

Contents

Special Issue on "Continuous Casting of Steel"

Foreword

Contributing to the Special Issue on "Continuous Casting of Steel" .....Z. YAMAMOTO...1041

Technical Reviews

General Review of Recent Progress in Continuous Casting Equipment .....M. KODAMA...1043  
Instrumentation and Control System on Recent Continuous Casting

..... K. USHIJIMA, R. FURUKAWA, A. YOSHIDA, and H. OKAJIMA...1056

Development of Production and Operation for Slabcaster..... T. INOUE and M. OKA...1066

Current Status of Improvement of Quality and Application of Continuously Cast Slabs

..... K. KAWAKAMI...1080

Continuous Bloom and Billet Casters and Quality of Its Product .....T. MORI...1101

Technical Papers and Technical Reports

Development of Slab Continuous Casting Technology in N.K.K.

.....M. YAMAGA and N. HASEBE...1114

The Characteristics of Walking Bar Type Curvilinear Continuous Caster

..... S. KOYAMA, Y. NIMIYA, A. YASUNISHI, S. HARADA, and T. MORI...1121

Automatic Casting System Using Electromagnetic Mold Temperature Detector

..... A. YOSHIHARA, K. IDEUE, Y. SEKIGUCHI, S. SUZUKI, O. NISHIMURA, and K. SASAKI...1128

The Technique for High Speed Casting with High Availability in Slab Caster

.....M. MAEDA, K. NAKAI, H. OMORI, S. KOJIMA, T. KOSHIKAWA,  
Y. HABU, K. EMOTO, and Y. IIDA...1135

New Continuous Slab and Bloom Caster at Kashima Steel Works

.....Y. SUGITANI, M. HASHIO, M. KAWASAKI, T. KIMURA, and T. SAKASHITA...1145

Source of Exogeneous Inclusions and Reduction of Their Amount in Continuous Casting Process

..... T. KOMAI, K. MIYAMURA, M. OOSAKI, A. KUSANO, S. YAMADA,  
I. SHIMAZU, N. SATO, and T. YAMAMOTO...1152

A Numerical Analysis of Strains in Slabs and Forces on Rollers in

the Straightening Zone of Continuous Casting Machine

.....K. ONISHI, K. NAGAI, and M. WAKABAYASHI...1162

Analysis of Bulging in Continuously Cast Slabs by the Creep Model

..... H. FUJII, T. OHASHI, M. ODA, R. ARIMA, and T. HIROMOTO...1172

Hot Ductility in Steels in the Temperature Range between 900 and 600°C

—Related to the Transverse Facial Cracks in the Continuously Cast Slabs—

..... H. G. SUZUKI, S. NISHIMURA, J. IMAMURA, and Y. NAKAMURA...1180

Fundamental Study and Its Application of Surface Defects of Powder Cast Strands

..... K. KAWAKAMI, T. KITAGAWA, H. MIZUKAMI  
H. UCHIBORI, S. MIYAHARA, M. SUZUKI, and Y. SHIRATANI...1190

Factors Affecting the Formation of Shell and Longitudinal Cracks in

Mold during High Speed Continuous Casting of Slabs

..... H. NAKATO, M. OZAWA, K. KINOSHITA, Y. HABU, and T. EMI...1200

Influence of the Molten Powder Pool on the Longitudinal Surface

Cracks in Continuously Cast Steel Slabs

..... T. NAKANO, M. FUJI, K. NAGANO, S. MIZOGUCHI, T. YAMAMOTO, and K. ASANO...1210

Prevention of the Formation of Longitudinal Facial Cracks on Continuously

Cast Slabs by Improving Mold Powder and Mold Oscillation

..... T. SAKURAYA, T. EMI, T. IMAI, K. EMOTO, and M. KODAMA...1220

Improvement of Continuously Cast Slab Surface and Performance of Rolling the Slab Free from Surface Conditioning	
.....M. KITAMURA, T. SOEJIMA, S. KOYAMA, Y. MATUDA, J. ABU, Y. NIMIYA, and Y. YAO...	1229
Hot Charge of Continuously Cast Slabs	
.....T. UEDA, H. HIRAHARA, A. KUWABARA, T. WATANABE, and K. MATSUI...	1236
Pseudo-rimmed Steel by Strand Casting	
.....T. KOHNO, M. NAGASAWA, O. TSUBAKIHARA, K. HOSONO, K. ESAKA, and S. ISHITOBI...	1241
Qualities of Pseudo-rimmed Steel Sheet Manufactured by Strand Casting	
.....T. KOHNO, M. NAGASAWA, O. TSUBAKIHARA, K. HOSONO, K. ESAKA, and S. ISHITOBI...	1248
The Technical Development of a Large Cross-sectional Bloom Caster for Seamless Tubular Products	
.....M. TATE, T. TAMAKI, A. YAMAGAMI, H. NAKASHIMA, and Y. SASAJIMA...	1255
Operation and Quality Aspects of Large Section Mono-size Bloom Caster at Wakayama Steel Works	
.....H. NASHIWA, K. YOSHIDA, A. MORI, H. TOMONO, and K. TADA...	1262
Influence of Operating Conditions on Internal Quality of Large Cross Section Continuously Cast Blooms	
.....Y. IIDA, M. ONISHI, T. UEDA, S. OKANO, and Y. SHINSHO...	1269
Influence of Electro-magnetic Stirring at Mold on Negative Segregation in Continuously Cast Bloom.....	K. AYATA, K. NARITA, T. MORI, and T. OHNISHI...1278
Quality Improvement by the Application of a Stirrer (Direct Current and Static Magnetic Field Method) to Continuous Casting Bloom	
.....M. NAKATANI, T. ADACHI, Y. SUGITANI, S. KOBAYASHI, M. YOSHIHARA, and S. ISHMURA...	1287
Improving Solidification Structure of Continuously Cast Steel by Electromagnetic Stirring	
.....Y. UJIE, H. MAEDA, Y. ITOH, S. OGIYASHI, H. SEKI, K. WADA, and Y. ITOH...	1297
Effect of Deformation on the Formation of Internal Cracks in Continuously Cast Blooms	
.....K. NARITA, T. MORI, and J. MIYAZAKI...	1307
Round Billet Casting by Slab Caster for High Quality Seamless Tube Application	
.....K. YOSHIDA, T. NAGAHATA, H. TOMONO, K. KIMURA, and S. TSUJITA...	1317
Continuous Casting of Beam Blanks	
.....H. OMORI, T. UEDA, H. MIZOTA, M. YAO, Y. SHINJO, and T. FUJIMURA...	1324
Electric Arc Furnace, Ladle Refining Furnace and all-Bloom Continuous Casting Process	
.....H. NEMOTO, K. KAWAKAMI, Y. IREGAMI, E. SUNAMI, and Y. TAMAO...	1331
Continuous Casting for Wire Rods and Its Quality Problems	
.....K. YAMADA, Y. HASHIMOTO, T. FUJITA, Y. AOKI, and H. TADA...	1338
Continuous Casting of Special Steel Slabs	
.....K. SORIMACHI, A. KAWAHARADA, K. HAMAGAMI, K. KINOSHITA, Y. YOSHII, and M. SHIRAIISHI...	1345
Refining of the Solidification Structure of Continuously Cast 18% Cr Stainless Steel by Electromagnetic Stirring	
.....M. HASEGAWA, S. MARUHASHI, Y. MURANAKA, F. HOSHI, and M. KINUGASA...	1354
Continuous Casting of Small-size Austenitic Stainless Steel Billets	
.....K. YAMADA, T. WATANABE, K. ABE, and K. FUKUDA...	1363
The Equipment and Operation of Rotative Continuous Casting	
.....M. TATE, K. TACHIBANA, and A. KURIBAYASHI...	1370
Effects of Various Factors on the Stability of Casting in Horizontal Continuous Casting.....	Y. UMEDA, Y. SUGITANI, M. MIURA, and K. NAKAI...1377
Development of Horizontal Continuous Caster for Steel Billet	
.....Y. MIYASHITA, A. MIYAMOTO, M. ITO, K. TAGUCHI, T. KOYANO, and A. HONDA...	1387
Solidification of Steel Billets in the Mold of a Synchronized Rotary Type Continuous Caster	
.....H. KODAMA, E. NIYAMA, M. HORIGUCHI, T. KIMURA, and M. ENDO...	1394
Abstracts.....	1401, Notice to Members.....N151,
Proceedings of the Institute.....	N163