

# 2 Housing

## *(Family Shelter)*

The purpose of shelter interventions is to help:

Scenario A: the repair of homes that have been damaged by the disaster, initially creating minimum habitable space, and later rebuilding both homes and infrastructure. If communal buildings are being used for shared accommodation, they first need to be adapted for the residents, and later renovated in order to return the buildings to their previous function(s).

Scenario B: the settlement of displaced people within existing communities by providing needed materials and skills, and by supporting the local construction and building materials industry where appropriate.

Scenario C: the construction of temporary shelters in the emergency phase, and maintenance of temporary shelter over the life of the settlement.

The number of people needing urgent assistance and the limited availability of resources at the early stage of an emergency may well limit what can be achieved in the short term. Even so, every effort must be made to work progressively towards achieving the minimum standards.

### **Housing standard 1: family living quarters**

At the onset of the emergency, people have sufficient covered space to provide protection from adverse effects of the climate. They have sufficient warmth, fresh air, security and privacy to ensure their dignity, health and well-being.

## **Key indicators**

- The covered area available per person averages 3.5-4.5m<sup>2</sup>.
- In warm, humid climates, shelters allow optimal ventilation and provide protection from direct sunlight.
- In hot, dry climates, shelter material is heavy enough to ensure high thermal capacity. If only plastic sheeting or tents are available, provision of a double-skinned roof or an insulating layer is considered.
- In cold climates, shelter material and construction ensures optimal insulation. A temperature that is comfortable to the occupants is achieved by means of insulated shelter combined with sufficient clothing, blankets, bedding, space heating and calorific intake.
- If plastic sheeting is provided for shelter, it meets the specifications defined by MSF and UNHCR.

## **Guidance notes and critical issues**

1. Shelter can have political implications: structures that appear to be more permanent could be interpreted by host authorities to mean that displaced people have firmly settled. Good communication must be maintained with host authorities to ensure that provision of a temporary settlement is not construed in this way.
2. For indicators on minimum and maximum distances to, and number of, water points and toilets, see Water Supply and Sanitation standard 1, excreta disposal, in chapter 2.
3. Shelter standards depend on the climate and the size of the family. In a cold climate people need more interior space, as they spend more time inside than in a hot climate. Older people, women and young children generally spend more time inside the covered area.
4. In warm, humid climates, shelters must be oriented and designed to maximise ventilation and prevent entry of direct sunlight, so the door and windows should preferably face north and south. The roof should have a good slope for rainwater drainage and have large overhangs. The construction of the shelter should be light, as

low thermal capacity is required. Appropriate orientation is important to maximise airflow; it should not be obstructed, for example, by neighbouring shelters. Shaded space outside the shelter is recommended for cooking and air-drying cooking utensils. Frequent monsoon seasons should be taken into account and surface water drainage is extremely important. (See Water Supply and Sanitation standard 6, drainage, in chapter 2.)

5. In hot, dry climates, construction must be heavy enough to ensure high thermal capacity, allowing changes in night and day temperatures to cool and heat the interior alternately. Windows should be small. If only plastic sheeting or tents are available, a double-skinned roof with ventilation between the layers to prevent radiant heat transfer should be considered. Alternatively, use of insulation materials should be supported. In a light structure, maximum ventilation is not an objective but should be easily controlled (eg by opening opposite doors) to prevent heating by hot winds and radiation from the surrounding ground, and to prevent sand coming into the shelter. Shade can be gained from surrounding shelters or trees.
6. In cold climates, it is essential to provide well-insulated shelters. However, good quality shelters alone are not sufficient to ensure adequate body warmth, which depends on a combination of factors. Key factors are: the external temperature; wind; insulation of the shelter; heating arrangements; available clothes and blankets; and calorific intake.

The chill factor can be minimised by ensuring that air flow through the shelter is kept to the minimum necessary for personal comfort and safety, and to prevent respiratory problems caused by space heaters or fires for cooking. A minimum level of ventilation must be ensured. Doors should be designed to minimise drafts.

Space heaters are essential and must be appropriate to the shelter. Ideally, air intake and exhaust from cookers or space heaters should be contained in flues.

Conduction through the floor is a major issue and needs attention to ensure that people do not lose a lot of body heat during the night.

This can be addressed by ensuring that the floor is insulated, as well as the shelter itself, and/or by providing bed mats or mattresses.

7. Reinforced sheets of polyethylene are generally supplied in the early stage of the emergency, occasionally with rope and support materials such as local bush poles, galvanised steel, aluminium or high density paper. Assistance in harvesting materials should be considered, as should local purchase of materials. The provision of shelter systems should be considered if harvesting of materials is expected to damage the local economy or the environment.

The average family of five people should receive at least one 4 x 6 metres sheet of plastic. This is best imported in rolls for easy transportation, storage and distribution (4 x 60 metres for 10 families). However, sheets of 4 x 7 metres per family would give more head clearance. (See Davis, J and Lambert, R, (1995); UNDP, (1995); and MSF, (1997) listed in Appendix 1).

8. Plastic sheeting provided for shelter should meet specifications defined by MSF and UNHCR. Plastic sheeting for weather-proofing damaged buildings should follow different performance specifications.
9. Accommodation shared between families should only be considered for short periods, and only if sufficient privacy for individual families can be assured.

## **Housing standard 2: environmental impact**

Sheltering of disaster affected people has minimal negative impact on the local environment. Appropriate corrective measures are taken if a negative impact is identified.

### **Key indicators**

- If high demand for construction materials is expected to cause deforestation, some or all basic materials are supplied to families within two days of their arrival.

- There is immediate protection of vegetation important for erosion control, wind breaks or shade.
- Forest conservation and replanting takes place during the assistance programme.

### **Guidance notes and critical issues**

1. A high level of demand for construction materials in the early stage of the emergency may cause deforestation in the immediate vicinity of the temporary settlement, which may in turn lead to soil erosion, wind damage and raised ambient temperatures caused by lack of shade. This should be considered as part of the assessment so that basic materials can be provided as a preventive measure.
2. The choice of materials provided for emergency shelter should take into consideration longer term shelter needs over the duration of the displacement to minimise environmental and financial costs at a later stage. Materials should be chosen that can be re-used by the displaced population for future shelter construction, or for reconstruction work on damaged buildings.
3. It may be necessary to distribute tools to people who are able to make their own supports or structures, provided that harvesting can be sustained by the environment.