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M1Or3C-04 [Invited]: Low Temperature Mechanical Properties of Two Epoxies used for Superconducting Magnet Impregnation

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Superconducting magnet epoxy impregnation has the unique requirement of utilizing a liquid with very specific properties at slightly elevated temperatures that transforms into a solid with low temperature property requirements. Here we test the properties of two neat resin epoxies at room and cryogenic temperatures. Tensile, compressive, fracture toughness and thermal expansion tests are conducted on the two materials. We compare the properties and discuss their relationship to magnet performance.

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