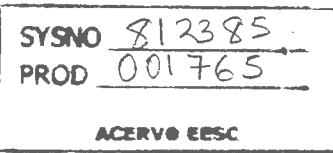


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# NOTES ON THE INTERPRETATION OF FAILURE LOAD FROM ROUTINE PILE LOADS TESTS\*

Discussão por

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The author has proposed a new and interesting approach for determining the ultimate load of a pile, based on the same assumptions of both Van der Veen's and Mazurkiewicz's methods. Actually, the new method allows the determination of the value of Van der Veen's ultimate load without loss of precision, in an easy and quick way. As the new method improves Van der Veen's method, the writers believe it will be widely used.

Nevertheless, the writers would like to suggest an appendix to the author's report. Besides the ultimate load, it can be useful to get Van der Veen's equation, which represents the pile load test's curve. But, according to the terms reported, one could have the false impression that the equation for the example presented is

$$P = 213 (1 - e^{-2,002\rho})$$

However, it is sufficient to plot the curve to note that there is not a good agreement with the given points.

It can easily be shown that equation (VI)

$$P_{n+1} = a' + b' P_n$$

is obtained from extended Van der Veen's equation

$$P = P_u (1 - e^{a\rho + b}) \quad (VII)$$

Therefore the author obtains the  $P_u$  and  $a$  values, but the determination of the coefficient  $b$  still remains.

It is a problem of finding a straight line of the pattern

$$\ln(1 - P/P_u) = a\rho + b \quad (VIII)$$

which has a slope already known. It is sufficient to suppose that this equation is satisfied by the point proceeding from the average values of abscissas and ordinates of known points.

In the author's example, the average values of  $\ln(1 - P/P_u)$  and  $\rho$  are equal to  $-1,89925$  and  $0,9$  respectively. Putting these in (VIII), it results  $b = -0,097$ .

Finally, the load test equation of the example is

$$P = 213 (1 - e^{-2,002\rho - 0,097})$$

Therefore, it is important to emphasize that the author's method does not impose  $b = 0$ , although the determination of  $P_u$  and  $a$  is independent of  $b$ .

\* Nota Técnica de Faical Massad, publicada no vol 9, nº 1 (abril, 1986).