

TESTING FORUM

industry seems to be relatively uncommon. Hence, it is the purpose of this article to introduce to those not familiar with them the benefits of using such manuals, the basic procedures for developing them, and to provide an example in the U.S. eastern gas and oil shales.

Such manuals help to promote uniformity in the classification of cored rocks by providing comparative, photographed examples of similar rocks and help ensure ease in the transfer of such lithologic data through an alphanumeric code, which is simple, consistent, and flexible. The code developed in the example of the U.S. eastern gas and oil shales is a four-place, alphanumeric code, in which the first place codes for the predominant lithology and the second place for a subordinate lithology if present. The third place codes for color, whereas the fourth place codes for special lithologic features. Although the example presented was developed specifically for use with the U.S. eastern gas and oil shales, the concept and coding scheme are readily applicable to logging cored rocks for other purposes as well.

Acknowledgments

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APPENDIX

ASTM Test Methods

- C 119: Terminology Relating to Dimension Stone
- C 294: Descriptive Nomenclature of Constituents of Natural Mineral Aggregates
- D 420: Guide for Investigating and Sampling Soil and Rock
- D 2113: Method for Diamond Core Drilling for Site Investigation
- D 2488: Practice for Description and Identification of Soils (Visual-Manual Procedure)
- D 3282: Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
- D 4083: Practice for Description of Frozen Soils (Visual-

Manual Procedure)

- D 5079: Practices for Preserving and Transporting Rock Core Samples

References

- Association of Engineering Geologists, Core Logging Committee, South Africa Section, 1978, "A Guide to Core Logging for Rock Engineering," *Bulletin of the Association of Engineering Geologists*, Vol. 15, No. 3, pp. 295-328.
- Coates, D. F., 1964, "Classification of Rocks for Rock Mechanics," *International Journal of Rock Mechanics and Mining Sciences*, Vol. 1, pp. 421-429.
- Coates, D. F. and Parsons, R. C., 1966, "Experimental Criteria for Classification of Rock Substances," *International Journal of Rock Mechanics and Mining Sciences*, Vol. 3, pp. 181-191.
- Deere, D. U., 1963, "Technical Description of Rock Cores for Engineering Purposes," *Rock Mechanics and Engineering Geology*, Vol. 1, pp. 16-22.
- Ettensohn, F. R. and Bayan, M. R., 1990, "Occurrence and Significance of a Zoned Halloysite (10 Å) and Allophane Deposit below Devonian Black Shales in Central Kentucky," *Southeastern Geology*, Vol. 31, No. 1, pp. 1-25.
- Ettensohn, F. R. and Hendricks, R. T., 1991, "Preliminary Photographic Core-Logging Manual for Rocks Within and Adjacent to the Devonian-Mississippian Black-Shale Sequence in Kentucky and Nearby Areas," Department of Geological Sciences, University of Kentucky, Lexington.
- Ettensohn, F. R. and Hendricks, R. T., 1992, "Core Logging Manuals for Eastern Oil and Gas Shales," *Highlights*, Vol. 11, No. 3, pp. 3-4.
- Ferm, J. C. and Melton, R. A., 1977, "A Guide to Cored Rocks in the Pocahontas Basin," Department of Geology, University of South Carolina, Columbia.
- Ferm, J. C. and Smith, G. C., 1981, "A Guide to the Cored Rocks in the Pittsburgh Basin," Department of Geology, University of Kentucky, Lexington.
- Ferm, J. C., Smith, G. C., and Weisenfluh, G. A., 1985, "Cored Rocks in the Rocky Mountain and High Plains Coal Fields," Department of Geological Sciences, University of Kentucky, Lexington.
- Ferm, J. C. and Weisenfluh, G. A., 1981, "Cored Rocks of the Southern Appalachian Coal Fields," Department of Geology, University of Kentucky, Lexington.
- Geological Society, Engineering Group Working Party, 1970, "The Logging of Rock Core for Engineering Purposes," *Quarterly Journal of Engineering Geology*, Vol. 3, pp. 1-24.
- Hasenmueller, N. R., Matthews, R. D., Kepferle, R. C., and Pollock, D., 1983, "Foerstia (*Protosalvinia*) in Devonian Shales of the Appalachian, Illinois and Michigan Basins, Eastern United States," *Proceedings*, 1983 Eastern Oil Shale Symposium, Institute for Mining and Minerals Research, University of Kentucky, Lexington, pp. 41-58.
- International Society for Rock Mechanics, 1980, "Basic Geotechnical Descriptions of Rock Masses," *International Journal of Rock Mechanics and Mining Sciences and Geomechanics Abstracts*, Vol. 18, pp. 85-110.
- Smith, G. C., 1982, "Methods and Criteria for Producing a Photographic Core Logging Manual for the Pittsburgh Coal," M.S. thesis, Department of Geology, University of South Carolina, Columbia.
- Travis, R. B., 1955, "Classification of Rocks," *Quarterly of the Colorado School of Mines*, Vol. 50, No. 1, pp. 1-98.
- U.S. Bureau of Reclamation, 1989, "Engineering Geology Field Manual," Denver, Co.

ERRATUM

Please note the following corrections to the article by Omar S. Al-Amoudi and Sahel N. Abduljawwad entitled "Suggested Modifications to ASTM Standard Methods When Testing Arid, Saline Soils" in the June 1994 issue of GTJ journal. The numerical value in the second to last sentence on page 244 in column one under the heading *Gradation Analyses* should be 0.028 m³, not 0.28 m³. In Fig. 3 on page 246, the number to the left of "38" should be "40", not "4". In the second equation on page 248, the lower line should read $1 + e_0$, not $1 + e_1$. The date of publication of the fourth reference on page 252 is 1994. In addition, on page 243, the third line of the first paragraph of the second column should read "of many semi-tropical countries", not "or many semitropical countries".

Additional Information for Authors

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Howard J. Pincus, Ph.D., P.E., C.P.G.
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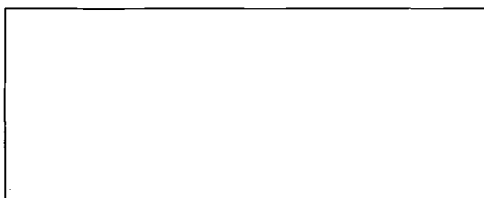
To convert from	to	multiply by
atmosphere (760 mm Hg)	pascal (Pa)	$1.013\ 25 \times 10^5$
board foot	cubic metre (m ³)	$2.359\ 737 \times 10^{-3}$
Btu (International Table)	joule (J)	$1.055\ 056 \times 10^3$
Btu (International Table)/h	watt (W)	$2.930\ 711 \times 10^{-1}$
Btu (International Table)·in./s·ft ² ·°F (<i>k</i> , thermal conductivity)	watt per metre kelvin [W/(m·K)]	$5.192\ 204 \times 10^2$
calorie (International Table)	joule (J)	4.186 800*
centipoise	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 meter (m ²)	$5.067\ 075 \times 10^{-10}$
degree Fahrenheit	degree Celsius	$t^{\circ}\text{C} = (t^{\circ}\text{F} - 32)/1.8$
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)	$1.638\ 706 \times 10^{-5}$
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-force (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, 2000 lb)	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)	$7.645\ 549 \times 10^{-1}$

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