CERAMICS AND REFRACTORIES TECHNOLOGICAL DEVELOPMENT COMPANY (CERECO S.A.)
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Registered No. 99098/96/B/86/003

TEST REPORT

[ISO EN 17025]

CONFIDENTIAL

Code No.: 168 E
Date of issue: 30.10.2008

Customer: IDCM HELLAS S.A.

Service ordered to the Laboratory:

- Determination of the Compressive Strength of Concrete Specimens
- Determination of the Compressive Strength of Concrete Specimens FOLLOWING FROST FOR 100 CYCLES

Test item description: Specimens of Concrete

Item manufacturer: IDCM HELLAS S.A.

Test item identification: 15 cubes coated with colour hardener

Sampling Method/Procedure: performed by the Customer

Test item date of receipt: 24.07.2008

Accreditation No.: 36/01, Hellenic Accreditation System S.A.

Sample size: 8 specimens 15x15x15 cm

Sampling performed by: the Customer

Remarks: -

Concrete-pouring date: 17.07.2008

Dr. K. STOURNARAS
General Manager

AN. GERALIS
Head of Conventional Ceramics Dept.
Technical Head

CERAMICS AND REFRACTORIES TECHNOLOGICAL DEVELOPMENT COMPANY (CERECO S.A.)

TEST REPORT
[ISO EN 17025]

CONFIDENTIAL

Code No.: 168 E
Date of issue: 30.10.2008

Test Description:
DETERMINATION OF THE COMPRESSIVE STRENGTH OF SPECIMENS OF CONCRETE

Method Specification: Concrete Technology Regulations/97 (Method: SK-304)

Procedure: DDO – 302

Testing performance date: 14.08.2008

Premises: CERECO S.A.

Description of specimens: Cubic specimens of concrete, having the following nominal dimensions: 150x150x150mm

Date of sampling (as stated by the customer): 17.07.2008

Concrete Strength Class (as stated by the customer): Cubes coated with Colour Hardener

RESULTS

Age of Specimens at Breaking: 28 Days

[*the Table of Results is given in the following page*]

Remarks:

* With fluidizer

Average: $X_6 = 41.4$ Mpa
Standard deviation: $s_6 = 1.72$
Fck + 1.60s = 37+1.60x1.72 = 39.7 < X_6 = 41.4 Mpa
(the 1st acceptance rule for criterion A of Concrete Technology Regulations 1997 is met)
Fck-2MPa = 37-2 = 35.0 Mpa < Xi
(the 2nd acceptance rule for criterion A of Concrete Technology Regulations 1997 is met)
Therefore criterion A of Concrete Technology Regulations 1997 is satisfied for concrete grade C30/37

CERECO CODE	DESIGNAT. BY THE CUSTOMER	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	COMPRESSION AREA (mm^2)	FORCE (KN)	COMPRESSIVE STRENGTH (N/mm^2)
S168	1	150	150	153	22500	957	42.5
S168	2	150	150	150	22500	981	43.6
S168	3	150	150	149	22500	931	41.4
S168	4	150	150	151	22500	946	42.1
S168	5	150	150	149	22500	873	38.8
S168	6	150	152	149	22800	916	40.2

CERAMICS AND REFRACTORIES TECHNOLOGICAL DEVELOPMENT COMPANY (CERECO S.A.)

TEST REPORT
[ISO EN 17025]

CONFIDENTIAL

Code No.: 168 E
Date of issue: 30.10.2008

Test Description:
DETERMINATION OF FROST RESISTANCE

Method Specification: EN539-2/C

Procedure: DDO – 402

Testing performance date: 14.08.2008 – 3.10.2008

Premises: CERECO S.A.

Description of specimens: Cubes coated with Colour Hardener

Number of specimens: 8

Specimens identification: Cubes coated with Colour Hardener

Measurement/Test Equipment Description/Identification:
Apparatus for Testing Frost Resistance ED-03

Reference and Consumable Materials: -

Calculated or Estimated Certainty of Measurements Involved:
Within the limits foreseen for this procedure

Attachments concerning this test: -

RESULTS

STRENGTH OF MATERIALS FOLLOWING 100 CYCLES OF THE FROST RESISTANCE TEST

[*the Table of Results is given in the following page*]

Remarks:

Average: $X_6 = 42.1$ Mpa
Standard deviation: $s_6 = 2.30$

Following 100 cycles of the frost resistance test, the specimens presented no defect.

STRENGTH OF MATERIALS FOLLOWING 100 CYCLES OF THE FROST RESISTANCE TEST

CERECO CODE	DESIGNAT. BY THE CUSTOMER	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	COMPRESSION AREA (mm^2)	FORCE (KN)	COMPRESSIVE STRENGTH (MPa)
S168	1	150	150	149	22500	992	41.0
S168	2	150	149	149	22350	893	39.7
S168	3	151	150	150	22650	982	43.6
S168	4	151	150	149	22650	968	43.0
S168	5	150	150	149	22500	997	44.3
S168	6	150	150	149	22500	853	37.9
S168	7	150	150	149	22500	996	44.1
S168	8	150	150	149	22500	981	43.2