Design of Household Furnace made of Fire Mortar (Castable)

Rony Dwi Apriliyanto
Renewable Energy Engineering Program
Department of Engineering

ABSTRACT

This study aims to design household stoves that have higher efficiency than traditional stoves. The furnace is designed with fire mortar that has a strong structure, durable and able to isolate heat. The furnace is designed with combustion chamber, air duct, ash storage room, grille, burner door, airway door, ash room door, kitchen hole and chimney. Furnaces that have been designed are tested using water boiling test (WBT) method and water ripening test. The furnace being tested is a designed stove and a traditional household stove. Based on the results of the furnace test the design has a higher efficiency of 26.07% compared with traditional furnace which has an efficiency of 10.64%.

Keywords: stove design, traditional stove, fire mortar and efficiency.