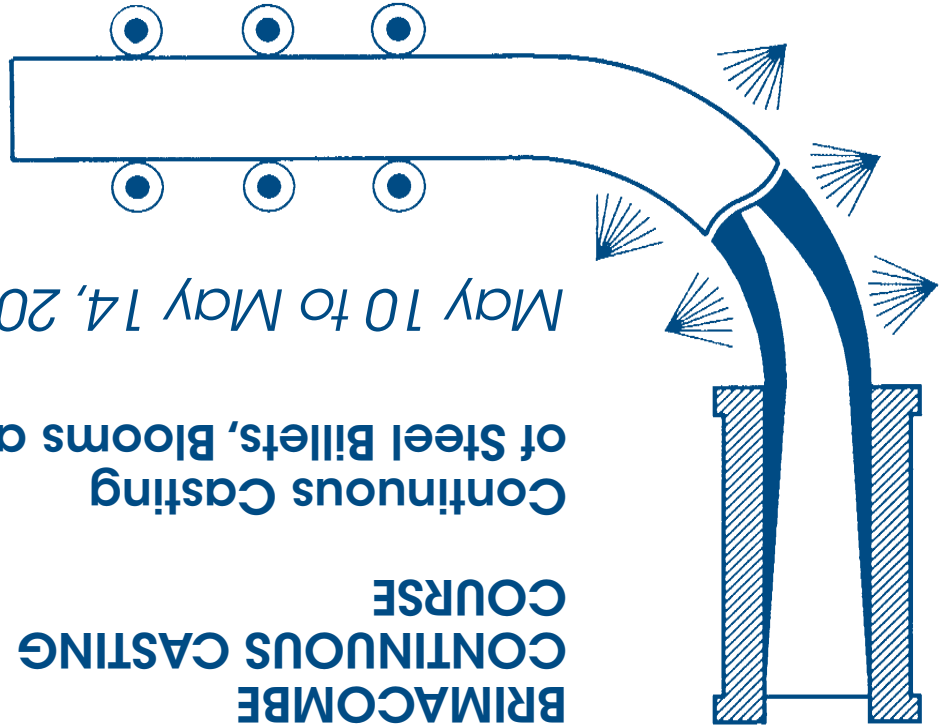


Renaissance Vancouver Hotel Harbourside
1133 West Hastings Street, Vancouver, B.C. Canada V6E 3T3



May 10 to May 14, 2010

Continuous Casting
of Steel Billets, Blooms and Slabs

**BRIMACOMBE
CONTINUOUS CASTING
COURSE**

BRIMACOMBE CONTINUOUS CASTING COURSE



Dr. J. Keith Brimacombe

sponsored by the **Brimacombe Continuous Casting Society**

www.brimacombecourse.org

Brimacombe Continuous Casting Course – 2010

Continuous Casting of Steel Billets, Blooms and Slabs

Time Monday, May 10 to Friday, May 14
7:00 a.m. to 6:00 p.m.

Place Renaissance Vancouver Hotel Harbourside
1133 West Hastings Street
Vancouver, B.C. Canada V6E 3T3

Fee **Either** \$2,750 CDN or \$2,600 US

WHO WILL BENEFIT

The Brimacombe Continuous Casting Course is designed for people who are concerned with controlling and improving the quality and production rate of continuously cast steel shapes. Persons who will benefit include shop floor operating personnel, quality control and research personnel, management personnel and individuals in support industries associated with continuous casting.

COURSE DESCRIPTION

Topics to be covered include chemical interactions, steel cleanliness, transfer operations, fluid flow, tundish metallurgy, mould design / behaviour, spray systems, heat extraction, solidification, segregation, electromagnetic stirring, crack formation and newer technologies such as thin slab casting. The course offers a practical understanding of the continuous-casting process and quality based on fundamental principles, and deals with problems commonly experienced in production. Much of what will be presented and discussed is based on our research, some of it unpublished, which spans a twenty-five year time period.

CORRESPONDENCE AND INFORMATION

The Brimacombe Continuous Casting Society
c/o Mary Jansepar, Course Coordinator
Materials Engineering
The University of British Columbia
Frank Forward Building
Room 309-6350 Stores Road
Vancouver, B.C. Canada V6T 1Z4

Telephone: (604) 822-2676 (Mary Jansepar)

Facsimile: (604) 822-3619

E-mail: info@brimacombecourse.org
(Mary Jansepar)

Website: www.brimacombecourse.org

COURSE CO-DIRECTORS:

Dr. Edward S. Szekeres

Dr. Indira V. Samarasekera

Course Lecture Schedule

Brimacombe Continuous Casting Course - 2010

Sunday, May 9th

6:00 - 9:00 p.m. COCKTAIL RECEPTION (with appetizers)
Renaissance Vancouver Hotel Harbourside
Ballroom Foyer, 2nd Floor

Monday, May 10th

7:00 - 7:30 a.m. Continental Breakfast and Registration
Confirmation, Ballroom Foyer
7:30 - 7:40 a.m. Welcome to Course (ESS)
7:40 - 7:50 a.m. Tribute to Keith Brimacombe (AWC)
7:50 - 8:45 a.m. Continuous Casting Systems (ESS)
8:45 - 9:00 a.m. BREAK
9:00 - 10:00 a.m. Issues in Caster Operation (AWC)
10:00 - 11:00 a.m. Inclusion Defects (AWC)
11:00 - 12:00 p.m. Chemistry Control (IDS)
12:00 - 1:30 p.m. LUNCH BREAK
1:30 - 2:30 p.m. Slags for Ladle and Tundish (IDS)
2:30 - 3:30 p.m. Slag Emulsification (AWC)
3:30 - 3:45 p.m. BREAK
3:45 - 4:45 p.m. Cleanliness Control (IDS)
5:00 p.m. Buses depart for cruise
6:00 - 9:00 p.m. COCKTAILS AND DINNER DURING
HARBOUR CRUISE (SPOUSES ARE
WELCOME)

Tuesday, May 11th

7:00 - 8:00 a.m. Continental Breakfast, Ballroom Foyer
8:00 - 10:00 a.m. Caster Operation to Minimize Oxide
Defects (AWC)
10:00 - 10:15 a.m. BREAK
10:15 - 12:00 p.m. Basic Aspects of Moulds (BGT)
12:00 - 1:30 p.m. LUNCH BREAK
1:30 - 2:30 p.m. Aspects of Mould Oscillation and
Transverse Cracking (ESS)
2:30 - 3:30 p.m. Mould Powders (AWC)
3:30 - 3:45 p.m. BREAK
3:45 - 5:30 p.m.* I Fluid Flow in Slab Moulds (BGT)
II Billet Operations (IDS & AWC)

NOTE: Audio and/or video taping
of lectures is not permitted.

*Groups divided into billets and
slabs/blooms for simultaneous sessions.

Wednesday, May 12th

7:00 - 8:00 a.m. Continental Breakfast, Ballroom Foyer
8:00 - 9:15 a.m. Strand Solidification and Shell Growth (ESS)
9:15 - 9:45 a.m. Electromagnetic Stirring and Braking (ESS)
9:45 - 10:00 a.m. BREAK
10:00 - 12:00 p.m. Segregation Problems (ESS)
12:00 - 1:30 p.m. LUNCH BREAK
1:30 - 2:45 p.m. Heat Transfer in Continuous Casting (BGT)
2:45 - 3:00 p.m. BREAK
3:00 - 4:30 p.m. High Temperature Mechanical Properties
of Steel (BGT)
6:00 - 9:00 p.m. OPTIONAL NO-HOST DINNER AT A LOCAL
RESTAURANT (SPOUSES ARE WELCOME)

Thursday, May 13th

7:00 - 8:00 a.m. Canadian Breakfast in the Vistas
8:00 - 9:15 a.m. Crack Formation (IVS)
9:15 - 10:15 a.m. Grade Transitions (BGT)
10:15 - 10:30 a.m. BREAK
10:30 - 11:15 a.m.* I Mould Friction in Billet Casting (ESS)
II Mould Behaviour, Oscillation Mark
Formation and its Influence on Cast
Quality in the Continuous Casting of
Slabs/Blooms (IVS)
11:15 - 12:30 pm* I Mould Maintenance and Optimum
Design and Operation (IVS)
II Slab Mould Behaviour (BGT)
12:30 - 2:00 p.m. LUNCH BREAK
2:00 - 3:15 p.m.* I Mould Tapers, Oil Lubrication and
Billet Quality (IVS)
II Slab Mould Tapers (BGT)
3:15 - 3:30 p.m. BREAK
3:30 - 4:30 p.m.* I Upsets in Billet Casting (IVS)
II On-line Detection of Breakouts and
Slab Quality Problems (BGT)
4:30 - 5:30 p.m.* Panel Discussion on Quality
I Billets (IVS)
II Slabs/Blooms (ESS/BGT)

Friday, May 14th

7:30 - 8:00 a.m. Continental Breakfast, Ballroom Foyer
8:00 - 8:45 a.m. Challenges in High Speed Casting (BGT)
8:45 - 9:00 a.m. BREAK
9:00 - 10:00 a.m. Spray Cooling and Related Defects (IVS)
10:00 - 11:30 a.m. Containment in the Submould Region (ESS)
11:30 a.m. COURSE ENDS

GENERAL INFORMATION

The Course will be held at the Renaissance Vancouver Hotel Harbourside in downtown Vancouver. The hotel is located at 1133 West Hastings Street, Vancouver, B.C. Canada V6E 3T3; telephone number: 604-689-9211; facsimile: 604-689-4358. Toll free number in North America: 1-800-905-8582. Hotel reservations can be easily made via our website. A limited block of rooms has been reserved for Course attendees at a reduced rate of \$239 CDN (city view); \$299 CDN (harbour view) single or double (twin) occupancy. To obtain the special rate be sure to **STATE YOU ARE ATTENDING THE BRIMACOMBE CONTINUOUS CASTING COURSE** when making reservations by phone. First night deposit by cheque or credit card is required. The special rate only applies to reservations made by April 15, so **MAKE YOUR RESERVATION EARLY!** Transportation between the Vancouver International Airport and the Renaissance Hotel is available via the "Airporter" bus (about \$14 CDN) or taxi (about \$32 CDN). Many excellent restaurants are located within easy walking distance of the hotel. For Customs, U.S. citizens must possess a valid US passport.

INSTRUCTORS

Dr. I.V. Samarasekera: President & Vice-Chancellor, University of Alberta, Edmonton. Previously Vice President Research, University of British Columbia. Expert in heat flow and stress analysis with extensive experience in mould design and its effect on quality.

Dr. A.W. Cramb: Provost & Senior Vice President for Academic Affairs, Illinois Institute of Technology, Chicago. Previously Dean of Engineering at RPI and for 18 years before that POSCO Professor of Iron and Steelmaking in the Department of Materials Science and Engineering at CMU. In addition, he spent seven years with both Inland Steel and Bethlehem Steel (now parts of Mittal Steel). His 28-year industrial and research career has focused in the area of continuous casting of steel.

Dr. B.G. Thomas: Wilkins Professor, and Continuous Casting Consortium Director, University of Illinois at Urbana-Champaign. Over 20 years experience conducting research on the continuous casting of steel. Expert in computational modeling.

Dr. I.D. Sommerville: Professor Emeritus, University of Toronto. Extensive experience in the thermochemistry of steelmaking and ladle metallurgy.

Dr. E.S. Szekeres: Principal Consultant, Casting Consultants, Inc. His experience includes over twenty years at U.S. Steel Research plus twenty-four years as an independent consultant on continuous casting. Expert on solidification and caster design.

REGISTRATION

Registration can be made by filling out the form on our website or completing the form below. In either case, the full fee must be sent to the address given below. Registration by phone is also possible providing the Course Fee is received one week prior to the start of the course. A cancellation charge of 20% of the fee will be levied for withdrawal of a registration within seven days prior to commencement of the Course. The Brimacombe Continuous Casting Society reserves the right to cancel or reschedule the course.

SEND COMPLETED REGISTRATION FORM EITHER BY FAX OR EMAIL OR APPLY ON-LINE AT www.brimacombecourse.org

THE BRIMACOMBE CONTINUOUS CASTING SOCIETY

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Materials Engineering

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Website: www.brimacombecourse.org

Registration Form

I enclose _____ to cover the fee for the Continuous Casting of Steel Billets, Blooms and Slabs, May 10–May 14, 2010
\$2,750 Canadian or \$2,600 U.S.

CHEQUE TO BE MADE PAYABLE TO THE **BRIMACOMBE CONTINUOUS CASTING SOCIETY**

First Name _____ Middle Initial _____ Surname _____

Position or Title _____

Company _____ Plant _____

Address _____

Telephone No. _____ Facsimile _____ E-mail _____

MAIL REGISTRATION FORM AND CHEQUE TO:

THE BRIMACOMBE CONTINUOUS CASTING SOCIETY

c/o Mary Jansepar, Course Coordinator

Materials Engineering

The University of British Columbia

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Room 309 - 6350 Stores Road

Vancouver, B.C. Canada V6T 1Z4

NO CREDIT CARD PAYMENTS ACCEPTED. FEE MUST BE RECEIVED BEFORE THE COURSE. PERSONAL CHEQUES ACCEPTED.

Bank Information:

The Royal Bank of Canada, 10th and Sasamat Branch

4501 West 10th Avenue, Vancouver, B.C. Canada V6R 2J2

Brimacombe Continuous Casting Society

Account Number: 07600-003-1016344

SWIFT CODE: ROYCCAT2