General Salt Analysis - Method of Taking Samples

If there is an issue with salt contamination on a masonry structure, knowing the type of salt and the amount of salt present at the different depths helps to determine the best plan of action to rectify the problem. This is done by drilling a 10mm hole at three different depths and carefully collecting the dust from each of the three depths. The minimum amount of dust required for each sample is around 6 grams. The amount of drill tests required will depend on the situation and vary from site to site. The samples are then sent to the laboratory for testing using Ion Chromatography (ICR) which provides results on the amounts of An-ions and Cat-ions present in each sample. This testing process generally takes around 5-10 business days.

Determine an appropriate location where the sample will be taken. (Sample are usually taken from around or near the worse affected areas). Once the location has been established, carefully drill a 10mm hole using a 10mm masonry drill bit and collect the dust from a depth of 0-10mm using a clean piece of plastic or similar and immediately place into a suitable plastic food grade clip lock bag. Brush or wipe the tip of the drill clean between drilling each depth. The same hole is then drilled to a depth of 10-20mm with the dust being collected in another bag. Finally drill the same hole to a depth of 20-40mm and again collect the dust in another bag. Each sample is to be collected in a separate, clean, plastic food grade clip lock bags and clearly labelled with the date, sample number, site name, site location, sample location and depth. The best practise is to fill out the details on all the bags prior to commencing the drilling.

The minimum number of samples for testing one location would be 3 samples at the three different depths.
Example below;

One set, one location.
Sample 1: Dust collected from 0-10mm
Sample 2: Dust collected from 10-20mm
Sample 3: Dust collected from 20-40mm

Salt Analysis with Cocoon Desalination System - Method of Taking Samples

If the type or origin of salt is unknown or if scientific evidence is required to verify the amount of salt that has been removed by the Cocoon desalination system, the following procedure is carried out

- prior to the first application of *Cocoon*
- 14 days after the first application of *Cocoon*
- 14 days after the second application of *Cocoon*

The standard method for rising damp is to drill one hole at the base of the wall and another at upper height of dampness. The upper height may be ascertained by using an electronic moisture meter. For lateral damp or other situations, one hole around or near the worse affected area is usually sufficient. Each sample is to be collected in a separate, clean, plastic food grade clip lock bags and clearly labelled with the date, sample number, site name, site location, sample location and depth. The best practise is to fill out the details on all the bags prior to commencing the drilling. Once the location has been established, carefully drill a 10mm hole using a 10mm masonry drill bit and collect the dust from a depth of 0-10mm using a clean piece of plastic or similar and immediately place into a suitable plastic food grade clip lock bag. Brush or wipe the tip of the drill clean between drilling each depth. The same hole is then drilled to a depth of 10-20mm with the dust being collected in another bag. Finally drill the same hole to a depth of 20-40mm and again collect the dust in another bag. The above process will be repeated again after each application of *Cocoon*.

The second set of dust samples taken 14 days after the first application of *Cocoon* must be drilled within 5cm from the first test hole and must include a 5cm square of the *Cocoon* from the area over the first test hole. The third set of dust samples taken 14 days after the second application of *Cocoon* must also be drilled within 5cm from the first and second test hole and must also include a 5cm square of the *Cocoon* from the area over the first and second test holes.

Salt Analysis Samples – Rising Damp

The total amount of samples for testing for the two locations for rising damp would be 6 samples for the first analysis and 8 samples each for the second and third set. (second and third set contain a 5cm square sample of dry Cocoon). Example below;

Lower wall – First set

Sample 1: Dust collected from 0-10mm
Sample 2: Dust collected from 10-20mm
Sample 3: Dust collected from 20-40mm

Upper wall – First set

Sample 4: Dust collected from 0-10mm
Sample 5: Dust collected from 10-20mm
Sample 6: Dust collected from 20-40mm

Lower wall – Second set

Sample 7: Dust collected from 0-10mm
Sample 8: Dust collected from 10-20mm
Sample 9: Dust collected from 20-40mm
Sample 10: Cocoon 5cm square

Upper wall – Second set

Sample 11: Dust collected from 0-10mm
Sample 12: Dust collected from 10-20mm
Sample 13: Dust collected from 20-40mm
Sample 14: Cocoon 5cm square

Lower wall – Third set

Sample 15: Dust collected from 0-10mm
Sample 16: Dust collected from 10-20mm
Sample 17: Dust collected from 20-40mm
Sample 18: Cocoon 5cm square

Upper wall – Third set

Sample 19: Dust collected from 0-10mm
Sample 20: Dust collected from 10-20mm
Sample 21: Dust collected from 20-40mm
Sample 22: Cocoon 5cm square

Salt Analysis Samples - Lateral Damp and other Situations

The total amount of samples for testing for the one location for lateral damp or other situations would be 3 samples for the first analysis and 4 samples each for the second and third set. (second and third set contain a 5cm square sample of dry Cocoon). Example below;

Drill site – First set

Sample 1: Dust collected from 0-10mm
Sample 2: Dust collected from 10-20mm
Sample 3: Dust collected from 20-40mm

Drill site – Second set

Sample 4: Dust collected from 0-10mm
Sample 5: Dust collected from 10-20mm
Sample 6: Dust collected from 20-40mm

Sample 7: Cocoon 5cm square from over drill site

Drill site – Third set

Sample 8: Dust collected from 0-10mm

Sample 9: Dust collected from 10-20mm

Sample 10: Dust collected from 20-40mm

Sample 11: Cocoon 5cm square from over drill site

Mortar Analysis Method

A mortar analysis provides information on the breakdown of materials and mix ratios so the client can re-create a similar, compatible mixture to what was originally used in the construction. A minimum 200 gram sample of the mortar must be collected from the site and sent into the laboratory. The process used to breakdown the sample is acid digestion. This testing process generally takes around 5-10 business days depending on the type of sample.