

11th International Inorganic-Bonded Fiber Composites Conference

(IIBCC 2008)

**Madrid, Spain
5-7 November 2008**

Editors:

**Ángeles Blanco
Elena de la Fuente
M. Concepción Monte**

**Al Moslemi
Carlos Negro**

ISBN: 978-1-62993-356-6

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2008) by International Inorganic-Bonded Fiber Composites Conference (IIBCC)
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact IIBCC
at the address below.

Secretary of the IIBCC Committee
Henning M. Thygesen
Skamol A/S
Østergade 58-60
DK-7900 Nykøbing Mors
Denmark

Phone: +45 9669 1233

hmt@skamol.dk

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SESSION 1: REINFORCEMENT FIBERS I

Development of Ductile Cementitious Materials with Wood Fibres	1
<i>M. Sierra-Beltran, E. Schlangen</i>	
Novel Bi-Component Fibers for the Mechanical Reinforcement of Concrete	9
<i>J. Kaufmann, J. Lubben, E. Schwitter</i>	
Optimisation Dry Mortar Product Properties by Application of Acrylic Fibres in Consideration of Fibre Length/diameter	17
<i>L. Bullinger</i>	

SESSION 2: REINFORCEMENT FIBERS II

Super Ductile PVA Fiber Reinforced Cement Board	25
<i>H. Hoshiro, A. Ogawa, Y. Hitomi</i>	
Hardwood Pulp Fibre As Alternative to Engineered Cement Based Composites	34
<i>G.H.D. Tonoli, E. Fuente, C. Negro, F. Rocco Lahr, A. Blanco, H. Savastano Jr.</i>	
Application of Natural Fibres to Replace Asbestos in Composite Cement Sheets	40
<i>E. Ganjian, M. Khorami</i>	

SESSION 3: MINERAL RAW MATERIALS AND ADDITIVES

The Effect of Aluminous Additives on the Properties of Autoclaved Cellulose Fibre Cement	50
<i>T. Cooke, A. Akers</i>	
Effect of Sepiolite on the Behaviour of Fibre Cement Suspensions in the Manufacture of Fiber-Reinforced Cement	74
<i>E. Fuente, R. Jarabo, A. Moral, C. Negro, L. Izquierdo</i>	
Effect of Microsilica on a Polypropylene Fibre Reinforced Product	83
<i>L. Zhen, V. Zampieri, S. Ikai</i>	

SESSION 4: NEW CONCEPTS AND TECHNOLOGIES

Technology and Market Consideration for Fiber Cement Composites	96
<i>A. Moslemi</i>	
Selected Issues of Fibre-Cement Sustainability: Wood Pulp Refining Energy and Accelerated Ageing of Fibres and Composites	113
<i>B. De Lhoneux, L. Alderweireldt, A. Boersma, R. Bordin, W. Saenen, L. van der Heyden, D. Verllene</i>	

SESSION 5: ECO-FRIENDLY PRODUCT

Eco-Friendly Inorganic Bonded Sandwich Panels (Aerocon Panels): Production, Properties and Applications	123
<i>J. Sunku, A. Shankar</i>	
Cost-Effective Composite Building Panels for Walls and Ceilings in Nigeria	131
<i>Y. Adedeji</i>	

SESSION 6: WOOD CEMENT PRODUCTS

Traullit Large Wall Elements	140
<i>M. Ruckert</i>	
Wood Strand Cement Board	146
<i>M. Aro</i>	
Dimensional Stability of Cement Bonded Particle Board	157
<i>M. Fan, J. Dinwoodie</i>	
New Developed Large Eltomation Plant Capable to Produce All Types of: Wood Wool Cement Board (WWCB), Wood Strand Cement Board (WSCB-Eltoboard) and Large Wall Elements	165
<i>B. Van Elten</i>	
The Practice of Manufacturing Durisol Material	175
<i>M. Rohn, H. Qi</i>	

SESSION 7: TESTING AND PRODUCT PERFORMANCE

Evaluation of the Mechanical Behaviour of Fibre-Cements by Measuring the Energy of Fracture and Impact Energy..... 180
S. Santos, C. Dias, H. Savastano Jr., V. John, G.H.D. Tonoli, W. Silva

Evaluation of a Flocculation Dual System As a Novel Alternative for Fibre-Cement Manufacture 188
L. Sanchez, A. Blanco, E. Fuente, C. Negro

An Original Non Destructive Technique for Fibre Rate Measurement 193
L. Autrique, M. Cano, L. Perez

SESSION 8: DURABILITY

Durability of Self-Compacting Concrete Reinforced with Polymeric Fibres: Studies of Interaction with Environment and Behaviour Against High Temperatures..... 200
M. Sanchez, M. Alonso, C. Rodríguez, B. Barragan

Controlling Alkalinity of Cement Matrix: A Key Approach to Improve Fiber-Cement Durability 209
A. Mansur, O. do Nascimento, H. Mansur

POSTERS

Strength Distribution of Elementary Falx Fibers for Composite Reinforcement 217
J. Andersons, E. Sparrins, E. Porike

Effect of Curing and Mix Design Types on Performance of Date Palm Fibres Reinforcement Concrete Under Hot Dry Environment..... 224
S. Abani, A. Kriker, A. Bali

Effect of Wood Density on Bending Strength and Dimensional Movement of Flakeboards from Gmelina Arborea Leuceana Leucocephala..... 230
A. Babatunde, B. Olufemi, J. Fuwape, S. Badejo

Cement Based Bonding Materials for FRP Strengthening of RC Structures..... 237
S. Hasemi, R. Al-Mahaidi

A Study on the Machinability of Al₂O₃ Particle Reinforced Aluminium Alloy Composite 242
M. Kok

Evaluation of Recirculating Load of Fine Particles During the Cement Asbestos Fiber Composites Production: A Case Study 252
A. Murillo Bettioli, R. Barbosa de Souza, R. Giuliano Pileggi, V. John

Effects of Cane Peeling and Aqueous Extraction on Compatibility of Two Rattan Species with Portland Cement..... 253
A. Olorunnisola, O. Adefisan

Effect of Fibre Morphology on Flocculation of Fibre-Cement Suspensions 259
G.H.D. Tonoli, E. Fuente, A. Blanco, H. Savastano Jr., F. Rocco Lahr, C. Negro

Natural Fiber As Alternative for Asbestos: Properties and Performance 260
A. Mansur, H. Mansur

Antimicrobial Activity of Triclosan and Chlorhexidine Incorporated Into Cellulosic and Asbestos Reinforced Cement Composites..... 261
A. Mansur, H. Mansur

Basic Research on the Anchorage of Textile Reinforcement in Cementitious Matrix 262
R. Ortlepp, E. Lorenz

Zeolite Mineral As Supplementary Cementing Materials in Hastchek Process in Cuba..... 263
M. Rosell Lam, A. Hernandez, M. Darboy

Author Index