EMERGENCY SHELTER CLUSTER
SOUTH ASIA EARTHQUAKE
PAKISTAN
WOOD BURNING STOVE SPECIFICATION DEC 2005

This document contains design specifications for a wood burning stove (both round and square types). This is the stove model developed by WWF. Although other stoves such as the quetta stove (round with grill) are good designs, the designs below are suggested for their small transportation and ease of manufacture. Precise construction details may depend on fabrication capacity. The key features of these stoves are;

- small internal volume,
- internal jacket 1" from the stove walls,
- Large door to allow large pieces of wood to be fed in,
- Shuttable door to restrict air-flow / burn rate,
- Butterfly valve in flue to control burn rate.

For further information consult section 5.4 of the winterisation technical guidelines.

Round Stove Specification (stove as pictured)

fig 1 preferred stove model. Sample available at IOM office. A few simple alterations may facilitate fabrication.

Note: to simplify fabrication, a square model may be manufactured (see below). A key feature of tis stove is the inner steel jacket design that forces air flow into the space between the firebox and the flue hole.

Steel thickness: galvanised 24 guage throughout as minimum
Stove dimensions: 10" diameter circular stove 8" tall with flat base and 5" hole cut in top with fitting lid
Jointing: joints hammered not welded to good quality of workmanship. Joints to not allow smoke to leak.
Stove lining: Inner curved jacket 1" from walls
Door Opening: 8" wide by 5" tall.
Door: 5.5" tall. On 4mm steel bar runners. Alternatively a hinged door design may be used depending on manufacturing capacity.
Chimney hole: 4 ½" steel. Tapered to 3 ¾" steel

Optional extras:
Front tray: optional, 10"x 10" galvanised steel with ½" raised sides
Legs: non critical. 3mmx 3" riveted to base. Bent to allow stoves to stack.

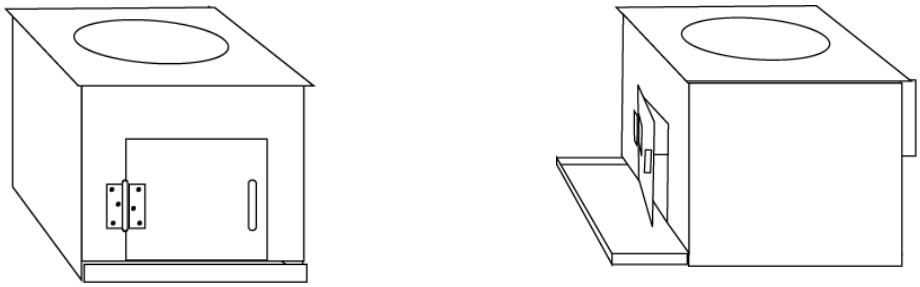
Pipe specification

Steel thickness: 26 guage acceptable.
Length: 7'6" in three 2'6" sections.
Diameter: 4"
Valve: simple butterfly valve 1' from bottom of one section of pipe
Bends: 2 x 90^0 bends
Flue cap – simple cap to flue pipe to prevent sparks from flying from end of pipe.
Chicken wire: ½" 1m x90m to prevent stoves from touching fly sheet.

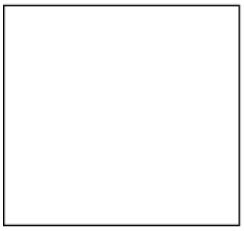
Square stove specification

This specification is the same as that for the rounded stove but the stove has had the following alterations:

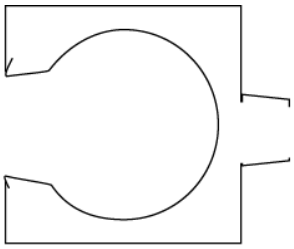
- Square shape – simplifies cutting of the 24 guage steel lid (although uses slightly more material)
- Detachable Tray at front - slides into front of stove to reduce transportation volume
- Door fixed with hinge riveted into position for ease of fabrication.



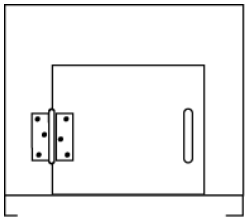
square stove with detachable tray and inner metal lining.



tray



plan section of stove showing metal lining



Front view of stove showing door, detachable tray and holder

Steel thickness: galvanised 24 guage throughout as minimum
Stove dimensions: 10” diameter circular stove 8” tall with flat base and 5” hole cut in top with fitting lid
Jointing: joints hammered not welded to good quality of workmanship. Joints to not allow smoke to leak.
Stove lining: Inner curved jacket 8” diameter and 6 1/2” tall joined at base and at front to wall of stove.
Door Opening: 7” wide by 5” tall.
Door: 5.5” tall. Riveted to body with 2” hinge
Chimney hole: 4 ½” steel. Tapered to 3 ¾“ steel
Front tray: optional, 10”x 10” galvanised steel with ½” raised sides