

LETTERS

Cone Penetration Test

To the editor:

I am a civil engineer who has been working in the area of soil mechanics and foundation engineering for many years. I am presently attempting to convince our fellow engineers in Brazil to use the cone penetration test or Dutch cone, since I believe that it is an investigative tool that offers clear advantages over the conventional standard penetration test. The standard penetration test has been used here since 1938, but the cone penetration test is not common.

The modern cone has a suitable device to collect soil samples, in addition to measuring the point resistance and skin friction. This information can give a better picture of the soil profile than just having blow counts at each 30 cm out of 1-m tested length and disturbed soil samples. In our practice of standard penetration test borings, and I believe this is done in many parts of the world, 55 cm of soil information are missed since out of 1 m usually only 45 cm are known and the number of blows to drive the split spoon is counted within this length. The interval of having the number of blows registered is 1 m but can be different. The cone penetration test offers the possibility to know the soil continuously without missing any soil layer, especially the thin ones. Also for soft soils in which the registered numbers of blows is zero, the cone penetration test is more sensible and will give results that enable an engineer to estimate settlements of a foundation, for example. Frequently, because of poor workmanship in conducting the standard penetration tests, the results are of questionable use for foundation design. Nevertheless, I have not been able to convince my soil engineers to use the cone on a regular basis instead of the standard penetration test.

I would like to request letters from anyone who can give me advice concerning the use of the cone penetration test, emphasizing its advantages over the standard penetration test. Comments on the Menard Pressiometer as an alternative would also be appreciated. Replies should be sent directly to Mr. Rogerio with a copy to the Technical Editor, Geotechnical Testing Journal, ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

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teners too) when the information provided is not factual. Unfortunately, this was not done in the text printed.

While both Professor Holtz, I, and many others are aware that reference to "figanewtons," "boxafiganewtons," and "gros-safiganewtons" was a spoof it may not be evident to everyone. Professor Holtz has even provided an imaginary prefix *F* which lends credence to the situation.

There are many persons who, for their own reasons (excuses?), find the SI system "difficult/distasteful." They are very happy to seize upon this type of published document as an example of why SI is "difficult/confusing." This does nothing positive to help the transition to SI. From the rest of Professor Holtz's fine article I am sure that was not the intention.

I note that this article is adapted from a soon-to-be-published textbook. I ask that it be corrected before publishing to prevent any further possible misunderstanding, and that metric humor be clearly identified as such, when used in the future.

L. C. Kiser
Chairman, ASTM Subcommittee E43.10,
Metric Practice

To the editor:

Geotechnical Testing Journal, Vol. 3, No. 2, June 1980 came across my desk today and I was interested to note that the article on page 73 was entitled "SI Units in Geotechnical Engineering," and I was pleased to see that on the first page of this article we are told that the SI is described in detail in E 380. It then says that E 380 is available in the back of every part of the Annual Book of ASTM Standards. It would be well if Mr. Holtz was made aware that the material in the back of every part of the ASTM Annual Book of Standards is in fact only 16 of the 42 pages that make up E 380.

I wonder if he has seen E 380 other than the excerpts in the back of the book. In any case, I was a little shook up at what I found in the righthand column on page 75. Who is pulling whose leg?

Bryant Mather
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SI Units in Geotechnical Engineering

The following letters discuss the article "SI Units in Geotechnical Engineering" by Robert D. Holtz published in the June 1980 Geotechnical Testing Journal.

To the editor:

The article "SI Units in Geotechnical Engineering" was brought to my attention. In particular, the prefix relationships concerning newtons were pointed out.

I do believe that a bit of levity helps get ideas communicated. However, it should be made perfectly clear to all readers (and lis-

To the editor:

The paper entitled "SI Units in Geotechnical Engineering" is very concise and useful and we can all hope that the figanewton unit introduced becomes widespread, especially in the fruit industry.

However, the international circulation of your journal makes it necessary to point out that the (British) Imperial avoirdupois ton is 2240 lb and is not your (American) short ton of 2000 lb. Therefore the British ton-force is 9.964 kN in your Table 5 on page 75 and the British ton-force/ft² is 107.252 kPa in your Table 6. These boring

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facts also alter your Table 4, because there is no such thing as a British (short) ton. In fact, the Imperial ton-force per square foot is closer to 1 kgf/cm² than the American short ton-force per square foot.

It was to avoid complications of this sort that the SI systems became so necessary, as is ably pointed out by Professor Holtz and, as he says, we in the British construction industry have been using it since 1972. It is now accepted as a great benefit.

R. A. Nicholls
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Nicholls Colton and Partners
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Author's reply

My apologies to Mr. Nicholls and other readers with good British educations for the omission of long tons-force (2240 lbf) and long tons-force/ft² from the lists of conversion factors in the paper. The long and short of it is that I did not realize the Imperial avoirdupois ton was our long ton—I assumed you used both before SI as we do and that the short ton was the common engineering unit. Being anti-imperialists, we usually refer to our old system as British Engineering Units rather than Imperial Units as seems to be common in the United Kingdom.

The complete conversion to SI in Britain, especially in such conservative industries as construction, is indeed admirable. I only

wish the rate of progress in the United States was as good. The "great benefit" of SI mentioned by Mr. Nicholls should encourage us SI proponents to redouble our efforts to hasten complete conversion in the United States.

I apologize that "excerpts of which are" was not inserted before "available" in line 8, column 2, page 73 of the article. I guess I presumed that anyone looking up E 380 in back of any of the Annual Books would read the fine print under the title and note that the full text is to be found in Part 41.

I can well understand some of the difficulties that Mr. Kiser, as the Chairman of the Metric Practice Subcommittee, may have experienced in introducing the SI system. I have had similar experiences as a teacher. Should we teach all SI, a mixture, or stick with the old standard familiar units? We decided a couple of years ago—and to the dismay of our publisher I might add—to go totally SI in our textbook rather than have a hybrid system. From comments I have received from several colleagues, I am glad that we made that decision, to go full SI.

As far as metric humor is concerned, I believe that is a matter of taste. In answer to Dr. Mather's question "Whose leg is being pulled?", why Dr. Mather's obviously! Both the technical editor of *Geotechnical Testing Journal*, Professor Selig, as well as Rosemary Horstman, managing editor from headquarters, thought it was fine. I do not think you have to worry—everyone seems to have gotten the joke.

Robert D. Holtz
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