



**Ibracon Structures
and Materials Journal**

is published bimonthly
(February, April, June, August, October
and December) by IBRACON.

IBRACON

Instituto Brasileiro do Concreto
Founded in 1972

R. Julieta do Espírito Santo Pinheiro, 68
Jardim Olímpia, São Paulo – SP
Brasil – 05542-120
Phone: +55 11 3735-0202
Fax: +55 11 3733-2190
E-mail: arlene@ibracon.org.br
Website: <http://www.ibracon.org.br>

Editors

Américo Campos Filho
(Brazil)

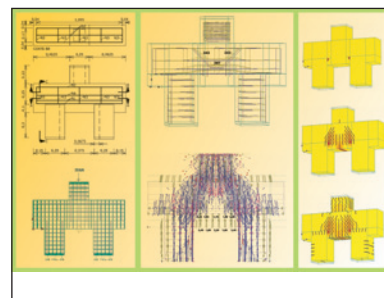
José Luiz Antunes de O. e Sousa
(Brazil)

Luiz Carlos Pinto da Silva Filho
(Brazil)

Romildo Dias Toledo Filho
(Brazil)

Cover Photo: NONLINEAR FEM ANALYSIS OF
TWO-PILE CAPS

Courtesy: T.E.T. BUTTIGNOL, CAMPINAS



Volume 5, Number 2

April 2012

ISSN: 1983-4195

REVISTA IBRACON DE ESTRUTURAS E MATERIAIS

IBRACON STRUCTURES AND MATERIALS JOURNAL

Contents

***Analysis of chloride diffusivity in concrete containing
red mud***

D.V. RIBEIRO, J.A. LABRINCHA and M.R. MORELLI

137

***Application of iron ore mud in powder form in portland
cement presence***

P. B. ARISTIMUNHO and S. R. BERTOCINI

153

***Study of the reuse of construction residues in concrete
employed by blocks manufacture***

R. C. C. LINTZ, A. E. P. G. A. JACINTHO, L. L. PIMENTEL and L. A. GACHET-BARBOSA

166

***Design model and recommendations of column-foundation
connection through socket with rough interfaces***

R. M. F. CANHA, G. M. CAMPOS and M. K. EL DEBS

182

***Guidelines for the development of concrete performance-
based specifications in Brazil***

J. TANESI, M. G. DA SILVA and V. GOMES

219

***Evaluation of partial clinker replacement by sugar cane
bagasse ash: CO₂ emission reductions and potential for
carbon credits***

E. M. R. FAIRBAIRN, T. P. DE PAULA, G. C. CORDEIRO, B. B. AMERICANO
and R. D. TOLEDO FILHO

229

Three-dimensional analysis of pile caps with two piles

T.E.T. BUTTIGNOL and L.C. ALMEIDA

252

Cover design & Layout:

Ellementto-Arte

www.ellementto-arte.com