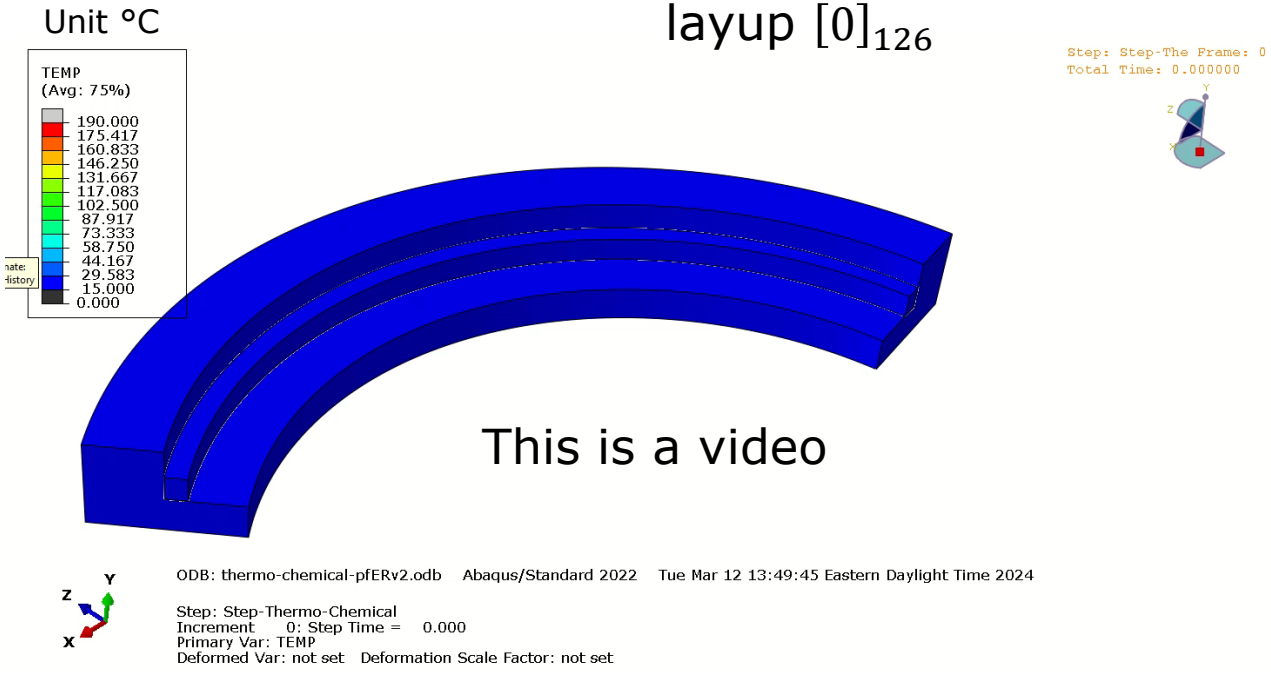
End ring prototyping

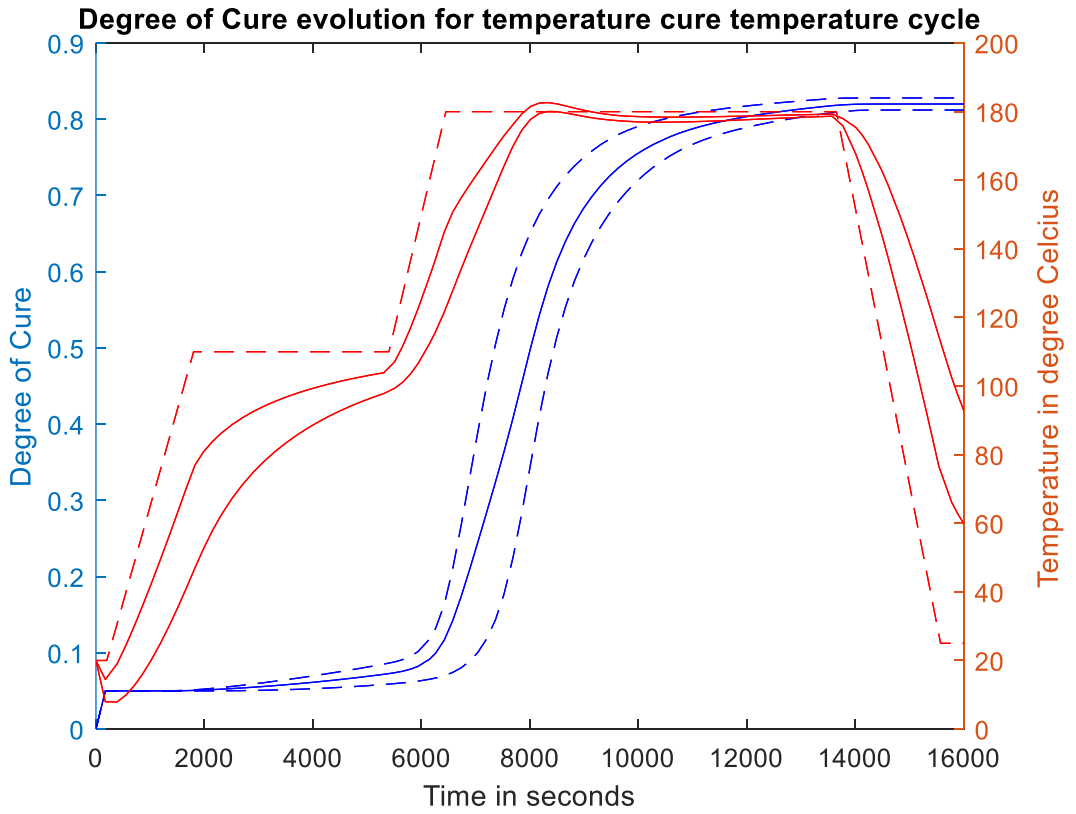
Renshape 5067 tooling block



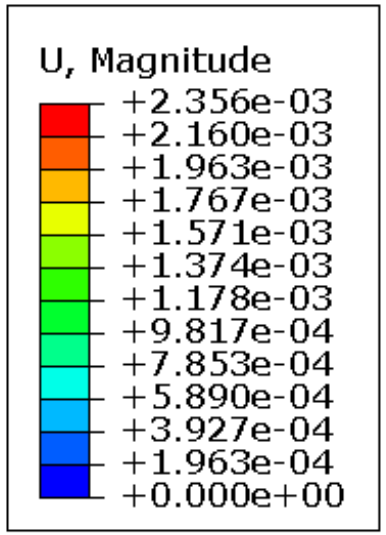
Proof p2si-250p epoxy resin + AS4 plain weave fiber pre-preg layup $[0]_{126}$

- pfRICH end ring mold
- Tool shape compensation simulation completed – we have a final tool shape for a 90 degree ring segment





- Stress-deformation analysis shows that the spring in predicted is about 2.3 mm on each end
- Tool shape was compensated by mirroring this deformation to the nominal shape



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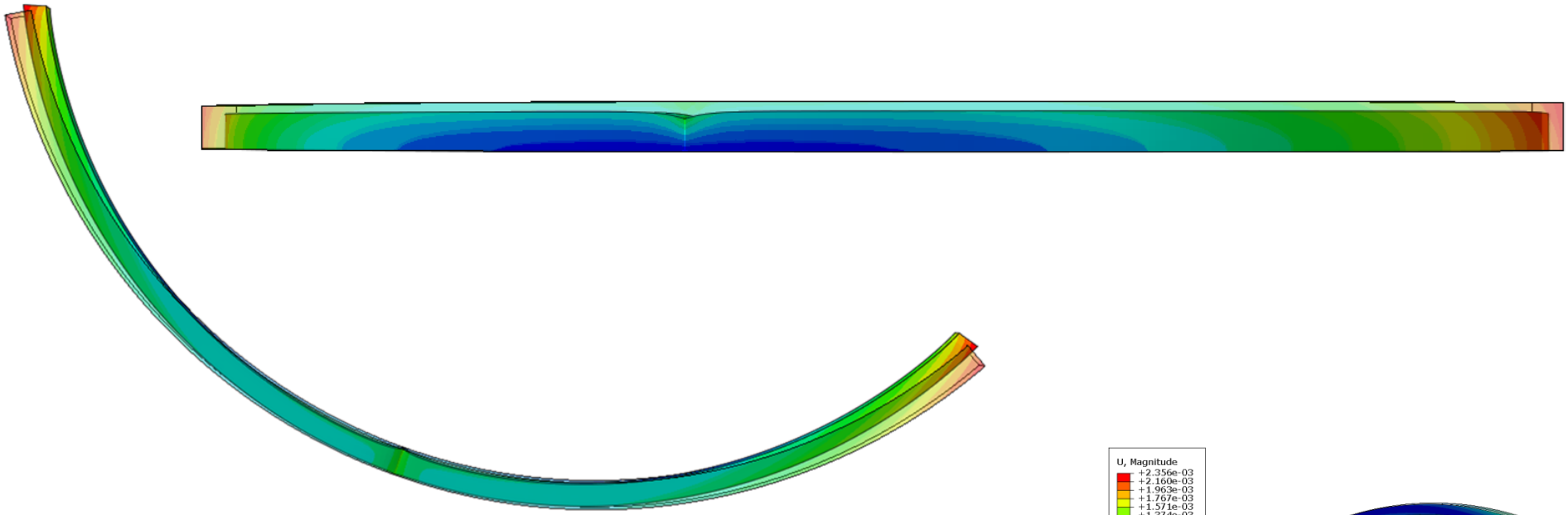
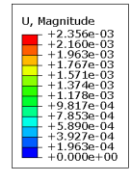
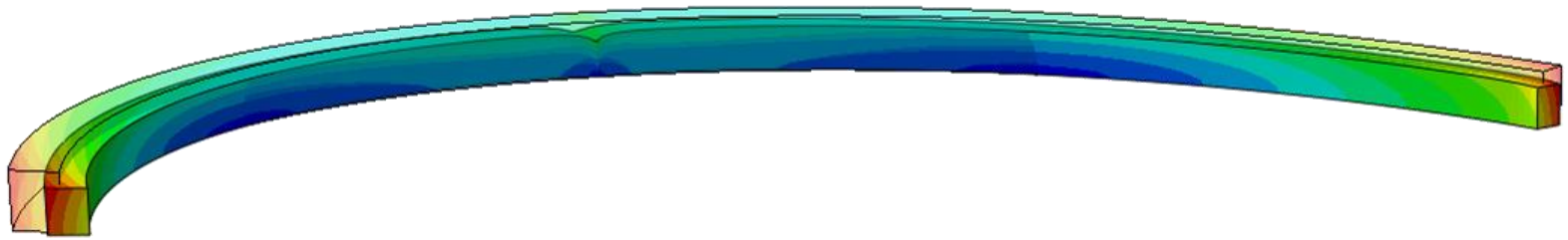
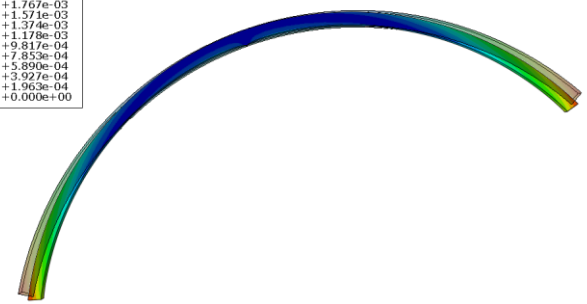
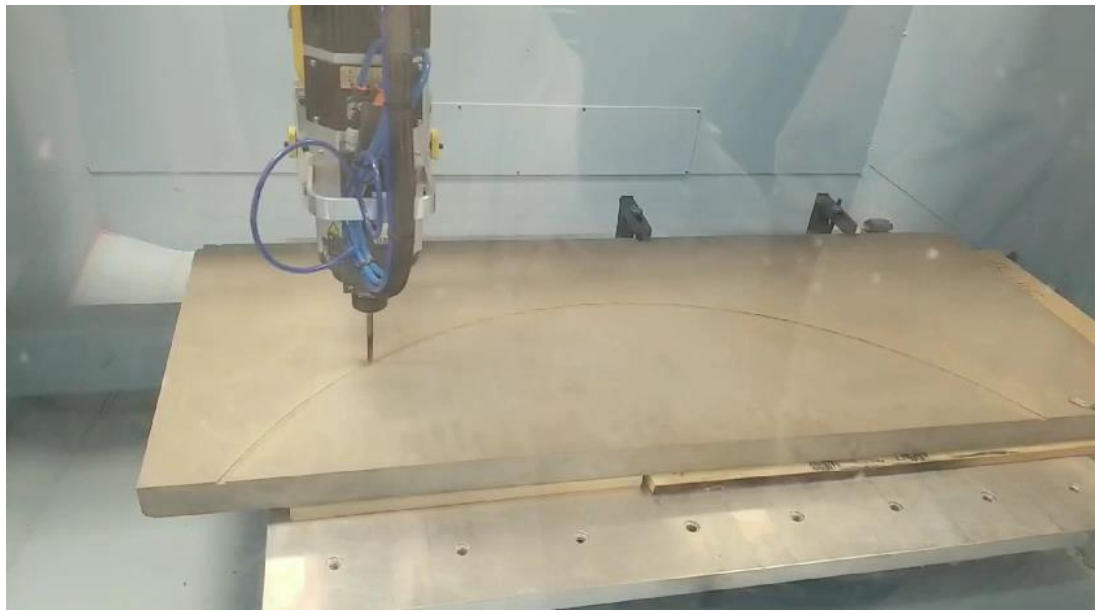






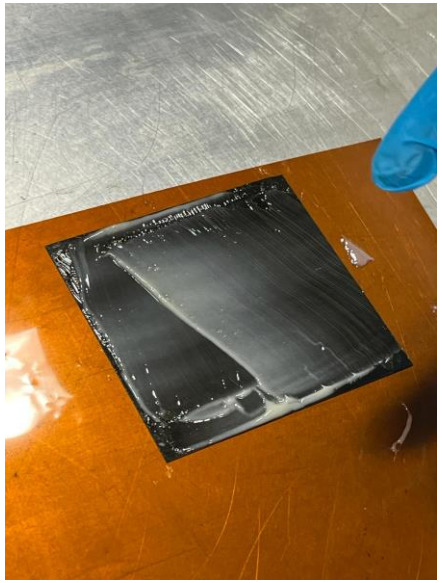


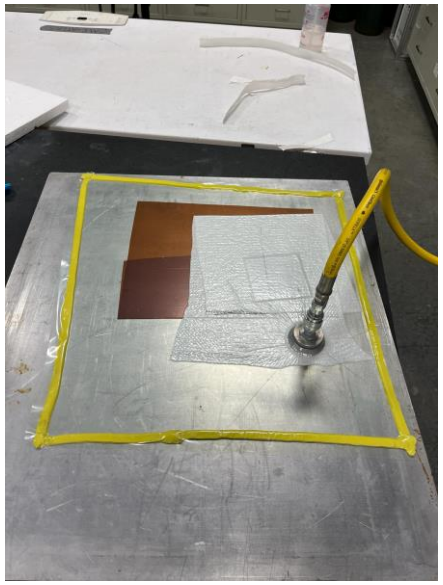
Tool machining completed

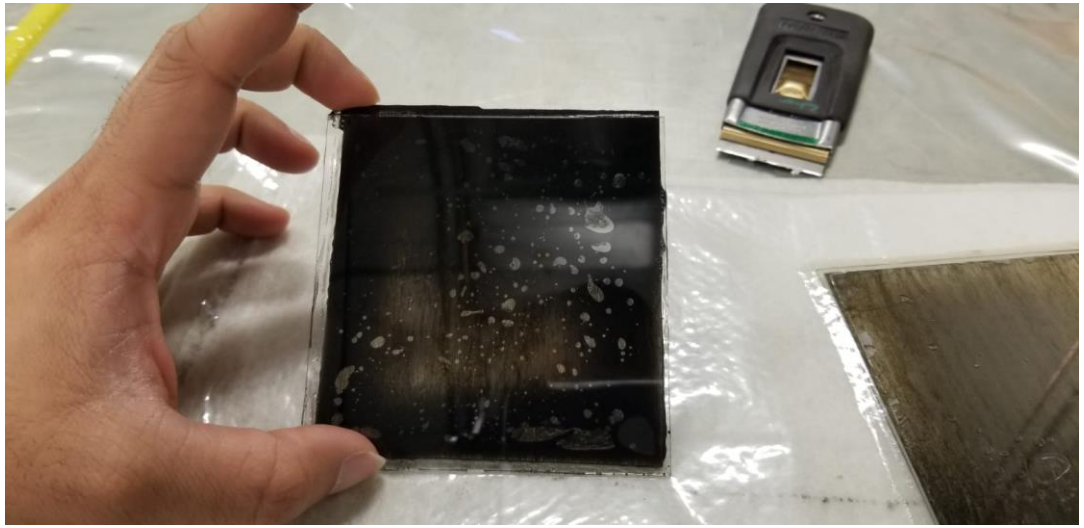


- Next step is surface preparation and ply cutting for the first ring layup
- Ply design is completed and ply cutting is scheduled for tomorrow/Friday 15th March for layup of quarter 1

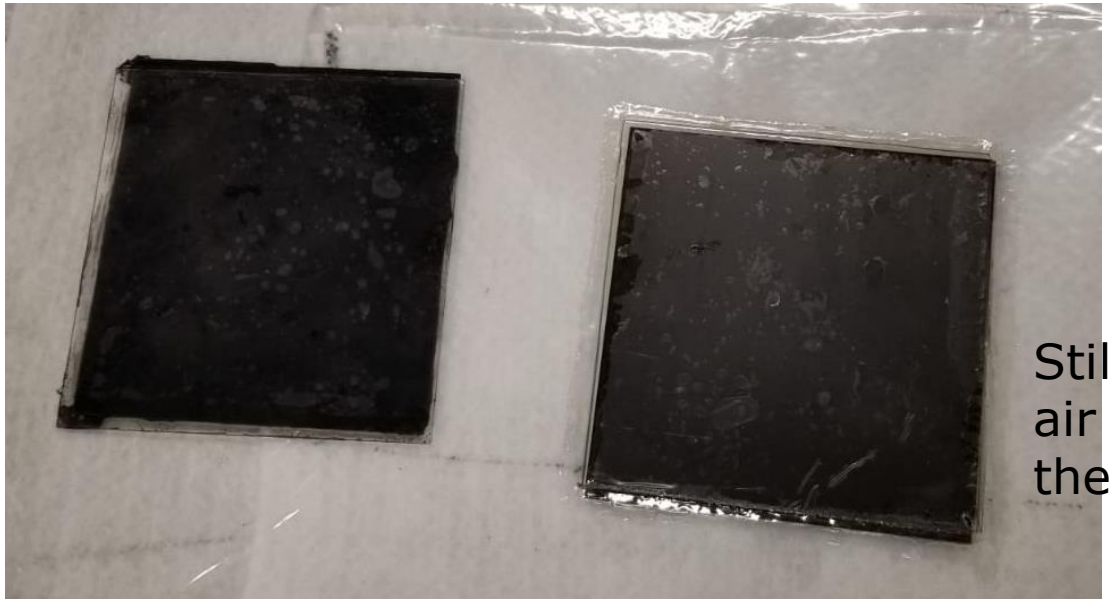
Lexan to CFRP co-bonding



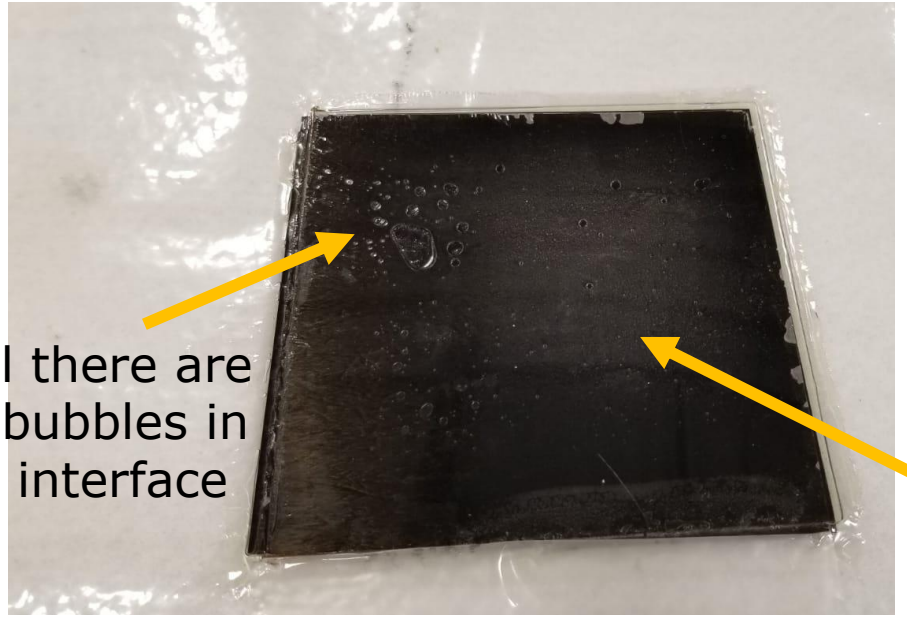




- First 2 attempts at co-bonding show that the viscosity of the adhesive used is too high for air-bubbles to escape.
- We are testing now with thinner (runny) adhesive – test undergoing right now



Still there are air bubbles in the interface



Good layer thickness control

Schedule check

- On the end ring we are on proposed schedule
- In the proposed old schedule, I only accounted for 1 end ring --- we need 2 end rings
- Below is the addendum for end ring 2

Date	End Ring
20 Feb	End ring prototype with small radius
25 Feb	surface roughness, tool compensation for larger end ring - start
10 Mar	tool compensation for larger end ring – end Tool machining start
15 Mar	Tool ready – metrology and QC/QA
30 Mar	Layup of all 4 end ring quarters
15 Apr	Machining & Assembly of 4 quarters
20 Apr	Ship End Ring to SBU
15 May	
25 May	

Date	End Ring #2
15 Apr	Layup of all 4 end ring quarters
25 Apr	Machining & Assembly of 4 quarters
30 April	Ship End Ring #2 to SBU