

كفاءة المختبرات

LABORATORIES PROFICIENCY

المؤتمر الخليجي الأول لكفاءة المختبرات
FIRST GCC CONFERENCE FOR LABORATORIES PROFICIENCY



ASTM International's Approach to Laboratory Efficiency

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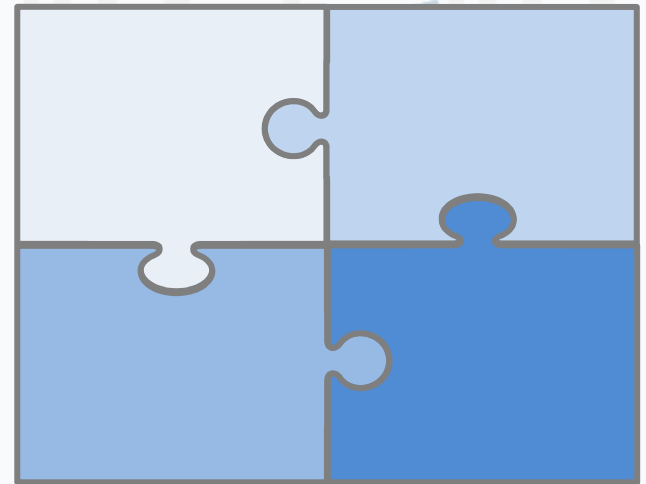
Europe, Middle East & Africa

March 13th 2013, Dubai



How can ASTM help?

- Proficiency Testing Programs
- Standards & Associated Technical Information
- Training & E-Learning
- Membership



Overview

- Organized in 1898 - American Society for Testing & Materials
- One of the worlds largest standards developing organizations
- 32,000 members – experts in their fields
- Publish standards (specifications and test methods) books, journals, conference papers & manuals
- Proficiency Testing Programs (PTP) & Training
- Funded mainly through sales of technical information
- Internationally recognized
- 5,000 standards adopted worldwide
- MOU's with over 70 nations
- Not for profit
- HQ – Philadelphia, USA



Used in thousands of Laboratories Worldwide



ASTM International: Proficiency Testing Programs (PTP)



ASTM Proficiency Testing Program

- ASTM provides management and administrative support:
 - Program registration, contract negotiations for sample preparation and distribution, data collection and generation of statistical summary reports
 - Coordinate the preparation and distribution of test samples
- Test samples are prepared by outside contractors
- ASTM provides reporting instructions, lab worksheets and electronic data report forms for submitting data, all accessible on the ASTM website portal



ASTM Proficiency Testing Program

- ASTM statistical summary reports include:
 - Listing of all lab data
 - Charts and graphs
- Lab data is coded to maintain lab confidentiality
- Final summary reports are provided electronically to participants and appropriate Committee contacts
- ASTM Custom Company Reports (CCR) – provided with multiple lab performance data upon request



Summary of Results for Concrete Proficiency Program

CCRL Proficiency Sample Program CCRL Concrete Proficiency Sample Nos. 165 & 166 Preliminary Report SUMMARY OF RESULTS								
TEST TITLE	UNIT	# of Labs	Sample: 165			Sample: 166		
			Average	S.D.	C.V.	Average	S.D.	C.V.
Air Content, Volume	%	280	1.58	0.42	26.63	1.78	0.54	30.20
Air Content, Pressure	%	329	1.5	0.4	25.4	1.7	0.5	29.8
Slump	inch	331	3.88	1.31	33.68	4.31	1.16	26.87
Unit Weight	lb/ft ³	332	150.3	3.4	2.2	149.1	2.5	1.7
Density of Comp Strength Specimen	lb/ft ³	228	150	5	3	150	5	3
Comp Str 7-day (6x12)	psi	109	4079	287	7	4294	297	7
Comp Str 7-day (4x8)	psi	223	4320	418	10	4564	384	8
Temp of Concrete	° F	331	71	6	9	71	6	8
* ELIMINATED								

Individual Concrete Lab Ratings

RESULTS FOR LABORATORY NO. 0									
CCRL Concrete Proficiency Sample Nos. 165 & 166									
Report Date: January 4, 2013									
TEST TITLE	UNIT	LAB DATA		AVERAGES		STAND. DEVS.		RATINGS	
		165	166	165	166	165	166	165	166
Air Content, Volume	%	1.75	1.50	1.56	1.70	0.39	0.42	5	-5
Air Content, Pressure	%	1.7	1.4	1.5	1.6	0.3	0.4	5	-5
Slump	inch	3.50	4.00	3.86	4.27	1.18	1.09	-5	-5
Unit Weight	lb/ft ³	149.2	148.8	150.2	149.1	1.2	1.3	-5	-5
Density of Comp Strength Specimen	lb/ft ³	149	149	151	150	2	2	**	**
Comp Str 7-day (4x8)	psi	4390	4590	4342	4553	353	350	5	5
Comp Str 7-day (6x12)	psi	--	--	4096	4286	309	309	--	--
Temp of Concrete	° F	80	80	71	71	6	6	**	**

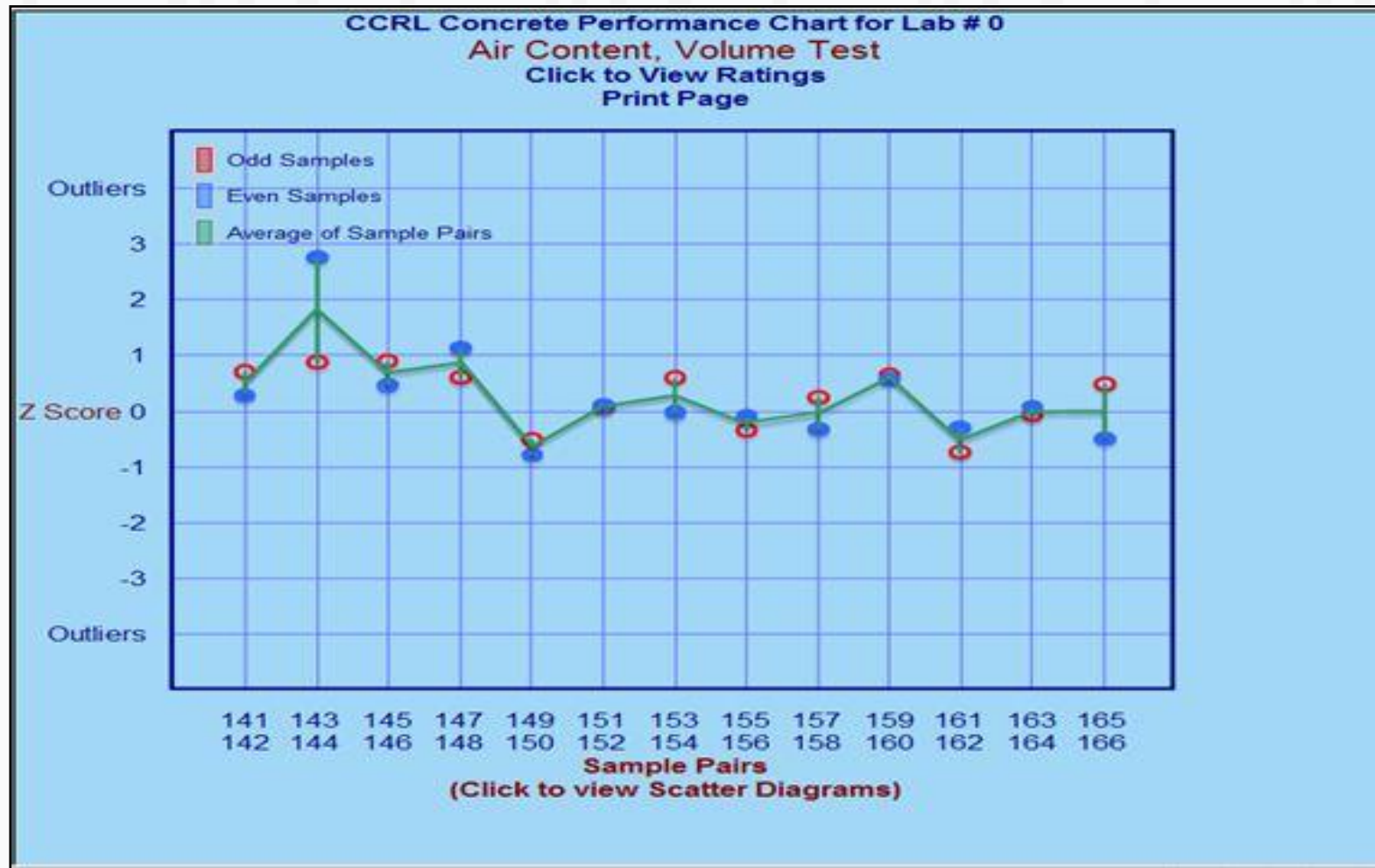
View Unrounded Statistics

The following table details the relationship between the ratings and the averages.
More information can be found on our [statistics page](#).

Done Internet | Protected Mode: Off 125%

❖ Lab data is coded to keep lab confidentiality

Individual Concrete Lab Ratings



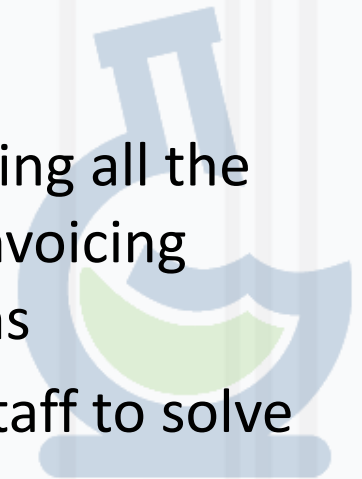
ASTM Proficiency Testing Program

- Globally recognized
- 49 different Proficiency Testing Programs available
 - Diesel Fuel, Crude Oil
 - Aluminium, Stainless Steel
 - Portland cement, Blended cement, Masonry cement
 - Textiles, Plastics
- Over 4,300 laboratories participating worldwide
- Over 58% participation outside the continental U.S including a significant number from the Gulf Region



Global Boundaries

- ASTM has extensive experience in shipping test samples overseas to the Middle East and most other parts of the globe
- Laboratory participants from over 80 different countries
- ASTM work with a network of freight forwarders that we continually communicate with to ensure timely shipment of sample material to labs such as:
 - FedEx
 - UPS
 - DHL
 - AIT Worldwide Logistics Agility
 - Panalpina Inc. (Qatar)
- ASTM has a long history of experience with preparing all the proper shipping documentation and commercial invoicing necessary to get sample deliveries through customs
- ASTM has dedicated Proficiency Testing Program staff to solve customer sample delivery issues



Why ASTM?

- Globally recognized 115 year old company where the majority of laboratories participating are international – 58%
- Lab QA Tool
 - Data for monitoring lab strengths and weaknesses
 - Residual sample material useful as internal QA sample
- Tool to evaluate other test methods for lab use
- Participation helps satisfy lab accreditation requirements
- Can demonstrate testing capability to customers
- Results and associated statistics helps ASTM validate and improve test method performance under real world conditions



ASTM International: Standards & Associated Technical Information



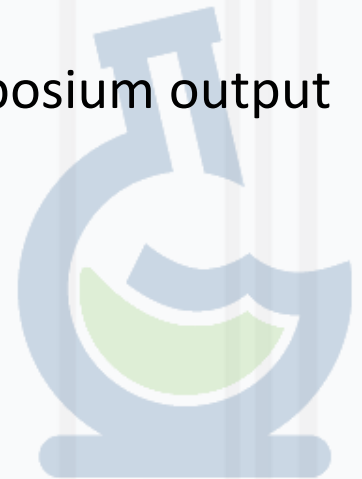
Standards & Associated Technical Information

Standards

- 13,000+ standards – 47% are test methods
- Developed by global experts from 135 countries
- Recognised and accepted worldwide
- Ultimately to improve product quality, enhance safety and build consumer confidence

Technical Information

- Special Technical Papers – leading edge research & symposium output
- Journal of Testing and Evaluation (since 1973)
- Geotechnical Testing Journal (since 1978)
- Materials Performance and Characterization (first Issue 2012)
- Advances in Civil Engineering Materials (first Issue 2012)



Non Standards Publications

Over 1,600 publications

- Petroleum
- Metals
- Cement
- Concrete
- Aggregates
- Roofing
- Road & paving materials
- Paints
- Gypsum
- Wood
- Thermal Insulation



Laboratory Consortia

- Access ASTM standards online – all standards or selected volumes (81 volumes to select from)
 - Access at all your locations 24 x7
 - Unlimited simultaneous users
 - No restrictions on downloads or prints
 - Includes all updates
 - Includes all new standards
- Guaranteed instant access to all the latest ASTM standards
- ASTM open to creating consortia - local, national or regional
- Any laboratory can join
- Lower cost per laboratory vs an individual subscription



ASTM International: Training



Training

- Award-winning continuing education & training
- Scheduled USA based training courses
- Tailored on-site training anywhere in the world to meet specific needs
- E-Learning – train technicians or prepare for ACI certification:
 - Concrete Field Testing
 - Concrete Strength Testing
 - Self-Consolidating Concrete
 - Aggregates
 - Cement
 - Petroleum
 - Textiles
 - Plastics



Videos

Demonstrate test method procedures, apparatus setup, materials, and preparation of specimens

7. Procedure

7.1 *Preparation of Cement Paste*— following the procedure prescribed, the water shall conform to the requirements of reagent water.

7.2 *Molding Test Specimen*— L into the approximate shape of of about 150 mm from one hand easily inserted into the Vicat ball, resting in the palm of one other hand, completely filling the single movement of the palm and slice off the excess paste of a sharp-edged trowel held as necessary, with a few light cutting and smoothing, take c

7.3 *Consistency Determination* under the rod *B*, Fig. 1, the pl of the paste, and tighten the mark of the scale, or take an i a time not exceeding 30 s after during the test. The paste shall mm below the original surface percentages of water until the cement.

8. Calculation

8.1 Calculate the amount of w by the mass of dry cement, ex 0.1 % and report the mass rat

9. Precision and Bias



[x] Close

ASTM International: Membership

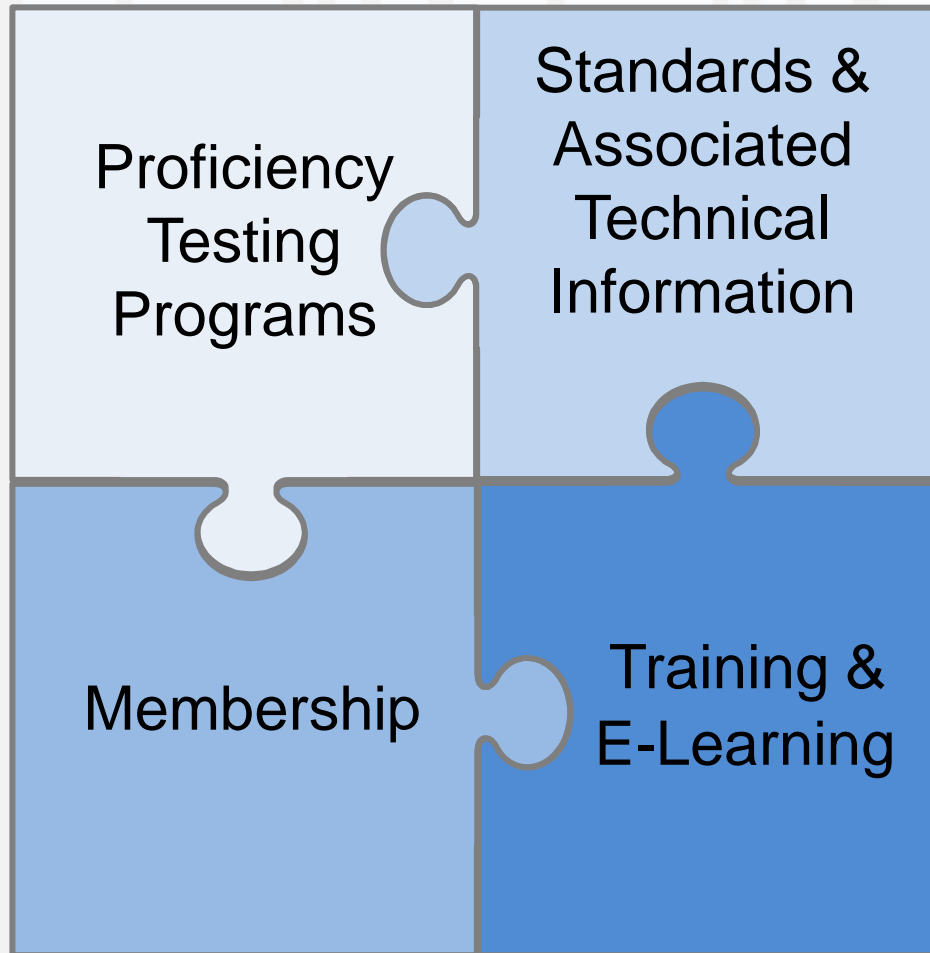


Membership

- Informational and participating membership
- Organizational membership
- Student membership is free
- Great networking tool
- Benefits include:
 - Subscription to Standardization News
 - The ability to vote on standards & updates to standards used by your business
 - One free volume for personal use



Summary – How can ASTM help?



Increase Quality &
Improve Results

Enhance education
and training

Latest test methods
constantly updated



Effective, Efficient
high performance

Thank you

Questions?

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