

## عنوان مقاله:

Experimental and Numerical Study of Energy Absorption Capacity of Glass Reinforced SCC Beams

## محل انتشار:

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## نویسندگان:

Sajjad Mohsenzadeh - *Department of Civil Engineering, Maragheh branch, Islamic Azad University, Maragheh, Iran*

Ahamd Maleki - *Department of Civil Engineering, Maragheh branch, Islamic Azad University, Maragheh, Iran*

Mohammad Ali Yaghin - *Faculty of Civil Engineering, University of Tabriz, Tabriz, Iran*

## خلاصه مقاله:

Various experimental studies have been carried out on glass fiber reinforced concrete (GFRC), but in limited studies, the behavior of this type of concrete is evaluated using finite element method (FEM). In this study an analysis model is presented for predicting energy absorption capacity of glass fiber reinforced self-compacting concrete (GFRCSKC) beams and the results are compared with experimental study. For this purpose, the investigations are conducted in two experimental and numerical sections. In experimental section, the characteristics of fresh and hardened concrete have been evaluated using slump flow, V-funnel, L-box, T50, compressive strength, tensile strength and flexural strength tests. In numerical section, ABAQUS software has been used to simulate GFRCSKC beams. The concrete damage plasticity model has been used to simulated concrete material. The fiber contents are 0, 0.25, 0.75 and 1% of the mixed concrete by volume. The results show that the maximum increase in energy absorption capacity of beams compared to the plain concrete for 25, 35 and 45 concrete grade was 29, 33.2 and 53.75%, respectively. At last, the ultimate loads corresponding to the FEM are found to hold good agreement with experimental ultimate loads which validates the FEM.

## کلمات کلیدی:

beams, Energy Absorption Capacity, Finite element model, Glass Reinforced Concrete, Self-Compacting Concrete

## لینک ثابت مقاله در پایگاه سیویلیکا:

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