

THE PERMATENT

D. Sorrill, Director, Aidecom International, Dhaka

Introduction

The Permatent Emergency Shelter cum Roofing Unit has been specially designed in Bangladesh for use in Bangladesh, particularly as disaster preparedness hardware for use in the cyclone high risk areas. However, it is suitable for use as an emergency shelter following any incident which makes people shelterless.

Design

The main design criteria were :

SIMPLICITY

because simple is cheaper and has less to go wrong as well as assembly being more readily understood.

The design finally chosen consists of only five components. Three identical steel sheets form the shell and two end walls are made of Bangladeshi canvas.

BE A COMPLETE SHELTER

because frequently after a cyclonic storm surge there are no materials remaining with which to build a shelter. Therefore, providing only one component of a shelter (say plastic sheeting or CI sheets) means that the recipients damage the environment by scavenging tree branches to make a framework or they buy massively in the local market so disrupting the local economy.

The design solution forms a complete shelter erected in two hours.

BE ERECTABLE WITHOUT NEED FOR TOOLS OR FIXINGS

because tools and fixings tend not to reach the relief site (being lost, stolen or misplaced); also, the Permatent will be used mainly by rural persons with no technical skills.

The components of the design solution overlap or interlock with each other.

BE OPTIONALLY USABLE AS A ROOF ON A HOUSE

so that it can become a durable house resource in the stricken area.

This helps to maximise benefits in return for logistical and administrative costs in deployment and to enable a flexible response to specific circumstances (e.g. recovery and multiple re-use as a survival shelter or to be supplied to survivors as a roof on their rebuilt house.

The Permatent steel shell forms a storm-resistant one-piece roof.

Specification

- Shell : Three pieces of Long Rib 1000 galvanised steel sheeting (from British Steel, UK), each 6m (19.7') long, crimp curved into a freestanding tent shape. Sheets are coated with polyester coloured white on the outside and grey inside. Dimensions of shaped sheets : Width 1.05m (3.4') by span 4.56m (15')
- End walls : Bangladeshi cotton canvas with door one end and window with storm flap at the other.
- Fixing : Edges of sheets, steel and canvas to be buried 275mm (11") in the ground. No other fixing, fixtures, framework or nuts and bolts or tools required.
- Floor size : 3.1m (10.2') long by 4.05m (13.3') wide giving a total of 12.5m² (135ft²)
- Weight : 100kg (220lb) (i.e. each sheet 32 kg).
- Identification : Each steel sheet carries a serial number stamped in the metal.
- Capacity : One family or 10 persons (sleeping space).
- Packing : 10 Permatents to one Brace (steel frame with attachable wheels)
- Life : Steel estimated at 25 years minimum.
- Resistance : Strongly resistant to fire, saline, ultra violet and wind.
- Cost : Tk 14,000 (US\$ 350), depending on number of units ordered.

Main Advantages :

- Provides a complete, easily erected reusable shelter (estimated 12 reuses)
- Requires no tools, framework, fixings or skills to erect in two hours.
- Requires no wood, so it is environmentally friendly (no scavenging of trees and bushes)
- Serial numbers make tracking of components during storage and deployment easy.
- Ideal for disaster preparedness because of long life and no need for godown.

- Good value for money (Tk 14,000/10 persons/10 uses = Tk140 per person per use)
- Can be used as roof, bridging the relief to development continuum.

Applications :

Any emergency situation where people are forced to leave their homesteads and become shelterless because of :

Cyclones, Floods, Nor'westers, Tornadoes, Riverbank/estuarine Erosion, Fires.

Production :

AIDECOM International is setting up a Government of Bangladesh-approved PermaTent production plant in Bangladesh which should be operational by the middle of 1997.

Field trials have taken place since the date of the Workshop and details can be obtained from Mr. Sorrill



Prototype PermaTent

