

## pH of Cement for Floor Installation Testing

LAQUAtwin is a series of pocket ION meters. Using Ion Selective Electrode (ISE) technology, they are available for measuring Conductivity, Calcium, Nitrate, Potassium, Sodium, Salt concentration and pH measurement. Using just a tiny amount of sample, the LAQUAtwin proprietary flat sensors can quickly and accurately measure the values of the chemical parameters in the field.



### Introduction

When flooring tiles are installed, it is very important that the subfloor level has a certain pH level. When the alkalinity in a concrete subfloor is high, it can stop the floor covering adhesive from bonding properly to the concrete. This is a problem that has only recently been discovered and the new Australian Standard for resilient flooring installation (AS 1884-2012) now says that a pH test must be carried out on a concrete subfloor as part of the pre-installation assessment.

Fresh concrete is usually very alkaline, above pH 11. AS 1884 states 'the pH level of the concrete surface should be between 9 and 10' before the flooring can be installed.<sup>1</sup>

In order to determine the pH level, and hence consider whether floor installation can be commenced, the Horiba LAQUAtwin pH meter can be used.

The Horiba LAQUAtwin pH meter is used to determine the pH of the cement to prepare for floor installations. This is an easy and quick method used to ensure that the cement is at the optimum pH.

### Method

Sand a small section of the concrete surface with 200 grit sandpaper and remove dust.

Put several drops of distilled or 'de-ionised' water onto the prepared surface.

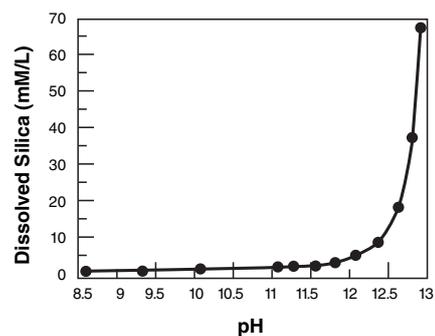
Leave the drops for 60 seconds and then extract the water droplets using a pipette.

The solution is placed on the sensor of the LAQUAtwin pH meter and measured. To repeat sampling, wash the sensor with tap water and pat dry with a paper tissue.

### Results and Benefits

The use of the Horiba LAQUAtwin pH meter to ensure a pH of between 9 and 10 in concrete will allow the floor-covering adhesive to bond properly to the concrete. The use of the Horiba pH Meter as opposed to using pH test strips enables the determination of accurate and reliable results.

The LAQUAtwin pH meter is small and compact; convenient to carry around in your pocket for easy on-site testing. Its easy-to-use interface is simple for anyone to use the LAQUAtwin hand held pH meter.



Effect of pH on Dissolution of Amorphous Silica (Tang and Su-fen, 1980)<sup>2</sup>

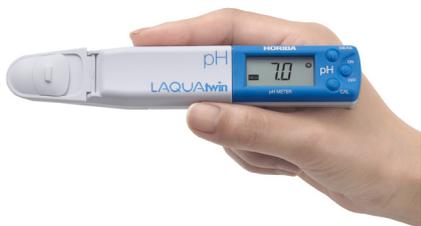
<sup>1</sup> Australian Standard AS 1884-2012 Standard report

<sup>2</sup> Alkali-Silica Reaction, United States Department of Transportation - Federal Highway Administration Publication Number FHWA-RD-03-047 July 2003

Pocket ION Meter

# LAQUAtwin

Unique Features



Calibrate and measure at the touch of a button—the smiley face will tell you when the result can be read.

Hassle-free automatic calibration with a few drops of standard solution reassures you of your measurement accuracy. Two-point calibration is also possible.\*1

\*1 Except for B-711

LAQUAtwin: the only meters with flat sensor technology.

HORIBA's highly-sensitive, flat sensor technology opens up new possibilities for sampling and sample types. Only a small amount of sample is required, so you can easily sample in situ without the need for beakers or other labware. Sensors are easily replaced as required.



LAQUAtwin is fully waterproof and dustproof.

The meter and sensor are fully waterproof\*3 and dustproof, so you can take it anywhere.

\*3 IP67 rated. Will withstand immersion for 30 minutes at 1 m. Not suitable for underwater use.

Carry case comes as standard for handy portability.

The compact carry case contains everything you need for your measurements, including the standard solution and sampling sheets.



# 1 X 6

## One meter, six methods.

Only LAQUAtwin allows you to be this flexible! Choose the best method according to your sample, your situation, and your needs.



01 Immersion

When you're in the lab, you can test the sample in a beaker. Ensure the sensor guard sliding cap is open.



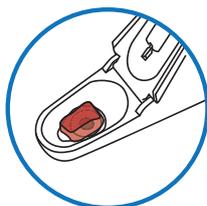
02 Scoop

Use as a scoop to test water eg from a river. A vertical scoop for an aquarium is also available with a unique sensor guard.



03 Drops

Place a drop of the sample onto the sensor with a pipette. LAQUAtwin meters can measure sample volume as low as 0.1mL



04 Solid Samples

Foods containing some moisture can be tested by placing a small piece directly onto the sensor.



05 Powders

LAQUAtwin meters can also test dry powders. Simply place the powder sample onto the sensor and drop on your defined volume of pure water.



06 Paper and textiles

To test sheets of paper and textiles, cut up the sample into small pieces and place directly onto the sensor. Drop on your defined volume of pure water.

Lineup

### pH



Accurate pH measurements in a few seconds, from a single drop.

Water pH varies in different environments, and a slight change can often have a major effect.

Whether you need to keep the pH of an aquarium within tight limits, are checking for the acidity of rain water or for the quality of meat and fish products, LAQUAtwin compact pH meters are ideal for you. No matter where and when you need to test.

### COND



Determine water conductivity with as little as 0.12 mL of sample.

The conductivity of rain water is a trusted guide to determining atmospheric purity. In agriculture, measuring the conductivity of soil allows farmers and agronomists to determine optimum fertilizer usage and check the 'health' of soil after salt water damage. The LAQUAtwin meter makes conductivity testing simple, anywhere.

### Na+



Only compact meter for a quick and reliable measurement of sodium ion at the scene using ion selective membrane.

### K+



Only compact meter for a quick and reliable measurement of potassium ion at the scene using ion selective membrane.

### NO3-



Only compact meter for a quick and reliable measurement of nitrate ion at the scene. Special application packages for crop (B-741) and soil (B-742) are also available.

### Ca2+



Only compact meter for a quick and reliable measurement of ionized calcium at the scene using ion selective membrane.



<http://www.horiba.com/laquatwin>

### IMS

HORIBA Group is operating Integrated Management System (IMS)  
ISO9001 JOA-0298 / ISO14001 JOA-E-90039 / ISO13485  
JOA-MD0010 / OHSAS18001 JOA-OH0068

