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### Wastes recycling into fired clay bricks: A review

Brick is one of the most common masonry units used as building material. Due to the demand, different types of waste have been investigated to be incorporated into fired clay brick for example sludge wastes, agricultural wastes, fly ash, fuel wastes and other wastes. Previous investigations have demonstrated positive effects on the physical and mechanical properties such as lightweight bricks with improved shrinkage, porosity and strength. However, reduced performances in number of cases were also demonstrated. In addition, the high temperature in the firing process allows volatilization of dangerous components through emissions changes the chemical characteristics of the material and eliminates the toxic components through fixation process. Therefore, this alternative disposal method for the waste may provide sustainable method to immobilise toxic chemicals that pose a very high risk to the environment through leaching or emissions as well as providing a new construction product with improved properties providing the mix is appropriately designed and prepared for the required properties.



Figure 1: Fundamental aspects to be considered in waste recycling into fired clay brick.

### Biography

Aeslina Abdul Kadir graduated with BSc Honors in Environmental Science from Universiti Kebangsaan Malaysia (UKM) in 2002 followed by MEng in Civil Engineering at Universiti Teknologi Malaysia (UTM) in 2004 and PhD in Civil Engineering at RMIT University, Melbourne, Australia (2010). Her expertise is in solid waste management and solid waste recycling into building material. She had published more than 50 publications including proceedings, journals, books and modules. In addition, her passion in research has enabled her to secure almost 2 million worth of grants. She is a member of International Water Association (IWA), International Solid Waste Association (ISWA), Malaysian Society of Waste Management and Environment (MSWME), Malaysian Society for Engineering and Technology (mySET), Concrete Society of Malaysia (CSM) and Malaysian Research and Innovation Society (MyRIS).

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