Dr B R Ambedkar National Institute of Technology Jalandhar, India

Department of Civil Engineering

GIAN Course (8-12 March 2021)

Recycled Aggregates: Characteristics and Effects of its Use in Concrete, including Environment Impact Considerations, Case Studies and Standards/Specifications

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Overview

Concrete is the highly diverse in nature among all other civil engineering items which comprises different mix materials from country to country depending on its application. An unmatched investment in construction industry and rising needs of habitats in urban cities has shaped a hefty call of conventional building materials. The issue of sustainability is of key concern nowadays as huge amount of natural resources are used continuously for producing materials for concrete. As a consequence, the threat of depletion of natural resources has already been elevated which require an immediate action to address for researchers and scientists. The depletion of good quality aggregates along with the increase in aggregate requirement makes the availability of raw materials scarcer.

On the other hand, the construction industry in particular is notorious for the creation of vast amounts of waste. The latest scenario in construction industry is to use the alternative sources of construction materials which replace the use of new/raw materials in order to minimize the ecological and environmental effects. The speedy trend of modernization has led to the generation of debris from construction and demolition wastes. These wastes produced through construction and demolition throughout the world contemplates the significant annoyance where it contains many various types of materials including concrete debris, steel, hazardous materials etc. So, handling of such debris has become one of the important issues in developed countries and it has become a global concern that requires sustainable solution. Moreover, the global anxiety about the reduction of carbon footprints is also playing a crucial role during the extraction process of aggregates. Advanced civil engineers, researchers and scientists are looking to provide solutions of these critical issues. Based on these issues, the use of Recycled Aggregates in construction work as structural grade concrete may yield as a means of economic viability and environmental consciousness along with bulk reduction of waste materials. Therefore, in the current time, recycled concrete aggregates (RCA) are being used for both structural and non-structural applications. It has been established that their use is feasible for commercial as well as residential purposes.

It is essential that the concrete industry across India and related organizations promote a consistent approach for utilization and recycling of construction and demolition wastes in the development of infrastructure and systems.

Module	**Recycled Aggregates: Characteristics and Effects of its Use in Concrete, including Environment Impact Considerations, Case Studies and Standards/Specifications** **8-12 March 2021** **Number of participants for the course will be limited to fifty.**
You Should Attend If…	The following persons can attend this program: (i) Faculty/Scientists/Technologists from academic Institutions/research organisations. (ii) Research Students/Master's students from academic institutions.
Fees	The participation fees for taking the course is as follows: **Participants from abroad: US $500** **Industry/Research Organizations: Rs. 10,000/-** **Academic Institutions: Rs. 2,000/-** **Students: Rs. 1,000/-** The above fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility. The participants will be provided with accommodation on payment basis.

The Faculty

Professor Ravindra Kumar Dhir OBE is an internationally acknowledged scholar and practitioner in concrete science, technology and construction. He is the founding Director of the Concrete Technology Unit (CTU) which he established in 1988, with an investment of £15k, within the Department of Civil Engineering, University of Dundee, and developed it into a £15m internationally acknowledged multidisciplinary Centre of Excellence having state of the art research facilities.

Professor S P Singh specialises in fatigue behaviour of concrete composites, concrete technology, recycling of materials in concrete and earthquake resistant design of concrete structures. He has more than 29 year experience of teaching, working closely with the construction Industry in India as well as undertaking consultancy and research and development work. In addition, he has developed a state of the art Concrete Research Laboratories, including controlled natural out-door carbonation testing facility at his parent Institution. He is a Member of RILEM Technical Committee 273 RAC: Structural Behaviour and Innovation of Recycled Aggregate Concrete. He is a Fellow of Institution of Engineers (India), Member of American Concrete Institute (ACI) and American Society of Civil Engineers (ASCE).

Course Coordinators

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