

PROJECT CONTROL DOCUMENT – TRP 9943 / 0408Y

PROJECT TITLE: Elimination or Minimization of Oscillation Marks – A Path to Improved Cast Surface Quality

PROJECT DESCRIPTION: The purpose of this project to develop new continuous casting practices to eliminate or minimize oscillation marks in the cast surface. Oscillation marks can be related to subsurface defects in continuous cast slabs including entrapped argon bubbles, inclusions and elemental segregation. Oscillation marks also act as nucleation sites for surface cracking and transverse cracks often form in the roots of the oscillation marks. The presence of oscillation marks and the related defects found on the surfaces of products rolled from continuous cast slabs leads to the necessity for excessive slab surface treatment from spot scarfing to complete surface removal before hot rolling. Successful development of new practices has the potential to significantly reduce defects in cast product and to increase productivity and yield of the continuous caster.

PRIMARY RESEARCH ORGANIZATION(S):

Carnegie Mellon University
Department of Materials Science and Engineering
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PRINCIPAL INVESTIGATOR(S): Dr. Alan Cramb

PROJECT PARTICIPANTS: Dofasco
Gallatin Steel
Severstal N.A.
Stelco Inc.
Timken Company
US Steel
Center for Iron and Steelmaking Research

PROJECT DURATION: 36 Months

PROJECT START DATE: 11/11/04

PROJECT BUDGET (excluding AISI Project Mgmt.): \$380,500

TECHNICAL PROJECT MANAGER: W. Obenchain – AISI, Washington DC