CL-2000 Chloride Field Test System

A chloride laboratory in a briefcase for wet or dry concrete.

Features and Benefits

- **Fast—Results within minutes at the site.**
- **Economical—Low cost per sample compared to laboratory testing.**
- **Accurate—Results are comparable to laboratory testing.**
- **Covers wide range from 0.002% to 2% chloride by weight.**
- **Automatic compensation for changes in ambient temperature.**
- **Digital display for direct reading of lbs./cu. yd. and percentage of chloride by weight.**
- **Conforms to AASHTO-T-260.**

CL-2000 Chloride Field Test System

Collecting drill dust sample

The CL 2000 Chloride Test System

CI 2000 Electronic Meter

Technical

The determination of the chloride ion concentration in concrete is essential in assessing the need for maintenance on, for example, bridge decks and parking structures. The test can also be used to ensure that materials used in new construction are free from potentially harmful chloride ion levels.

With this method, the concentration of acid soluble chlorides is measured. In most cases, this is equivalent to total chloride concentration.

A sample of powder is obtained by drilling and careful quartering. Then an accurately weighed 3 gr. (0.1 oz) sample is dissolved in 20 ml (0.67 fl. oz.) of extraction liquid which consists of a precise, measured concentration of acid. For sampling wet concrete a 3 gr. (0.1 oz.) sample of mortar (i.e. without coarse aggregate) is used.

The chloride ions react with the acid of the extraction liquid in an electrochemical reaction. An electrode, with integral temperature sensor, is inserted into the liquid and the electrochemical reaction measured. A uniquely designed instrument converts the voltage generated by the chloride concentration. The instrument automatically applies the temperature correction and it shows the chloride concentration on a LCD display in either lbs. per cu. yd. or percentage by weight.

Once the sample is obtained, test results can be determined and read in less than five minutes.

To avoid contamination, the electrode should be thoroughly washed with deionized water after each test.

Replacement packs, containing twelve bottles of extraction liquid, each for one time use, are available. Five calibration liquids each with known concentrations are supplied with each pack.

These liquids are used to establish the calibration curve, and to check that the system is functioning correctly. Calibration is not required for each use. The calibration liquids are colored to avoid confusion between them and with the extraction liquid.

All equipment necessary to complete the chloride test is supplied in a standard size carrying case.

Sales Numbers & Specifications

C-CL 2000 Chloride Test System

C-CL 3700 Chloride combination electrode with externally mounted temperature sensor, cable, and connectors.

C-CL 2020 Battery powered, high impedance, electronic meter, with temperature compensation circuits and microprocessor for direct conversion to percentage of chloride.

C-CL 2012 Replacement pack of 12 jars each with 20 ml (0.67 fl. oz.) of extraction liquid and 5 jars of colored calibration liquid.

C-CL 1030 Bottle of electrode wetting agent.

C-CL 2096 Bulk pack of 100 jars extraction liquid and 20 jars of colored calibration liquid.

C-CL 2050 Optional system for compliance with AASHTO-T260.

To meet AASHTO's specification the 3 gm (0.1 oz.) sample is digested in sufficient extraction liquid to bring the volume to 20 ml (0.67 fl. oz). After 24 hours digestion period this is titrated with 80 ml (2.7 fl. oz.) of solution. The C-CL 2020 electronic meter, in AASHTO mode is then used with chloride electrode to read the concentration of chloride.

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