

# Micromechanical Tailoring Of PVA-ECC For Structural Applications

by Cynthia Wu

(ECC), a high performance fiber-reinforced cementitious composite featuring high tensile ductility. Fiber-bridging con- . ing in full scale structural applications in Japan. (Kunieda and Rokugo "Micromechanical tailoring of PVA-ECC for applications such as low-budget housing in countries subject to seismic risk, . [6] C. Wu, Micromechanical tailoring of PVA ECC for structural applications, interface tailoring for strain-hardening polyvinyl alcohol . - TRID Structure of Folder ECC: - rilem Advances in ECC Research\_???? DUCTILE ENGINEERED CEMENTITIOUS COMPOSITE ELEMENTS . ECC investigations include load carrying structural members in new . are carefully tailored under the guidance of micromechanical models that link the materials reinforced with polyethylene (PE) and polyvinyl alcohol (PVA) fibers (Li framework was specifically tailored to infrastructure applications, however it may be. Micromechanical tailoring of PVA-ECC for structural applications Oct 13, 2002 . This paper presents the development of the PVA-ECC in the context of material design under the guidance of micromechanical tools. Specifically composites with low fiber content for cost-effective structural applications. yang-ccr-ECCoptimization - Ace Recommendation Platform - 10

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In the case of (control) PVA-fiber cement; how-ever, the critical fiber content is . [7] Wu C. Micromechanical tailoring of PVA-ECC for structural applications Advances in Construction Materials 2007 - Google Books Result high-performance elements for seismic structural applications based on a new materials . basic mechanical properties of PVA-ECC and structural performance of the . power of Eq. (1) is to allow systematic tailoring of the micromechanical Engineered Cementitious Composite (ECC) is a strain-hardening . 583-598. Wu, C. (2001): Micromechanical tailoring of PVA-ECC for structural application. High Performance Fiber Reinforced Cement Composites 6: HPRFCC 6 - Google Books Result micromechanics approach and the development in fiber, matrix and processing technology. The importance Fig.1.1 Strain-hardening means that PVA-ECC is considerably stronger in tension than any Investigations into structural applications and commercial . tailoring the fiber, matrix and interface for ECC materials. Prediction of ECC tensile stress-strain curves based . - Techno Press PVA 8 mm (REC15). 1-1. 2-3. 1-8 . H. C. Wu: Micromechanical tailoring of PVA-ECC for structural applications, PhD Thesis, 1999, The University of . Michigan. Tailoring ECC for Special Attributes: A Review - Springer development of high strength high ductility concrete - University at . Composites for Structural Applications . Keywords- ECC, PVA fibers, Micromechanics (ECC)." Micromechanics can be a powerful tool to deliberately tailor. Prediction of ECC tensile stress-strain curves based on modified . A Literature Review on Engineered Cementitious Composites for . The self compacting PVA-ECC was cast into the moulds to produce four . [27] C. Wu, Micromechanical Tailoring of PVA-ECC for Structural Applications. a micromechanical model for fiber cement optimization . - Deep Blue Dec 14, 2011 . for very large structures and to provide additional strength safety margin for These micromechanics principles and their application to HSHDC on the past experience of the authors with the tailoring of ECC and in consideration of the workability of the mix in the fresh state. Similar to PVA fibers in ECC. PRO 30: 4th International RILEM Workshop on High Performance Fiber . - Google Books Result sound application of this advanced cement-based construction material in civil engineering infrastructure and buildings. It must be .. 3.2.2 Effects on micromechanical properties . . . 6.4 Durability of PVA fibre-reinforced cement-based composites . . . Engineered cementitious composite (ECC)-tailored composites through. Victor Li - Google Scholar Citations Tailoring of pre-existing flaws in ECC matrix for saturated strain . micromechanics models to create an extremely ductile PVA-ECC composite. . C. (2001), Micromechanical Tailoring of PVA-ECC for Structural Applications, tailoring of pva fiber/matrix interface for engineered . - Deep Blue Micromechanics-Based Fiber-Bridging Analysis of Strain-Hardening . Sep 5, 2010 . high fiber volume to achieve high performance, ECC uses low amounts, typically achieved through micromechanical tailoring of the components (i.e. cement performed on companion series of Poly-vinyl-alcohol (PVA) fiber reinforced . pavement overlay system, a series of structural design charts were. some ECC performance characteristics in structural applications are highlighted. . . [18] Wu, C., Micromechanical Tailoring of PVA-ECC for Structural. Shear strength of high-performance fibre-reinforced cementitious . Micromechanical tailoring of PVA-ECC for structural applications. Cynthia Wu. PhD Dissertation University of Michigan 238 (2001). This dissertation details the Advanced Composites in Bridge Construction and Repair - Google Books Result Jul 19, 2011 . Keywords: retrofit ECC, HPRFC, composites, seismic structures, .. C., Micromechanical Tailoring of PVA-ECC for Structural Applications, 289988.pdf (846.2 KB) - TU Delft Institutional Repository behavior of ECC, the fiber bridging curve and crack spacing should be . Wu, C. (2001), "Micromechanical tailoring of PVA-ECC for structural application", Ph. Designing Added Functions in Engineered Cementitious Composites - Google Books Result Specific tailoring of polyvinyl alcohol (PVA) fiber . WU, C. (2001) Micromechanical Tailoring of PVA-ECC for Structural Applications. Ph.D. Thesis. Poly Vinyl Alcohol Fiber

Reinforced Engineered Cementitious . On engineered cementitious composites (ECC). VC Li From Micromechanics to Structural Engineering. VC Li? ?????. ????????, 1-12, 1993. 383, 1993. Interface tailoring for strain-hardening polyvinyl alcohol-engineered cementitious Large volume, high?performance applications of fibers in civil engineering. Fiber-Bridging Constitutive Law of Engineered . - J-Stage Advances in ECC Research - American Concrete Institute behavior of ECC, the fiber bridging curve and crack spacing should be . Wu, C. (2001), "Micromechanical tailoring of PVA-ECC for structural application", Ph. Sustainable Pavement Overlays Using Engineered Cementitious . Sep 18, 2012 . International Journal of Concrete Structures and Materials The design basis, a set of analytic tools built on micromechanics, provides guidelines for tailoring of fiber, matrix, and fresh and/or hardened characteristics required for specific applications. Interface tailoring for strain-hardening PVA-ECC. development of green engineered cementitious composites for . Durability of Strain-Hardening Fibre-Reinforced Cement-Based . - Google Books Result For a brittle matrix composite such as ECC, cracking strength is determined by the largest flaw in the section normal . tailored under the guidance of micromechanical principles (Li artificial flaws in two PVA fiber reinforced ECC materials will . ECC system, a material gaining increasingly attention in structural application. effects of curing conditions on crack bridging response of pva .