عنوان مقاله:

Flexural Performance of Fibre Reinforced Concrete with an Optimised Spirally Deformed Steel Fibre

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نویسندگان:

M. Hajsadeghi - *School of Engineering, University of Liverpool, The Quadrangle, Brownlow Hill L۶۹ ۳GH, UK*

M. Jalali - *Faculty of Civil Engineering, Shahrood University of Technology, Shahrood, Iran*

C. Chin - *Department of Civil Engineering, Xian Jiaotong-Liverpool University, Suzhou Industrial Park, Jiangsu Province, China*

T. Zirakian - *Department of Civil Engineering and Management, California State University Northridge, USA*

M. Bahrebar - *Department of Civil Engineering and Management, The University of Auckland, Auckland, New Zealand*

خلاصه مقاله:

In this paper, the flexural performance of Fibre Reinforced Concrete (FRC) with an optimised spirally deformed steel fibre developed by the authors is evaluated experimentally. For comparison purposes, concrete specimens with commercially available steel fibres (hooked-end and crimped) are tested and included in the study. The experiment parameters include two different matrices with ۲۸-day compressive strengths of ۳۵ MPa and ۴۵ MPa and four fibre volume contents (۰.۲%, ۰.۳۵%, ۰.۵%, and ۰.۶۵%). Besides, specimens with plain concrete are also tested as reference. Findings of the research indicate that the spirally deformed steel fibre considerably enhances flexural characteristics of concrete compared with existing fibres on the market (hooked-end and crimped) where the deflection-hardening response (even at the presence of wide cracks) can also be achieved even with low fibre dosages common in practice. Therefore, such a composite, i.e. concrete reinforced with spirally deformed steel fibre, .can be deemed as a structural material

کلمات کلیدی:

Fibre Reinforced Concrete, Flexural Performance, Optimised spirally deformed steel fibre, Deflection-hardening response