

## عنوان مقاله:

Effects of using carbon nano tubes on thermal and ductility properties of bitumen

## محل انتشار:

هفتمین کنگره ملی مهندسی عمران (سال: 1392)

تعداد صفحات اصل مقاله: 6

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## خلاصه مقاله:

New plans must be used to improve quality and to increase productivity and durability of conventional pavements. In this investigation, it has been attempted to promote technical characteristics of bitumen using carbon nanotubes as an additive. Wet and dry process methods are most practical ways of mixing CNF in AC. It was decided that the best method to adopt for this investigation was the dry process. In this study thermal and ductility properties of modified bitumen by 0.1, 0.5, and 1% carbon nano tube content in bitumen were evaluated considering bitumen penetration, softening point, and ductility tests, then the results were compared to those of unmodified bitumen. It was found that adding carbon nano tubes effects on thermal properties of bitumen by increasing the softening point, and decreasing the bitumen penetration. It was also shown that bitumen ductility decreases by carbon nano tubes modification process.

## کلمات کلیدی:

bitumen, carbon nano tube, ductility, bitumen penetration, softening point

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/216601>

