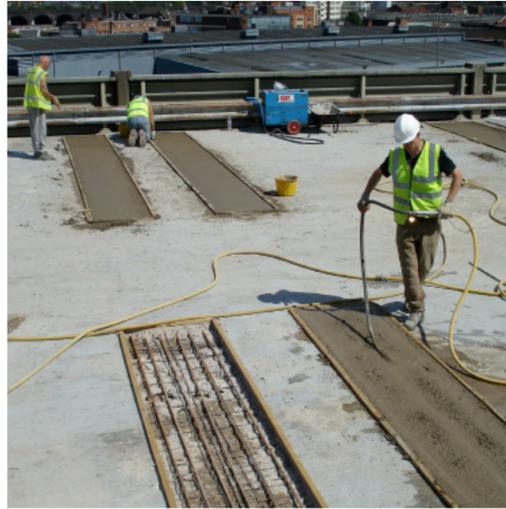


CONCRETE REPAIRS EXPERTISE & EXPERIENCE



Makers Construction is synonymous with quality and innovation; along with its dedicated long serving workforce, Makers has obtained vast experience and knowledge enabling us the opportunity to offer turnkey solutions to our clients in all areas of Concrete Repairs. Makers has attained industry wide recognition in its specialist fields winning both National and International awards and continues to go from strength to strength.

We are committed to excellence and continued improvement in all that we do to maintain our position as a market leader and this is reflected in our desire to maintain our **ISO 9001, 14001 and 18001** accreditation since 2007.

WE SPECIALISE IN

- Mechanically breaking out defective concrete with percussion tools
- Breaking out defective concrete by Hydro-demolition
- Hand Placed Mortar Repairs
- Repairs placed with fluid flow mortars
- Repairs placed by wet and dry sprayed techniques
- Application of surface levelling and pore filling materials
- Application of anti-carbonation coatings

TRANSFORMATION EXCELLENCE



Structural Repair and Refurbishment

- Concrete repairs
- Electro chemical
- Deck waterproofing
- Anti carbonation coatings
- Signage, CCTV
- Testing & investigation
- Lighting schemes & design
- Movement joints

MAKERS

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CONCRETE REPAIR

MAKERS



CONCRETE REPAIRS OUR APPROACH



We have seen all manner of repair techniques 'come and go', until now when we see the use of a single system approach being utilised. The system will usually comprise of a reinforcement primer, a bonding bridge and then the repair mortar itself.

The correct route to concrete repair is diagnosis of the deterioration mechanism prior to starting repairs and then it is essential that the correct type of system/product is specified, ensuring that the repair product is compatible with the parent concrete.

It is also essential to determine the type of repair most applicable:- Poured, Placed or Sprayed. Makers Staff can assist you through this process, as we have with many thousands of clients.

WE GIVE YOU MORE

- Work guaranteed by the company under its non diminishing warranty
- Active members of the CRA (Concrete Repair Association)
- We only chose products, systems and partners with proven track records
- Improving the built environment, arresting the need for demolition and lessening the impact of CO2 emissions
- Multi award winning projects

THE REPAIR PROCESS ESTABLISHING CAUSE

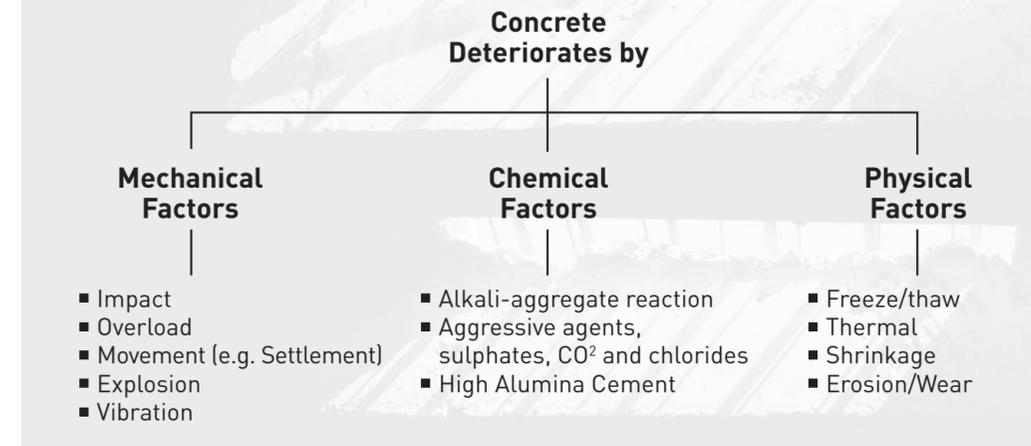
Testing and Investigation

Makers employ a wide range of techniques to establish the root cause of concrete deterioration including:

- **Visual Inspections, Hammer Testing & Rebound (Schmidt) Testing**
Tests surface hardness and penetration resistance
- **Cover Meter Surveys**
Measures the depth of the steel reinforcement
- **Carbonation Level Testing**
Evaluates the risk of corrosion due to carbonation
- **Chloride Analysis**
Establishes the level of chloride contamination
- **Half Cell Surveys**
Evaluates potential steel corrosion
- **Pull Off Testing**
Measures the depth of the steel reinforcement



Why does concrete deteriorate?



THE REPAIR PROCESS REPAIR AND SAFEGUARDING

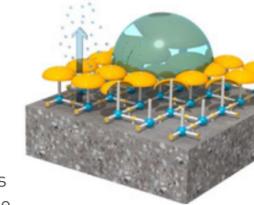
Hand applied mortar Surface Restoration

Repair material is mixed into a troweled scoop of non-sag consistency. Trowels are used to transport the repair material to the prepared substrate.



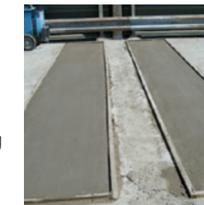
Hydrophobic Impregnation Protection against Water Ingress Moisture Control and Increasing Resistivity

A surface applied, invisible non-film forming protection system, which increases durability of the concrete structure



Form and Cast-in-place Columns, walls, and exterior slab edges

The placement of repair material into a confined space with formwork defining all exposed boundaries. Repair materials are deposited into the formwork and consolidated by rodding or conventional vibration.



Shotcrete

Large vertical and overhead areas with small bars.

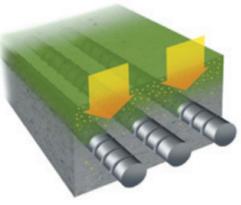
Repair material is placed dry or slightly damp into shotcrete machine and mixed with compressed air. The mixture is transported via hose to the exit nozzle where water and admixtures, if any are introduced. The ingredients are propelled onto the prepared substrate by the force of the compressed air.



MCI - Migration Corrosion Inhibitor

Protection against the corrosive effects of carbonation and chlorides

MCI applied to the surface is drawn into the concrete via capillary action forming protective, molecular layer around the steel.



Electro-chemical Repair Techniques - Cathodic Protection

Prevent or reduce corrosion rates. Removes aggressive chloride ions from contaminated concrete. Involves the application of an electrical field between the reinforcement and an externally mounted anode mesh.



Maintenance requirements following protection and repair

Makers can prevent the future development of serious structural defects and avoid a potentially expensive and disruptive programme of remedial works.

MAKERS
Life Care

IMPORTANT CONSIDERATIONS

- What is the repair meant to do:
- Restore structural integrity
 - Arrest deterioration
 - Prevent further deterioration
 - Restore original profile
 - Restore integrity of sealed system e.g. waterproofing
 - Maintain / restore aesthetic appearance