

REBCO Coated Conductor for the NHMFL 32 T superconducting magnet

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The NHMFL is constructing a 32 T superconducting magnet that includes 2 coils with a total length of 10 km of REBCO coated conductor. These HTS coils operate at 4.2 K and are designed to generate 17 T in the background magnetic field of a 15 T Low-temperature superconductor outsert. Specifications for the REBCO conductor include geometric tolerances, joint resistance, Cu cross-sectional area, RRR of the stabilizer and critical current at 4.2 K in high magnetic field. Results of routine Quality Assurance measurements on 169 piece lengths of conductor will be presented, leading into a discussion of observed improvements and desirable improvements from a magnet design point of view.