The aim of this study is to assess the compressive strength values of different concrete classes by using the image processing technique. For this purpose, seven different water/cement ratios were obtained using the different series of concrete. Physical and mechanical tests were conducted on the obtained specimens. In addition, analyses were carried out by using image processing techniques. Correlations between compressive strength values of the obtained concrete specimens and the results obtained at the end of image processing were sought. A good correlation (R-2 = 0.9847) between the aggregate volume was observed by means of image processing, and the aggregate volume, theoretically assigned during mixture design. Regression analyses were done using image processing and non-destructive test results. For the comparison the performance of the regression techniques R-2, RMSE, SSE and MAPE were evaluated for each analysis. It is further considered that the image processing technique that was used in this study can be an auxiliary tool to destructive and non-destructive testing methods.