

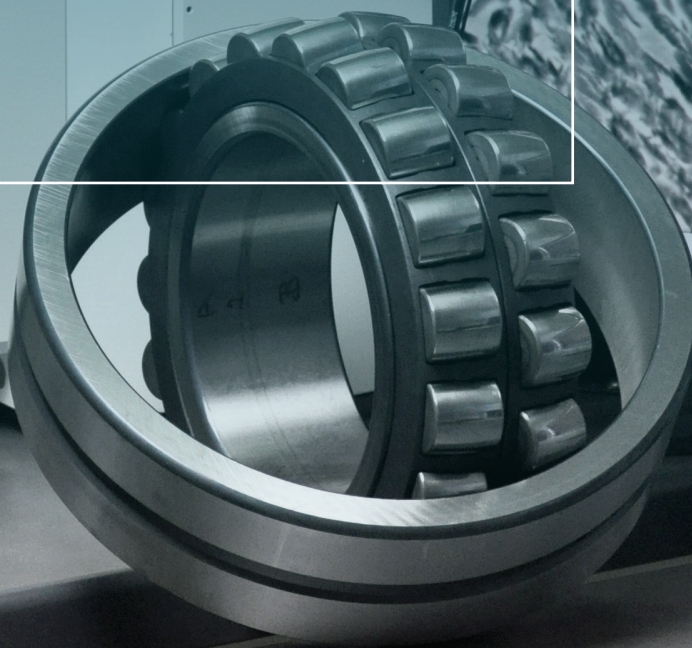


ASTM INTERNATIONAL  
Selected Technical Papers

# Bearing Steel Technologies: 10th Volume, Advances in Steel Technologies for Rolling Bearings

STP 1580

Editor:  
John M. Beswick





**SELECTED TECHNICAL PAPERS**  
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## Foreword

This compilation of *Selected Technical Papers*, STP1580 on *Bearing Steel Technologies: 10th Volume, Advances in Steel Technologies for Rolling Bearings* contains 31 papers presented at a symposium with the same name held in Toronto, Ontario, CN, May 6–8, 2014. The symposium was sponsored by the ASTM International Committee A01 on Steel, Stainless Steel and Related Alloys and Subcommittee A01.28 on Bearing Steels.

The Symposium Chairman and STP Editor is John M. Beswick, SKF Group Technology Development, Nieuwegein, Netherlands.

# Contents

Overview	vii
<b>Advances in Bearing Steel Steelmaking and Processing</b>	
On the Effect of Consumable Electrode Remelt Processes on Steel Cleanliness Peter Glaws and R. Scott Hyde	3
Thermodynamic Calculations Versus Instrumental Analysis of Slag-Steel Equilibria in an ASEA-SKF Ladle Furnace Kamrooz Riyahi Malayeri, Patrik Ölund, and Ulf Sjöblom	16
Steelmaking Technologies and With Focus on Micro Inclusion Development for 700 ktons Production of State-of the Art 1C-1.5Cr Bearing Steel Qian Gang, Li Guozhong, Xu Xiaohong, and Hans-Åke Munther	27
Modelling of Micro-Segregation in a 1C-1.5Cr Type Bearing Steel Peter F. F. Walker, Aidan Kerrigan, Matthew Green, Nina Cardinal, James Connell, and Pedro E. J. Rivera-Díaz-del-Castillo	54
<b>Steel Cleanliness Knowledge and Relationships with Rolling Bearing Functional Properties</b>	
Influence of Sulfur Inclusion Content on Rolling Contact Fatigue Life Markus Dinkel and Werner Trojahn	83
Microscope Inclusion Rating Standards and Fatigue Initiation Propensity Thore B. Lund and Susanne Stude	100
Non-Metallic Inclusion Density in Bearing Steel Characterized by Ultrasonic Testing F. Midroit, F. Merchi, and M. Meheux-Millot	116
Characterization of Non-Metallic Inclusions in Bearing Steels by Means of Focused Ion Beam Aldara Naveira Suarez	126

<b>Crack Initiation and Propagation Behavior Around the Defect in Steel Under Rolling Contact Fatigue</b>	147
Takeshi Fujimatsu, Toshifusa Nakamizo, Morihiko Nakasaki, and Norimasa Tsunekage	

<b>Improvement of the Rolling Contact Fatigue Resistance in Bearing Steels by Adjusting the Composition of Oxide Inclusions</b>	173
Masaki Shimamoto, Tomoko Sugimura, Sei Kimura, Akihiro Owaki, Masaki Kaizuka, and Yosuke Shindo	

## **New Bearing Steels for Improved Functional Properties**

<b>Improved Chemical Composition of Low Alloyed High Carbon Martensitic Bearing Steels for Higher Fatigue Strength</b>	189
Brigitte Clausen, Christoph Stöberl, Werner Trojahn, and Hans-Werner Zoch	

<b>Slip-Rolling Resistance of Alternative Steels Under High Contact Pressures in Engine Oils</b>	210
Mathias Woydt and Christian Scholz	

<b>Review of XD15NW (Through Hardening) and CX13VDW (Case Carburizing) Cost-Effective Corrosion Resistant Bearing Steels Grades</b>	239
Olivier Laurent, Jacques Bellus, Sylvain Puech, Franck Devilder, and Atman Benbahmed	

<b>Introduction of Nitrided M50 and M50NiL Bearings Into Jet Engine Mainshaft Applications</b>	259
Mark Rhoads, Mike Johnson, Keith Miedema, Jon Scheetz, and Jeff Williams	

<b>Enhanced Performance of Rolling Bearings by Improving the Resistance of Rolling Elements to Surface Degradation</b>	272
Hiroki Komata, Yasuhiro Iwanaga, Tohru Ueda, Koji Ueda, and Nobuaki Mitamura	

<b>Novel High-Carbon High-Vanadium PM Steel for High-Load Rolling Bearing Applications</b>	291
Mohamed Y. Sherif	

<b>Advantages and Shortcomings of Retained Austenite in Bearing Steels: a Review</b>	312
Christine Sidoroff, Michel Perez, Pierre Dierickx, and Daniel Girodin	

<b>High Integrity Powder Metallurgy for Demanding Bearing Applications</b>	349
F. Sandberg, J. Olofsson, D. Rébois, and S. Sundin	

## **Softening and Hardening Heat Treatment Physical Metallurgy**

<b>Accelerated Carbide Spheroidization of 100CrMnSi6-4 Bearing Steel by Hot Rolling</b>	371
Jaromir Dlouhy, Daniela Hauserova, and Zbysek Novy	

<b>Microstructure and Properties of Hardened 100CrMnSi6-4 Bearing Steel After Accelerated Carbide Spheroidization and Long-Duration Annealing</b>	389
Daniela Hauserova, Jaromir Dlouhy, and Zbysek Novy	
<b>Kinetics of Bainite Formation in 100Cr6 and Similar High-Carbon Steel Grades</b>	410
T. Sourmail, V. Smanio, and G. Auclair	
<b>Austempering Effects on the Rolling Contact Fatigue Characteristics of Bearing Steels</b>	421
Seon Ho Lee and Hee Jae Kang	
<b>Low Temperature Plasma Nitriding of Pyrowear 675</b>	444
Hitesh K. Trivedi and Ray Monahan	
<b>Heat Treatment Process for Martensitic Stainless Steel Pyrowear 675 for Improved Corrosion Resistance</b>	465
Hitesh K. Trivedi, Frederick Otto, Bryan McCoy, Rabi S. Bhattacharya, and Timothy Piazza	

### **Rolling Bearing Metallurgy for Wind Energy Applications**

<b>A Review: The Dilemma With Premature White Etching Crack (WEC) Bearing Failures</b>	487
Kenred Stadler, Junbiao Lai, and Reinder Hindrik Vegter	
<b>Material Qualification of Main Bearings for Large Wind Energy Turbines</b>	509
Marco Burtchen, Uwe Maschelski, and Bernd Lüneburg	

### **Developments in Fatigue and Rolling Contact Fatigue Testing**

<b>Mechanical Twinning in Aircraft Engine Bearing Steel</b>	525
J. R. Nygaard, R. H. Vegter, M. Rawson, P. Danson, and H. K. D. H. Bhadeshia	
<b>Flat Washer Test Practice—Statistical Analysis</b>	538
M. Millot-Meheux and E. Henault	
<b>Understanding Microstructural Transitions Occurring Under Rolling Contact Fatigue</b>	550
P. E. J. Rivera-Díaz-del-Castillo	
<b>Subsurface Material Response of Hypo Eutectoid Bearing Steels for Use in Energy Saving Rolling Bearings as a Substitute for Journal Bearings in Combustion Engines</b>	564
Sager Dave Sircar, Jürgen Gegner, Karl-Heinz Lang, Gerhard Poll, and Rainer Joos	
<b>Measurement of Residual Stresses in Ball Bearings by Synchrotron Radiation</b>	590
R. H. Vegter, T. Buslaps, Y. Kadin, and H. A. Verschoor	
<b>Author Index</b>	603
<b>Subject Index</b>	605

## Overview

This book is a compendium of selected technical papers (STP) from the *10th ASTM International Symposium on Bearing Steel Technologies* held in Toronto, Ontario, Canada, May 6–8, 2013. ASTM International has legacy of support to the bearing steel industry, a symposium on the subject being first held in 1946; see the seminal STP 70 and other STP's on the subject between 1974 and 2013 (STP 575, 771, 987, 1195, 1327, 1395, 1419, 1524 and 1548).

The ASTM Bearing Steel symposia are traditionally held in association with the ASTM A01 Committee Week and the A01.28 Subcommittee on Bearing Steel meetings. The remit for the Subcommittee A01.28 on Bearing Steels is to have jurisdiction over the standards for steels commonly used for ball and roller bearings. This subcommittee is responsible for preparing, reviewing and maintaining these standards and assuring that they reflect current technology.

Every bearing steel technologist aspires to participate in the ASTM International Bearing Steel Symposia and the 10th event had 35 presentations under the six section headings:

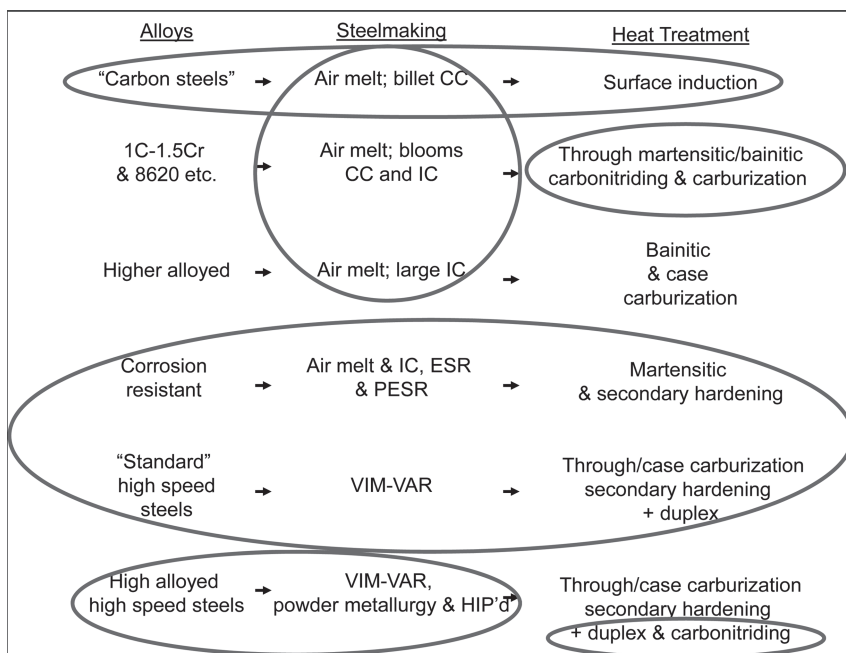
- Advances in Bearing Steel Steelmaking and Processing
- Steel Cleanliness Knowledge and Relationships with Rolling Bearing Functional Properties
- New Bearing Steels for Improved Functional Properties
- Softening and Hardening Heat Treatment Physical Metallurgy
- Rolling Bearing Metallurgy for Wind Energy Applications
- Developments in Fatigue and Rolling Contact Fatigue Testing

The purpose of STP1580 is to bring together the peer-reviewed papers to support the readers' understanding of the current state-of-the-art in rolling bearing steel technologies. A multitude of topics, within the bearing steel technologies, are covered in STP1580 as indicated in the bearing steel technology landscape figure:

From the symposium presentations, and in editing the book, a unique insight can be gained in rolling bearing steel technologies. This has resulted in some revised ideas on bearing steel steelmaking and industries micro cleanliness specification requirements, rating methods and limits for none re-melt bearing steels.

The ASTM on-line journal publications and this book would be impossible without the timely cooperation of the paper authors and peer reviewers. It is increasingly





## Bearing Steel Technology Landscape - Topics Covered in STP 1580

difficult to obtain good quality peer reviews and the STP1580 Reviewers did an exceptional job in maintaining the technical integrity of the publication.

The Symposium Chairman and ASTM International are especially grateful for the support from the following rolling bearing steel industry sponsors:

AB SKF	Sweden
Amsted Rail Company Inc.	USA
Ascometal	France
Carpenter Latrobe Specialty Metals	USA
FNSteel BV	The Netherlands
Georgsmarienhütte GmbH	Germany
Gerdau Special Steel North America	USA
Kobe Steel	Japan
Sanyo Specialty Steel Co. Ltd	Japan
Schaeffler Technologies GmbH	Germany
The Timken Company	USA

The 10th symposium was attended by 129 registered participants which is considerably higher than the industry recession years (respectively 65 and 95 in 2009 and 2011) but lower than, for example, the 2001 and 2005 symposia (respectively 165 and 180 attendees). It is obvious that the subject commands a high interest

level and the next ASTM international bearing steel symposium experience is anticipated in November 2016.

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