

## Title of Paper

First Author Name<sup>1</sup>, Second Author<sup>2</sup>, Third Author<sup>3</sup>

(at the end of each author's name, use "Insert", "Footnote" from pull down menu to place author's affiliation and contact information at the bottom of the first page)

### ABSTRACT

Timber piles are widely used for supporting bridges, piers, wharves, and other marine structures. As they age, it becomes critical that their in situ condition be assessed so their remaining service life can be evaluated. Current inspection methods involving visual examinations and sounding tests are unable to quantitatively disclose a pile's degree of deterioration, depth of penetration, or remaining load-bearing capacity. Years of exposure to wood-decomposing fungi and weathering may have substantially decreased a pile's effective cross-sectional area, so that the pile can no longer function as originally intended. A study was conducted in which nondestructive dispersive wave propagation tests were applied to both laboratory pile models and field timber piles. ...

### INTRODUCTION (FIRST ORDER HEADING)

Timber pilings are one of the most commonly used structures in bridge construction because of the relative low cost of the raw wood and installation. These economic advantages are partially off-set by the timber's proneness to decay and deterioration from insects, marine organisms, fungi, and weathering. As timber piles age, it becomes critical that their in situ condition be assessed so their remaining service life can be evaluated.

While there are a number of schemes to protect timber piles from biological damages, a widespread practice is to simply replace all the piles at regular intervals. A preferable criterion for replacement should be based on a reliable evaluation of the structural integrity of a pile. ...

### ANY *OTHER* FIRST-ORDER HEADINGS

Body texts begin here ...

### Laboratory Specimen – Timber Post (Second-Order Headings)

A Douglas fir timber post, 100 mm by 100 mm by 5.5 m, was used to simulate damaged timber. Transverse holes were drilled in the middle of the post to simulate the damage created by the marine borers. The damage was made by drilling a total of 185 holes in the middle of the wood in an array of 5 rows by 37 columns. The diameter of the hole was 6 mm with 13 mm equal spacing in the vertical and horizontal direction.

---

<sup>1</sup> First author affiliation, address, phone and fax numbers, email address

<sup>2</sup> Second author affiliation, address, phone and fax numbers, email address

<sup>3</sup> Third author affiliation, address, phone and fax numbers, email address

## **Any *Other* Second-Order Headings**

Body texts begin here ...

*Any Third-order Headings (if needed)*

Body texts begin here ...

## **CONCLUSIONS**

Body texts begin here ...

## **ACKNOWLEDGEMENTS**

Body texts begin here ...

## **REFERENCES**

1. Goble, G. *Pile Driving Analyzer Manual*. Pile Dynamic, Inc., 1987.
2. Antony, R.W., Phillips, G.E., and Bodig, J. *Nondestructive Strength Assessment of In-Situ Timber Piles*. SBIR Phase I Final Report. Engineering Data Management, Inc., Ft. Collins, Colo., Sept. 1989.
3. Aggour, M.S., Hachichi, A., and Mayer, M.A. Nondestructive Evaluation of Timber Bridge Piles. In *Evaluation and Upgrading of Wood Structures: Case Studies*, American Society of civil Engineering, 1986, pp. 82-95.
4. ...