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Materials science for hohlraum-driven ignition double-shell targets<sup>1</sup> ALEX V. HAMZA, PETER AMENDT, Lawrence Livermore National laboratory — Designs for ignition double shell targets put stringent requirements on materials and fabrication methods. The inner shell needs to be high-Z and contain 790 atmospheres of DT gas at room temperature. To reduce hydrodynamic instability during implosion the inner shell must be density graded as well. The inner shell must be concentric with the outer shell to with in 2 microns. Foam spacers to maintain concentricity must have density of less than 100 mg/cm<sup>3</sup>. In order to maintain hydrodynamic stability during implosion the cell size of the foam must be small, less than on the order of 500 nm to 1  $\mu$ m. In addition the foam must be compositionally matched to the inner shell. In order to maintain symmetry the joint in the outer shell must be without voids and density and opacity matched to the outer shell material. Approaches to and progress toward achieving these requirements will be presented.

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