Design and Fabrication of Rutherford-type Cables Made for High Field Magnets*

D.R. Dietderich
H. Higley
R.M. Scanlan

Supercondcuting Magnet Group
Lawrence Berkeley National Laboratory, Berkeley, CA, 94720, USA

The Superconducting Magnet Group of LBNL has been fabricating cables for numerous superconducting applications. The cabling parameters (wire diameter, cable thickness, cable width, pitch length, and keystone angle) that are acceptable for various strands (MJR, RRP, and PIT) with different internal structure, composition, and fabrication methods are discussed. An empirical model is presented to guide in the cabling process to minimize or eliminate strand damage. The evolution of the cable parameters are placed in context with a discussion of the cables developed for the record high field magnets (D-20, RD-3 and HD-1) fabricated at LBNL.

*Supported by the U.S. Department of Energy under Contract No. DE-AC03-76SF00098.