

Concrete Testing Services

Reasoning for testing the quality of concrete should be done for the following possible purposes:

- To detect the variation of quality of concrete being supplied for a given specification.
- To establish whether the concrete has attained a sufficient strength or concrete has set sufficiently for stripping, stressing, de-propping, and opening to traffic etc.
- To establish whether the concrete has gained sufficient strength for the intended purpose.

Skill Stone Limited offer a concrete testing services, and adhesion testing and are completed with a full survey report and certification.

Detailed below is the brief over view of the different types of test we provide:

Schmidt Hammer Test:

The Schmidt Hammer Test, is also widely known as a Swiss hammer test, this rebound hammer device to measure the elastic properties or strength of concrete, for mainly surface hardness and penetration resistance.



Original Schmidt Concrete Test Hammer

The hammer is designed to measure the rebound of a spring-loaded mass impacting against the surface of the sample.

The test hammer hits the concrete at a defined energy, it is a rebound and is dependent on the hardness of the concrete and is measured by the test equipment.

By reference to the conversion chart, the rebound value can be used to determine the compressive strength.

When conducting the test the hammer should be held at right angles to the surface which in turn should be flat and smooth, a rebound reading will be affected by the orientation of the hammer, when used in a vertical position (on the underside of a suspended slab for example) gravity will increase the rebound distance of the mass and vice versa for a test conducted on a floor slab. The Schmidt hammer is an arbitrary scale ranging from 10 to 100.

Delamination Testing:

Also known as the Delam Tool:



This complete "Delamination detection tool" incorporates a marking and measuring system, it is designed to accurately identify areas of delamination, which have been caused by corrosion, or a possible bond failure. It uses a non-destructive rotary percussion method, this tool is far quicker than other more traditional methods. This has been designed and is a method not un-similar to "Hammer Tapping or tap testing", but cover larger areas, including vertical, and overhead structural elements, it is recognised for its ease of use and accuracy. (Now included in ASTM standard D 4580-86)

Cross Hatch Testing:

Adhesion Testing:



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Core Testing: Strength Testing:

Samples are taken by drilling/cutting cores, using a hollow barrel tipped with industrial diamonds, the rig must be firmly fixed into position by either weights, anchor bolts, vacuum pads or bracing against other parts of the structure. The preferred core diameter for strength testing is not defined in the BS EN 12504-1, BS EN 13791 or BS 6089, but the core should be at least 3.5 x the maximum aggregate size.

On occasion even smaller diameter cores have to be used for strength testing, in this case the strength results can be variable and greater number of cores should be extracted.

For Strength testing, the length to diameter ratio should be between 1 & 2 and preferred 1 & 1.2, cores are then tested in laboratory conditions they may be examined for degree of compaction, cracks, voids, honeycombing and the presence of reinforcement.

Before testing is carried out on cores for strength, they have to be trimmed to length, and the ends prepared so that they are flat and perpendicular to the longitudinal axis, this is achieved by grinding or more usually capping with a high alumina cement (Calcium aluminate cement), mortar or sulphur/sand mixture.

Cores are tested in a dry state, and must be dry by air not Heat (Oven Dried), if they are tested wet/by water a small positive correction to the strength is made.

The sample below is a sample of concrete , and other substances to determine the materials used on a railway platform.



Cross Hatch Testing:

This simple Cross Cut Adhesion Tester kit is used to test the adhesion of dry coats of paint, acrylic paint on their substrate, this is achieved by means of a series of cuts through the coating.

Two series of parallel cuts cross angled to each other to obtain a pattern of 25 or 100 similar squares. The ruled area is evaluated by using a table chart after a short treatment with a stiff brush, or adhesive tape for hard substrates.



The round cutting knife of the Cross Cut Adhesion Tester Kit has eight cutting edges that can be changed easily by rotating the knife, the self-positioning knife bracket ensures equal pressure on the cutting knife.



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