

Effect the Use of Steel Fibers (Dramix) on Reinforced Concrete Slab

Authors : Faisal Ananda, Junaidi Al-Husein, Oni Febriani, Juli Ardita, N. Indra, Syaari Al-Husein, A. Bukri

Abstract : Currently, concrete technology continues to grow and continue to innovate one of them using fibers. Fiber concrete has advantages over non-fiber concrete, among others, strong against the effect of shrinkage, ability to reduce crack, fire resistance, etc. In this study, concrete mix design using the procedures listed on SNI 03-2834-2000. The sample used is a cylinder with a height of 30 cm and a width of 15cm in diameter, which is used for compression and tensile testing, while the slab is 400cm x 100cm x 15cm. The fiber used is steel fiber (dramix), with the addition of 2/3 of the thickness of the slabs. The charging is done using a two-point loading. From the result of the research, it is found that the loading of non-fiber slab (0%) of the initial crack is the maximum crack that has passed the maximum crack allowed with a crack width of 1.3 mm with a loading of 1160 kg. The initial crack with the largest load is found on the 1% fiber mixed slab, with the initial crack also being a maximum crack of 0.5mm which also has exceeded the required maximum crack. In the 4% slab the initial crack of 0.1 mm is a minimal initial crack with a load greater than the load of a non-fiber (0%) slab by load1200 kg. While the maximum load on the maximum crack according to the applicable maximum crack conditions, on the 5% fiber mixed slab with a crack width of 0.32mm by loading 1250 kg.

Keywords : crack, dramix, fiber, load, slab

Conference Title : ICCMET 2018 : International Conference on Construction Materials Engineering and Technology

Conference Location : London, United Kingdom

Conference Dates : January 18-19, 2018