

Geotechnical Testing Journal

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ASTM Task Group on Data Automation Questionnaire for Geotechnical Laboratories

1. Name _____ Position _____
 Company _____ Address _____
 Type of Organization: University _____ Government _____ Consulting _____ Industry _____
 List testing or standards organizations in which you participate _____
2. With regard to the general laboratory: Number of staff devoted to lab _____ Floor area in sq. ft. _____
 Which do you have on staff? Mechanist _____ Electronic specialist _____ Instrumentation Specialist _____ Software engineer _____
 Which of the following do you have? Temperature Control _____ Dust Control _____ Emergency Power _____

3a. Please complete the following table for soil tests performed in your facility:

Soil Tests	Gradation (D422)	Limits (D4319)	Consolidation (D2435)	UC (D2166)	UU (Q) (D2850)	CU (R) (D4785)	CD (S) (D4785)	Direct Shear (D3680, D5321)	Permeability (D2434, D5084)	Other*
Number of tests per year										
Check if you automatically record data										
Check if you use computer for data reduction										
Check if you use computer for graphs or tables										
Estimated cost savings per test from automation										

* describe other test _____

4. Please complete the following table for rock tests performed in your facility:

Rock Tests	Strength (D2664, D2936, D2938, D3967)	Elastic Modulus (D2845, D3148, D5407)	Permeability (D4525)	Creep (D4341, D4405, D4406)	Sonic (D2845)	Thermal (D4535, D4611, D4612, D5334, D5335)	Other*
Number of tests per year							
Check if you automatically record data							
Check if you use computer for data reduction							
Check if you use computer for graphs or tables							
Estimated cost savings per test from automation							

* describe other test _____

ASTM Task Group on Data Automation Questionnaire for Geotechnical Laboratories

5. If you have a data acquisition system, please answer the following questions (use a separate copy for each system)
 Type _____ Number of Input Channels _____ Number of tests you monitor at once _____
 Maximum Number of Readings per second you use _____ Total Cost of hardware, excluding sensors _____
 Total cost of sensors _____ How are data stored? _____ printed _____ tape _____ floppy disk _____ hard disk _____ other _____
 Describe what you use the system for _____
 Does the system control the test _____ Describe how _____
 How much time required to train a new user _____ Frequency of breakdown _____ Describe reliability _____
 Did supplier offer service contract _____ Did you take it _____ Cost of service contract as percent of original system purchase price _____
 Describe experience with service _____
 Is system rugged _____ Give examples _____
 Has system been cost effective? _____ Give example _____
 Are you considering additional equipment _____ If yes please answer #7.
 How do you charge your clients for use of the system _____
 Would you buy the same system again _____ Why _____

6. If your data acquisition system uses software to collect and reduce data, please answer the following:
 Function of software: _____ collect data _____ sort data for test from master data file _____ reduce data _____ plot results _____ show real-time graphs of test
 _____ control test _____ place data in master data base _____ perform statistical and/or engineering evaluations of data
 Programming language used _____ Operating system used _____
 How much time to train new user _____ Who corrects deficiencies _____
 Can you modify software _____ Is software flexible enough for your needs _____
 Describe software problems you have had _____
 Would you buy same system again _____ Why _____
 Is your software available to others _____

7. If you have no data acquisition equipment or are considering expansion of your present system
 Do you plan further automation in the near future? _____ Why _____
 Which tests do you plan to automate? _____
 Which parts will you automate? _____ collect data _____ reduce data after test _____ plot results for report _____ provide real-time graph as test runs _____ control test _____ other _____
 Will you _____ purchase software _____ develop software in-house _____
 What information is most helpful in selecting a new system (please rank by importance with 1 as highest) _____ manufacturer's literature _____ specs _____ example results _____ reliability of system
 _____ experience of another with system _____ other (specify _____)

8. Does your company use data acquisition equipment in field applications? _____ Describe _____

9. What standards would be helpful to you in regard to using your data acquisition equipment? _____

10. Please comment on your experiences with data acquisition systems, positive and negative.

Thank you for your time and help. Please mail the completed questionnaire to: D18.95 Data Automation Survey, c/o Bob Morgan, ASTM, 1916 Race Street, Philadelphia, PA 19103-1187. Phone any questions to Dr. Marr at (508) 635-0012.

Additional Information for Authors

The *Geotechnical Testing Journal* (GTJ) is a quarterly publication sponsored by ASTM technical committee D-18 on Soil and Rock, with support from D-35 on Geosynthetics, D-4 on Road and Paving Materials, and D-34 on Waste Management. Each published paper and technical note has been peer-reviewed. Papers and technical notes are open to brief written comments in the Discussion section of the Journal, which also includes authors' written responses.

The Technical Editor may consider a paper submitted to the Journal as a Technical Note if: it gives a reasonably brief description of ongoing studies with or without providing interim, tentative data, and/or conclusions; it reports phenomena observed in the course of research requiring further study; it provides mathematical procedures for facilitating reduction and analysis of data; or it reports promising new materials prior to undertaking extensive research to determine their properties.

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The submitting author must also affirm that all those listed as co-authors have agreed (a) to be listed and (b) to submit the manuscript to ASTM for publication.

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Figures

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References

References shall be cited in the text by author's last name and date of publication. References shall be listed together at the end of the text in alphabetical order by author's last name. They must contain enough information to allow a reader to consult the cited material with reasonable effort.

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If ASTM does not hear from the author by the time designated for return of the edited paper and/or page proof, ASTM will proceed with the publication process.

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Testing Forum and Tips

Anyone having interesting test tips should submit a brief description of such innovations to the Testing Forum. Such contributions are screened and edited by the Technical Editor and staff without peer review.

Howard J. Pincus, Ph.D., P.E., C.P.G.
Technical Editor

E 380 SELECTED CONVERSION FACTORS

To convert from	to	multiply by
atmosphere (760 mm Hg)	pascal (Pa)	1.013 25 x 10 ⁵
board foot	cubic metre (m ³)	2.359 737 x 10 ⁻³
Btu (International Table)	joule (J)	1.055 056 x 10 ³
Btu (International Table)/h	watt (W)	2.930 711 x 10 ⁻¹
Btu (International Table)•in./s•ft ² • °F (k, thermal conductivity)	watt per metre kelvin [W/(m•K)]	5.192 204 x 10 ²
calorie (International Table)	joule (J)	4.186 800*
centipose	pascal second (Pa•s)	1.000 000* x 10 ⁻³
centistokes	square metre per second (m ² /s)	1.000 000* 10 ⁻⁶
circular mil	square metre (m ²)	5.067 075 x 10 ⁻¹⁰
degree Fahrenheit	degree Celsius	t°C = (t°F - 32)/1.8
foot	metre (m)	3.048 000* x 10 ⁻¹
ft ²	square metre (m ²)	9.290 304* 10 ⁻²
ft ³	cubic metre (m ³)	2.831 685 x 10 ⁻²
ft•lbf	joule (J)	1.355 818
ft•lbf/min	watt (W)	2.259 697 x 10 ⁻²
ft/s ²	metre per second squared (m/s ²)	3.048 000* x 10 ⁻¹
gallon (U.S. liquid)	cubic metre (m ³)	3.785 412 x 10 ⁻³
horsepower (electric)	watt (W)	7.460 000* x 10 ⁺²
inch	metre (m)	2.540 000* x 10 ⁻²
in. ²	square metre (m ²)	6.451 600* x 10 ⁻⁴
in. ³	cubic metre (m ³)	1.683 706 x 10 ⁻⁵
inch of mercury (60°F)	pascal (Pa)	3.376 85 x 10 ³
inch of water (60°F)	pascal (Pa)	2.488 4 x 10 ²
kgf/cm ²	pascal (Pa)	9.806 650* x 10 ⁴
kip (1000 lbf)	newton (N)	4.448 222 x 10 ³
kip/in. ² (ksi)	pascal (Pa)	6.894 757 x 10 ⁶
ounce (U.S. fluid)	cubic metre (m ³)	2.957 353 x 10 ⁻⁵
ounce-force	newton (N)	2.780 139 x 10 ⁻¹
ounce (avoirdupois)	kilogram (kg)	2.834 952 x 10 ⁻²
oz (avoirdupois)/ft ²	kilogram per square metre (kg/m ²)	3.051 517 x 10 ⁻¹
oz (avoirdupois)/yd ²	kilogram per square metre (kg/m ²)	3.390 575 x 10 ⁻²
oz (avoirdupois)/gal (U.S. liquid)	kilogram per cubic metre (kg/m ³)	7.489 152
pint (U.S. liquid)	cubic metre (m ³)	4.731 765 x 10 ⁻⁴
pound-force (lbf)	newton (N)	4.448 222
pound (lb avoirdupois)	kilogram (kg)	4.535 924 x 10 ⁻¹
lbf/in ² (psi)	pascal (Pa)	6.894 757 x 10 ³
lb/in ³	kilogram per cubic metre (kg/m ³)	2.767 990 x 10 ⁴
lb/ft ³	kilogram per cubic metre (kg/m ³)	1.601 846 x 10 ¹
quart (U.S. liquid)	cubic metre (m ³)	9.463 529 x 10 ⁻⁴
ton (short, 2000lb)	kilogram (kg)	9.071 847 x 10 ²
torr (mm Hg, 0°C)	pascal (Pa)	1.333 22 x 10 ²
W•h	joule (J)	3.600 000* x 10 ³
yard	metre (m)	9.144 000* x 10 ⁻¹
yd ²	square metre (m ²)	8.361 274 x 10 ⁻¹
yd ³	cubic metre (m ³)	7.645 549 x 10 ⁻¹

*Exact