In this study, the amount of marble dust “MD” as filler was investigated that effect to fresh (slump “S”) and hardened (compressive strength “CS”, modulus of elasticity “EM”, splitting tensile strength “STS”, wear “WS” and resistance of freezing and thawing “RFT”) properties of concrete, at constant dosage of cement (400 kg/m^3) two different cement type (CEM I 42.5 R and CEM II/B-M (P-LL) 32.5 N) and water/cement (“w/c”) ratios (0.50 and 0.55). The fuzzy logic model was developed that of MD ratio, w/c ratio, strengths of cements “SC”, S were used as input, and the hardened properties (CS, EM, STS, WS and RFT) were used output parameters. It was obtained that high determination coefficient (0.9903-0.9995) from relationships between model results with experimental results. It is concluded that fuzzy logic is usable for estimated of hardened properties using filler ratios and some main parameters such as w/c, SC, S etc.