



**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)

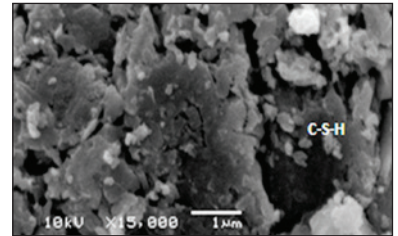
José Luiz Antunes de O. e Sousa  
(Brazil)

Roberto Caldas de Andrade Pinto  
(Brazil)

Romildo Dias Toledo Filho  
(Brazil)

**Cover:** SCANNING ELECTRON MICROSCOPY  
OF ROLLER COMPACTED CONCRETE

**Courtesy:** T. SACHET, EPUSP, SÃO PAULO



**Volume 6, Number 6  
December 2013  
ISSN: 1983-4195**

# REVISTA IBRACON DE ESTRUTURAS E MATERIAIS

## IBRACON STRUCTURES AND MATERIALS JOURNAL

### Contents

***Influence of service life, strength and cement type on life  
cycle environmental performance of concrete***

M. G. SILVA, M. R. M. SAADE and V. GOMES

**844**

***Relations between indirect tensile and flexural strengths for  
dry and plastic concretes***

J. T. BALBO

**854**

***Comparative analysis between prediction models in codes  
and test data for shear strength***

F. P. HIRATA, R. G. M. DE ANDRADE and J. C. DELLA BELLA

**875**

***Determination of reinforcing bars for tests of hollow core  
slabs with continuity***

A. P. SANTOS, M. A. FERREIRA, R. C. CARVALHO and L. M. PINHEIRO

**903**

***Rendering the loss of strength in dry concretes with addition  
of milled asphalt through microscopic analysis***

T. SACHET, J.T. BALBO and F.T. BONSEMBIANTEC

**933**