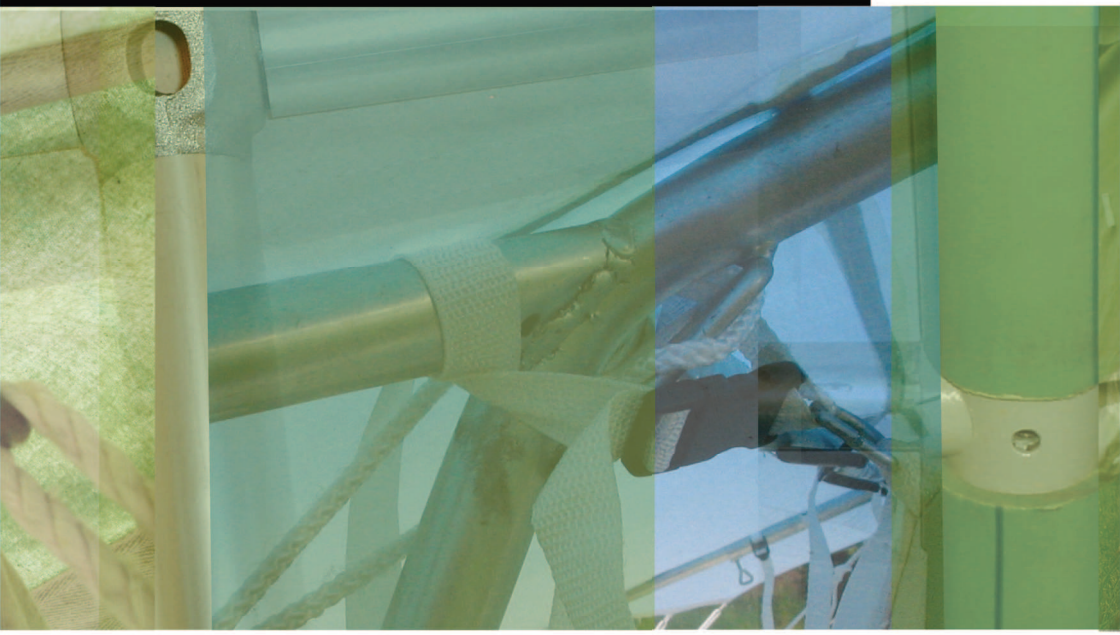
Transitional Shelter Standards

Draft
December 2010



"Agreeing common standards and indicators for transitional shelters in humanitarian operations, both in order to improve the quality and consistency of response, and to engage research and development capacities of shelter manufacturers."

shelter centre

Draft
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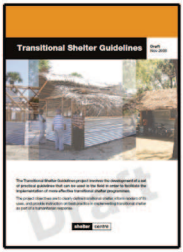
Project booklets

Shelter Centre's work with transitional shelter comprises three complementary booklets:



Transitional Shelter Guidelines
A handbook of practical guidelines that can be used in the field to facilitate the implementation of more effective transitional shelter programmes. Includes sector consensus on planning and implementation best practices.

Transitional Shelter Standards
Common standards and indicators, consistent with Transitional Shelter Guidelines, for both locally produced and stockpiled, airlifted family transitional shelters, developed and agreed upon by a multi-agency Project Consortium.

Transitional Shelter Prototypes
Prototypes that meet the Transitional Shelter Standards, including only examples of stockpiled, airlifted family transitional shelters. Includes designs by participating private manufacturers.

Transitional Shelter Standards

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Acronyms and abbreviations

CRS	**Catholic Relief Services**
DFID	**Department for International Development**
ECHO	**European Commission Humanitarian Aid Office**
IFRC	**International Federation of Red Cross and Red Crescent Societies**
IOM	**International Organization for Migration**
JICA	**Japanese International Co-operation Agency**
MSF-B	**Médecins Sans Frontières – Belgium**
MSF-Int	**Médecins Sans Frontières – International**
NRC	**Norwegian Refugee Council**
OCHA	**Office for the Coordination of Humanitarian Affairs**
RedR	**Registered Engineers for Disaster Relief**
SDC/HA	**Swiss Agency for Development and Cooperation/ Swiss Humanitarian Aid Unit**
UN-Habitat	**United Nations Human Settlements Programme**
UNHCR	**United Nations High Commissioner for Refugees**
UN/OCHA	**United Nations Office for the Coordination of Humanitarian Affairs**
USAID	**United States Agency for International Development**
USAID/OFDA	**USAID Office of Foreign Disaster Assistance**
WVI	**World Vision International**

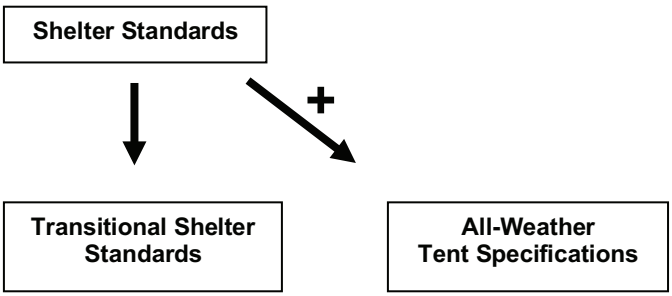
Contents of this booklet

1 Summary of amendments

The previous draft of the Transitional Shelter Standards was circulated at Shelter Meeting 9b, in Geneva, Switzerland, on the 12th and 13th November 2009. The current version contains amendments made in response to feedback from members of the Transitional Shelter Standards Humanitarian Consortium at Shelter Meetings 9b and 10a. Proposed changes from the attendees at the Transitional Shelter Prototype Evaluation are also included. This process took place in Kemble, UK, hosted by DFID on the 1st and 2nd November 2010.

1.1 Shelter Standards document change of scope

Consortium members agreed that to further clarify the difference between emergency and transitional shelter, this booklet should be renamed *Transitional Shelter Standards*, and will serve as a complement to a new document, to be published by UNHCR and the Red Cross Movement, titled *All-Weather Tent Specifications*.



Transitional shelter is a shelter built from either local materials or stockpiled and airlifted which provides a habitable, secure, private living space during the period between a conflict or natural disaster and the achievement of a durable shelter solution. Tents are not included in this.

1.2 Technical standard amendments

Discussions on various technical standards have raised the following changes and considerations. The following list includes a limited summary of the changes implemented following the May 2009 Draft.

General Revisions

A number of wording changes have been made throughout the standards to improve consistency and clarity.

Section 3.2.1, standard 1:

The total mass of the packaged shelter has been raised from 80kg to 100kg.

Section 3.2.1, standard 2:

The mass of each smaller package has been raised from 40kg to 50kg.

Section 3.2.4, previously standard 12:

The standard describing suitably fast production rates was removed.

Section 3.2.3, previously standard 8:

The requirement for the name, trademark and contact information of the manufacturer to be printed on the shelter was removed. The requirement for the manufacturer to print to the number of people the shelter holds on the shelter was removed. The requirements for a moisture-protected clear plastic A4 envelope for address information and erection date was added.

Section 3.2.3, standard 9:

Requirements were added for the date of manufacture; weight and volume of packaged shelter; and details of hazard resistance, including maximum wind and snow loads, to be marked on the shelter packaging. A requirement was added for a space to mark the actual duration of storage and the actual conditions of storage on the shelter packaging.

Section 3.3.2, standard 15:

In addition to the lifetime requirement for shelter covering, the associated connections for the covering are also required to last for a minimum of 18 months

Section 3.3.2, standard 17:

The requirement for the breaking strength and the resistance to penetration by rain to be no more than 5% below the minimum value applicable to the shelter replaced the requirement for it to be no more than 30% below the minimum value.

Section 3.3.2, standard 18:

Fabric strength requirements were updated to be consistent with the UNHCR specifications for light-weight emergency tents.

Section 3.3.3, standard 22:

Further guidance on provision for cooking areas was included.

Section 3.3.3, standards 24 - 25:

A requirement was added regarding disability access provision, with a focus on access width, threshold height and accessibility of door opening mechanisms.

Section 3.4.2, standard 50:

A recommendation for a minimum of written instruction to be used in assembly instructions was added.

Specifications that have been amended or are currently under consideration are marked with a grey box and asterisk.

2 Project outline

The Transitional Shelter Standards project, initiated in 2006, has since generated a consortium of project partners and a working group. Further details on these two reviewing mechanisms can be found on pages 6-8.

The Transitional Shelter Standards project is one of ten deliverables, identified and prioritised by participants of the twice-yearly Shelter Meeting, that are funded by DFID 2006-2011. USAID has provided additional funding for the Transitional Shelter Standards Project.

2.1 Transitional Shelter Standards project aims

The aims of the project are:

"... to improve the appropriateness and coordination of response to transitional shelter needs following conflicts and natural disasters. It seeks to achieve this aim through supporting consensus within the humanitarian community and amongst manufacturers and suppliers on standards and indicators for family transitional shelter, including emergency tents."

In the original project proposal these aims were further qualified with the following areas that the standards should seek to maximise:

- adaptation by the user to local conditions and cultural norms;
- repair and maintenance, improvement and extension by the user using local materials;
- local fabrication options for spare and additional components;
- global fabrication options using standard low-cost techniques;
- protection from solar gain, using a double roof and vented cavity;
- control of infiltration, or draughts, with options for cross venting;
- external space use and surface water drainage options;
- the integration of vector control, including mosquito netting;
- the structural system life and flexibility, and cover reparability ;
- a single hot and cold climate shelter, with climatic adaptation; and
- incremental climatic adaptation using imported and local options.

2.2 Transitional Shelter Standards objectives

In order to meet the project aims, the following objectives were set for the Standards project:

- bring together in a Consortium the mandated and experienced donors, UN bodies and implementing agencies that constitute a global stockpiled hot and cold family shelter capacity;
- achieve consensus within the Consortium for standards and indicators for stockpiled hot and cold family shelter; and
- finalise and publish consensus standards and indicators.

2.3 Transitional Shelter Standards background

Although local solutions are preferred, the urgent and large-scale need following major conflicts and disasters can often overwhelm local construction and materials capacities, creating the necessity for a family shelter solution that can be stockpiled and airlifted. In the humanitarian community, this need has so far been met largely by canvas tents.

This current stockpiled hot and cold family shelter capacity presents challenges for procurement, stockpiling and logistics, especially given the weight of tents and their susceptibility to degradation resulting from rotting and ultraviolet light, both in storage and when deployed.

Numerous alternative designs available present innovations, based upon varying awareness of field conditions.

Suppliers have requested clear standards and indicators from the international community of shelter requirements, so that they may engage productively in research and development.

2.4 Review mechanisms for Transitional Shelter Standards

This booklet was circulated at a Shelter Meeting 9b on the 12th and 13th November 2009, in Geneva, Switzerland. Subsequently, this booklet may be downloaded and reviewed from:

www.sheltercentre.org/library/shelter+standards

Humanitarian agencies may participate in the Project Consortium.

Manufacturers of shelters may participate by developing prototypes to the Transitional Shelter Standards, as part of a process agreed by the Project Consortium.

Joining the Humanitarian Project Consortium

Humanitarian agencies may join the Humanitarian Project Consortium by emailing standards@sheltercentre.org. A list of current Humanitarian Consortium members may be found in section 2.4.1.

Members of the Project Consortium are not obliged in any way to procure shelters manufactured to the Transitional Shelter Standards, or to use the Transitional Shelter Standards in preference to, or in replacement of, existing consensus or internal standards on family shelter.

Members of the Project Consortium review drafts of the Standards and prototypes of shelters manufactured to meet those Standards.

Manufacturer Participation

Manufacturers and suppliers of humanitarian shelter may apply to exhibit prototypes which are considered to meet the Transitional Shelter Standards agreed by emailing standards@sheltercentre.org with a letter headed statement confirming that the manufacturer or supplier:

- will bear all of the costs associated with the research, development, fabrication, transport and exhibition of prototypes over the duration of their involvement in the project;
- understands that neither Shelter Centre nor the Project Consortium are under any obligation to purchase shelters, regardless of whether or not they meet the Standards agreed;
- understands that it is the role of the Project Consortium to agree its requirements as Standards, however manufacturers and suppliers may be offered the opportunity to comment upon these Standards later in the project; and
- understand that the project is not an opportunity to display existing shelters, nor prototypes that do not meet the Standards agreed.

The objective of this project is for a group of humanitarian agencies to agree achievable standards for one type of emergency family shelter – a 'transitional shelter' that may be stockpiled and airlifted – and not to define all emergency family shelter.

Shelter Centre considers that the involvement of manufacturers and suppliers over the course of the project will be critical to its success, through developing a common understanding of requirements and opportunities.

Shelter Centre reserves the right at all stages of the project to refuse participation of any manufacturer or supplier, regardless of work undertaken by the manufacturer or supplier, and without warning or justification.

2.4.1 Consortium for review and agreement

The Transitional Shelter Standards Humanitarian Consortium is for donor governments and implementing humanitarian organisations to collaborate in the development of standards and indicators for emergency family transitional shelter, for use in response to both conflicts and natural disasters.

The following organisations are members of the Consortium:

CARE International	CARITAS Austria	CRS
DFID	ECHO	IFRC
IOM	JICA	MSF-Belgium
MSF-International	Nederlands Red Cross	Oxfam GB
Save The Children Fund	SDC/HA	Shelter Centre
Sphere Project	The Sphere Project	UN/OCHA
UN-Habitat	UNHCR	USAID/OFDA
World Vision International		

The Consortium also reviews the prototypes produced which reflect the Standards under development. Organisations wishing to join the Consortium should email standards@sheltercentre.org.

2.4.2 Shelter Meetings

The Transitional Shelter Standards project will be reviewed at the twice-yearly Shelter Meeting, organised by Shelter Centre as a sector forum service. The consortium shall review these draft Standards at Shelter Meeting 10b on the 2nd and 3rd December 2010.

The purpose of the Shelter Meeting is to facilitate discussion among participant organisations, coordinate and agree upon initiatives, policy, good practice and technical specifications relating to the transitional settlement and shelter needs of populations affected by conflict and natural disasters, such as the Transitional Shelter Standards. See www.sheltermeeting.org for further information.

2.5 Activities and timeline for Transitional Shelter Standards

Supported by USAID/OFDA in 2006, these standards will constitute performance standards, based upon those developed through the Shelter Meeting as part of a project initiated by Shelter Centre and published as Annex C of 'Tents: A guide to the use and logistics of family tents in humanitarian relief' (OCHA, 2004).

Supported by DFID 2006 - 2011, the Transitional Shelter Standards Consortium will develop and agree indicators for the technical quantifiers of the degree of compliance with the standards and the performance requirements for transitional family shelter. The Consortium will also develop and agree winterisation components for Transitional Shelter Standards.

Winterisation will consider the incremental addition of flooring, stoves and insulation, integrating options for local adaptation, but will not look at calorific intake, bedding, or mattresses.

Further steps agreed for the project will be postponed until comments on the draft Standards included in this booklet are received.

3 Draft Transitional Shelter Standards

Presented in this chapter are the draft Transitional Shelter Standards for stockpiled hot and cold family shelter, agreed and developed by the Consortium, distributed to the manufacturing community for comment.

These Standards are a draft and the intention is for humanitarian professionals and manufacturers to optimise these Standards over the course of the project. These Standards have been revised to incorporate comments made by manufacturers and suppliers, as well as the participants of the twice-yearly Shelter Meeting, a sector forum open to humanitarian organisations, organised and run by Shelter Centre.

Shelter Meeting 10b, on the 2nd and 3rd October 2010, shall be the final Shelter Meeting at which the draft Transitional Shelter Standards will be presented for comment and review. Feedback from the Humanitarian Consortium is welcomed and should be sent by email to standards@sheltercentre.org.

> Specifications that have been amended or are currently under consideration are marked with a grey box.

3.1 Introduction to the Transitional Shelter Standards

The Transitional Shelter Standards will provide manufacturers with a manufacturing standard from which their individual designs can be derived. Although the designs may differ, and although the Standards do not constitute any obligation of Project members to procure, designs meeting these Standards may be suitable for deployment in an emergency or post-disaster context.

Each of the requirements listed in the Transitional Shelter Standards is prefaced with some context of the operating environment of the humanitarian shelter sector. These prefaces are consistent with the relevant 'minimum standards', 'key indicators' and 'guidance notes' from the *Humanitarian Charter and Minimum Standards for Disaster Response* (The Sphere Project, 2004).

Many of the standards and tests developed by the International Standards Organization are relevant to this project, but may require revision in order to reflect the operating environment of these shelters. Relevant ISO standards and tests have been included in the bibliography, and are referenced, where appropriate, throughout the requirements.

The Transitional Shelter Standards are comprised of requirements which are described under three headings: logistics, physical and social requirements.

The requirements are further divided into relevant sub-headings. Each sub-heading is prefaced by an introduction describing the humanitarian context of the requirements contained within that section of the Transitional Shelter Standards.

3.2 Draft logistics requirements

The shelter shall minimise logistics requirements and costs while maximising the logistics options for their transport.

The following logistical requirements will prove useful to humanitarian staff defining and implementing a strategy involving stockpiled transitional family shelters. This will also provide the commercial sector with a further understanding of the humanitarian community logistics chain.

3.2.1 Total weight and packed size

The shelter will need to be handled by both the intended beneficiaries, and agency staff. Beneficiaries may have limited access to transportation, making it difficult to move the shelter long distances. Agency staff will be looking to make the most effective and efficient use of their supply chains.

Requirements

1	The mass of a complete packed shelter shall be no more than 100 kg.
2	A complete packed shelter shall consist of one package that can be broken down into smaller packages of weights suitable for transport by two people. The mass of each smaller package should be no more than 50 kg[i].
3	The volume of a complete packed shelter shall be no more than 0,5 m^3.
4	The longest dimension of a packed shelter shall be no more than 2000 mm.
5	It shall be possible to fit at least four packed shelters onto a 1200 mm x 800 mm x 144 mm Euro pallet. The packed shelters shall not overlap the edge of the pallet and the overall height, including the pallet, shall be no more than 2144 mm.

3.2.2 Storage

It is unknown when the shelters will be needed, and it is therefore important that agencies are able to stockpile shelters with confidence in advance of a response.

Requirements

6 It shall be possible to keep shelters in storage for at least five years without damage or changes reducing the functional capacity.

7 The maximum guaranteed duration of storage and the recommended conditions of storage shall be provided by the manufacturer and marked on the shelter packaging.

3.2.3 Marking

Shelters will be handled by many actors, and it is important for logistics and programme staff to understand the type and performance of the shelters, including where they were made, who they were made by, their size, their thermal performance, what components they have, whether they have already been deployed, and how long they've been in storage.

Requirements

8 Marking requirements for the shelter packaging and the outside of the erected shelter shall include:

a. a standardised reference number including the manufacturer number, factory number and batch number;

b. the useable floor area in square meters;

c. whether or not the shelter is mosquito proofed;

d. there shall be space to print an agency logo;

e. the maximum number of people the tent is designed to accommodate should not be marked on the tent as, in emergency situations, it may not be possible to adhere to this figure; and

f. a moisture-protected clear plastic A4 envelope for address information and erection date.

9 Marking requirements for the shelter packaging shall include:

a. the date of manufacture;

b. the packaged shelter weight and volume;

c. the transport requirements, including means of transport, stack height and package orientation;

d. details of hazard resistance, including maximum wind and snow loads; and

e. space to mark the actual duration of storage on the shelter packaging and the actual conditions of storage on the shelter packaging.

3.2.4 Availability

Not all organisations stockpile shelters, and rapid-onset disasters require that shelters are able to be procured in a quick and timely fashion by implementing agencies within weeks, if not days, of an emergency.

Requirements

10 The shelter shall be easy to obtain from different manufacturers under competitive bidding.

3.3 Preliminary draft physical requirements

Recipients of stockpiled hot and cold family shelter shall have sufficient covered space to provide dignified accommodation. The shelter must permit essential household activities to be satisfactorily undertaken, and livelihood support activities to be pursued as required.[ii]

The design of the shelter shall be acceptable to the affected population and provide them with sufficient thermal comfort, fresh air and protection from the climate to ensure their dignity, health, safety and well-being.[iii]

The following physical requirements will prove useful to humanitarian staff defining and implementing a strategy involving stockpiled transitional family shelters. This will also provide the commercial sector with a further understanding of the constraints and opportunities facing humanitarian shelter programmes.

3.3.1 Integrity

The shelter, including the covering, liner, frame and floor shall be consistent with known climatic conditions, be capable of withstanding appropriate wind-loading, rain-loading and accommodate snow-loading in cold climates.

Requirements

11 Structural requirements of the shelter are as follows:

a. The structure shall have built in structural redundancy so that if one structural member fails, the shelter shall remain upright.

b. The shelter, with all doors and windows closed, shall be able to withstand a minimum wind speed of 18 m/s in any direction. After application of the load, the shelter shall return to its original shape and position without damage or changes reducing the functional capacity.

c. Shelters designed for use in areas at risk of hurricanes and tropical storms shall be able to withstand a minimum wind speed of 45 m/s in any direction. After application of the load, the shelter shall return to its original shape and position without damage or changes reducing the functional capacity.

d. The shelter shall withstand 300 N/m² of snow loading without damage or changes reducing the functional capacity.

12 Water penetration requirements are as follows:

a. The cover shall withstand a 1500 mm water column minimum[iv].

b. A water column test is not applicable for technical cotton and 100% natural cotton. If these materials are used, the manufacturer shall prove them to be equally suitable as synthetic materials that withstand a water column of 1500 mm.

c. The groundsheet shall withstand a 3000 mm water column minimum[iv].

13 Shelter roof slope requirements are as follows:

a. Shelters designed for use in warm, humid climates shall have a roof with a slope of at least 1:3 for rain water drainage and wind load uplift stability.

b. Shelters designed for use in areas at risk of hurricanes and tropical storms shall have either a doubled-pitched roof with a slope between 30° and 45° or a mono-pitched roof with a slope between 12° and 14°. The roof overhang shall be no more than 300 mm.

14 There shall be a provision for excess wall material, or sod cloth, that can be trenched and buried in the ground to increase the stability of the shelter.

3.3.2 Durability

Often in an emergency, a household will have to make do with what they are initially distributed in the emergency phase for some time after. It is therefore important that the shelter design is durable enough to withstand well beyond the typical emergency phase.

Requirements

15 From moment of deployment, the structure shall last for a minimum of 36 months, the covering and associated connections shall last for a minimum of 18 months *(additional investigation undertaken to determine cost burden of 12-, 18-, or 24-month covering lifetime)*.

16 The shelter shall withstand temperatures from -30ºC to +55ºC without damage or changes reducing the functional capacity.

17 All outer materials shall provide a minimum resistance to natural sunlight. This requirement is deemed to be met if, after artificial weathering in accordance with ISO 4892-2 and applying the test parameters specified in Table 8, the breaking strength and the resistance to penetration by rain is not more than 5% below the minimum value applicable to the shelter.[v]

18 Fabric warp and weft strength requirements are given in the table below to be confirmed in accordance with ISO 13934-1 or ISO 1421 testing standards.[vi]

Fabric	Tensile strength[vii]	Tear Resistance[viii]
Outer roof	850N	60N
Outer wall	650N	40N
Inner tent	300N	20N

3.3.3 Useable area

Space within the shelter, and immediately surrounding it, shall provide for sleeping, washing and dressing; care of children and elderly; the storage of food, water, household possessions; and cooking and eating indoors when required.[ix]

Requirements

19 The covered floor area of the shelter shall be at least 17,5 m^2.

20 The standing height for the covered space shall be a minimum of 1800mm over at least 60% of the covered floor area.

21 Shelters designed for use in cold climates shall have a fireproof and waterproof flue manifold for the introduction of fuel burning stoves.

22 Provision will be made for shaded cooking areas, such as by designing the outer liner to be larger than the inner liner, which would provide a sheltered semi-enclosed space.

23 There shall be no guy ropes, or other trip hazards around the shelter.

24 Provision shall be made to facilitate use by those with a disability. Entry and exit thresholds should have a minimum access width of 900mm and be easily collapsible to a maximum height of 20mm to provide for wheelchair users[x].

25 Opening mechanisms such as door handles must be placed between 800 and 900mm from the ground to be accessible to children and wheelchair users for ease of access and safety[xi].

3.3.4 Ventilation

Adequate ventilation shall be provided within the shelter design to maintain a healthy internal environment and to limit the risk of transmission of diseases, such as tuberculosis spread by droplet infection.[xii]

Ventilation should be maximised in hot-climates to reduce inside temperature, and minimised in cold-climates to retain heat within the shelter.

Requirements

26 Minimum ventilation shall be achieved through an unobstructed, non-closable aperture with a total area of at least 0.01 m^2. The aperture should be at a high level.

27 The number of air changes should be from 7 per hour to 14 per hour. Air changes should be defined using blower door at 50 Pa pressure difference[xiii].

Manufacturers may measure air changes by any other method which has been proved to be equally suitable.

28 Shelters shall have a ceiling to provide an adjustable air gap for insulation and ventilation.

29 All doors and openings shall be adjustable to control light and heat gain or loss.

30 In hot, dry climates the shelter should have a double-skinned roof with ventilation between the layers to reduce radiant heat gain.

31 Shelters designed for use in warm, humid climates shall maximise air flow.

32 Shelters designed for use in cold climates shall minimise air flow while meeting ventilation requirements given in specification 25 and 26. Additional ventilation shall be required for space heaters or cooking stoves.

33 In cold climates, the shelter shall have internal compartments in order to minimise heat loss through infiltration while meeting ventilation requirements given in specification 25 and 26.

3.3.5 Fire safety

Fire is of tremendous concern with a population living in transitional shelters. Safe shelter, appropriate heat and light emitting NFIs, and public information campaigns are all of critical importance to mitigate injury and damage resulting from fire.

Requirements

34 The shelter shall have two opposite doors to facilitate escape in the event of fire.

35 It shall be possible to exit the shelter within 30 seconds when all doors are fully closed.

36 The shelter shall not ignite when tested in accordance with ISO 6940 and exposed to a test flame for 10 seconds, in the new condition and also after artificial weathering in accordance with ISO 4892-2.

3.3.6 Vector control

The patterns of shelter used by beneficiaries should inform the shelter design and subsequent vector control measures. Typical risks are posed by mosquitoes, rats and flies and pests such as snakes, scorpions and termites.[xiv]

Requirements

37 All doors and openings shall be protected against mosquitoes, flies and other disease vectors.

38 The shelter shall impede the entry of crawling insects. This impedance may be a 100 mm vertical edge around the base of all entry points or an equivalent alternate.

39 The shelter must be mosquito proofed in an area long and broad enough for the intended occupancy to sleep in.

40 There shall be fixings for additional or replacement mosquito nets to be hung. It shall be possible to hang mosquito nets with both a single fixing or multiple fixings.

3.3.7 Environmental toxicity

Shelters will be modified, passed on, and ultimately disposed of. At no point in this process can the shelter cause harm to the user, or the environment.

Requirements

41 Shelters shall not involve materials that are toxic to humans, even when cut or modified for later re-use. Manufacturers need not carry out their own lab tests but shall provide material data sheets similar to the UK's control of substances hazardous to health (COSHH) hazard assessment sheets for all materials used in the shelter.

42 The environmental impact resulting from the manufacturing or disposal of shelters shall be minimised.

43 Shelters shall not involve materials that are toxic by burning or burying, and shall not pollute the ground water table or enter the food chain. Manufacturers need not carry out their own lab tests but shall provide material data sheets similar to the UK's control of substances hazardous to health (COSHH) hazard assessment sheets for all materials used in the shelter.

3.3.8 Colour

Not all colours have the same meaning to all people, and care must be taken to ensure the colours used in shelters are culturally appropriate.

Requirements

44 Military or camouflage colours shall not be used.

45 Cultural and political sensitivities shall be taken into account, for example in the use of colours used in national or factional flags.

3.4 Preliminary draft social requirements

The design of the shelter shall be acceptable to the affected population and provide them with an adaptable, repairable and dignified living space.

The following social requirements will prove useful to humanitarian staff defining and implementing a strategy involving culturally appropriate stockpiled

hot and cold family shelter. This will also provide the commercial sector with a further understanding of the variety of cultural contexts within which these shelters will be deployed.

3.4.1 Privacy

Existing local practices in the use of covered living area, for example sleeping arrangements and the accommodation of extended family members, should inform the covered area required.[xv]

Requirements

46 It shall be possible to sub-divide the internal volume in order to increase visual privacy, whilst maintaining standards 25 and 26.

47 During the hours of darkness, it shall be possible to use artificial lighting of up to 500 lx within the shelter without creating a silhouette on the outer cover.

3.4.2 Buildability

Shelter materials and design may often be unfamiliar to the recipients. It is important that the design, where possible, be familiar and that the method of erection straight forward.

Requirements

48 It shall be possible for two adults to assemble the shelter without expert supervision.

49 The shelter shall be distributed complete, ready to erect, with all components and tools included. An inventory listing all components and tools shall be included.

50 Each shelter shall be accompanied by instructions for erection and use with explanatory sketches or drawings, using a minimum of written instructions so that it is suitable for multi-cultural and multi-lingual use. English and French instructions shall be included at a minimum.

51 Instructions shall also be provided for erection and use in a variety of climatic and physical contexts, including on different topographies and ground conditions.

52 Instructions shall also be provided for the safe disposal of the components and materials.[xvi]

3.4.3 Adaptability and reparability

As emergency shelter response typically provides only a minimum level of enclosed space and materials assistance. Affected families will need to seek alternative means of increasing the extent or quality of the enclosed space provided.

The design and materials shall enable individuals to incrementally adapt or upgrade the shelter or aspects of the design to meet their needs and to undertake repairs using locally available tools and materials. [xvii]

Requirements

53 It shall be possible to connect the shelter to another of the same type to increase the covered area. It should be possible to connect the shelters using only the components and tools provided in the standard shelter package.

54 The design shall facilitate the local adaptation of wall and roofing materials, such as mud brick side walls, local matting, or thatch.

55 The frame shall be able to support a dead load of at least 300 N/m^2 for sheet roofing materials in addition to the potential snow load of 300 N/m^2 described in standard 13.

56 In addition, the frame shall be able to support at least 6 hanging live loads of 30kg.

57 The number of different types of components shall be kept to a minimum.

58 The total number of components shall be kept to a minimum.

59 Components shall be interchangeable where possible.

60 Components shall be available globally, or appropriate materials, tools and skills should be available for their local manufacture and repair.

61 Insulating materials shall be incorporated into the shelter when temperatures fall below a comfortable level

62 The shelter shall include a repair kit, with appropriate tools, spare components and material.

63 The design shall use component materials that can be later re-used, upgraded or modified.

64 It shall be possible to dismantle, relocate and reconstruct the shelter, using only the original components and tools provided in the standard shelter package.

65 Zippers and fixing methods, such as proprietary clips and Velcro, should not be used in functions that must be used frequently, such as doors and windows.

4 Notes and References

i Consistent with European Commission. Directive 90/269/EEC. Manual handling of loads. May, 1990.

ii Consistent with shelter and settlement standard 3: covered living space' (The Sphere Project, 2004).

iii Consistent with shelter and settlement standard 4: design (The Sphere Project, 2004).

iv The measurement should be carried out as follows: 1000 mm2 of tent material is stretched under a measurement cylinder, and the cylinder is filled with water. The water column is the point at which the water starts to penetrate the fabric. The water column is given in millimeters. Source: Nordisk website, URL= http://www.nordisk.eu/contents/intro?tid=9&c=icons.

v Consistent with 'International standard 10966 - Sports and recreational equipment - Fabrics for awnings and camping tents - specification' (ISO, 2005).

vi Consistent with 'International standard 10966 - Sports and recreational equipment - Fabrics for awnings and camping tents - specification' (ISO, 2005).

vii Consistent with UNHCR Specifications and List of tests for future reference Light-Weight Emergency Tent (UNHCR LWET), 2006.

viii Consistent with UNHCR Specifications and List of tests for future reference Light-Weight Emergency Tent (UNHCR LWET), 2006.

ix Consistent with guidance note 6 of shelter and settlement standard 3: covered living space' (The Sphere Project, 2004).

x Consistent with Handicap International France. Manual #1 - Introduction & Accessibility standards. December 2008.

xi Consistent with Handicap International France. Manual #1 - Introduction & Accessibility standards. December 2008.

xii Consistent with guidance note 7 of shelter and settlement standard 4: covered living space (The Sphere Project, 2004).

xiii This may be calculated using the equation N = 60 Q / V where:

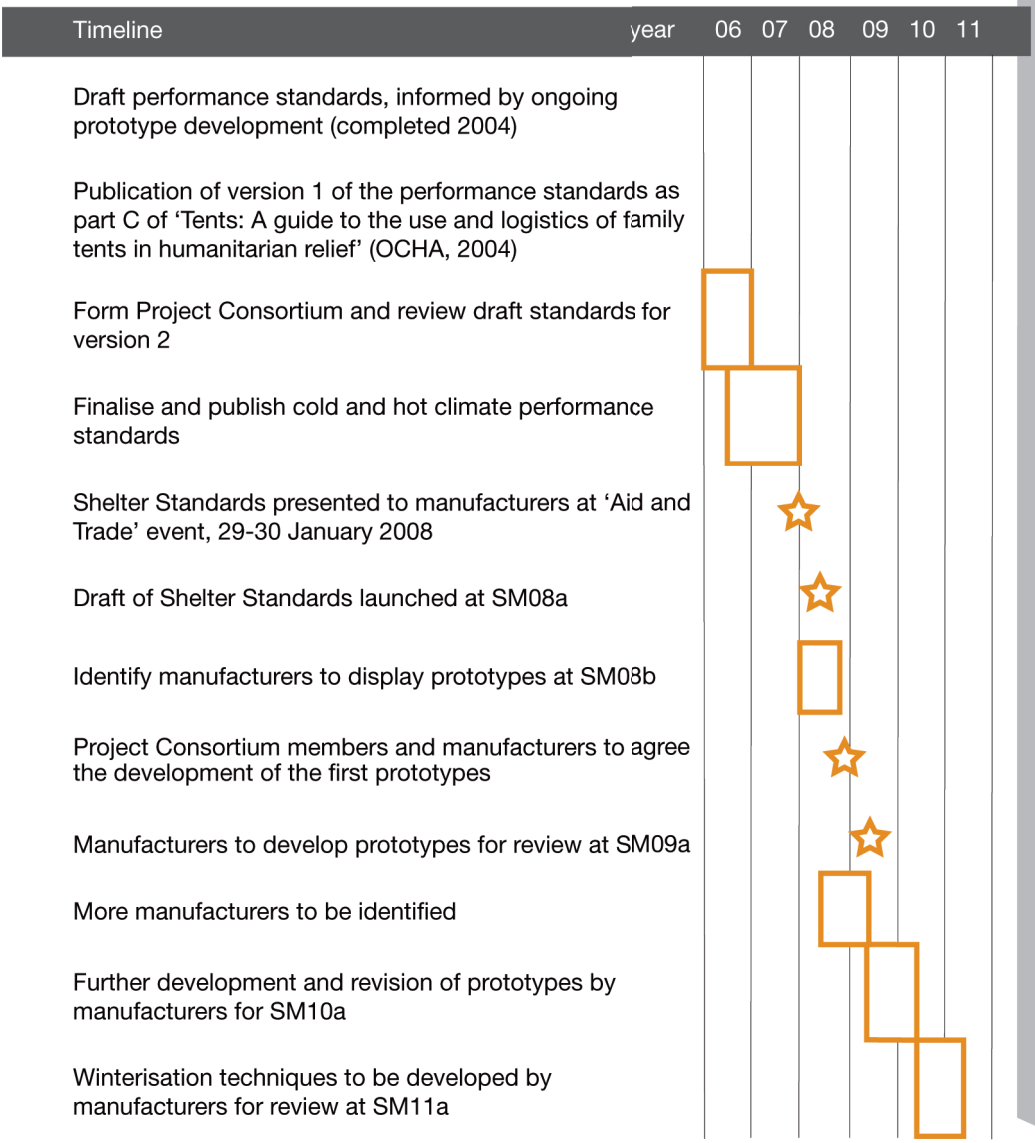
N = number of air changes per hour;
Q = volumetric flow rate of air in cubic metres per minute; and
V = space volume in cubic metres.

xiv Consistent with guidance note 7 of shelter and settlement standard 4: design (The Sphere Project, 2004).

xv Consistent with guidance note 4 and 5 of shelter and settlement standard 3: covered living space (The Sphere Project, 2004).

xvi Consistent with 'International standard 5912 - Camping tents' (ISO, 2003).

Project schedule



Online project review

All Shelter Centre projects are available for free viewing online at:

www.sheltercentre.org/projects

If you are a member of the Shelter Community, you may also leave discussion comments pertaining to each sector project. Those eligible to join the Shelter Community include: employees of humanitarian and development NGOs, IOs, and UN bodies, independent humanitarian consultants, donors, and some government ministries. To apply for membership, visit www.sheltercentre.org/membership

For more information on the Transitional Shelter Standards project, visit www.sheltercentre.org/tss/transitional+shelter+standards

DFID Department for International Development

Transitional Shelter Standards

The previous version of the Transitional Standards booklet was circulated for feedback from the Project Consortium at Shelter Meeting 9b on the 12th and 13th November 2009, in Geneva, Switzerland.

For the humanitarian shelter community:

This document is made available for commenting from members of the humanitarian community. The contents of Transitional Shelter Standards have been developed cooperatively among members of the Project Consortium, which is explained in detail in section 2.4 of this booklet.

For more information, to provide feedback, or to join the Consortium, please email us at standards@sheltercentre.org.

For interested manufacturers:

The Transitional Shelter Prototypes are not a mechanism by which to promote pre-existing designs, unless they already meet the Transitional Shelter Standards.

Manufacturers participating in the Transitional Shelter Standards project are developing prototypes that aim to conform to the Standards at their own cost. They are displaying posters of prototypes at Shelter Meeting 10b (1st – 2nd December, 2010) in Geneva, at which this booklet was distributed.

To download the current draft of this document, please visit the Transitional Shelter Standards sector project page at:

www.sheltercentre.org/tss/transitional+shelter+standards

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