Use of Waste & Marginal Materials and Sustainable Highway Construction

Day 1	
9.45-13:00	**Green Highways & Decarbonisation of Highway Construction** • Use of WARM Mixes • Rubber Modified Bitumen • Jute & Coir Fibres • Bio-Binders • Use Marginal Materials **Carbon Rating**
14:00-17:15	**Use of Flyash in Embankment Construction** ➢ MoEF Guidelines ➢ Generation of Ash in TPPs-Flyash, pond ash etc. ➢ Advantages of Flyash in Embankment ➢ Material Characteristics(Physical & Chemical) ➢ Construction Methodology (Soil Cover, Compaction, Drainage etc.) ➢ Quality Assurance, Quality Control and Acceptance ➢ Case Studies
Day 2	
9.45-11.15	**Use of Flyash in Structural Concrete & PQC** ➢ Advantages of Flyash in Concrete ➢ Material Characteristics (Physical & Chemical) ➢ Mix Design Guidelines ➢ Storing and Mixing of Flyash in Concrete Batching Plants ➢ Quality Assurance, Quality Control and Acceptance ➢ Case Studies
11.30-13.00	**Use of Slag** ➢ Types of Slag ➢ Advantages ➢ Material Characteristics (Physical & Chemical of Crushed Aggregates and Ground Granulated Blast Furnace Slag (GGBFS)) ➢ Guidelines and Construction Methods for Use of Crushed Aggregates in Pavement ➢ Mix Design Guidelines for Use of GGBFS in Concrete ➢ Storing and Mixing of GGBFS in Concrete Batching Plants ➢ Quality Assurance, Quality Control and Acceptance ➢ Case Studies
14:00- 17:15	**Use of C&D Waste** ➢ Advantages ➢ Material Characteristics ➢ Guidelines and Construction Methods for Use in Pavement and Concrete ➢ Quality Assurance, Quality Control and Acceptance ➢ Case Studies

Day 3	
9.45-13:00	**Use of Waste Plastic** ➢ Advantages ➢ Material Characteristics ➢ Mix Design Guidelines for Use of Waste Plastic in Bituminous Mixes ➢ Guidelines and Construction Methods for Use in Pavement Courses ➢ Quality Assurance, Quality Control and Acceptance ➢ Case Studies
14:00-17:15	**Recycled Pavements** ➢ Advantages ➢ Guidelines and Construction Methods • Hot-in-Place Recycling • Cold-in-Place Recycling • Hot-in-Plant Recycling • Cold-in-Plant Recycling ➢ Quality Assurance, Quality Control and Acceptance ➢ Case Studies

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