France Ciment 2

Bureau de Normalisation des Liants Hydrauliques

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Technical Data

Reference Material Strength Test
RESI 25
Portland Cement
(CEM I 52,5 N)

Distributed by:
SNL
(Société Nouvelle Du Littoral)

Siège social et usine : Zone Artisanale – F-11370 LEUCATE
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I – Participation and execution of tests

Each year the French Cement Association (France-Ciment, previously ATILH) organises a round robin test campaign involving the participation of the cement production industry laboratories, the cement end-user laboratories and Research and Inspection Centers within the construction materials sector. This participation is compulsory for laboratories accredited by COFRAC for cement testing. The tests are carried out in accordance with standardised methods where latter exist, otherwise according to everyday traditional methods.

II – Statistical analysis of the results

Outliers are eliminated via the STUDENT's test with a confidence level of 98 %. A reiteration is set at this threshold to keep only those values which are related to the "Normal or Gaussian" distribution, the latter being entirely defined by 2 parameters: mean and standard deviation. The coefficient of variation symbolised by "V" is the ratio between the standard deviation "σ" and the mean value $\overline{X}$.

III – Strength test and Hydration Heat test

SN Strength Test **RESI25**	According French (NF) and European (EN) Standard Method		
KPIs	**Mean**	**Standard Deviation σ (%) Reproductibility**	**Coefficient of variation V (%)**
Sample weight (CEN EN 196-1)	586.5	6.2	1.1
Strength compression 1d (CEN EN 196-1)	27.6	1.3	4.8
Strength compression 2d (CEN EN 196-1)	37.9	1.4	3.8
Strength compression 7d (CEN EN 196-1)	54.9	1.9	3.5
Strength compression 28d (CEN EN 196-1)	68.6	2.4	3.5
Hydration Heat 41h (CEN EN 196-9)	376	12	3.3
Hydration Heat 3d (CEN EN 196-9)	378	16	4.2
Hydration Heat 5d (CEN EN 196-9)	382	18	4.6
Hydration Heat 7d (CEN EN 196-9)	383	18	4.8
Setting Time (CEN EN 196-3)	125	11	8.4

For the calibration of the strength test and Hydration Heat test, follow the requirements of the EN 196-1 and EN 196-9 standards.

III – Sample conditioning

The sample of this reference material is packaged in sold in batch of 2 bags of 500 g. Physic & chemical properties of the sample are stable until the bag is open. After opening each bag, you must use cement for the test immediately. The remaining cement that is not used will lose immediately his quality.