

Abstract :

The study aim is to investigate the reusing of refractory brick wastes (RBW) as a fine aggregate (by a partial substitution of sand) to produce cement mortar. RBW were finely crushed at a high-specific surface and have been introduced in cement mortar by sand substitution (0, 10, 20, 30 and 50 wt.%). The fresh and hardened properties of mortars were evaluated at 28-days, the refractory brick-based mortars have been subjected to heat treatment according a thermal cycle with multiple levels (20, 600, 700, 900, 1010 and 1100°C) for 8 h with a dwell in each temperature chosen. The results show that proportional increase in mass loss as a function of temperature. However, the mortar with 20% of RBW shows good thermal stability since its mass loss is lower compared with other compositions. The mortar sample with 10% of RBW cannot resist at high temperatures (chipping, cracking and splitting).