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USE OF TANNERY SLUDGE IN CLAY BRICK MANUFACTURING

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Abstract

The paper analyses the possibilities of recycling tannery sludge (TS) in clay brick manufacture. The physico-mechanical properties and microstructure of clay brick and cement mortars vary depending on TS content in the mix. 2.5 %–15.0 % TS (by weight) was added to clay bricks fired at 1000 °C temperature and maintained at maximum heat for 1 hour. The tests revealed that 2.5 % TS addition had a positive effect on physical and mechanical properties of clay brick: reduce drying and firing shrinkage, reduce water absorption, and increase compressive strength. Chromium leaching values in clay brick (2.5 % TS) were found not to exceed the limit values set forth in 2003/33/EC.

Key words: chromium (III), clay brick, recycling, tannery sludge, waste

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