

# **SDOF MODELLING OF SFRC STRUCTURES SUBJECTED TO AIR-BLAST LOADING: COMPARISON OF ANALYTICAL AND EXPERIMENTAL RESULTS**

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A numerical approach is presented for the analysis of the dynamic response of steel fibre reinforced concrete (SFRC) structures subjected to air-blast loading. Calculated results are compared with air-blast tests on SFRC structural elements. The structural elements were tested as (a) rectangular panels: simply-supported (SS) on two opposing edges, (b) square panels: simply-supported all round the edges (SSAR), and (c) fully-fixed (FF) panels: in the form of an open-box. Charge weights range from 8 kg to 40 kg and at 5m standoff distance. The deformed configuration of the structure is computed at constant load steps, and the results are employed to evaluate the parameters of an equivalent dynamic model. The approach considers an elastic-plastic structural resistance function for the single-degree-of-freedom (SDOF) dynamic analysis. Details of the analysis are presented and the results are discussed. Comparisons of computed and measured residual displacements are provided.