

Continuous Casting Consortium

Reports

2008

University of Illinois at Urbana-Champaign

• *Metals Processing Simulation Lab* •

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2008 CCC Reports: Mold Fluid Flow

Transient mold fluid flow with well- and mountain- bottom nozzles in continuous casting of steel

R. Chaudhary, Go-Gi Lee, B. G. Thomas, and Seon-Hyo Kim

Flow Control with Local Electromagnetic Braking in Continuous Casting of Steel Slabs - Summary

BG Thomas and Kevin Cukierski

Flow Control with Local Electromagnetic Braking in Con Casting of Steel Slabs

Cukierski, K., and B.G. Thomas

Metals and Materials Transactions B, V. 39B, No. 1, 2008, pp 94-107

Using Nail Board Experiments to Quantify Surface Velocity in the CC Mold

Bret Reitow and Brian G. Thomas

AISTech 2008, Pittsburgh, PA, May 5-8, 2008.

Experimental and Computational Study of Multi-phase Fluid Flow in Nozzle and Mold during Continuous Slab Casting

Go-Gi Lee, PhD Thesis, Postech



2008 CCC Reports: Flow & Inclusion Entrapment

Asymmetric Multiphase Fluid Flow and Particle Entrapment in a Continuous Casting Mold

G.-G. Lee, H.-J. Shin, Brian G. Thomas, and S.-H. Kim

AISTech 2008, Pittsburgh, PA, May 5-8, 2008.

Particle Entrapment in the Mushy Region of a Steel Continuous Caster

Pfeiler, C., B.G. Thomas, A. Ludwig, M. Wu



2008 CCC Reports: Initial Solidification

Thermal-Mechanical Behaviour during Initial Solidification in Continuous Casting: Steel Grade Effects

J. Sengupta, C. Ojeda and B. G. Thomas

Prediction and control of subsurface hooks in continuous-cast ultra-low-carbon steel slabs

Go-Gi Lee, Ho-Jung Shin, Seon-Hyo Kim, Sung-Kwang Kim, Wung-Yuel Choi, and Brian G. Thomas

Heat Transfer

Investigating Mold Heat Transfer in Thin Slab Casting With CON1D

Santillana, B., B.G. Thomas, L.C. Hibbeler, A. Hamoen, A. Kamperman, W. van der Knoop, Ironmaker and Steelmaker, Vol. 5, No. 7 (July), pp51-63, 2008

Online Dynamic Control of Cooling in Continuous Casting of Thin Steel Slabs

B.G. Thomas, J. Bentsman, B. Petrus, S. Vapalahti, H. Li, A.H. Castillejos, and F.A. Acosta, Proc. NSF CMMI Conf, Knoxville, Tennessee, Jan. 7-10, 2008, 16p.

2008 CCC Reports: Stress and Cracks

Longitudinal Face Crack Prediction with Thermo-mechanical Models of Thin Slabs in Funnel Moulds

Lance Hibbeler, B. Santillana, B.G. Thomas, A. Hamoen, and A. Kamperman

Thermo-Mechanical Modeling of Beam Blank Casting

Lance C. Hibbeler, Seid Koric, Kun Zhu, Brian G. Thomas, and Clayton Spangler
AISTech 2008, Pittsburgh, PA, May 5-8, 2008.

Mold Distortion Simulation of BB2 at SDI

L. Hibbeler and B.G. Thomas, CCC Report, No. 200803, UIUC, 2008

Explicit Coupled Thermo-Mechanical Finite Element Model of Steel Solidification, Seid Koric, Lance C. Hibbeler, and Brian G. Thomas

Modeling of Stress, Distortion and Hot Tearing

Thomas, B.G., and M. Bellet, ASM Handbook, Vol 15, 2008

Thermo-mechanical models of steel solidification based on two elastic visco-plastic constitutive laws

Koric, S., and B.G. Thomas, J. Mat. Proc. Tech., V197, No.3, 2008, pp. 408-418.

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2008 CCC Reports: Other Heat Transfer

Heat Transfer During Melt Spinning of Al-7%Si Alloy on a Cu-Be Wheel

Sundararajan, A., and B.G. Thomas

Cast Shop Tech., TMS Annual Meeting, Light Metals Proceedings, 2008, pp. 793-810

3-D Numerical Study of Impinging Water Jets in Run Out Table Cooling Processes

Cho, M.J., B.G. Thomas, and P.J. Lee

Metals and Materials Transactions B, 2008

Effect of Geometry on Void Formation in Commercial Electroplating of Thin Strips to Copper

Okelman, M.K., B.G. Thomas, and M. Powers

Surface and Coatings Technology, Vol. 202, No. 17, 2008, pp 4153-4158.

Fundamental Study on Metal Embedded Micro Photonic Sensors

Li, X., D. Dornfeld, B.G. Thomas, and C.W. Wong

Proc. 2008 NSF CMMI Conf., Knoxville, Tennessee, Jan. 7-10, 2008, #0529361, 9p.