

TITLE OF INVENTION: HOLCIM HI-DENSCRETE

SPECIFICATIONS / DESCRIPTION

In view of the protection required for the human beings, from the radiation of harmful rays like high-energy x-rays, gamma rays and neutrons and providing attenuation of the same to avoid any harmful affect. Such protection would be required especially for places like hospitals, atomic installation, bunkers, bomb shelters, etc.

Further, this product also would meet the demanding requirements of special application like anti-buoyancy needs, balancing loads for high rise cranes, etc.

Technically, this is a high density concrete having density exceeding 2600 kg per cubic meter with other special feature like self compacting concrete with heat resistance, high resistance to segregation, etc.

We have developed innovative combination of materials like Portland cement, heavy aggregates (iron ore), washed spent copper slag and special admixtures for creating unique properties of Holcim Hi-Denscrete with density exceeding 2600kg/m³ with other unique properties such as self-leveling and self-compacting concrete.

This innovative combination of the ingredients of the concrete with unique part of process produces a value-added product for special applications such as anti-buoyancy properties for underwater structures, attenuation of high-energy X-rays, gamma rays and neutrons.

Novelty

It is an unique combination of Ordinary Portland Cement (OPC) (18.25%), iron ore (18.25%), washed copper slag (WCS) (57.3%), polycarboxylate based admixture (950ml per 100kg cementitious materials) and water with water cement ratio of 0.28.

This product has many specialties as described below:

1. It has higher density as compared to normal concrete which make it heavier for special applications like anti-buoyancy properties for underwater structures.
2. It's special use is also for the purpose of attenuation of high-energy X-rays, gamma rays and neutrons.
3. This product has another special characteristic which is having heat and radiation resistance.
4. Though it is a heavy concrete, it is a self-compacting concrete, it is difficult to achieve as it contains heavy weight aggregates– , but with Holcim's special process this could be achieved.

5. It's a combination of fine and coarse aggregates with up to 100% replacement of fine aggregates by washed copper slag and up to 100% replacement of coarse aggregates by iron ore. These with the combination of special admixtures will make the concrete self-compacting and self-leveling.

CLAIMS

This unique product Hi-Denscrete characterized by unique combination of Ordinary Portland Cement (OPC) (18.25%), iron ore (18.25%), washed copper slag (WCS) (57.3%), polycarboxylate based admixture (950ml per 100kg cementitious materials) and water with water cement ratio of 0.28, shall be having exclusive intelligent property rights for the inventor and anyone trying to utilize this combination directly or indirectly and copying the same would be breaching the patent rights filed for this product by the inventor and the said party would be liable for legal actions.