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The Effect of Particle Sizeson the Mechanical Properties for the Sport surfacesPrepared from Crumb Rubber

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Abstract: This research aims to study the effect of particle sizes on mechanical properties for sports surfaces prepared by usingthecrumb rubber which is considered as pollutant materials for the environments that is available at the state company for rubbers industries and tires industry in Al-Najaf city and in different particle sizes (P.S)which areconsidered as a base material in this work and added for various ratios from acrylic polymer material as binder material. The binder material added in various ratios (100, 150, 200, 250) g in to crumb rubber (CR) which has different particle sizes (2.3, 2, 1.7, 1.4) mm. and by mechanical tests results we selected the sample (400 CR + 250 BM) with the size of 2mm for crumb rubber for being more convenient and an investigation of the mechanical properties required, the results showed that mechanical properties match with international standards .The results indicated that tensile strength 0.467 MPa, hardness 59.6 Shore A and resilience 52.9 %, compression set 0.69%, density of 11.091 g / cm3, friction coefficient 0.75 and wear resistance 0.647%.

Keywords: Particle Sizes, Mechanical Properties, Sport Surfaces, Crumb Rubber.

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