In this study, it is aimed to compare static and dynamic elastic parameters of water saturated concrete. For this purpose, 9 concrete designs with different strengths were prepared and studies were carried out. As for each design, cube samples of 150 mm size of unreinforced and one of each including 10, 14 or 20 mm diameter reinforcement, a total of 108 concrete samples were prepared and these were subjected to water curing. The weights and volumes of the samples in the case of saturated dry surface, Ultrasonic P and S wave travel time measurements and uniaxial compressive strength tests of samples were performed at certain times. Dynamic elastic modules were calculated by using P and S wave velocities and elasticity theory, and static elastic modules were calculated based on uniaxial compressive strength. Seismic velocity ratio and Poisson ratio were also obtained. In this study; empirical relationships were obtained above 0.90 of the correlation coefficient (R) between the dynamic and static elastic modulus of water-saturated concrete. In addition, in water saturated concrete, the water saturation lower limit value according to the seismic velocity ratio was determined as 1.8.