Cement Calorimeter

LT-CE0606 | Heat of hydration by the solution method

Comparative calorimetry • Temperature monitoring • Bench-top setup



30 × 20 × 65 cm

EXTERNAL DIMENSIONS

13 kg

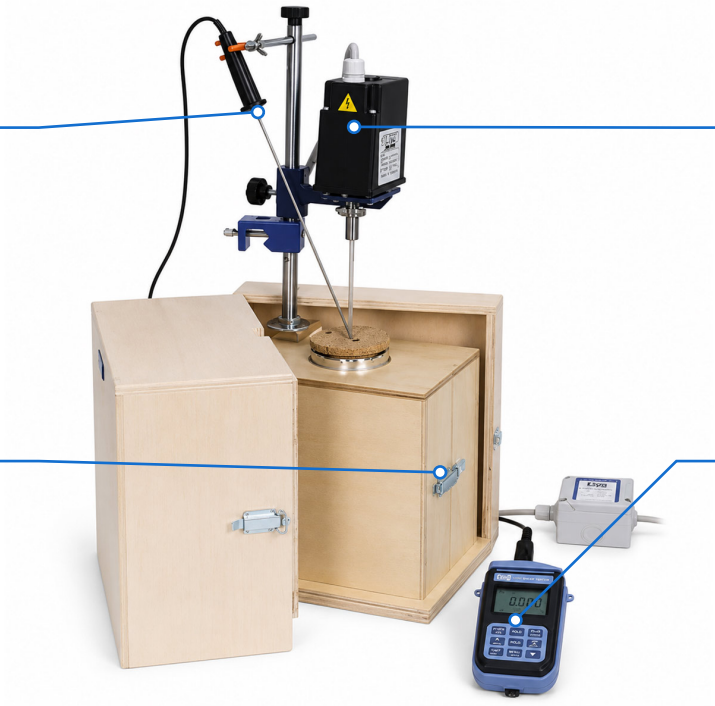
APPARATUS WEIGHT

EN 196-8 • ISO 29582-1 | Solution calorimetry

Photographs and Test Components

Temperature probe, stirring head and calorimeter arrangement

LT-CE0606 supports determination of hydraulic cement heat of hydration by the solution method. The photograph shows the stirrer, temperature probe, calorimeter cabinet and external indicator together.



TEMPERATURE PROBE

The probe extends into the test vessel to monitor temperature change during dissolution.

STIRRING HEAD

The upper head connects to a shaft extending into the vessel. Check the stirring setup before testing.

CALORIMETER CABINET

Housing for the test vessel. Complete specimen preparation and positioning according to the method.

EXTERNAL INDICATOR

The handheld display shown is the external reading component of the temperature measuring setup.



Stirrer shaft, probe and upper test vessel region



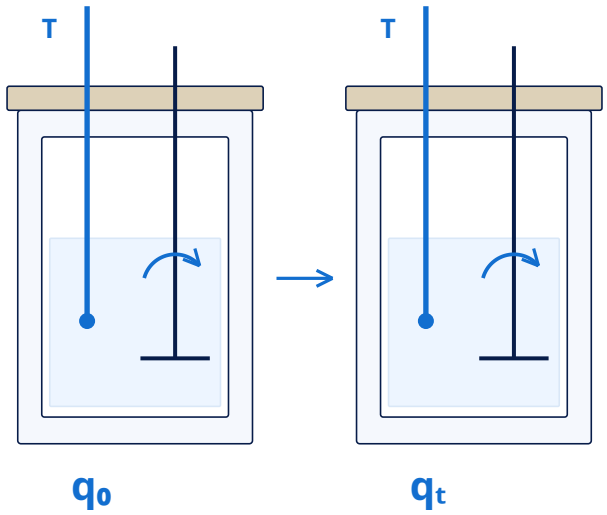
External temperature indicator and connection

LT-CE0606

From Solution Heat to Hydration Heat

Dry cement • Hydration to a defined age • Difference between solution tests

TWO SAMPLES • ONE MEASUREMENT PRINCIPLE



$$H(t) = q_0 - q_t$$

q_0: DRY • q_t: HYDRATED

HEAT OF HYDRATION: $H(t) = q_0 - q_t$

UNIT: J/g • METHOD CORRECTIONS APPLY • NOT TO SCALE

Measure the Dry Sample

Determine the heat of solution of unhydrated cement. Record temperature readings.

Measure the Hydrated Sample

Hydrate a separate portion of the same cement to the specified age. Measure its heat of solution.

Calculate the Difference

Convert both results to the same cement mass basis. Apply method corrections to calculate hydration heat.

Report heat of hydration for a specified test age. Calorimeter heat capacity, temperature change and sample mass enter the calculation. Use consistent preparation and measurement conditions for both tests.

Measurement Control

Check calorimeter calibration and the temperature measuring system before testing. Record sample identification, mass and hydration age.

Keep the vessel clean. Follow the selected method for solution preparation, stirring, temperature corrections and calculations.

Method and Result

EN 196-8 and ISO 29582-1 define heat of hydration testing by the solution method. ASTM C186 is a former solution method withdrawn in 2019.

Report the result in J/g of cement with the test age. The laboratory value is not directly equal to the temperature inside a concrete structure.

LT-CE0606

Technical Specifications and Test Data

LT-CE0606 • Dimensions, weight and essential method information

Parameter	Technical Information
Product Code	LT-CE0606
Product Name	Cement Calorimeter / Heat of Hydration Apparatus
External Dimensions	30 × 20 × 65 cm
Weight	13 kg
Test Property	Heat of hydration of hydraulic cement
Measurement Principle	Solution calorimetry
Compared Samples	Dry cement and cement hydrated to a defined age
Result Unit	J/g of cement
Test Age	According to the selected method
Method Reference	EN 196-8
International Method	ISO 29582-1
Former Method Reference	ASTM C186 (withdrawn in 2019)

Consistent Preparation and Temperature Monitoring

Keep sample mass, hydration age and temperature readings traceable. Compare both solution measurements on the same cement mass basis.

From Sample to Heat of Hydration

01
Prepare
Identify samples and check the measuring setup.

02
Dry Sample
Run the first solution test and record readings.

03
Hydrated Sample
Run the second test at the specified age.

04
Calculate
Report corrected difference with age and J/g.

Product Page | liyatest.com.tr/en/urun/heat-of-hydration/