SUMMARY OF IS 6452 'HIGH ALUMINA CEMENT FOR STRUCTURAL USE – SPECIFICATION'

High alumina cement (**HAC**) is a special cement with unique properties, such as **high early strength** and **refractoriness**. **High alumina cement** is mainly a **refractory cement** but in some **cold regions,** this cement may find use as a **structural material** taking advantage of high heat of hydration and high early strength development. Due to high early strength development, this **cement** will have special utility in work involving **emergency repair** or **construction**.

The Indian Standard, IS **6452** 'High alumina cement for **structural** use – Specification' covers the manufacture of **high alumina cement** (**HAC**) and the specific requirements for its **use** as a **structural building material** in the colder regions of our country (continuously 18°C and below). The standard does not cover use of HAC as a **refractory cement**.

The standard **cautions** the users about the restrictions associated with this special cement. It cautions that in view of the retrogression in strength and reduced durability, high alumina cement shall not be used in locations where the ambient temperatures are likely to exceed 18°C even for short periods. Also, it shall not be used in mass concrete in view of the high heat of hydration inducing conversion of the hydrated compounds. Accelerators like calcium chloride shall not be used with this cement. Steam curing or elevated temperature of curing shall be avoided and **HAC** shall not be **mixed** with any other type of cement.

IS 6452 covers the requirements for manufacturing HAC. It also specifies requirements for **total alumina content**, **fineness**, **initial setting time**, **final setting time** and **compressive strength**. The standard also specifies requirements for **sampling and testing**, **storage**, **packing** and **tolerance** on **mass** of cement bags. It specifies that all physical tests shall be carried out at a temperature of 18°C ± 2°C. Compliance to the standard ensures consistent quality, strength, and durability **as well as** safe transportation and usability.

In order to **distinguish** HAC from ordinary Portland cement to avoid mixing, the standard specifies that a **distinctive** mark along with the words 'High Alumina Cement' shall be permanently marked on the bag or the container.

The **Cement Quality Control Order**, 2003 mandates that High Alumina Cement sold, manufactured, or imported in India for structural use, must comply with IS 6452 and bear the BIS Standard Mark, for ensuring **safety** of **structures** built using this cement.

So, become an **informed citizen**, and look for ISI mark and the standard number on the high alumina cement bag, use the product for the right **application** as provided in the standard.