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. Steelmaking is the second step in producing steel from iron ore. There are three primary steel making processes: open hearth steel making, oxygen steel making and electric furnace steel making. There are two main raw materials used in making of steel; hot metal which is a molten blast furnace iron and scrap which consists of the byproducts of steel fabrication and also of the worn out, broken, or discarded items containing iron or steel. Open hearth process allows high flexibility in regard to a composition of raw material. The most appealing characteristic of the Open hearth furnace is the rapid production of large quantities of basic steel, used for example to construct high rise buildings. Basic oxygen steelmaking also known as the oxygen converter process is a method of primary steelmaking in which carbon rich molten pig iron is made into steel. Hot metal is the principal material used in the BOS (Basic Oxygen Steelmaking) process. Blowing oxygen through molten pig iron lowers the carbon content of the alloy and changes it into low carbon steel. There are three important types of Electric furnace; A.C (alternating current) direct arc electric furnace, D.C. (direct current) direct arc electric furnace and induction electric furnace. The casting process basically involves pouring molten metal into a mold patterned after the part to be manufactured, allowing cooling and removing the metal from the mold. There are various hot mills involved in the production of steel plate mill, hot strip mill, bar and rod mills etc. Techniques of steelmaking have undergone vast changes in scale and new processes have been developed to meet the demands of speed, quantity and quality. The steel industry has had a long history of development, yet, despite all the time that has passed, it still demonstrates all the signs of longevity. Rapid rise in production has resulted in India becoming the 5th largest producer of steel.

Some of the fundamentals of the book are fusion welding processes, arc welding processes: consumable electrode, arc welding processes, width change by rolling and pressing, metallurgical defects in cast slabs and hot rolled products, primary steel making processes, open hearth steel making, oxygen steel making, electric furnace steel making, chemical formulas of steel making, optimization of primary steel making process, secondary steel making processes, methods of continuous casting of thick slabs, optimization and control of width, fundamentals of metal casting, steel making technology, basic principles of width change, types of mills used for the rolling of plates, quality assurance, testing, and inspection etc.

New ideas continue to revolutionize the steel producing process today as much as they did a hundred years ago. The present book covers latest technology of steel rolling, which will give a new path to entrepreneurs
and existing units. It is hoped that this book will be resourceful to researchers, design engineers, technocrats, new entrepreneurs, institutional libraries, training institutes etc.

Contents

CHAPTER 1
FUSION WELDING PROCESSES
Introduction
Oxyfuel Gas Welding
Types of flames
Filler metals
Welding practice and equipment
Process capabilities
Arc-Welding Processes: Consumable Electrode
Shielded metal-arc welding
Process capabilities
Submerged arc welding
Process capabilities
Gas metal-arc welding
Process capabilities
Flux-cored arc welding
Process capabilities
Electrogas Welding
Process Capabilities
Electroslag Welding
Process capabilities
Electrodes
Electrode coatings
Arc-Welding Processes
Nonconsumable Electrode
Gas tungsten-arc welding
Process capabilities
Atomic hydrogen welding
Plasma-arc welding
Process capabilities
Thermit Welding
Process capabilities
Electron-Beam Welding
Process capabilities
Laser-Beam Welding
Process capabilities
Cutting
Oxyfuel gas cutting
Process capabilities
Arc cutting
Welding Safety

CHAPTER 2
GRINDING AND ABRASIVE PROCESSES
Grinding and Abrasives
Practices
Processes
Cylindrical Grinder
Internal Grinders
Surface Grinding
Tool and Cutter Grinders
Honing
Lapping
Superfinishing
Abrasive-Belt Grinding
Mass Media Finishing
Abrasive-Media Flow Deburring Machine
Miscellaneous Finishing Operations
Wire Brushing
Polishing
Buffing
Abrasives, Grinding Wheels, and Stones
Materials
A. Natural
B. Manufactured
Grinding Wheels
Bonding Processes
Vitrified process
Silicate process
Shellac process
Rubber process
Bakelite or resinoid process
Wheel Selection
Size and shape of wheel
Type of abrasive
Grain size of abrasive particles
Grade or strength of bond
Structure of grain spacing
Type of bond material
Coated Abrasives
Mass Media Abrasives

CHAPTER 3
WIDTH CHANGE BY ROLLING AND PRESSING
Methods of Width Change by Rolling
Vertical Edgers
Examples of edging practice
Slab Sizing Mills
Effect of Edging Practice on Workpiece End shape
Effect of Edging Practice on Workpiece Metallographic Properties
Edging in Finishing Mills
Methods of Width Enlargement by Rolling
Width Enlargement with Tapered Rolls
Classification of Sizing Presses
Design of Short-Tool Start-Stop Sizing Presses
Performance of Short-Tool Start-Stop Sizing Presses
Flying Type Sizing Presses
Rocking Type Sizing Presses
CHAPTER 4
METALLURGICAL DEFECTS IN CAST SLABS AND
HOT ROLLED PRODUCTS
Classification of Defects in Cast Slabs
Internal Defects in Slabs
Segregation
Non-metallic inclusions
External Cracks in Slabs
Surface Defects in Slabs
Slab Shape Defects
Scaling of Steel During Reheating
Scaling Rate
Effect of the Atmosphere on Scaling
Effect of Residual and Alloying Elements on Scaling
Scaling and Decarburization
Scaling of Steel During Roughing Passes
Scaling of Steel During Finishing Passes
Scaling of Steel During Coiling
Classification of Scale
Primary and Heavy Primary Scales
Furnace Scale
Refractory Scale
Secondary Scale
Red Oxide Scale
Scale Related to Descaling Process
Scale Related to Roll Wear
Contraction Gouges
Scratches and Gouges
Slivers

CHAPTER 5
PRIMARY STEEL-MAKING PROCESSES
Raw Materials
Open-Hearth Steel-making
Oxygen Steel-making
Top-blown (BOP) process
Bottom-blown (Q-BOP) process.
Combination-blown process
Electric-Furnace Steel-making
Chemical Formulas of Steel-making
Chemistry of Refining
Affinity for Oxygen
Basic And Acid Steel-making
Deoxidation of Steel
Optimization of Primary Steel-making Process
Secondary Steel-making Processes
Purpose of Secondary Steel-making
Vacuum Stream Degassing
Recirculation Degassing
Vacuum Ladle Degassing
Argon-Oxygen Decarburization
CHAPTER 8
STEEL MAKING TECHNOLOGY
Principle of Gauge Control
Causes of Gauge Variation
Actuators for Roll Gap Control
Methods of Measurement of Roll Gap
Position Sensors
Closed Loop Control of A Hydraulic Actuator
Dynamic characteristics of Roll Gap Control
Gaugemeter control
Differential Gauge Control
Spacer Gauge Control
Gauge Deviation Control
Strip Tension Control System
Three Stage AGE for Tandem Cold Mill
Feed-forward AGC for Tandem Cold Mill
Flow-Stress Feed-Forward AGC
Non-Interactive AGC
Automatic Tension and Gauge Control System
Interstand Tension Control in Hot Strip Mills
Three-Stage AGC for Tandem Hot Strip Mill
Feed-Forward AGC for the Hot Tandem Mill
Compensation for Imperfection of Mill Equipment
Modeling of Dynamic Characteristics of HAGC
Block Diagram of a Single Stand HAGC
Position Error Amplifier
Lead-Lag Network
Current Controller
Servovalve
Hydraulic Actuator
Mill spring
Mill Stiffness and Mill Structure Weight
Servovalve Droop
Transducers
Actuator Pressure and Force
Mill Stiffness Multiplier
Transfers Functions of Synthesized Blocks
Amplitude Ratios and Phase Shifts of Individual Blocks
Frequency Response Characteristics of Control System
Position Errors and Control Margins
Time Domain Response Characteristics
Compensation of Control System
Compensation for Material Stiffness
Compensation for Oil Height in Actuator
CHAPTER 9
BASIC PRINCIPLES OF WIDTH CHANGE
Lateral Spread of Initially Flat Workpiece
Main Factors Affecting Lateral Spread
Effect of Slab Initial Thickness on Lateral Spread
Effect of Friction on Lateral Spread
Edging with Flat Rolls
Main Parameters of Dog Bone Shape
Edging Followed by Reduction in Thickness
Effective Width Reduction and Edging Efficiency
Edging with Grooved Rolls
Distortion of Workpiece Plan View
Shape of Workpiece Ends
Buckling
Edge Cross- Sectional Shape

CHAPTER 10
PLATE MILLS
Introduction
Types Of Mills Used for The Rolling of Plates
Plate-Mill Design
The Levelling of Plates
The Cooling, Marking and Cutting of Plates
The Ultrasonic Inspection and Gaging Of Plates
Modern Plate-Mill Installations

CHAPTER 11
HOT STRIP MILLS
Introduction
Steckel Hot Mills
Planetary Mills
Sendzimir Planetary Mills
Single Planetary Mills
The Krupp-Platzer Planetary Mill
Semi-Continuous Hot-Strip Mills
Semi-Continuous “Three-Quarter” Hot-Strip Mills
Continuous Hot-Strip Mills
Roughing Trains
Coilboxes In Hot-Strip Mills
Crop Shear And Descaling Unit
Finishing Trains
Runout Tables and Strip-Cooling Systems
Coilers

CHAPTER 12
QUALITY ASSURANCE, TESTING, AND INSPECTION
Introduction
Product Quality
Quality Assurance
Total Quality Management
Quality engineering as a philosophy
Deming methods
Taguchi methods
Juran methods
The ISO 9000 standard
Statistical Methods of Quality Control
Statistical quality control
Statistical Process Control
Control charts
Process capability
Acceptance Sampling and Control
Reliability
Nondestructive Testing
Liquid penetrants
Magnetic-particle inspection
Ultrasonic inspection
Acoustic methods
Radiography
Eddy-current inspection
Thermal inspection
Holography
Chapter 13
BAR AND ROD MILLS
Introduction
The Evolution Of Merchant And Bar Mills
The Development Of Rod Mills
â€œJumpingâ€œ Three-High Stands
â€œHousinglessâ€œ Stands for Bar And Rod Mills
The ContiLoop Arrangement Of Roll Stands
â€œNo-Twistâ€œ Mills
The Three-Roll Planetary Mill
Kocksâ€™ Three-Roll Rod And Bar Mills
Guides
Flying Shears
Cooling Beds
Coiling Facilities
The Stelmor Process
The â€œEasy-Drawâ€œ (E.D.) Process
The Design Of Modern Merchant Mills
Modern Rod Mills

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