

TITLE OF INVENTION: Holcim Jet Setcrete

SPECIFICATIONS / DESCRIPTION

Holcim Jet Setcrete is a specialty concrete developed having ultra high strength development in few hours, permitting its use within few hours after placement for movement of vehicles on road pavements, landing of aero-planes, stripping of form work, etc. It is also having self-compacting and self leveling characteristics providing ease of placement without any noise pollution or vibrations. It is also having very high performance with low utilization of cementitious materials, making it very cost effective as well as environmentally friendly.

Novelty

This is unique combination of Ordinary Portland Cement (OPC) (15 to 20%), silica fume (4 to 5%), natural sand (32%), graded 20mm stone (41%), water, retarders and fourth generation polycarboxylate based admixture mixed for 5 to 7 minutes to have the required formulation.

The strength development (based on 15cm cube) is around 18 MPa at 6 hours, 30 MPa at 8 hours, 50 MPa at 12 hrs, 60 MPa at 24 hrs, 70 MPa at 3 days, 80 MPa at 7 days and 90 MPa at 28 days.

This product has many specialties as described below:

1. Holcim Jet Setcrete is self-leveling, high early strength, high performance concrete, generally specified for concrete pavements, airport runways, precast and pre-stressed concrete, where concrete strengths after about 6 hours are crucial.
2. One of the solutions towards demanding needs of today's fast track consumer is to achieve faster construction techniques, which would save time in execution of projects and thus make investments giving early returns.
3. It is also essential for urgent repairs of concrete pavements, airport runways, aero-plane parking bays, where specified strength for concrete after few hours is crucial.
4. Suitable for high rise buildings and all other concrete applications where high early strength is required.
5. High early strength development after 6 hours onwards as such early stripping of mould and faster use of moulds for precast application
6. No vibration required being self-leveling concrete as such no noise pollution.
7. Easy access of concrete through congested reinforcement steel.
8. Faster construction (shorter floor cycles).
9. Increase construction speed amounting to:
10. Higher productivity with lesser human resources.
11. Lower invested capital, earlier returns.
12. Almost no need for repairs, thus saving in time and costs.

13. This product is self-leveling and is designed to give high compressive strength up to about 80 MPa at 28 days and 50 MPa at 24 hours.

Claims

1. Holcim Jet Setcrete is a specialty concrete developed having ultra high strength development in few hours, permitting it's use within few hours after placement for movement of vehicles on road pavements, landing of aeroplanes, stripping of form work, etc. It is also having self-compacting and self leveling characteristics providing ease of placement without any noise pollution of vibrations. It is also having very high performance with low utilization of cementitious materials, making it very cost effective as well as environmentally friendly. This is concrete characterized by unique combination of Ordinary Portland Cement (OPC) (15 to 20%), silica fume (4 to 5%), natural sand (32%), graded 20mm stone (41%), water, retarders and fourth generation polycarboxylate based admixture mixed for 5 to 7 minutes to have the required formulation, shall be having exclusive intelligent property rights for the inventor. 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.