



REF: 812/02/02/1/748

DATE: 16 January 2007

ATTENTION: LAB MANAGER

SUBJECT: 149th INTER-LABORATORY PROFICIENCY TESTING PROGRAM

We are pleased to present the results of the 149th Inter-laboratory Proficiency Testing Program involving the determination of the electrical indication of concrete ability to resist chloride ion penetration.

As in previous programs, we have assigned code numbers to participating laboratories in order to protect their identities. For this particular program please contact Dr. Yaser (Tel. No. 3027074) or Eng. Raniah (Tel. No. 3027069) to inform you which code number has been assigned to you.

You are also requested to pay to Dubai Accreditation Centre (DAC), an amount of (Dhs 418) in return for your participation in the Inter-laboratory Proficiency Testing Program (please note that the governmental laboratories are exempted from participation fees). We would like to draw your attention that payment can be made through DCLD counter-ground floor by credit card. Should you intend to pay by cheque please address the cheque to Dubai Municipality. After payment, please submit a copy of the invoice to Dubai Accreditation Center (Eng. Raniah Ed Dili in the administration building on the second floor office no. 310).

You are kindly requested to pay the amount within one month from the date in which the result is posted on our website.

We thank you for your participation and we would welcome any comments or suggestions on this and on future programs. Please do not hesitate to contact us if you need any clarification on the report.

Kind Regards

Eng. Mohammed Badri
Director of Dubai Accreditation Center

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Report on 149th Inter-Laboratory Proficiency Testing Electrical Indication of Concrete Ability to Resist Chloride Ion Penetration

14 January 2007

1. INTRODUCTION

This document presents the results of the 149th inter-laboratory proficiency-testing program conducted during the months of November - December 2006, involving the determination of electrical indication of concrete ability to resist chloride ion penetration according to ASTM C 1202-97.

This program is part of the Interlaboratory Comparison Programs organized by Dubai Accreditation Center of DM for monitoring the validity of tests results of laboratories operating in Dubai as a requirement of the Local Order 52/1990 and ISO/IEC 17011: 2004.

2. EXPERIMENTAL DESIGN

2.1 Participants:

A total of thirteen laboratories participated in this program.

2.2 Samples tested:

The test items consisted of two sets of concrete cubes 150 x 150 x 150 mm, with each set specially collected from one site location in Dubai upon request of DM-DAC.

From one set, 26 samples were randomly selected and similarly from the other set, another 26 samples were also selected. The samples were randomly selected to the thirteen participating laboratories with each participant receiving four samples, two from each set. The samples were designated as Samples 1, 2, 3 and 4 with a unique identification number marked on each sample

3. CONFIDENTIALITY

Each laboratory is given a Code number to maintain confidentiality of results and to protect their identities. Only the concerned laboratory knows its code number.

4. TEST METHOD

Instructions were given to the participants to test the samples for Electrical Indication of Concrete Ability to Resist Chloride Ion Penetration as per ASTM C 1202-97.



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5. TEST RESULTS

The test results submitted by the participating laboratories are presented in Appendix A. In order to protect the identity of the participating laboratories, each one was assigned a code number. The numbers in the column headings, Lab #, of the tables represents the code numbers for the participating laboratories.

6. METHOD OF ANALYSIS

6.1 Please refer to document **DAC-G3-03** Robust Z-Score Analyses for the methodologies of analysis

6.2 CALCULATIONS OF Z- SCORES

Appendix B gives the details of the calculation of the Z-Score from the raw data. The Z-Score analysis is based on an internationally accepted procedure being used by accreditation bodies implementing Interlaboratory comparison programs.

6.3 EVALUATION OF RESULTS

After evaluating the Z-Score, the results from all participating laboratories are found within the Z-score limits of ± 3 .

7. APPENDICES

7.1 Appendix A: Raw Data

7.2 Appendix B: Calculation of z-scores and other statistics

7.3 Appendix C: Charts

Appendix A: Results Submitted by the Participating Laboratories

Total charge passed, (Coulombs) over 6 hrs

Lab#	1	2	3	4
Lab 1	4797	5449	588	599
Lab 2	5005	4821	619	612
Lab 3	4281	4564	595	665
Lab 4	4971	4342	475	462
Lab 5	4533	4059	657	651
Lab 6	4250	4345	680	641
Lab 7	4650	5593	631	602
Lab 8	4976	5139	638	622
Lab 9	4884	4485	731	713
Lab 10	4940	5085	605	633
Lab11	4253	4498	653	620
Lab 12	5099	4917	644	604
Lab 13	4673	5068	590	667

Appendix B: Calculation of z-scores and other statistics

Result#	S1 S2	S3 S4	S1+S3 S2+S4	S1-S3 S2-S4	Between Labs z- score	Within Labs z- score
Lab1-1	4797	588	5385	4209	-0.0667	0.0725
Lab1-2	5449	599	6048	4850	1.7746	1.7330
Lab2-1	5005	619	5624	4386	0.5971	0.5310
Lab2-2	4821	612	5433	4209	0.0667	0.0725
Lab3-1	4281	595	4876	3686	-1.4802	-1.2823
Lab3-2	4564	665	5229	3899	-0.4999	-0.7305
Lab4-1	4971	475	5446	4496	0.1028	0.8160
Lab4-2	4342	462	4804	3880	-1.6802	-0.7797
Lab5-1	4533	657	5190	3876	-0.6082	-0.7901
Lab5-2	4059	651	4710	3408	-1.9412	-2.0024
Lab6-1	4250	680	4930	3570	-1.3302	-1.5828
Lab6-2	4345	641	4986	3704	-1.1747	-1.2356
Lab7-1	4650	631	5281	4019	-0.3555	-0.4197
Lab7-2	5593	602	6195	4991	2.1828	2.0983
Lab8-1	4976	638	5614	4338	0.5693	0.4067
Lab8-2	5139	622	5761	4517	0.9775	0.8704
Lab9-1	4884	731	5615	4153	0.5721	-0.0725
Lab9-2	4485	713	5198	3772	-0.5860	-1.0595
Lab10-1	4940	605	5545	4335	0.3777	0.3989
Lab10-2	5085	633	5718	4452	0.8581	0.7020
Lab11-1	4253	653	4906	3600	-1.3969	-1.5051
Lab11-2	4498	620	5118	3878	-0.8081	-0.7849
Lab12-1	5099	644	5743	4455	0.9276	0.7098
Lab12-2	4917	604	5521	4313	0.3110	0.3419
Lab13-1	4673	590	5263	4083	-0.4055	-0.2539
Lab13-2	5068	667	5735	4401	0.9053	0.5699

No. of Results	26	26	26	26
Median	4809	627	5409	4181
Q 1	4488	603	5136	3877
Q 3	4998	653	5622	4397
Inter Q Range	510	50	486	521
Normalzd IQR	378	37	360	386
Robust CV,%	7.85	5.92	6.66	9.23
Minimum	4059	462	4710	3408
Maximum	5593	731	6195	4991
Range	1534	269	1485	1583

Appendix C: Charts

