Self-compacting sand concrete (SCSC) can be regarded as a flowing sand concrete, containing as principal aggregate natural sand, which can be cast without compaction or vibration. Due to the finesses of aggregates in SCSC, it requires a high amount of fine materials than other types of concretes. This paper studies the effect of marble powder content (MP) on the properties of the sand concrete (SCSC) at fresh and hardened states. The properties of the fresh prepared mixes tested are the mini-slump flow, the V-funnel flow time and viscosity. At the hardened state, the parameter which has been determined is the 28-day compressive strength. The obtained test results show that the increase of MP content in SCSC, from 150 kg/m3 to 350 kg/m3, improves the properties at fresh state by decreasing v-funnel flow time (from 5s to 1.5s) and increasing the mini-cone slump (from 28cm to 34cm). With the use of 250 kg/m3 of MP we can reach the highest initial viscosity while retaining good fluidity at high rotational speeds, compared to the MP contents of 150 kg/m3 and 350 kg/m3. In other hand, the 28-days compressive strength decreases with an increase of MP content