

HTS Coated Conductors Developed for the European Super3C Cable

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Abstract – Within the European Super3C project, a 30m-long one-phase cable was manufactured by employing high-performance coated conductors which were processed by high-rate pulsed-laser deposition of YBCO on stainless-steel tapes coated with an Yttria-Stabilized-Zirconia biaxially textured buffer layer. This paper briefly summarizes the advanced tape processing, which includes the plating with a copper shunt layer, as well as the lamination of the tapes. Tapes without patterned filaments could be manufactured with homogeneous I_c values along the full length, and rather low AC losses. Their electromechanical performance with satisfactory limits to irreversible degradation and good stability in aggressive environments offer a high degree of reliability in applications.

Keywords - superconducting, YBCO, high temperature superconductor, coated conductors, HTS cable

Submitted, July 29, 2009; accepted September 8, 2009. Reference No. ST129; Category 5.