TECHNICAL DATA SHEET

HIGHWAY FC CEMENT

Rapid Setting Reinstatement Concrete



PREMCRETE

HIGHWAY FC CEMENT





DESCRIPTION

HIGHWAY FC Cement is a special cement system based on Portland and CSA cements and containing active additives. HIGHWAY FC Cement is used in concrete mixes to create a very rapid setting and hardening concrete. It is used in concrete projects where an early return to work or trafficking is required. The HIGHWAY FC Cement concrete should be mixed using high shear concrete mixers then placed and compacted rapidly.

For high volume projects the concrete can be mixed in approved Volumetric Truck mixers. The early age compressive strength gain will allow rapid opening of roads to traffic.

HIGHWAY FC Cement is mixed with concreting sand and aggregate to produce a rapid hardening concrete mix. Such mixes can be used at thicknesses of 40mm to 500mm.

Testing and certification

HIGHWAY FC Cement has been tested in accordance with appropriate parts of EN 1015-3, EN 480-2 , EN 12390-7 and EN12390-3. Premcrete Ltd is Certified to ISO 9001 & ISO 14001.

USES

- Concrete carriageway repair and bay replacement projects
- Bedding for kerbs and frames
- Concrete slab repairs
- Concrete runway repairs

ADVANTAGES

- Rapid strength development - enables early trafficking and reduced closure times.
- Increased productivity - allows significantly more concrete repairs to be completed per shift.
- Lower embodied carbon - approximately 35% lower CO_2e than conventional Portland cement.
- Reduced programme times - fewer shifts, helping reduce labour, plant and traffic management requirements.
- Proven highways performance - successfully used for full-depth carriageway repairs and other time-critical concrete applications.

HIGHWAY FC CEMENT

TECHNICAL & PERFORMANCE PROPERTIES

Property	Test Method	Value
Compressive strength - Laboratory at 600kg/m³	EN 12390	40N/mm² @ 4 hr 60N/mm²@ 1 day 90N/mm²@ 28 days
Compressive strength - Site Results at 540kg/m³	EN 12390	35N/mm² @ 4 hr 45N/mm²@ 1 day 65N/mm²@ 28 days

INSTALLATION PROCEDURE

Surface Preparation

prepare a clean sound substrate free of dirt, dust and contamination. The adjacent substrate should be dampened with clean water taking care to remove any standing water before placing the HIGHWAY FC Cement based concrete mix.

Mixing

The moisture content of the sand and aggregate components of a mix must be determined prior to addition of water to the mix and the amount of water in the aggregates allowed for in the mix design. Smaller mixes may be carried out in a suitable container using a slow speed high powered drill and paddle mixer with measured mix constituents.

Larger mixes, should be mixed in a suitable forced action pan mixer. Carefully add the HIGHWAY FC Cement and aggregate to the measured water while mixing. Mix for a minimum of 3 minutes until a uniform homogenous concrete is formed. Use rapidly.

Most large-scale applications are carried out by adding HIGHWAY FC Cement and aggregates from a calibrated volumetric truck mixer at the point of application. The concrete should be placed rapidly within approximately 5 minutes from start of mixing. The setting time may be longer in cold weather and may be shorter in hot weather. For cold weather working increase the total cement content or use warm mixing water up to 25°C.

Required Concrete mix design for 1m³.

HIGHWAY FC Cement	600kg
All in sand to 20mm gravel	1575kg
Free water content	180ltr
Total free W/C Ratio:	0.30
Slump (EN 12350):	Nominal 40mm
Set density:	2350kg/m³
Compressive strength:	(EN 12390)

Dependent on ambient temperature the total Highway FC Cement content required can vary from 540Kg/m³ in warm weather to 700kg/m³ in cold weather. The target W/C ratio remains at 0.3.

Application

Any shuttering required must be made sufficiently strong and grout tight. The mixed concrete loses workability rapidly after it has been placed. Normal concrete placing methods are used including vibration if required. The mix needs to be placed and finished rapidly.

Curing

HIGHWAY FC Cement based concrete mixes should be cured using Premcrete CUREAID AC and protected in accordance with good concrete practice.

Equipment Cleaning

Tools and equipment should be cleaned immediately using water before it sets.

HIGHWAY FC CEMENT



PACKAGING & COVERAGE

Pack Sizes

25kg, 1000kg bulk bag and 26 tonne tankers.

Coverage

10LM when applied as a typical 3mm x 100mm.

Yield

This will depend on the mix design used. See above for a $1m^3$ mix design.

STORAGE & SHELF LIFE

HIGHWAY FC Cement has a shelf life of 6 months when kept in cool dry conditions.

HEALTH & SAFETY

See separate Material Safety Data Sheet.

Precautions

HIGHWAY FC Cement is alkaline and you should take precautions that it does not come into contact with skin or eyes.

Do not inhale dust during mixing. Wear safety goggles, dust mask and gloves. If this product does come into contact with skin, wash thoroughly with clean water. If there is any contact with eyes, wash out the eye with an eye wash or clean water and take further medical attention.

44 Macadam Way | West Portway | Andover | Hampshire | SP10 3XW
www.premcrete.com | 02380 276166 | sales@premcrete.com

PREMCRETE