



 Get Print Book

Waste Materials Used in Concrete Manufacturing (Building Materials Science Series)

By Satish Chandra

 Download

 Read Online

Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra

The environmental aspects involved in the production and use of cement, concrete and other building materials are of growing importance. CO₂ emissions are 0.8-1.3 ton/ton of cement production in dry process. SO₂ emission is also very high, but is dependent upon the type of fuel used. Energy consumption is also very high at 100-150 KWT/ton of cement produced. It is costly to erect new cement plants. Substitution of waste materials will conserve dwindling resources, and will avoid the environmental and ecological damages caused by quarrying and exploitation of the raw materials for making cement. To some extent, it will help to solve the problem otherwise encountered in disposing of the wastes. Partial replacement of clinker or portland cement by slag, fly ash, silica fume and natural rock minerals illustrates these aspects. Partial replacement by natural materials that require little or no processing, such as pozzolans, calcined clays, etc., saves energy and decreases emission of gases. The output of waste materials suitable as cement replacement (slags, fly ashes, silica fumes, rice husk ash, etc.) is more than double that of cement production.

These waste materials can partly be used, or processed, to produce materials suitable as aggregates or fillers in concrete. These can also be used as clinker raw materials, or processed into cementing systems. New grinding and mixing technology will make the use of these secondary materials simpler. Developments in chemical admixtures: superplasticizers, air entraining agents, etc., help in controlling production techniques and, in achieving the desired properties in concrete.

Use of waste products is not only a partial solution to environmental and ecological problems; it significantly improves the microstructure, and consequently the durability properties of concrete, which are difficult to achieve by the use of pure portland cement. The aim is not only to make the cements and concrete less expensive, but to provide a blend of tailored properties of waste materials and portland cements suitable for specified purpose. This requires a better understanding of chemistry, and materials science.

There is an increasing demand for better understanding of material properties, as well as better control of the microstructure developing in the construction material, to increase durability. The combination of different binders and modifiers to produce cheaper and more durable building materials will solve to

some extent the ecological and environmental problems.

 [Download Waste Materials Used in Concrete Manufacturing \(Bu ...pdf](#)

 [Read Online Waste Materials Used in Concrete Manufacturing \(...pdf](#)

Waste Materials Used in Concrete Manufacturing (Building Materials Science Series)

By Satish Chandra

Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra

The environmental aspects involved in the production and use of cement, concrete and other building materials are of growing importance. CO₂ emissions are 0.8-1.3 ton/ton of cement production in dry process. SO₂ emission is also very high, but is dependent upon the type of fuel used. Energy consumption is also very high at 100-150 KWT/ton of cement produced. It is costly to erect new cement plants. Substitution of waste materials will conserve dwindling resources, and will avoid the environmental and ecological damages caused by quarrying and exploitation of the raw materials for making cement. To some extent, it will help to solve the problem otherwise encountered in disposing of the wastes. Partial replacement of clinker or portland cement by slag, fly ash, silica fume and natural rock minerals illustrates these aspects. Partial replacement by natural materials that require little or no processing, such as pozzolans, calcined clays, etc., saves energy and decreases emission of gases. The output of waste materials suitable as cement replacement (slags, fly ashes, silica fumes, rice husk ash, etc.) is more than double that of cement production.

These waste materials can partly be used, or processed, to produce materials suitable as aggregates or fillers in concrete. These can also be used as clinker raw materials, or processed into cementing systems. New grinding and mixing technology will make the use of these secondary materials simpler. Developments in chemical admixtures: superplasticizers, air entraining agents, etc., help in controlling production techniques and, in achieving the desired properties in concrete.

Use of waste products is not only a partial solution to environmental and ecological problems; it significantly improves the microstructure, and consequently the durability properties of concrete, which are difficult to achieve by the use of pure portland cement. The aim is not only to make the cements and concrete less expensive, but to provide a blend of tailored properties of waste materials and portland cements suitable for specified purpose. This requires a better understanding of chemistry, and materials science.

There is an increasing demand for better understanding of material properties, as well as better control of the microstructure developing in the construction material, to increase durability. The combination of different binders and modifiers to produce cheaper and more durable building materials will solve to some extent the ecological and environmental problems.

Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra Bibliography

- Sales Rank: #952477 in Books
- Published on: 1997-01-14
- Original language: English
- Number of items: 1
- Dimensions: 9.75" h x 6.75" w x 1.75" l, 2.97 pounds

- Binding: Hardcover
- 672 pages

 [Download Waste Materials Used in Concrete Manufacturing \(Bu ...pdf](#)

 [Read Online Waste Materials Used in Concrete Manufacturing \(...pdf](#)

Editorial Review

About the Author

Satish Chandra is presently an assistant professor at Chalmers University of Technology, Department of Concrete Structures, Göteborg, Sweden. A graduate of Lucknow University, Lucknow, India, he then was awarded his Doctor of Technology from the University of Mining and Metallurgy, Cracow, Poland. His area of special interest is in materials development, durability and deterioration mechanisms of building materials. He also is interested in the use of mineral admixtures in concrete. He is a member of ACI committees 547 and 548; RILEM Committees TC 105 and 113; a Life member of the Indian Concrete Institute; a member of the Swedish Chemical Society and Swedish Silicate Society. He has also organized and chaired numerous meetings and seminars in the Cement and Concrete area. Dr. Chandra has contributed to three books and has published sixty-five technical papers in journals of international repute.

Users Review

From reader reviews:

Pam Wright:

Have you spare time for just a day? What do you do when you have far more or little spare time? Yep, you can choose the suitable activity for spend your time. Any person spent their particular spare time to take a go walking, shopping, or went to the particular Mall. How about open or perhaps read a book eligible Waste Materials Used in Concrete Manufacturing (Building Materials Science Series)? Maybe it is to get best activity for you. You understand beside you can spend your time with your favorite's book, you can wiser than before. Do you agree with their opinion or you have different opinion?

Dennis Byrd:

A lot of people always spent all their free time to vacation or maybe go to the outside with them family or their friend. Do you realize? Many a lot of people spent that they free time just watching TV, as well as playing video games all day long. If you need to try to find a new activity here is look different you can read a book. It is really fun in your case. If you enjoy the book which you read you can spent 24 hours a day to reading a guide. The book Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) it is rather good to read. There are a lot of people that recommended this book. These were enjoying reading this book. If you did not have enough space bringing this book you can buy typically the e-book. You can m0ore very easily to read this book out of your smart phone. The price is not very costly but this book has high quality.

Nancy Reese:

This Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) is great guide for

you because the content that is certainly full of information for you who have always deal with world and get to make decision every minute. This kind of book reveal it facts accurately using great arrange word or we can declare no rambling sentences inside it. So if you are read the idea hurriedly you can have whole details in it. Doesn't mean it only gives you straight forward sentences but tricky core information with attractive delivering sentences. Having Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) in your hand like obtaining the world in your arm, information in it is not ridiculous one particular. We can say that no guide that offer you world within ten or fifteen minute right but this guide already do that. So , this can be good reading book. Hello Mr. and Mrs. stressful do you still doubt that will?

Laura Thompson:

You may get this Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) by go to the bookstore or Mall. Only viewing or reviewing it can to be your solve problem if you get difficulties for the knowledge. Kinds of this guide are various. Not only by written or printed but additionally can you enjoy this book simply by e-book. In the modern era such as now, you just looking of your mobile phone and searching what their problem. Right now, choose your current ways to get more information about your reserve. It is most important to arrange yourself to make your knowledge are still revise. Let's try to choose suitable ways for you.

Download and Read Online Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra #MJ7CRS0ZQG2

Read Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra for online ebook

Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra books to read online.

Online Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra ebook PDF download

Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra Doc

Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra Mobipocket

Waste Materials Used in Concrete Manufacturing (Building Materials Science Series) By Satish Chandra EPub