BUILDING TRUST

PRODUCT DATA SHEET

Parex Highway Rapidpave Cement

Ultra-Rapid Strength Gain Binder

DESCRIPTION

Parex Highway Rapidpave Cement is an expertly formulated ultra-rapid strength gain binder, containing high quality cements and high-performance additives. When used to produce concrete in place of Ordinary Portland Cement, a rapid strength concrete, ideal for rapid repair and construction, is created. The product is perfect for volumetric concrete mixers supplying Pavement Quality Concrete into the highways sector where a rapid return to service is required. An early compressive strength of 35N/mm² is achievable at only 4 hours.

USES

Parex Highway Rapidpave Cement is used in place of Ordinary Portland Cement to create an ultra-rapid strength gain concrete, ideal for:

- Situations that require a quick gain in early compressive strength and rapid return to service.
- Airport runways, taxiways, aprons, aircraft stands, and floors of hangars.
- Motorways, trunk roads, dual carriageways, and service roads.
- Car parks, forecourts, loading bays and ramps that require early trafficking.
- Ports, wharves, shipyards, and oil terminals.
- Marine and tidal zones where access can be limited.
- Industrial, manufacturing plants and fabrication facilities.
- Rail structure and track bed replacement.
- Floor slabs for warehouses, distribution centres, flex buildings and data housing centres.

CHARACTERISTICS / ADVANTAGES

- Binder used in place of Ordinary Portland Cement to produce a rapid setting concrete.
- All mixing water is completely chemically bound, resulting in no water surplus. The water surplus that occurs with other cement types is the cause of shrinkage, cracking and warping.
- Non-shrink when used in well-designed concrete.
- High freeze-thaw resistance.
- Not based on Ordinary Portland Cement.
- Higher water demand than concrete with Ordinary Portland Cement which results in an improved yield.
- Quick setting.
- Ultra-rapid strength gain (compressive strength of 35N/mm² achievable at only 4 hours).
- High ultimate strength.
- Rapid return to service.
- Suitable for marine or tidal zones.
- Can be delivered and placed in remote locations.
- Does not require a concrete plant to produce concrete.
- No risks of concrete hardening in transit or being unsuitable at the time of placing.
- Exact amount of concrete produced, zero waste.
- No specialist tools or training required for the contractor.
- Consistent quality, unlike Pavement Quality Concrete which can vary from load to load.
- Reduced CO_2 emissions. Specialist cement used is considered a green binder because of the following factors:
  - This cement is calcined at 1250°C (2250°F), whereas Ordinary Portland Cement is calcined at a temperature of 1500°C (2700°C).
  - The clinker is much softer compared to Portland clinker, which reduces the energy requirement during grinding.

PRODUCT INFORMATION

Packaging	25kg, 454kg and 1000kg bags
Shelf life	25kg bags: 6 months from the date of manufacture. Bulk bags (454kg and 1000kg): 3 months from date of manufacture.
Storage conditions	Store properly in cool, dry conditions in undamaged and unopened original sealed packaging.
Appearance and colour	Grey powder
Density	~2400kg/m³

TECHNICAL INFORMATION

Compressive strength	~35 N/mm² at 4 hours	(EN 12390)

APPLICATION INFORMATION

Mixing ratio

To be determined by the user.
As a guide, to produce premium quality ultra-rapid concrete, a suggested ratio is water : 0/4mm sand : 4/20mm aggregate : binder = 1 : 3.3 : 6.6 : 3.3.
For each 25kg bag of Parex Highway Rapidpave Cement, the following proportions are therefore – 7.58 litres of water : 25kg of 0/4mm sand : 50kg of 4/20mm aggregate.

Yield

Unit size (kg)	Mass of concrete produced (kg)	Volume of concrete produced (litres)	Volume of concrete produced (m³)
25	108	45	0.045
454	1960	817	0.817
1000	4320	1800	1.800

*as an approximate guide

Ambient air temperature	Winter version = +5°C to + 20°C Summer version = + 20°C to +35°C
Initial set time	~25 mins
Final set time	~30 mins
Application time	~20 mins

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

Any vegetation should be removed, and the substrate should be clean and dust free (extraneous material removed and dust blown clear using oil-free compressed air immediately prior to concreting). All joints and cracks 20mm or wider should be suitably filled and repaired prior to overlaying. Any formwork shall be generously oiled/coated to ease removal. If a separation membrane is used, the surface shall be clean, smooth, and free of standing water, mud, grit, and any other extraneous materials. Installation shall be in accordance with the manufacturer's guidelines.

MIXING

The concrete shall be mixed in the appropriate proportions (confirmed through testing) for a period long enough to achieve a fully blended, homogeneous concrete. Batch sizes will depend on the equipment used and manufacturer’s guidelines should be followed.

APPLICATION

The mixed concrete should be placed and compacted in the same manner as Pavement Quality Concrete (PQC). Placing shall take place in a manner which avoids segregation and contamination of the concrete with extraneous matter. The concrete shall be fully compacted using poker vibrators.

CURING TREATMENT

Good concreting curing practices shall be followed. As soon as the surface has been finished, it shall be sprayed with a suitable curing compound (e.g. Sika® Antisol® E-20) following the manufacturer’s guidelines.

CLEANING OF EQUIPMENT

Clean all tools and application equipment with water immediately after use. Hardened/cured material can only be mechanically removed.Clean all tools and application equipment with water immediately after use. Hardened/cured material can only be mechanically removed.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product’s suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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