عنوان مقاله:

ULTIMATE BEHAVIOUR OFCONTINUOUS COMPOSITE CONCRETE SLABS

محل انتشار:

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خلاصه مقاله:

Composite one-way concrete slabs with profiled steel decking as permanent f ormwork are commonly used in the building construction i ndustry. In addition to carry the gravity loads, composite slabs act as a diaphragm to distribute the lateral (wind and earthquake) forces to the vertical ele ments of the lateral load resisting systems. As ground motio ns occur in both horizontal and vertical directions concurrently, many design codes consider the vertical e ffects of earthquake by means of introducing a static load equivalent to about 25% of the dead load applied in the upward and downward directions. Thus, t he design of a composite slab as a diaphragm to carry the vertical earthquake load will be very similar to that in gravity loads.Design codes require the expperimental evaluation of the load bearing capaci ty of each type of steel decking using full scale tests in sim ple-span slabs. There is no procedure in curre nt codes to evaluate the ultimate strength of continuous composite slabs and this is often assessed by full scale tests. This paper presents the results of three full-scale tests on continuous composite concrete slabs ca st with using trapezoidal steel decking profile (KF70) that is widely used in Australia. Slab specimens were tested in four-point bending at each span with shear spans of s pan/4. The longitudinal shear failure of each slab is evaluated and the measured mid-span deflection, the e nd slip and the mid-span steel and concrete strains are also presented and discussed. The slabs are also modell ed in a finite element (FE) software package using interface elements to model the contact between the .steel decking and concrete slab

کلمات کلیدی:

Continuous Composite Slab, Cracking, Longitudinal Shear, Steel Decking, Ultimate Strength