



CENTRE FOR RESEARCH IN ENERGY AND ENERGY CONSERVATION

**ICSEA WBT Protocol - Initial Rating for BM Energy Saving Stove (Medium Size)**

Date of Test: 08-09/12/2015

**BM STOVE 1**

WBT	Thermal Efficiency - Test 1		
	Cold-start	Hot-start	Simmering
Thermal Efficiencies	31%	38%	58%
Thermal Efficiency - Power Averages	High Power		
	34.1%	Low Power	
Stove Thermal Efficiency	45.8%		

**BM STOVE 2**

WBT	Thermal Efficiency - Test 1		
	Cold-start	Hot-start	Simmering
Thermal Efficiencies	31%	36%	57%
Thermal Efficiency - Power Averages	High Power		
	33.3%	Low Power	
Stove Thermal Efficiency	45.0%		

**BM STOVE 3**

WBT	Thermal Efficiency - Test 1		
	Cold-start	Hot-start	Simmering
Thermal Efficiencies	30%	38%	52%
Thermal Efficiency - Power Averages	High Power		
	34.0%	Low Power	
Stove Thermal Efficiency	43.1%		

**BM STOVE 4**

WBT	Thermal Efficiency - Test 1						Thermal Efficiency - Test 2			Thermal Efficiency - Test 3		
	Cold-start	Hot-start	Simmering	Cold-start	Hot-start	Simmering	Cold-start	Hot-start	Simmering			
Thermal Efficiencies	30%	35%	53%	31%	37%	57%	30%	38%	55%			
Thermal Efficiency - Power Averages	High Power 32.4%			High Power 33.9%			High Power 34.0%					
Stove Thermal Efficiency	42.6%			45.3%			44.4%					
Average three tests										44.1%		

**Safety Test Result:**

BM Energy Saving Stove: Stove secured 86.5 Points  
 Stove rating: Good  
 Stove safety IWA Tier: 2

**Remarks:**

The BM Energy Saving stove medium size was rated 44.1% for thermal efficiency (based on an average of three tests). On safety rating, it was rated good and was placed into tier 2 indicating a substantial improvement over the baseline Stove. Upon measurements of the external diameters of the stove, two stoves had a diameter slightly <26cm and the other two were slightly >26cm but the inside diameter of the combustion chamber were almost of the same dimensions. This implied that different pot sizes would be used on the stoves as per the ICSEA protocol. The protocol developers (UCB) were consulted with client's knowledge and it was agreed to use a 6 liter pot weighing 288g with a diameter of 26cm and height of 12cm to measure 4 liters of water for all the tests on the four Stoves. 4-7cm sized charcoal with a Gross calorific value of 31917.66 KJ/Kg and moisture content of 5.9% was used. The charcoal used was purchased from the same company in bulk.

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