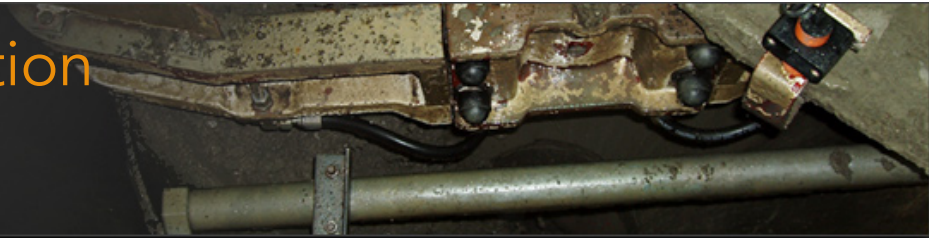


# Concrete Specification



## Specification for Concrete Materials

### *Coarse & Fine Aggregates*

Coarse and fine aggregates shall be from natural sources and shall comply with IS EN 12620.

### *Chloride Content*

The total chloride content of the concrete mix for reinforced concrete shall not exceed 0.4% expressed as a percentage of chloride ion by weight of cement.

### *Cement*

Normal Portland cement (CEM I, CEM II) shall comply with the requirements of IS EN 197–1. The cement shall be delivered to site in standard bags or in bulk containers and shall be stored under dry conditions.

### *Cement Additions*

Ground Granulated Blastfurnace Slag (GGBS) is permitted in IS EN 206–1:2007 to be used as a Type II addition to CEM I or CEM II cements in concrete. Where GGBS is added it replaces the CEM I or CEM II cement on a one-for-one basis; the total cementitious material content of the concrete mix does not change, and the GGBS counts fully towards the total cement content and water/cement ratio in concrete. GGBS shall comply IS EN 15167–1 and be ground to a blaine of  $> 4000 \text{ cm}^2/\text{g}$ .

A cement combination comprising 50% GGBS and 50% CEM I or CEM II is to be used in all concrete throughout the Project, unless otherwise specified on the drawings or by the Engineer.

## Standards

### *IS EN 197–1*

Composition, specification and conformity criteria for common cements.

### *IS EN 206–1*

Concrete – Part 1: Specification, Performance, Production and Conformity.

### *IS EN 15167–1*

Ground granulated blast furnace slag for use in concrete, mortar and grout – Part 1 Definitions, specifications and conformity criteria.