

**6.3 Pb-Li Compatibility Issues for DEMO** — B. A. Pint and K. A. Unocic (Oak Ridge National Laboratory)

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The current dual coolant fusion blanket concept is limited to a ~475°C wall temperature due to dissolution/redeposition of the FeCr steel in Pb-Li. Higher wall temperatures could be achieved if compatibility issues can be controlled. Isothermal capsule experiments have demonstrated that thin (<50µm) Al-rich coatings on Gr.92 steel can reduce mass loss in Pb-Li for up to 5,000h at 700°C and that similar coating performance was obtained for coated oxide dispersion strengthened FeCr steels at 700°C. Dissimilar material experiments at 700°C suggested a possible reaction between Fe and SiC in Pb-Li that needs to be further studied as it could limit the blanket temperatures.