AN ISO 9001 : 2015 CERTIFIED COMPANY

The Complete Technology Book on Bricks, Cement and Asbestos

FREE SAMPLE: contents and introduction of the 720-page book
Price: Rs 1,400 | US$ 37.83

Order the full book >

AN ISO 9001 : 2015 CERTIFIED COMPANY

Author: NPCS Board of Consultants & Engineers
Format: paperback
Code: NI193
Pages: 720
Price: Rs 1,400 | US$ 37.83
Publisher: NIIR PROJECT CONSULTANCY SERVICES
Shipping: 5 days

About the Book

Bricks, cement and asbestos have major role in building and road construction. Construction industry is the largest consumer of material resources, of both the natural ones (like stone, bricks, cement, lime) and the processed and synthetic ones. Each material which is used in the construction, in one form or the other is known as construction material (engineering material). No material, existing in the universe is useless; every material has its own field of application. A brick is a block of ceramic material used in masonry construction, usually laid using various kinds of mortar. It has been regarded as one of the longest lasting and strongest building materials used throughout history. Brick is the most commonly used building material which is light, easily available, and uniform in shape and size and relatively cheaper except in hilly areas. Bricks are easily moulded from plastic clays, also known as brick clays or brick earth. Bricks can be moulded by any of the three methods; soft mud process, stiff mud process and semi dry process. There are various kinds of bricks; silica bricks, carbon bricks, magnesite bricks, dolomite bricks, alumino silicate bricks, refractory bricks, etc. Cement is a binder, a substance that sets and hardens independently, and can bind other materials together. The most important use of cement is the production of mortar and concrete the bonding of natural or artificial aggregates to form a strong building material that is durable in the face of normal environmental effects. Cement is made by heating limestone (calcium carbonate) with small quantities of other materials (such as clay) to 1450 °C in a kiln, in a process known as calcination, whereby a molecule of carbon dioxide is liberated from the calcium carbonate to form calcium oxide, or quicklime, which is then blended with the other materials that have been included in the mix. The resulting hard substance, called clinker, is then ground with a small amount of gypsum into a powder to make Ordinary Portland Cement, the most commonly used type of cement (often referred to as OPC). Asbestos is a set of six naturally occurring silicate minerals used commercially for their desirable physical properties. Asbestos mineral have an almost unique combination of physical and chemical properties. The most widespread modern uses of asbestos are in fireproof textiles, papers and boards and in brake and clutch linings for many kinds of vehicle and machinery. The three main kinds of asbestos which have had wide commercial exploitation are chrysolite, amosite and crocidolite.
Some of the major contents of the book are moulded and ornamental bricks and blocks, including copings and lintels, cutters and rubbers, fireplace bricks, fire bricks and other refractory bricks
mixing, tempering mills or wet pans, the addition of water, souring, de airing, shaping the bricks, bricks made of calcined clay or grog, silica bricks, transition temperatures of silica on cooling, alumino silicate bricks, magnesium silicate bricks (forsterite bricks), high alumina bricks, spinel bricks, developments in refractory

brick, production of cement clinker, introduction, preparation of kiln feed, wet and semi wet processes, dry and semi dry processes, pyroprocessing: principal manufacturing processes, wet and semi wet processes, dry processes, semi dry (lepol) process, clinker cooling, refractories, electric power consumption , plastic moulding by machinery the machine moulding process, moulding machines, the wire cut or extrusion process, selection of machinery, power, individual machines, shredding machines , grids, feeders, proportioning, proportioning feeders, crushing rolls, high speed rolls, dressing the rolls, edge runner mills, tempering mills etc.
The present book contains processes of different types of bricks making, cement manufacturing and production of asbestos. The book is very resourceful for new entrepreneur, existing units, professionals, institutions related to building construction, research scholars etc.

Contents

1. Moulded and Ornamental Bricks and Blocks, Including Copings and Lintels, Cutters and Rubbers, Fireplace Bricks, Etc.

2 Fire-bricks and Other Refractory Bricks
Mixing, Tempering Mills or Wet Pans, The Addition of Water, Souring, De-airing, Shaping the Bricks, Bricks Made of Calcined Clay or Grog, Silica Bricks, Transition Temperatures of Silica on Cooling, Alumino-silicate Bricks, Magnesium Silicate Bricks (Forsterite Bricks), High Alumina Bricks, Spinel Bricks, Refractory Heat-insulating Bricks, Developments in Refractory Brick
3.The Stiff-plastic Process of Brickmaking
The Simple Stiff-plastic Process, Preliminary Processes, Feeding the Mills, Crushing, Grinding Mills, Precautions With Edge-runner Mills, Selecting a Mill, Storage of Raw Clay, Elevating Ground Material, Screens, Sieves and Riddles, Tailings, Storage of Ground Clay, Mixers, Adding the Water, Stiff-plastic Process Brickmaking Machines, Precautions, Re-pressing, Transport, Drying, Kilns
4. Hand-moulding Processes
Hand-made Facing Bricks, Hand-made Fire-bricks, Preparing Clay for Hand-moulding, Hand-moulding, Slop-moulding, Sand-moulding, Semi-dry Hand-made Bricks, Transport, Drying, Pressing, Taking Bricks to the Kiln, Burning, Characteristics of Hand-made Bricks, Hand-made V. Machine-made Bricks.
5. Glazed Bricks
Glazes and Bodies, Enamelled Bricks , First Dip, White Body, Colourless Glaze (Cone 8), Opaque White Glaze, Storage, Applying the Body and Glaze, Salt-glazed Bricks
6. Production of Cement Clinker
Introduction, Preparation of Kiln Feed, Wet and Semi-wet Processes, Dry and Semi-dry Processes, Pyroprocessing: Principal Manufacturing Processes, Wet and Semi-wet Processes, Dry Processes, Semi-dry (Lepol) Process, Clinker Cooling, Refractories, Pyroprocessing: Physical and Chemical Processes Involved, Preheating, Calcining, Clinkering (Sintering In The Presence of a Liquid Phase) , Cooling, Thermal Efficiency of Pyroprocessing, Process Control, The Heat Balance â€" Process Efficiency , Electric Power Consumption
7. Grinding and Fineness of Cement
Cement Milling, Factors Influencing the Grindability of Clinker, Minor Additional Constituents, Addition of Gypsum, , Fineness of Cement, Determination of Surface Area, Particle Size Distribution
8. Tests of Cement Quality
Introduction, Chemical Composition, Setting Times, Compressive Strength, Workability, Soundness, Heat of Hydration, Concluding Remarksâ€"Durability of Concrete,
9. Admixtures and Special Cements
Admixtures, Accelerators, Retarders, Water-reducing (Plasticising) Admixtures, Air Entrainment, Oilwell Cements, Calcium Aluminate Cement (Cac), Alkali-activated Slag and Aluminosilicate Cements, Calcium

Sulfoaluminate Cements, Expansive and Shrinkage Compensated Cements, Sulfoaluminate-belite Cements, Practical Considerations
10. Characterisation of Portland Cement Clinker
Introduction, Chemical Analysis By Selective Dissolution, Optical Microscopy, Characteristics of The Principal Clinker Phases, Quantitative Deter-mination of Phase Composition, X-ray Diffraction, Quantitative X-ray Diffraction Analysis (Qxda) , Electron Microscopy, Backscattered Electron (Bse) Imaging,
X-ray Microanalysis, Concluding Remarks
11. The Mineralogy of Asbestos
Introduction, Definitions, Chemical Composition, Crystal Structures, Occurrences, Synthesis, Optical Properties, X-ray Diffraction Data, Electron Optical Characteristics, Non-asbestiform Amphibole and Serpentine Minerals
12. Monitoring and Identification of Airborne Asbestos (Synopsis)
Introduction, The Membrane Filter Method, Outline Of Technique, Definition of the Fibres which are Evaluated, The Membrane Filter, Sampling, Transportation of Filters, Mounting of the Filter, Microscopical Evaluation, Accuracy of the Membrane Filter Method, Recent Developments In Fibre Evaluation, Determination of very Low Asbestos Concentrations, Direct-reading Dust Monitoring Equipment, Miscellaneous Instruments, Introduction, The Thermal Precipitator, The Konimeter, The Owens Jet Counter, The Impinger, Identification of Airborne Asbestos Fibres
13. Alternatives to Asbestos in Industrial Application
Introduction, Industrial Applications of Asbestos Products, Thermal Insulation and High-temperature Applications, Industrial Applications of Asbestos-cement, Dry-rubbing Bearings, Substitutes for Asbestos-reinforced Thermosets in Bearing Applications, Electrical Insulation, Health Hazards of Substitute Materials,
14. Getting, Cleaning, and Delivering the Clay
Removal of Overburden, Digging and Excavating, Blasting, Digging By Hand, Mechanical Excavators, Choice of Excavators, Loading and Loaders, Expansion after Excavation, Clay Haulage and Transport, Haulage, Safety Devices, Belt Conveyors, Wagons and Tubs, Tramway Tracks, Clay Storage, Preparing the Clay, Improving Workability, Sorting or Picking, Weathering, Selecting and Blending Clays, etc., Cleaning Clays, Rendering Lime Harmless in Clay, Chemical Treatment if Clays
15. Plastic Moulding by Machinery
The Machine-moulding Process, Moulding Machines, The Wire-cut or Extrusion Process, Selection of Machinery, Power, Individual Machines, Shredding Machines , Grids, Feeders, Proportioning, Proportioning Feeders, Crushing Rolls, High-speed Rolls, Dressing the Rolls, Edge-runner Mills, Tempering Mills, Mixers, The Addition of Water, Pug-mills, a Mixer Followed by a Pug-mill, Compressing, Extruding, and Shaping, The Clay Paste, The Collar Spacer or Distance-piece, Dies or Mouthpieces, Defective Working of Mouthpiece, Expression Roller Machines, Cutting Tables, Precautions When Cutting by Wires, Precautions in Shaping Wire-cut Bricks, Re-pressing, Precautions in Re-pressing Bricks, Die-boxes for Presses, Transport, Drying, Application of Heat, Sources of Heat, Types of Dryers, Shed Dryers, Chamber-dryers With Hot Floors, Air-heated Chamber Dryers, Corridor Dryers, Tunnel Dryers, External Air-heaters, Direct V. Inverse Dryers, Multiple-chamber or Compound Dryers, Humidity Drying, Admission of Air Into Tunnel Dryers, Fuel Consumption and Time Of Drying, Precautions in Drying, Cars and Rails For Dryers, Selecting a Dryer, Relative Costs of Drying, Control of the Dryer

Get the full book
This sample shows only the contents and introduction. The full book has every chapter.
Price: Rs 1,400 | US$ 37.83
Delivery: Shipped within 5 working days of payment
Order online: niir.org/books/bricks-cement-asbestos-handbook/ **WhatsApp:** +91 9097-075-054

Planning a unit? NPCS project reports:

- Calcium Silicate Blocks project report
- Activated Alumina project report
- Calcium Silicate project report
- Cement Grinding project report

NIIR PROJECT CONSULTANCY SERVICES (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.

Our various services are: Detailed Project Report, Business Plan for Manufacturing Plant, Start-up Ideas, Business Ideas for Entrepreneurs, Market Research, Manufacturing Process, Machinery, Raw Materials, Project Feasibility, Investment Opportunities, Technical Consultancy and Startup Help.

NPCS also publishes process technology books, technical books, startup books, directory, business database, detailed project reports and market research reports.

Our Detailed Project Report aims at providing all the critical data required by entrepreneurs for starting new business ventures.

NIIR PROJECT CONSULTANCY SERVICES
106-E, Kamla Nagar, New Delhi-110007, India

Email: npcs.india@gmail.com **Website:** https://www.niir.org/

Scan to order the full book on niir.org