E 380

E 380 SELECTED CONVERSION FACTORS

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

*Exact

QUESTIONNAIRE ON SUBJECT AREAS OF AUTHORS AND REVIEWERS

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Mailing Address: _____ Tel: _____
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To facilitate timely and fair reviews of papers submitted to GTJ, (a) authors of manuscripts submitted for publication are asked to circle the subject areas most applicable to their respective manuscripts, and (b) prospective reviewers are asked to circle the subject areas in which they have the greatest current competence to provide informed technical evaluations of manuscripts submitted to GTJ for publication. Thank you.

The Technical Editors

1. FIELD EXPLORATION

- 1.1 Reconnaissance
- 1.2 Mapping and GIS
- 1.3 Remote Sensing
- 1.4 Geophysical Methods
- 1.5 Geochemical Methods
- 1.6 Geobotanical Methods
- 1.7 Borehole Logging
- 1.8 Drilling Operations
- 1.9 Sampling Soil
- 1.10 Sampling Rock
- 1.11 Sample Transport and Storage
- 1.12 Ground Water Monitoring
- 1.13 Surface Water Monitoring
- 1.14 Other _____

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- 2.1 Calcareous Soils
- 2.2 Marine and Lacustrine Sediments
- 2.3 Admixtures
- 2.4 Hydrocarbon-Bearing Soils
- 2.5 Hazardous Materials
- 2.6 Pollutants
- 2.7 Jointed Rock
- 2.8 Tailings, Backfill, Talus
- 2.9 Penetration Testing
- 2.10 Moisture, Density
- 2.11 In Situ Stresses
- 2.12 Transmissivity, Storativity
- 2.13 Physicochemical Testing
- 2.14 Stress-Strain, Strength
- 2.15 Load-Deformation
- 2.16 Seismic Methods, Acoustic Emission
- 2.17 Other _____

3. TESTING AND MONITORING SOIL AND ROCK STRUCTURES

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- 3.2 Rock for Erosion Control
- 3.3 Dams
- 3.4 Tunnels and Shafts
- 3.5 Marine Structures
- 3.6 Waste Impoundments
- 3.7 Pavement Systems
- 3.8 Drainage Aids
- 3.9 Natural Slopes
- 3.10 Fills
- 3.11 Retaining Structures
- 3.12 Liners
- 3.13 Geotextile Structures
- 3.14 Mechanically Modified Soil and Rock
- 3.15 Chemically Modified Soil and Rock
- 3.16 Biologically Modified Soil and Rock
- 3.17 Admixtures
- 3.18 Erosion Tests
- 3.19 Subsidence and Collapse
- 3.20 Piles and Foundations
- 3.21 Other _____

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- 4.2 Sampling and Specimen Preparation, Transportation, and Storage

4.3 Grain Size, Specific Gravity, Density
4.4 Physicochemical Properties
4.5 Permeability, Void Ratio, Water Content
4.6 Consolidation, Swelling, Collapse
4.7 Shrinkage, Creep
4.8 Compaction Tests
4.9 Stress-Strain, Strength
4.10 Liquefaction Tests
4.11 Cyclic and Dynamic Tests
4.12 Thermal Property Tests
4.13 Microscopic Analysis
4.14 Other _____

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5.2 Specimen Preparation
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5.4 Permeability, Void Ratio, Pore-Size Distribution, Water Content
5.5 Stress-Strain, Strength
5.6 Creep
5.7 Fracture-toughness
5.8 Shear Strength, Sliding Friction
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5.10 Cyclic and Dynamic Tests
5.11 Electrical and Magnetic Properties
5.12 Thermal Properties
5.13 Microscopic Analysis
5.14 Other _____

6. LABORATORY TESTING—GEOSYNTHETICS

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6.6 Permeability and Filtration
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8. LABORATORY-MODEL TESTING

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8.2 Soil and Rock Reinforcement
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9.8 Data Acquisition, Reduction and Management
9.9 Probabilistic Methods
9.10 Numerical Modelling
9.11 Laboratory Accreditation
9.12 Education and Training
9.13 Terminology, Definitions, and Notation
9.14 Other _____
9.15 Other _____

SUMMARY OF NUMBERS CHECKED: _____ _____ _____ _____

COMMENTS:

_____

_____

Please send completed form to:

Ms. Kathy G. Dernoga, Manager, Acquisitions and Review
ASTM Publications
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
or FAX 1 610 832-9635

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? __Machinist __Mechanical engineer __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 (D4318)	Consolidation (D2435)	UC (D2166)	*UU (Q)* (D2850)	*CU (R)* (D4785)	*CD (S)* (D4785)	Direct Shear (D3080, 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* (D4644, D5240, D5312, D5313)
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, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. 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.

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