

LA REPAIR CONCRETE

Description

LA Repair Concrete complies with the requirements of BS EN 1504-3 Class R4.

LA Repair Concrete is a blend of special Portland cements, ground granulated blast furnace slag plus high quality continuously graded non ASR reactive aggregates. The product, when mixed with water, produces a homogenous concrete which will not segregate or bleed and has a dual shrinkage compensating system giving volume stability in both the plastic and hardened states. The mix has high flow characteristics and will not rapidly stiffen.

LA Repair Concrete may be used for all concrete repairs wherever a flowing concrete is required. The product is easily mixed and placed under gravity or by pumping. The placed material is self compacting and will displace air from the repair area ensuring a strong bond between the placed material and the repair substrate.

The use of the Portland blast furnace type of cement gives a mix design with less than 3kg of equivalent sodium oxide per m³ thus minimising the risk of alkali aggregate reaction even in the parent concrete. In addition, the midrange resistivity enables cathodic protection to be undertaken in conjunction with LA Repair Concrete.

LA Concrete is suitable for the following repair methods as defined in BS EN 1504

- 3.2 – Concrete restoration - Recasting with concrete or mortar.
- 4.4 – Structural strengthening – Adding mortar or concrete.
- 5.3 – Increasing physical resistance – Adding mortar or concrete.
- 6.3 – Resistance to chemicals – Adding mortar or concrete.
- 7.1 – Preserving or restoring passivity – Increasing cover with additional mortar or concrete.
- 7.2 – Preserving or restoring passivity – Replacing contaminated or carbonated concrete.

Other uses include:

- Motorway bridge repairs.
- Repairs to large structural concrete elements.
- Protection of corroded and damaged reinforced concrete.
- Refurbishment of soffits to bridge beams and crossheads.
- Grouting under baseplates.

Specification Outline

Concrete repairs and replacement shall be carried out using LA Repair Concrete as manufactured by Parex Ltd. The product must be stored, handled and used strictly in accordance with the manufacturer's instructions.

Quality Assurance

Parex Ltd is a firm of Assessed Capability. The Company's quality system conforms to BS EN ISO 9001:2008 and is assessed by UK CARES LTD.

Standards

LA Repair Concrete conforms to the requirements of the Department of Transport Standard BD27/86, clause 4, "Materials for the Repair of Concrete Highway Structures".

LA Repair Concrete conforms to the requirements of "the Department of Transport Specification for Highway Works, clause 1704.6 Control of Alkali Silica Reaction."

LA Repair Concrete complies with the classification R4 according to BS EN 1504-3 and is a concrete repair product for structural repair CC mortar (based on hydraulic cement).

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Parex Ltd, Holly Lane Industrial Estate, Atherstone, Warks, CV9 2QZ. UK 12 GB12/85674		
EN1504-3		
Products for structural repair CC Mortar (based on hydraulic cement)		
Compressive strength	EN 12190	Class R4
Chloride ion content	EN 1015-17	≤ 0.05%
Adhesive bond	EN 1542	≥ 2MPa
Restrained shrinkage / expansion	EN 12617-4	≥ 2MPa
Carbonation resistance	EN 13295	Complies
Elastic modulus	EN 13412	28 GPa
Dangerous substances	Complies with 5.4	
Reaction to fire	Class A1	

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Typical LA Repair Concrete Properties (At 20°C and 13% (3.25litres) water addition).

Property	Standard	Result
Consistency		Flowing concrete
Flow trough	EN 13395-2	750mm in 10s
Initial set	EN 197-1	5 hours
Final set	EN 197-1	8 hours
Compressive strength	EN 12190	1 day - 20 MPa 3 day - 30 MPa 7 day - 55 MPa 28 day - 65 MPa
Flexural strength	EN 1015-11	6.5 MPa @ 28days
Elastic Modulus in compression	EN 13412	28 GPa @ 28 days
Bond strength via pull off	EN 1542	2.3 MPa @ 28 days
Set density	EN 12390-7	2250-2300 kg/m ³
Electrical resistivity		11000 Ohm.cm
Coefficient of thermal expansion		10 – 12x10 ⁻⁶ /°C
Air content	EN 12350-7	4%
Cl ⁻ content	EN 1015-17	<0.003%
Application thickness		Min: 50mm Max: 500mm*

*Applications at a thickness greater than 500mm are possible. Please consult the Technical Services Department before undertaking.

Instructions for use

Preparation

Repair surfaces should be roughened to produce a good mechanical key. Ensure all contact surfaces are clean and free of contamination. Concrete surfaces should be soaked then blown free of standing water prior to concreting. Enclosed formwork sections should have drain holes to remove any standing water.

Formwork must give sufficient hydrostatic head for the concrete to flow across the work area and be strong enough to resist the force of concreting. When placing concrete upwards from the bottom of a section, air release and tell-tale outlets may be required.

Mixing

The recommended water addition is 3.25 litres (13% by mass) per 25 kg bag. Place the required quantity of water in a suitable forced action mixer such as a Creteangle. Slowly add the powder to the water whilst continuously mixing. After all the powder is added mix for a further minute to ensure a smooth lump free consistency is achieved.

Placing

Ensure sufficient LA Repair Concrete has been mixed and available so the placing operation can be carried out in one continuous pour. Place from one side of the form until the area is full. When placing through a flexible tube to the bottom of the section, pour slowly and continuously to displace air upwards within the work piece.

Curing

At temperatures between 5°C and 35°C, formwork should be left in place until the compressive strength of the LA Repair Concrete has reached at least 10N/mm². Once the formwork has been struck any exposed concrete should be cured immediately with Polycure sprayed at a rate of 10m² per litre. In adverse ambient conditions of rapid drying such as high temperatures and drying winds apply a second coat after the first coat has dried. In cold ambient conditions protect recently placed concrete from freezing.

Precautions

Health and Safety

LA Repair Concrete is alkaline when mixed with water and should not come into contact with skin or eyes. Avoid inhalation of dust during mixing and wear safety glasses, dust mask and gloves. If skin contact occurs wash thoroughly with clean water. Should eye contact occur, rinse immediately with plenty of clean water and seek medical advice.

Full health and safety data are given in Product Safety Data Sheet.

Fire

LA Repair Concrete is non-flammable. Fire Class A1.

Yield

LA Repair Concrete is packed in 25kg bags. The yield obtained is approximately 12.5 litres of mixed material.

Storage and Shelf Life

LA Repair Concrete will have a shelf life of 12 months when kept in dry conditions at a temperature of 5°C to 35°C. Higher temperatures or high humidity may reduce the shelf life.

Packaging and Ordering

LA Repair Concrete is supplied in:

25kg bag Product Code TP64

For further information and sales please contact your local Parex office as listed below.

Parex Ltd products are guaranteed against defective materials and manufacture. Products are sold subject to the Parex Ltd Terms and Conditions of Sale, copies of which are forwarded on invoice and are available on request. Parex Ltd endeavours to ensure that the above data and any further advice is correct, however, it cannot accept any direct or indirect liability for the use of its products as such usage is beyond its control.