

The Complete Technology Book on Hot Rolling of Steel

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The hot rolling technology is the most widely used method of shaping metals and is particularly important in the manufacture of steel for use in construction and other industries. In metalworking, rolling is a metal forming process in which metal stock is passed through a pair of rolls. Rolling is classified according to the temperature of the metal rolled. If the temperature of the metal is above its re crystallization temperature, then the process is termed as hot rolling. The hot mills using plain rolls were already being employed by the end of the seventeenth century. But the industrial revolution in the nineteenth century saw a new horizon in steel making process, with the considerably expanded markets for rods, rails and structural section, provided further impetus to the development of hot rolling. The basic use of hot rolling mills is to shape up the larger pieces of billets and slabs into narrow and desired forms. These metal pieces are heated over their re crystallization temperature and are then moved between the rollers so as to form thinner cross sections. Hot rolling mill thus helps in reducing the size of a metal thereby molding it into the desired form and shape. Rolling mills perform the function to reform the metal pieces such as billet and ingot whilst maintaining its well equipped micro structure into bar, wire, sheet, strip, and plate. Hot rolled products are frequently categorized into plain carbon, alloy, high strength alloy, dual phase, electrical and stainless steels.

This book provides a descriptive illustration of pre treatment of hot metal, the basic principles of heat treatment, types of hot rolled products, principles of measurement of rolling parameters, steel making refractories, performance characteristics of transducers, causes of gauge variation , main factors affecting gauge performance, gauge control sensors and actuators, automatic gauge control systems, strip tension control system in cold mills, flat rolling practice cold rolling, pack rolling, steelmaking refractories, refining of stainless steels, special considerations in refining stainless steels etc.

This book is a unique compilation and it draws together in a single source technical principles of steel making by hot rolling process up to the finished product. This handbook will be very helpful to its readers who are just beginners in this field and will also find useful for upcoming entrepreneurs, engineers, personnel responsible for the operation of hot rolling mills, existing industries, technologist, technical institution etc.

Contents

1. Pre-Treatment of Hot Metal

Introduction

Desiliconization and Dephosphorization Technologies

Desulfurization Technology

Process Chemistry

Transport Systems

Process Venue
Slag Management
Lance Systems
Cycle Time
Hot Metal Sampling and Analysis
Reagent Consumption
Economics
Process Control
Hot Metal Thermal Adjustment
2. Heat Treatments for Hot-Rolled Products
Introduction
The Basic Principles of Heat Treatment
Quenching and Tempering
Annealing
Normalizing
Grain Refinement
Carbon Restoration and Carburizing
Heat Treatments for Stainless Steels
Facilities for Heat Treating Bars
The Heat Treating of Tubular Products
Equipment for Heat Treating Plates
The Heat Treatment of Structural Shapes, Rails and Wheels
3. Types of Hot-Rolled Products
Introduction
Plain-carbon Steels
Alloy Steels
High-Strength Low-Alloy (HSLA) Steels
Dual-phase Low-alloy Steels
Electrical Steels
Stainless Steels
Slabs, Blooms and Billets
Rails and Joint Bars
Structurals and Other Shapes
Wheel
Small Sections, Bars and Narrow, Flat-rolled Products
Rods
Tubular Products
Hot-Strip-Mill Products
4. Principles of Measurement of Rolling Parameters
Process of Measurement
Basic Methods of Measurement
Direct comparison method
Indirect comparison method
Nature of Measured Parameters in Rolling Mills
Purpose and Classification of Transducers
Purpose and Classification of Sensors
Performance Characteristics of Transducers
Static characteristics
Dynamic characteristics
Environmental characteristics
Reliability characteristics
Theoretical characteristics
Noise characteristics

Static Characteristics of Transducers

Error of measurement

Repeatability

Precision

Sensitivity

Linearity

Hysteresis

Threshold

Dead band

Resolution (Discrimination)

Drift (Creep)

Zero drift

Zero stability

Backlash

Static friction

Error band

Static Calibration of Measuring Systems

Dynamic Characteristics of Transducers

Zero order instrument

First order instrument

Second order instrument

Analysis of Errors

Systematic errors

Random errors

Propagation of Errors

Addition of values containing errors

Subtraction of values containing an errors

Multiplication of values containing errors

Division of values containing errors

Compatibility of Tolerances with

Measurement Technology

Signal sensing errors

Data transmission errors

Signal recovery errors

5. Causes of Gauge Variation

Analysis of Gauge Variation

Effect of roll gap setting

Effect of entry thickness

Effect of mill stiffness

Effect of workpiece stiffness

Main Factors Affecting Gauge Performance

Disturbances from mill mechanical and hydraulic equipment

Disturbances from mill control systems

Distributions from incoming rolled product

Gauge Variation in Hot Strip Mills

Effect of Strip Tension on Gauge

Effect of Mill Speed on Gauge

Effect of Mill Chatter on Gauge

Torsional mode

Third-octave vertical mode

Fifth-octave vertical mode

Definition and Causes of Roll Eccentricity

Design imperfections
Assembling imperfections
Roll and bearing distortions
Grinding imperfections
Roll gap control imperfections
Effect of Roll Eccentricity on Roll Force
Effect of Roll Eccentricity on Rolled Material
Thickness
Roll force mode
Position mode
Gaugemeter mode
Effect of Roll Eccentricity on Gauge Variation
in Tandem Cold Mills
6. Gauge Control Sensors and Actuators
Classification of Thickness Gages
Optical Thickness Gages
Comparison method
Shifting images method
Isotope Thickness Gages
X-ray Thickness Gages
Methods of Measurement of Roll Gap
Digital Induction Position Transducers
Magnetostrictive Position Transducers
Measurement of Roll Separating Force
Roll Separating Force Transducers
Load cells
Extensimeters
Pressure transducers
Measurement of Strip Tension
Measurement of Strip Velocity
Signal processor error
Fringe flare error
Temperature error of diode laser
Actuators for Roll Gap Control
7. Automatic Gauge Control Systems:
Close-Loop Control of Hydraulic Actuators
Dynamic Characteristics of Automatic
Control Systems
Step-function response
Frequency response
Phase shift
Gaugemeter Control
Gauge Deviation Control
Strip Tension Control System in Cold Mills
Roll Gap and Strip Tension Decoupling Control
Interstand Tension Control in Hot Strip
Mills with Loopers
Interaction of Strip Tension and Roll Gap Control
Looperless Tension Control
Three-Stage AGC for Tandem Cold Mills
Three-Stage AGC for Tandem Hot Strip Mills
Feedforward AGC for Tandem Cold Mills
Flow-Stress Feedforward AGC for Tandem

Cold Mills
Non-Interactive AGC for Tandem Cold Mills
Automatic Tension and Gauge Control Systems
Mass flow gauge calculating system
Gauge and tension control system
Dynamic gauge control system
High/Low Frequency AGC
Effect of Roll Speed Control Response on
AGC Performance
Feedforward AGC for Hot Tandem Mills
Feedforward Head-End Gauge Control System
Features of Advanced Gauge Control Systems
Roll Eccentricity Control Methods
Passive roll eccentricity control methods
Active roll eccentricity control methods
Preventive roll eccentricity control methods
Dead Band Method
Roll Force Method
Fourier Analyzer of Roll Eccentricity (FARE)
Method
Flying Gauge Change
8. Rolling
Introduction
Flat Rolling
Frictional forces
Roll force and power requirement
Example: Calculation of roll force and torque
Roll deflections
Spreading
Flat-Rolling Practice
Cold rolling
Pack rolling
Defects in rolled plates and sheets
Other characteristics
Residual stresses
Tolerances
Surface roughness
Gage numbers
Rolling Mills
Rolls
Lubricants
Shape-Rolling Operations
Ring rolling
Thread rolling
Production of Seamless Tubing and Pipe
Rotary tube piercing
Continuous Casting and Rolling
Minimills
9. Steelmaking Refractories
Refractories for Oxygen Steelmaking Furnaces
Introduction
Balancing Lining Wear
General Considerations

Areas of Severe Wear
Wear-Rate Measurements
Zoned Linings by Brick Type and Thickness
Refractory Construction
Furnace Burn-In
Wear of the Lining
Considerations of Slag Formation
Other Factors Affecting Lining Life
Hot Metal Differences
Scrap Variations
Tap Temperature Requirements
Reblows and Heat Times
Lance/Tuyere Design and Practices
Production Rates
Lining Life and Costs
BOF Slag Coating and Slag Splashing
Slag Coating Philosophy
Magnesia Levels and Influences
Material Additions
Equilibrium Operating Lining Thickness
Other Refractory Maintenance Practices
Laser Measuring
Slag Splashing
Lance Buildup
Slag Splashing Augmented by Gunning
Refractories for Electric Furnace Steelmaking
Electric Furnace Design Features
Electric Furnace Zone Patterns
Hearth
Slagline
Upper Sidewall
Taphole Refractories
Roof
Electric Furnace Refractory Wear Mechanisms
Corrosion
Oxidation
Erosion
Melting
Hydration
Spalling
Conclusion
Refractories for AOD and VOD Applications
Background
AOD Refractories
Life and Wear Rates
AOD Lining Construction and Zoning
Safety Lining
Working Lining
Bottoms
Tuyere Zone "Knapsacks"
Walls and Slagline
Vessel/Cone Flange and Seal
Cone

Pour Spouts
Preheating of Linings
Process Variables Significantly Affecting life
Slag Control
Transfer Slag
Decarburization Slag
Reduction Slag
Tuyere Knurdle Control
Temperature
Back Titt
VOD Refractories
Lives and Wear Rates
VOD Lining Construction and Zoning
Safety Lining
Backfill
Working Lining
Bottoms
Bottom/Wall Impact Pads
Stir Plug/Blocks and Well Blocks
Walls
Main Slagline plus Sidewall and Slagline Stir Pads
Upper Slaglines
Freeboard
Lip Rings
Preheating of Linings
Acknowledgments
Refractories for Ladles
Function of Modern Steel Ladle
Ladle Design
Ladle Refractory Design and Use
Stream Impact Pad
Bottom and Lower Barrel Refractories
Barrel
Slagline
Ladle Refractory Construction
Refractory Stirring Plugs
Refractories for Degassers
10. Refining of Stainless Steels
Introduction
Special Considerations in Refining Stainless Steels
Selection of a Process Route
Raw Materials
Melting
Electric Arc Furnace Melting
Converter Melting
Dilution Refining Processes
Argon-Oxygen Decarburization (AOD) Converter Process
K-BOP and K-OBM-S
Metal Refining Process (MRP) Converter
Creusot-Loire-Uddeholm (CLU) Converter
Krupp Combined Blowing-Stainless (KCB-S) Process
Argon Secondary Melting (ASM) Converter
Sumitomo Top and Bottom Blowing

Process (STB) Converter
Top Mixed Bottom Inert (TMBI) Converter
Combined Converter and Vacuum Units
Vacuum Refining Processes
Direct Stainless Steelmaking
Equipment for EAF-AOD Process
Vessel Size and Shape
Refractories
Tuyeres and Plugs
Top Lances
Gases
Vessel Drive System
Emissions Collection
Vessel Operation
Decarburization
Refining
Process Control
Post-Vessel Treatments
Summary
11 . The Instrumentation and Computer Control
of Hot Mills
Introduction
Pyrometers
Thickness Gaging
Monitoring the Profile of Hot-rolled Strip
Measuring the Flatness of Hot-rolled Strip
Width and Length Gaging of Rolled Products
The Measurement of Rolling Force
Automatic Control of Blooming and Slabbing Mills
The Control of Billet, Rod and Bar Mills using Microcomputers
Automatic Gage Control
Computer Control of Plate Mills
Hot-Strip-Mill Automation
Finishing Mill Setup
Finishing-Temperature Setup
Finishing-Temperature Control
Ciling-Temperature Setup and Control
Roughing-Mill Setup
Edger Setup
Mill Pacing
Reheat-Furnace Control
12. Overview of Steelmaking Processes and their Development
Introduction
Bottom-Blown Acid or Bessemer Process
Basic Bessemer or Thomas Process
Open Hearth Process
Oxygen Steelmaking
Electric Furnace Steelmaking
13 Structural Changes in Steel During Hot Rolling 414
Structural Changes During Reheating
Grain Restoration Processes
Dynamic Restoration Process
Static Restoration Process

Effect of Initial Grain Size on Static Recrystallization
Effect of Temperature and Microalloying
Effect of Amount of Deformation
Recovery
Partial recrystallization
Complete recrystallization
Factors Affecting Critical Reduction for Recrystallization
Grain Growth After Deformation
Structural Changes in Steel During Cooling
Effect of Steel Structure on Flow Stress
14. Steel Heating for Hot Rolling
Purpose of Heating Process
Requirements for Heating Process
Heat Transfer in Ingots
Mold Cooling Time
Air Cooling Time
Types Of Soaking-pit Furnaces
Regenerative Pits
Continuous-fired Pits
Electric Soaking Pits
Heat Transfer In Soaking Pits
Batch-type Slab Reheating Furnaces
Continuous Reheating Furnaces
Fuel-firing on Continuous Reheating Furnaces
Analysis of a Continuous Heating Process
Hot Slab Charging
Effects of Skid System on Heating
15. Heat Transfer During the Rolling Process
Workpiece Temperature Change in Hot Strip Mill
Temperature Loss due to Radiation
Temperature Loss due to Convection
Temperature Loss due to Water Cooling
Temperature Loss due to Conduction to Work Rolls
Temperature Rise due to Mechanical Work
Intermediate Reheat Facilities
Thermal Covers
Heat Transfer in Reradiating Heat Covers
Heat balance for metallic shield
Heat transfer through Insulation
Heat balance for outer metallic panel
Heat Transfer in Coilbox
16. Thermomechanical Treatment Combined
with Rolling
Thermomechanical Treatment of Steel
U.S. Classification of TMT
Russian Classification of TMT
Standard Heat Treatment (SHT)
Thermomechanical Treatment (TMT)
Low Temperature Thermomechanical Treatment
High Temperature Thermomechanical
Treatment (HTMT)
Combined Thermomechanical Treatment (CTMT)
Preliminary Thermomechanical Treatment (PTMT)

Mechanico-Thermal Treatment (MTT)
Thermomechanical Treatment During Rolling
Conventional hot rolling
Controlled rolling
Low finishing temperature rolling
Types of Controlled Rolling Processes
Structural Changes in Steel During Controlled Rolling
Deformation in recrystallization region
Deformation in non-recrystallization region
Deformation in the gamma-alpha region
Structural Changes in Steel During Continuum
Rolling
Structural Changes in Steel During Controlled
Cooling
Effect of Alloying Elements in Controlled Rolling
Controlled Rolling in Hot Strip Mills
Precipitation Strengthening
Hot Rolling of Acicular Ferrite Steel
Hot Rolling of Dual-Phase Steel
Finish rolling temperature
Intermediate temperature
Coiling temperature
Controlled Rolling of Arctic Grade Steel
Effect of slab reheating and finishing temperatures
Ferritic Rolling
Accelerated Cooling
Multipurpose Accelerated Cooling System
On-Line Accelerated Cooling (OLAC)
Dynamic Accelerated Cooling
RAC Process
Cold Rolling and Annealing of Steel
Temper Rolling of Steel
Tin mill products
High-strength cold-rolled sheets
Electrical sheets
Deep-drawing Sheet
17. Oxygen Steelmaking Processes
Introduction
Process Description and Events
Types of Oxygen Steelmaking Processes
Environmental Issues
Sequence of Operationsâ€™Top Blown
Plant Layout
Sequence of Operations
Scrap Handling
Hot Metal Pouring
Hot Metal Treatment
Charging the Furnace
Computer Calculations
Oxygen Blow
Flux Additions
Final Oxygen Adjustments and Dynamic Sensors
Turndown and Testing

Corrective Actions
Quick Tap Procedures
Tapping
Slagging Off and Furnace Maintenance
Shop Manning
Hot Metal
Charging Crane
Scrap
Furnace and Charging Floor
Flux Handling
Maintenance
General Labor
Chemistry Lab
Refractory Maintenance
Relines and Major Repairs
Ladle Liners
Management and Clerical
Raw Materials
Hot Metal
Composition
Determination of Carbon and Temperature
Hot Metal Treatment
Weighing
Scrap
High Metallic Alternative Feeds
Oxide Additions
Iron Oxide Materials
Waste Oxides
Fluxes
Burnt Lime
Dolomitic lime
Limestone
Fluorspar
Oxygen
Process Reactions and Energy Balance
Refining Reactions in BOF Steelmaking
Carbon Oxidation
Silicon Oxidation
Manganese Oxidation
Phosphorus Oxidation

Sulfur Reaction
Slag Formation in BOF Steelmaking
Mass and Energy Balances
Determination of the Flux Additions
Determination of Oxygen Requirements
Determination of the Weight of Iron-Bearing
Materials
Determination of the Gases and Fumes Produced
Determination of the FeO in the Slag
Tapping Practices and Ladle Additions
Process Variations
The Bottom-Blown Oxygen Steelmaking or

OBM (Q-BOP) Process
Plant Equipment
Raw Materials
Sequence of Operations
Process Characteristics
Product Characteristics
Mixed-Blowing Processes
Bottom Stirring Maintenance Problems
Bottom Plug/Nozzle Configurations
Oxygen Steelmaking Practice Variations
Post-Combustion Lance Practices
High Scrap Melting Practices
Slag Splashing Refractory Maintenance
Effects of Desulfurized vs. Non-Desulfurized Hot Metal
Process Control Strategies
Static Models
Fundamentals of the Static Charge Model
Operation of the Static Charge Model
Statistical and Neural Network Models
Dynamic Control Schemes
Gas Monitoring Schemes
Optical and Laser Based Sensors
Sensor or Sub-Lances
Drop-in Thermocouples for Quick-Tap
Sonic Analysis
Lance Height Control
Measurement of Lance Height
Environmental Issues
Basic Concerns
Sources of Air Pollution
Hot Metal Reladling
Desulfurization and Skimming of Hot Metal
Charging the BOF
Blowing (Melting and Refining)
Sampling and Testing
Tapping
Materials Handling
Teeming
Maintenance and Skull Burning
Relative Amounts of Fumes Generated
Other Pollution Sources
BOF Slag
BOF Dust and Sludge
Summary
18. Alternative Oxygen Steelmaking Processes
Introduction
General Principles and Process Types
Specific Alternative Steelmaking Processes
Energy Optimizing Furnace (EOF)
AISI Continuous Refining
IRSID Continuous Steelmaking
Trough Process
Other Steelmaking Alternatives

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