High Efficiency and Reliability and High Casting Speed on the Billet Casters at BSW J. BARBE (SUTEC Consultants, Saint-Etienne), France, A. VOLKERT, R. SCHWEIKLE (Badische Stahl Engineering, Kehl), Germany

Through Process Developments and Caster Enhancement at Corus Scunthorpe to Supply Bloom for Rail and Special Profile M.A. EATON, S. McINTOSH, A. ANDERSON, R. LONGBOTTOM (Corus Construction and Industrial, Scunthorpe), United Kingdom


Modernization of Continuous Casting Machine for Slabs No. 1 from Ispat Sidex - Galati, Romania D. ZORLESCU, L. MACARIE (Ispat Sidex, Galati), F. DEAC (Metallurgical Research Inst., Bucharest), Romania, B. RAKIPI, (Vesuvius Group, Kraainen, Belgium, M. STUMMER (Vesuvius Deutschland, Emmerich), Germany, V. MUNTEANU (Dunarea de Jos University, Galati), Romania

New "Clean Steel" Ladle Slide Gate Installed in Arcelor Chertal E. ANDRY (Cockerill-Sambre, Chertal), V. BOISDEQUIN (Vesuvius Systems Division, Ghlin), Belgium

TOME 2

SESSION 12 - Strip Casting

Effects of Process Parameters on the Fluid Flow and Solidification at Twin-Roll Strip Casting H.J. ODENTHAL, C. OHLER, H. PFEIFER, (RWTH Aachen), Germany

Direct Application of Direct Cast Steel Products J. WHITBREAD (Corus UK Ltd - R, D&T. Teesside Technology Centre), United Kingdom, W. SCHMITZ (Thysen Krupp Stahl AG, Duisburg), Germany, C. MARCHIONI (Arcelor Research, Maizières-les-Metz), France, C. MARIQUE, P. FOURNEAUX (CRM, Liège), Belgium, F. HAGEMANN (Wieland Werke AG), Germany

MAINSTRIP Twin Roll Casting Production Plant B. STEINER, M. GODAT, (MTAG Marti-Technologie AG, Emmenbrücke), Germany, A. SCHOLES (Corus UK Ltd - R, D&T. Teesside Technology Center), United Kingdom, T. STAUBLI (University of Applied Science of Central Switzerland), Switzerland

The CASTRIP® Process: Progress towards Commercial Strip Casting at Nucor Crawfordsville P. CAMPBELL, W. BLEJDE (Castrip LLC, Charlotte), R. WECHSLER, G. GILLEN, R. MAHAPATRA (Nucor Steel, Crawfordsville), USA

SESSION 13 - Nozzle and Steel Cleanliness Improvement

Development and Introduction of the Integrated Technology of Steel Refining and Modification in CC Tundish A.V. VOROBYOV, O.V. NOSOCHENKO, O.B. ISAYEV, L.S. LEPISKHOV, V.P. KRUTIKOV (PJSC Azovstal Iron and Steel works, Mariupol), Ukrainia

Development of Composite Anti-Clogging Nozzles for Continuous Casting of Steel B. PRASAD, J.K. SAHU, J.N. TIWARI, S.K. CHAUDHURI (OCL India Limited, Orissa), India

"A Real Clog-Free Nozzle", How the Self-Cleaning Nozzle does it? W. DAMEN, H. VISSER (Corus NL, Ijmuiden), The Netherlands, M. KENDALL (Heraeus Electro-Nite Int'l NV, Houthalen), Belgium
Some Keys to Reach Long Sequence Casting
M. BURTY, L. PEETERS (Arcelor, Sidmar N.V., Gent), Belgium, E. PERRIN (Arcelor, Sollac Méditerranée, Fos), France, S. MUNZER (Arcelor, SWB, Bremen), Germany, J. GERARD (Arcelor, Sollac Lorraine, Florange), T. COFFRE (Arcelor, Sollac Atlantique, Dunkerque), France, F. SCHADOW (Arcelor, EKO Stahl, Eisenhüttenstadt), Germany, J.M. VALCARCEL (Arcelor, Aceralia, Aviles Asturias), Spain

Visualisation of Steel Flow in the Continuous Casting Nozzle Using an Electromagnetic Technique
S. HIGSON, P. DRAKE (Corus UK Ltd - R, D&T. Teesside Technology Centre), United Kingdom

WEDNESDAY June 22, 2005

SESSION 14 - Fluid Flow & EMS Actuators (1)

Nippon Steel in-Mold Electro-Magnetic Stirrer "M-EMS" for Improving Slab Casting
S. KITTAKA, K. WATANABE, T. SATO, Y. MIURA (Nippon Steel Corporation, Hirohata), Japan

Multi-Mode EMS in Thick Slab Caster Molds and Effect on Coil Quality and Machine Performance
S. KUNSTREICH, P.H. DAUBY (Danieli Rotelec, Bagnolet), France, S.K. BAEK, S.M. LEE (Posco), Korea

Effect of Process Parameters Variation on CC Mould Hydrodynamics and Inclusion Behaviour
J.F. DOMGIN, A. DEZ, J.M. GALPIN, P. GARDIN (Arcelor Research, Maizières-les-Metz), France

Optimization of Mould Flow Patterns to improve Slab Quality and Operational Performance at Mittal Steel Ostrava (MSO)
M. ALLATT (Advent Process Engineering Inc., Barlborough), United Kingdom, T. MISCHINGER (MSO), M. PSZCZOLKA (Vesuvius Ceska Republik, Trinec), Czech Republic

SESSION 15 – Fluid Flow & EMS Actuators (2)

Recent Research and Technologies on Inclusion Removal in Ultra Low Carbon Steel
J. KUBOTA, M. SUZUKI, S. TAKEUCHI, Y. MIKI (JFE Steel Corporation, Chiba), Japan

Optimization of an EMBr for a Thin-Slab Caster
T. PEETERS, R. KOLDEWIJN, J. KROMHOUT, A. KAMPERMAN (Corus NL, IJmuiden), The Netherlands

The Effect of Stirring Intensity in the Mold of a billet Caster on Solidification Structure and Segregation in High Carbon Steel
J. MOREAULT, J. LIMOGES (Ispat Sidbec, Contrecœur), L. BEITELMAN (ABB Inc., Whitby), Canada

Swirling Flow Effect in Immersion Nozzle on Heat and Mass Transfer in Square and Round Billet Continuous Casting Mold
S. YOKOYA, M. TAKAGI (Nippon Institute of Technology, Saitama), Japan, P. JONSSON (Div. Metallurgy KTH Stockholm), Sweden, M. IGUCHI (Hokaido University), Y. TSUKAGUCHI (Corporate R&D Labs. Sumitomo Metal Industries Ltd.), Japan
SESSION 16 – Long Semis

Processes Control and Reliability Applied to High Characteristic Steels for Automotive Industry
J. MANCINI, D. ROBAT (Ascométal, Hagondange), S. GERARDIN (Ascométal-Creas, Hagondange), France

Development of Granulated Mold Fluxes and Automatic Feeding System for Near Net Shape Casting at Nucor-Yamato Steel
G. MATHIS, D. PANDA (Nucor-Yamato Steel Blytheville), USA

Optimization of Water Slot Design in Beam Blank Molds
J. JIANG, B.G. THOMAS (University of Illinois), USA, D. LORENTO (Accumold, Huron Park), Canada

Production of Wide Flange Beams up to 730 lbs/ft (1086 kg/m) at Nucor-Yamato Steel through Near Net Shape Casting
T. PATTERSON, T. MANNERING, D. PANDA, G. MATHIS (Nucor-Yamato Steel, Blytheville), USA

Pilot Development of High-Speed Casting of Bars with Ultra Fine Microstructure
J.M. JOLIVET, C. LOPES, J.L. JACQUOT (Arcelor Research, Maizières-les-Metz), P. JOLY (Arcelor, Cockerill-Sambre Chertal), Y. MATTHIJSSEN, P. NAVEAU (CRM, Liège), Belgium

SESSION 17 - Modelling and Lab Studies

Global Modelization of the Continuous Casting Process
J. BARCO, M. OJANGUREN, J. PALACIOS, C. OJEDA, M. SERNA (Fundacion Labein, Derio), V. SANTISTEBAN (Sidenor, Basauri), Spain

The Thermomechanical Modeling of Steel Slab Continuous Casting: a Useful Tool to Adapt Process Actuators
M. BELLET (Ecole Nat. Sup. des Mines, Paris), N. TRIOLET, M. BOBADILLA (Arcelor Research, Maizières-les-Metz), France

Development of Techniques utilising EMATs for Non-Contact Surface and Internal Inspection of As-Cast Semis
I. BAILLIE (Corus UK Ltd - R, D&T. Teesside Technology Centre), S. DIXON (The University of Warwick), United Kingdom

SESSION 18 - Modelling and E-learning

Micromechanical Evaluation of Intergranular Crack Growth under Continuous Casting Conditions

An Approach to Understanding the Formation of Surface Defects through Numerical Modelling of Casting Fluxes in-Service Behaviour
A. GOTTI, M. RIDOLFI, I. LUZZO (Centro Sviluppo Materiali, Rome), M. BEIRANA (Tenaris), Italy

Numerical Modeling of Macro Instabilities in the Continuous Casting Process
F. OBERMEIER, A. RUCKERT, R. SCHWARZE (TU Bergakademie, Freiberg), Germany

Learn How to Continuously Cast Steel on the Internet at Steeluniversity.org
D. NAYLOR (IISI International Iron and Steel Institute, Brussels), Belgium
A Major Step Ahead in Caster Safety with Extensive Use of Robotics in Continuous Casting Technology
J. PENN, F. WIMMER, J. LANSCHÜTZER, S. TANZER, H. THÖNE K. MÖRwald (VAI Anlagebau Austria, Linz), Austria

The Research and Developments of Strip Casting Process in Baosteel
Y. FANG, J. CUI, Y. YU, J.F. FAN (Baosteel Research Institute, Shanghai), P.R. China

Mechanical Development requests a high sophisticated Control System totally integrated in the Casting Operation and on the Simatic PCS7 Basis
H. WELKER (Siemens, Erlangen), Germany

Inverse Problem-based, Thermo-Mechanical Coupled Analysis considering Mould Friction for Round Billet of Continuous Casting
H. YIN, M. YAO, D.C. FANG (Dalian University of Technology, Dalian City), P.R. China

Study of the Defects due to the Interaction between the Lubrication Flux and the Solidified Shell of the Billets
R. CARLI (Prosimet, Filago), C. MAPELLI, A. GIACOBBE (Politecnico di Milano, Milano), Italy

The Influence of Mould Powders Properties on Heat Transfer in Continuous Casting
E. BRANDALEZE, L. CASTELLA (Instituto Argentino de Siderurgia, San Nicolás), E. BENAVIDEZ (Facultad Regional San Nicolás) Argentina

Color Coded Mold Powder for the Continuous Casting of Steel
J. MACHO, M. MCCLYMONDS, D. STURGIll (Stollberg), USA

Practical Results of Slab Mould Level Control revamping with latest Stopper Flow Control Techins
M. DUSSUD, F. MONTEGU, S. SEBEK (SERT, Decines), France

Effects of Mould Flux on the Solidifying Steel in the Meniscus Region of Continuous Casting Mould
M. SAFI, H. HAMADOU, D. SENK (RWTH, Aachen), Germany

Measurements of Bubble Diameters in the SEN - Water Model Experiments with a Sliding Gate and a Stopper Rod
P. PLANQUART, M.L. RIETHMULLER, (Von Karman Institute), Belgium, P. GARDIN (Arcelor Research, Maizieres-les-Metz), France

Fluid Flow and Mixing Effects in Continuous Casting Tundishes During Ladle Change
R. BÖLLING, A. BRAUN, R. KOITZSCH, H. PFEIFER, H.J. ODENTHAL (RWTH, Aachen), Germany

Increase in Casting Speed of Low Carbon and Peritecric Steel Grades at CST's Continuous Casting No 1
H. SILVA FURTADO, S. DE SOUZA SANTOS (C.S.T, Tubarao), Brazil

Evaluation of Anti-Clogging Actions at Continuous Casting
H. SILVA FURTADO, M. GALLO, M. FIALHO, M. BARCELOS (C.S.T., Tubarao), Brazil

Optimization of a Concasting Technology via a Dynamic Solidification Model of a Slab Caster
J. STETINA, F. KAVICKA, J. DOBROVSKA, L. CAMEK, M. MASARIK, J. HEGER, Z. FRANEK, V. KROL, J. SMID,
(Brno University of Technology, Brno), Czech Republic

Improvement of Quality of Concast Slabs as a Result of Investigation and Hydrodynamics of "Tundish-Mold" System in CCM
A. LAMUKHIN, S. ZINCHENKO, S. NIKONOV (JSC Severstal) A. KUKLEV, V. TINYAKOV, Y. AYZIN, V. DANILOV (Corad Ltd), Russia

Determination and Modeling of the EMS Effects on the Inner Metallurgical Microstructure of the Square Resulphurized Steels
C. MAPELLI, S. BARAGIOLA, W. NICODEMI (Politecnico di Milano), Italy
Condition Monitoring of the port Talbot Caster Utilising Process Control Data
R. CROSS (EPSRC Engineering Doctorate Centre in Steel Technology), M. JEFFORD (Corus Port Talbot), K. GOODE (Corus Workington), J. WATTON (University of Wales), United Kingdom

Effect of Slag Composition on Composition Control of Inclusion in Type 304 Stainless Steel
Y. EHARA, S. NAKAMURA, M. SASAKI (Nippon Metal Industry Co. Ltd Kinnuura), Japan

Continuous Casting: a Winning Solution for Stainless Steels, Alloys and base Nickel Superalloys Billets
P. WILLEMIN, O. SIRUGUE, F. PERRIN, W. MIHOUB (Arcelor, Imphy Alloys, Imphy), France

Crack Formation in Billet Casting: How Much Optimization of Mold Flux can help ?
S. TINTORI, R. CARLI, A. MONACI, M. LUNI, A. GIACOBBE (Prosimet, Filago), Italy

Improvement of Inner Structure Quality of Continuous Casted Slabs for Critical Destination
S. ZINCHENKO, A. LAMUKHIN, S. NIKONOV, V. ORDIN, M. PHILATO (SEVERSTAL, Cherepovets), Russia

Evaluation of Inclusions During Ladle Refining of Aluminum Killed Steels for the Automotive Industry
I. SCRIPNIC, J. BOLOTA, D. OLIVEIRA, M. CARBONI (Aços Villares S/A, Sao Paulo), Brazil

Characteristics and Formation Mechanism of Internal Cracks in Continuously Cast Slabs
Y.Y. ZHENG, G.D. XU, Q.C. TIAN (Baoshan Iron & Steel, Shanghai), P.R. China

New Methods (OES-PDA and PSEM) to Determine Cleanliness in Steel Samples of ULC and High Strength Steel Grades and the Correlation to Production Parameters
P. REISINGER, E. PISSENBERGER, A. PISSENBERGER, M. NUSPL (voestalpine Stahl, Linz), Austria

New Slag Detection System Improves Availability
A. LYONS, V. SPECHT, H. KELVESJÖ (MPC, Metal Process Control, Nyköping), Sweden

Corrosion Evaluation of Tundish Lining Refractories in Iranian Steel Plant
M. AMIN, B. ARFAEI (Materials and Energy Research Center, Tehran), Iran

Zirconium Boride Refractory with High Corrosion Resistance
S. KUWABARA, T. KODAMA, H. NAKAJIMA, T. ITO (Mitsubishi Heavy Industries, Ltd.), Japan,
Y. AYZIN, A. KUKLEV, A. LAMUKHIN, S. NIKONOV, S. ZINCHENKO, V. TINYAKOV (SEVERSTAL, Cherepovets), Russia

The Introduction of a New Slide Gate System at Saarstahl AG, Germany
R. BÜHLMANN, K. ACKERMANN (Stopinc Aktiengesellschaft, Hünenberg), Switzerland, A. HEINEN (Saarstahl AG, Völklingen), Germany