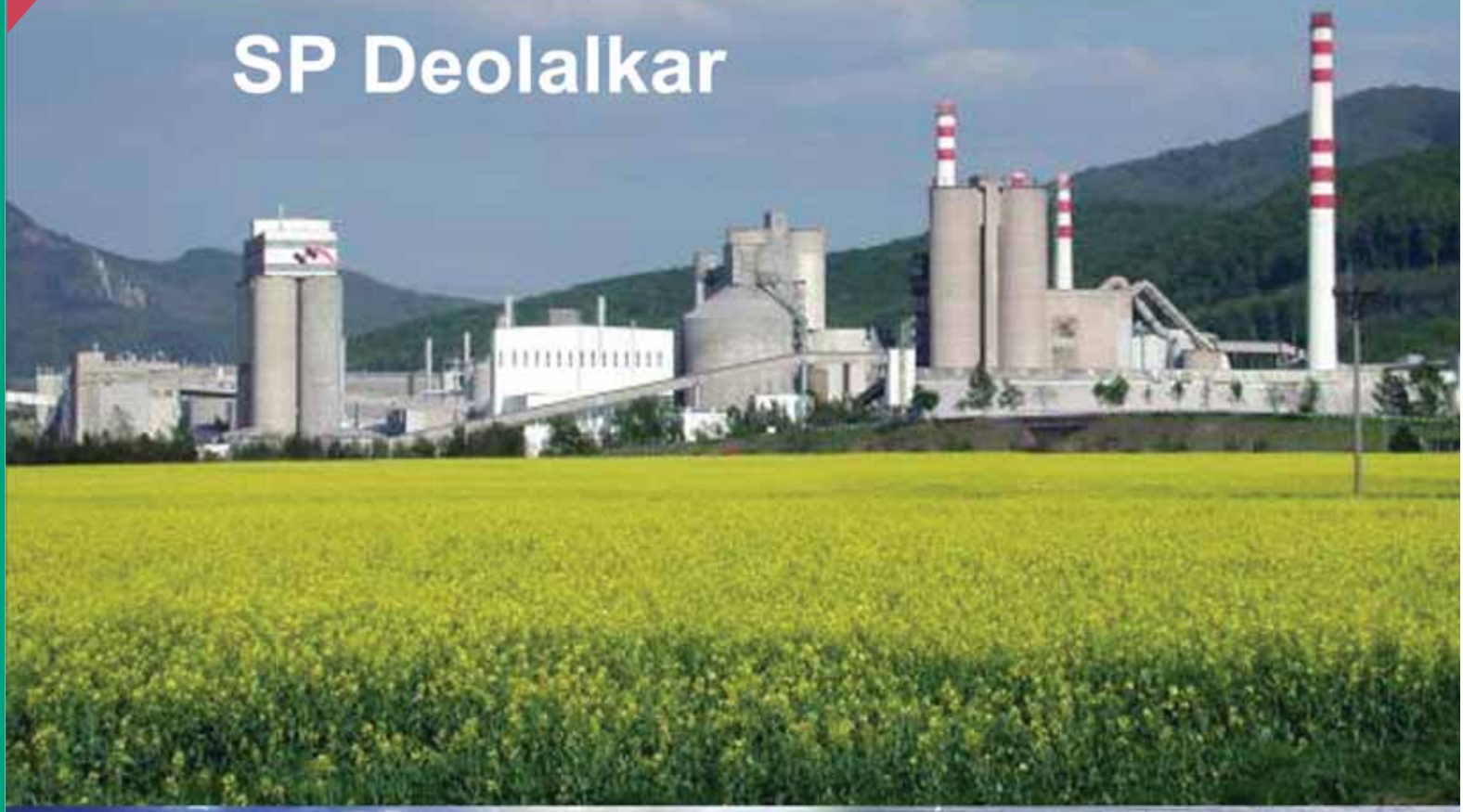
SAVE RS. 500/-

Designing Green Cement Plants

SP Deolalkar



BS Publications

Designing Green Cement Plants

by

S. P. Deolalkar

2014 | 978-81-7800-302-3 | 380 pp | HB | Rs. 3500.00

This book is about designing new large cement plants that would promote sustainable growth, preserve natural resources to the maximum possible extent and make least possible additions to the Greenhouse Gases that cause global warming. These are the Green Cement Plants.

Process of making cement involves 'calcination' of limestone- that is release of Carbon Dioxide – the principal greenhouse gas. In ordinary portland cement, OPC, ratio of cement to clinker is 1.05. Every ton of cement produced releases 0.8 ton of CO_2. By increasing the cement/clinker ratio that is by making 'blended cements' this emission can be reduced to 0.53 to 0.30 tons per ton of cement depending on the type of blended cements viz. PPC, BFSC or composite cements made.

Combustion of fuel needed to make clinker also releases CO_2 (quantum included in values mentioned above). Reduced sp. fuel consumption thus reduces ghg emissions. Substitution of fossil fuels by waste - alternate fuels some of which are 'carbon neutral' thus saves exhaustible fossil fuels and also lowers ghg emissions.

Presently a lot of heat is wasted through kiln and cooler exhaust gases even after they are used to dry raw materials and coal. If the heat therein is recovered to generate power, a dual advantage accrues in that fossil fuel is saved and ghg emissions are lowered.

World is paying urgent attention to harnessing inexhaustible and renewable sources of energy like wind and sun. Both Solar and wind power are renewable and green house gas emissions are practically nil. New cement plants should therefore be designed to use renewable energy to the extent possible depending on the present day status of cost and production factors.

There are other ways of reducing CO_2 emissions like capturing the emitted gas and either storing it for other uses or for making new cements like Calera. New green cement plants should also examine possibilities of developing cement substitutes like Calera, Caliix, Novacem, Aether and Geopolymer cements etc. that are 'green cements'.

The concept of saving energy and saving materials by recycling are also applied to construction of cement plants by constructing green buildings, to mining operations and so on.

All these aspects and activities add up to making 'Green Cement'. They have been dealt with in the book. Large new cement plants should be designed to incorporate all these aspects. Cement making machinery to be selected and cement plant layouts to be developed should also contribute to this concept of 'green cement'.

This book like its predecessor 'Handbook for Designing Cement Plants, would be a useful tool in the hands of Cement Engineers, Cement Technologists and Cement Consultants to achieve the objective of the day viz sustainable growth through Green Cement.

Distinctive Features of the book

1. Clear definition of Green Cement
2. Factors contributing to generation and emission of Greenhouse Gases and steps that can be taken to reduce it
3. Steps that can be taken to:
   1. make blended cements
   2. use alternate fuels
   3. install waste heat recovery systems

   Impact of these steps on reduction in green house gases and savings of natural resources
4. Prospects and feasibility of using renewable energy - wind and solar power
5. look at the future - carbon capture and storage and substitute cements like Novacem, Calix Calera and Geopolymer and Aether cements for example.
6. Design of new large plants of 5000 to 10000 tpd (single kiln clinkering capacity) incorporating above features of green cement plants. Development of plant general layouts
7. Essential data for quantities, storages , capacities of major machinery units for large new green cement plants in active excel spreadsheets
8. Indication of Capital Costs and Costs of Production; Impact and benefits resulting from making green cements as compared to conventional OPC.

Contents

About the Author

Mr. Deolalkar is a first class graduate in Mech. and Elect. Engineering. He is also a Graduate of the British Institute of Management.

He joined The Associated Cement Companies Ltd., in1956 and has been associated with the cement industry ever since, a long innings of over 50 years.

He had first hand working experience in cement plants – in operation, in erection and in commissioning of new plants.

Mr. Deolalkar later worked with ACC-Vickers-Babcock Ltd., a subsidiary of ACC engaged in manufacture of Babcock Boilers and in making Cement Machinery.

Mr. Deolalkar has thus been associated with design and setting up new cement plants and expansions of existing ones for a quarter of a century – plants ranging in capacity from 300 tpd to 3000 tpd. He has been witness to the great strides made by the cement industry in India . The first indigenously designed 3000 tpd cement plant containing 5 stage preheater and fluid bed calciner, vertical mills for raw materials and coal, especially for coal mill and clinker cooler and advanced computer controlled operation was designed under his leadership

Since 1986, Mr. Deolalkar has been working as a consultant – first as a Chief Executive of Bhagwati Priya Consulting Engineers Ltd., and later for Deolalkar Consultants a proprietary consultancy company in Hyderabad.

During his career Mr. Deolalkar has handled almost all aspects of the design of cement plants.

He has been a pioneer in computerising process, project engineering and machinery design calculations relating to cement making and cement plants.

Mr. Deolalkar was associated with a number of Institutions related to Cement Industry at the National Level like Bureau of Indian Standards (earlier known as ISI), National Committee for Science and Technology and National Council for Cement and Building Materials. He was a member of the Research Advisory Committee of the NCCBM and was also a Member of its Faculty. Mr. Deolalkar served as Secretary of the Cement Machinery Manufacturers' Association in the early 1980s. He has written a number of papers in national and international publications on cement.

In 2008 he wrote his first book 'Handbook for Designing Cement Plants'. It was well received by the Cement Industry.

His second book, 'Nomograms for Design and Operation of Cement Plants' is a sequel to his first book and is complementary to it.

For Placing Order/Enquiry Contact :

BSP Books Pvt. Ltd.

4-4-309 / 316, Giriraj Lane, Sultan Bazar, Koti, Hyderabad - 500 095 (A.P.) INDIA
Phone : 91 +40 - 23445688; Fax: 91+40-23445611;
e-mail: info@bspbooks.net website: www.bspbooks.net
Mr. Nikunjesh Shah, (M) 08374105220; e-mail: nikunjesh.shah@bspbooks.net

Other Books by the Same Author

Handbook For Designing Cement Plants

S. P. Deolalkar

The book is structured as a practical handbook for designing cement plants from scratch, guiding the user step by step through various stages involved in setting up a cement plant.It starts with raw materials, various processes in making different types of cements, various machinery used in the different sections. It explains working out of sizes and capacities of machines and sections. It deals with preparation of Techno-Economic Feasibility, Construction, Electrical and Instrumentation in Cement Plants.

Salient Features

- Comprehensive coverage of all aspects of Cement plant designing
- Layouts and detailed engineering of various sections of the cement plant covered including design and drawings of ductings and vent systems
- Practical aspects like design of working platforms, safety precautions discussed
- Interactive Reference Section in CD-format provided for process calculations, sizing of main machinery and auxiliaries.

Contents : Section 1 : Basics Section **Section 2 :** Machinery Used in Making Cement Section **Section 3 :** Technoeconomic Feasibility Studies **Section 4 :** Civil Design and Construction **Section 5 :** Electricals and Instrumentation **Section 6 :** Layouts and Detailed Engineering **Section 7 :** Selecting and Ordering Machinery **Section 8 :** Reference Section (rs) (CD Form) **Section 9 :** Sources

Rpt. 2013	1127 pp	978-81-7800-145-4	BSPBSP	HB	Rs. 10,000.00

Nomograms for Design and Operation of Cement Plants

S. P. Deolalkar

Nomograms are a graphical representation of two or more variables related to one another in such a way that when one or more is known the third can be read from the nomogram. A Slide Rule is a classic example of a nomogram. Usefulness and convenience of nomograms would be evident from this one example.

Features:

- The book covers almost all aspects of plant design and operation and hence will be a handy tool for cement plant personnel and cement consultants.
- The nomograms have been presented in a manner that will facilitate their use. Each nomogram is accompanied with an explanatory note that explains its usefulness, concerned inputs and outputs and scales. It contains an example illustrating its usage.
- Most nomograms are in one step but a few are in 2 or 3 progressive steps. In this print form, the nomogram appears on the left and the corresponding text on the right. Text furnishes all pertinent information about the purpose and the use of the nomogram.
- A CD is included containing nomograms in autocad format. Readers can use it to put in their own inputs and get corresponding outputs.
- A user, even with little knowledge of autocad, can draw lines across it to obtain results of new inputs. In many nomograms 'log scales' have been used to facilitate construction.
- All in all every effort has been made to make them user friendly.
- Cement Engineers, Cement Plant Designers and Cement Consultants will find the book useful and practical.

Contents: Section 1 - Basics Section 2 - Physical Properties Section 3 - Process Section 4 - Machinery

2011	249 pp	978-93-81075-00-5	BSPBSP	HB	Rs. 2500.00

Designing Green Cement Plants

Price: 3500.00

SPECIAL OFFER RS. 3000/-

SPECIAL SET OFFER


Handbook for Designing Cement Plants

+


Nomograms for Design and Operation of Cement Plants

+


Designing Green Cement Plants

= Rs. 13,000/-


Handbook for Designing Cement Plants

+


Designing Green Cement Plants

= Rs. 11,000/-


Handbook for Designing Cement Plants

+


Nomograms for Design and Operation of Cement Plants

= Rs. 10,000/-