NEWS from MARTECH

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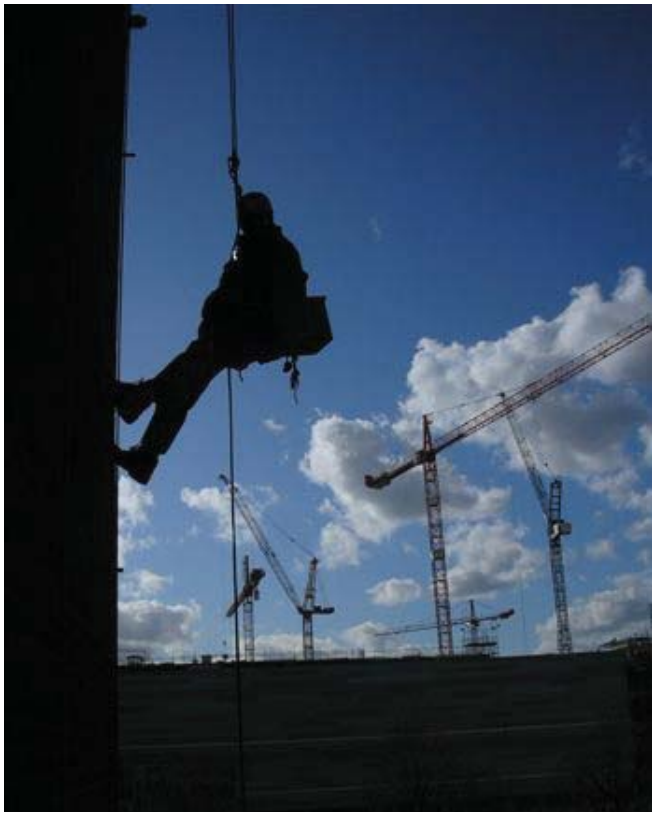
Martech achieve CHAS compliance



Martech is now an accredited company with the Contractors Health and Safety (**CHAS**) Assessment Scheme

The aim of the scheme is to avoid repeated applications by contractors and consultants in safety prequalification. This saves time and money for all involved. In addition, a **CHAS** assessment may cancel the need for a full assessment when tendering for work with **CHAS** client members.

Roel van Es comments:
"This assessment by the **CHAS** organisation is recognition of the commitment by **Martech** to not only comply with but to continuously improve health and safety at work. It will help us to further develop our services in the construction markets and provide our clients with the assurance of a continued problem solving and solution advising specialist business, now with the added benefit of **CHAS** accreditation".

CONTRACTORS HEALTH & SAFETY ASSESSMENT SCHEME
Accredited Contractor
www.chas.gov.uk

Keeping Homes Decent

Reinforced concrete has been used for the construction of housing for many decades and prudent management of these stocks by local authorities and housing associations involves regular inspection and testing of the concrete.

Martech have completed a concrete condition survey for a Housing Association on two blocks of flats in the Rotherhithe area of South London to ascertain the nature and extent of the reinforcement corrosion problems present there.

It was found by **Martech** testing engineers that the concrete suffers from cracking and spalling as a result of reinforcement corrosion triggered by low cover and concrete carbonation – a naturally occurring process of concrete ageing where carbon dioxide from the atmosphere carbonates the alkaline cover concrete lowering the ph to levels where the embedded steel can corrode with the presence of moisture.

Martech recommendations for repair were submitted to the client with the detailed survey report allowing them to manage their budgets and plan for the necessary refurbishment programmes more efficiently.

Roof Top Load Testing

To facilitate the installation of a new flat roof system over the existing roof on a listed reinforced concrete apartment block in North London, **Martech** carried out a water load test.

The clients structural engineers, Conisbee, instructed **Martech** staff on the installation of a number of plastic water tanks that were interconnected and filled to give a test load of 2.1 kN/m2 or 215 litres per m2 of water.

On the underside of the roof slab **Martech** erected a tower in a selected area and with the installation of four micrometer dial gauges with a measuring range of 0 – 10mm in 0.01mm increments deflection could be accurately measured.

Readings were taken by **Martech** from the start and at regular intervals until the water tanks achieved the full test load. Interestingly there was very little deflection during the loading and at the full test load the maximum deflection measured was 0.49mm.

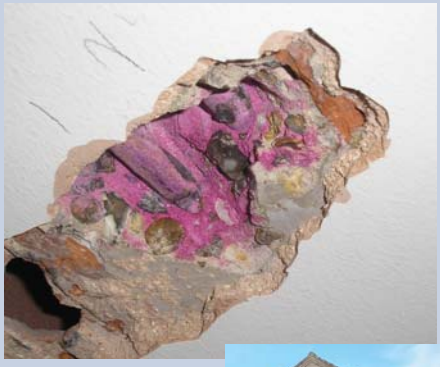
The test required the load to remain in place overnight and for the tanks to be emptied slowly again taking regular measurements as the deflection relaxed under the reducing weight.

These results together with a full report of the load test were submitted to the structural engineers for them to complete their new roof design.

Martech work closely with consulting engineers on many innovative and problem solving assignments using their specialist knowledge of building construction methods and materials.

Education, Education, Education:

A grammar school science block constructed using a steel frame of RSJ's encased in concrete was investigated for the possible addition of a new top storey to be built on the existing flat roof.



Martech were commissioned to carry out a survey for the structural engineers to confirm the construction details of the steel frame and report on the condition of the existing concrete.

Martech testing engineers confirmed the main beams and columns to be of concrete encased RSJ's with the secondary beams of reinforced concrete and the roof slab of beam and pot construction. The condition of the existing concrete showed signs of advancing carbonation and together with low cover in places was causing localised steel corrosion and hence some cracking.

A detailed report by **Martech** confirmed the method of original construction and explained the cause and extent of the concrete problem to the client with included repair options.

Repair recommendations in this case were straight forward with traditional repairs to the spalled areas and the use of embedded corrosion inhibitors to treat the concrete encased steel frame members.

Corrosion Inhibitors in the form of vapour phased inhibitors travel through the pore structure of the concrete to the reinforcing steel where they adhere to the steel surface providing protection from corrosion and the sources of corrosion.

Martech have many years of experience in the field of construction investigation and corrosion control.

Car Parking Problems

Reinforced concrete Multi Storey Car Parks are many and varied in design. These car parks are susceptible to steel reinforcement corrosion from chloride attack where the chlorides have been brought in by cars depositing road de-icing salt during winter conditions.

The effects of chlorides in concrete are exacerbated by advancing carbonation and low concrete cover, symptoms found on this MSCP in the Midlands by **Martech** testing staff. Following an extensive concrete condition survey, **Martech** submitted a detailed report together with repair solutions.

In this case the repair recommendations called for the use of electrochemical methods of corrosion control based on impressed current cathodic protection for the running decks and traditional repairs elsewhere.

Multi-Storey Car Parks built from concrete can have their useful life extended greatly by regular maintenance and inspections. **Martech** have the experience to provide a thorough inspection service of these reinforced concrete structures and give repair advice.

Sea Front Safety

Martech engineers have recently carried out inspection and safety works to the reinforced concrete sea wall structures for one of the south coast borough councils.

The work commissioned by the local authority is part of their coastal structures risk management strategy and involved **Martech** staff hammer testing and removing loose or spalling concrete followed by treating the exposed steel reinforcement and adjacent concrete areas with a protective coating .

Detailed records were made by **Martech** of these areas and presented to the client in a report for their management analysis and future risk assessments of their buildings and structures.

Many coastal reinforced concrete structures can suffer from chloride contamination from the sea either as a direct result of contact with sea water or from salt laden moisture in the atmosphere eventually causing corrosion to the reinforcing steel.

Martech are experts in this field and can assist with testing, making safe and the repair of seaside structures.

MARTECH

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Margel

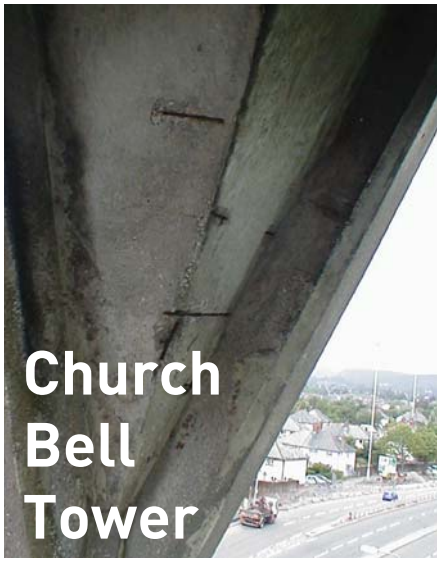
– the original embedded corrosion inhibitor for reinforced concrete

Martech are approved Surveyors and Installers of **Margel** Vapour Phased Inhibitors for use in reinforced or structural steel frame encased concrete.

A recent project involved **Martech** installing **Margel** 580 pellets into a number of non-traditional PRC (pre-cast reinforced concrete) homes as part of an overall refurbishment and upgrading programme.

The two storey homes are of exposed aggregate large panel design built in the 1950's and the **Margel** treatment is part of the Adams Specification Licence, a repair system developed by Adams Consulting Engineers that brings these buildings up to modern Decent Homes high standards of comfort, energy efficiency and low maintenance.

Martech were originally involved with the product introduction and site testing of **Margel** some ten years ago and with the manufacturers offer an unrivalled knowledge on the effective use of embedded corrosion inhibitors in buildings and structures.



Church Bell Tower

A reinforced concrete bell tower to a church in South Wales was suffering from spalling concrete to its structure.

Martech were called in to carry out a concrete condition survey to ascertain the nature and extent of the reinforcement corrosion problems that were causing the concrete to spall.

The survey by **Martech** testing engineers found the concrete to have a combination of localised low cover to the steel reinforcement and advancing carbonation. There was also the presence of low to moderate chloride levels in some areas.

Martech recommended repair advice was to phase the works with the high level elements having priority. The repair techniques involved traditional concrete repair with selected use of corrosion inhibitors and overall protective coatings.