

## Some properties of fine aggregate free polymer concrete

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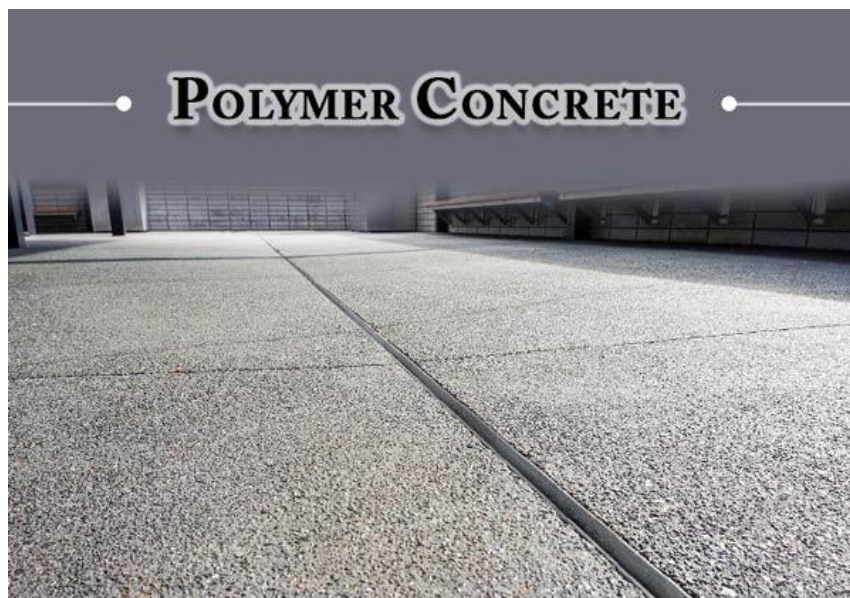
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This research includes the study of the properties of No-fines concrete using 10-mm maximum size of aggregates and improved by [SBR](#) polymer . The concrete mixes by weight were (1:5) , (1:6) and (1:7) (cement:aggregate) respectively .The polymer was added as percentages of cement weight and were 5% , 7.5% and 10%. Reference mixes were made for every case .

### Concrete mixing

The mixing process was carried out inside the concrete laboratory at the Department of Civil Engineering / University of Anbar using a mixer with a capacity of (0.1 m<sup>3</sup>). The mixing process was carried out by placing an amount of coarse aggregate, then a quantity of cement, then the remaining quantity of coarse aggregate, then the remaining quantity of cement, then the process of pouring concrete into the molds in the form of three layers Where each layer was stacked by means of an electric vibrator for a period not exceeding 10 seconds, and after the completion of the molding and stacking of the three layers, the surface of the models was treated with a trowel for the purpose of obtaining a flat surface.



## Testing

### Density test:

The density of concrete was found by measuring the weight of each model of the compression and flexural resistance test models by measuring its dry weight in the air before testing and measuring its dimensions and then its volume and dividing the weight by the volume.

### Ultrasound test:

The portable device known commercially as (Pundit) as shown in fig., where two transducers with a frequency of 54 kHz were used to transmit and capture the ultrasonic vibrations. A thin layer of motor fat was placed to facilitate the transmission of the vibrations As well as to reduce the effect of the gaps on the two ends of the examination (the two opposite sides surfaces of samples of fracture calibrator examination points).



### Absorption test:

The amount of water absorption for this type of concrete was found by calculating the weights of the prisms before immersing them in water, then immersing them in water for four days and then drying them in the air for two hours.