

IOM South Sudan Emergency Procurement Catalogue



A Guideline of Shelter and NFI Procurement
Edition I version May 2016

International Organization for Migration- South Sudan



IOM Emergency Procurement Catalogue
First edition Juba
2016

For further information please contact nfipeline@iom.int

Cover Photo: Bentiu POC, South Sudan. June 2015.

The overall majority of shelter materials at this site have been provided by the IOM managed common pipeline.

Introduction

The International Organization for Migration (IOM) has played a major role in humanitarian response operations for many decades. Since 2005, IOM has delivered Non Food Items (NFIs) in emergency response in more than 40 countries. In 2015 alone, IOM distributed NFIs to more than 787,400 households (HH)¹. Given the ongoing and increasing scale of responses it seems timely that IOM should develop and share a global catalogue with the intention of accelerating the procurement process by improving precision in specifications.

This is a first edition of the IOM Emergency Procurement Catalogue, containing core items for international procurement. Unless otherwise stated, the specifications are as per the IFRC/ICRC catalogue which can be found online at: procurement.ifrc.org/catalogue.

The purpose of using the same specifications is to promote harmonisation between agencies and distribution sites, as well as to ensure that agencies can push with a collective voice for consistent quality with suppliers.

¹ IOM Shelter and Settlements Highlights, 2015

This catalogue will be regularly upgraded. Later editions of this catalogue will include guidance on national procurement and specifications development where international specifications may be difficult to monitor.

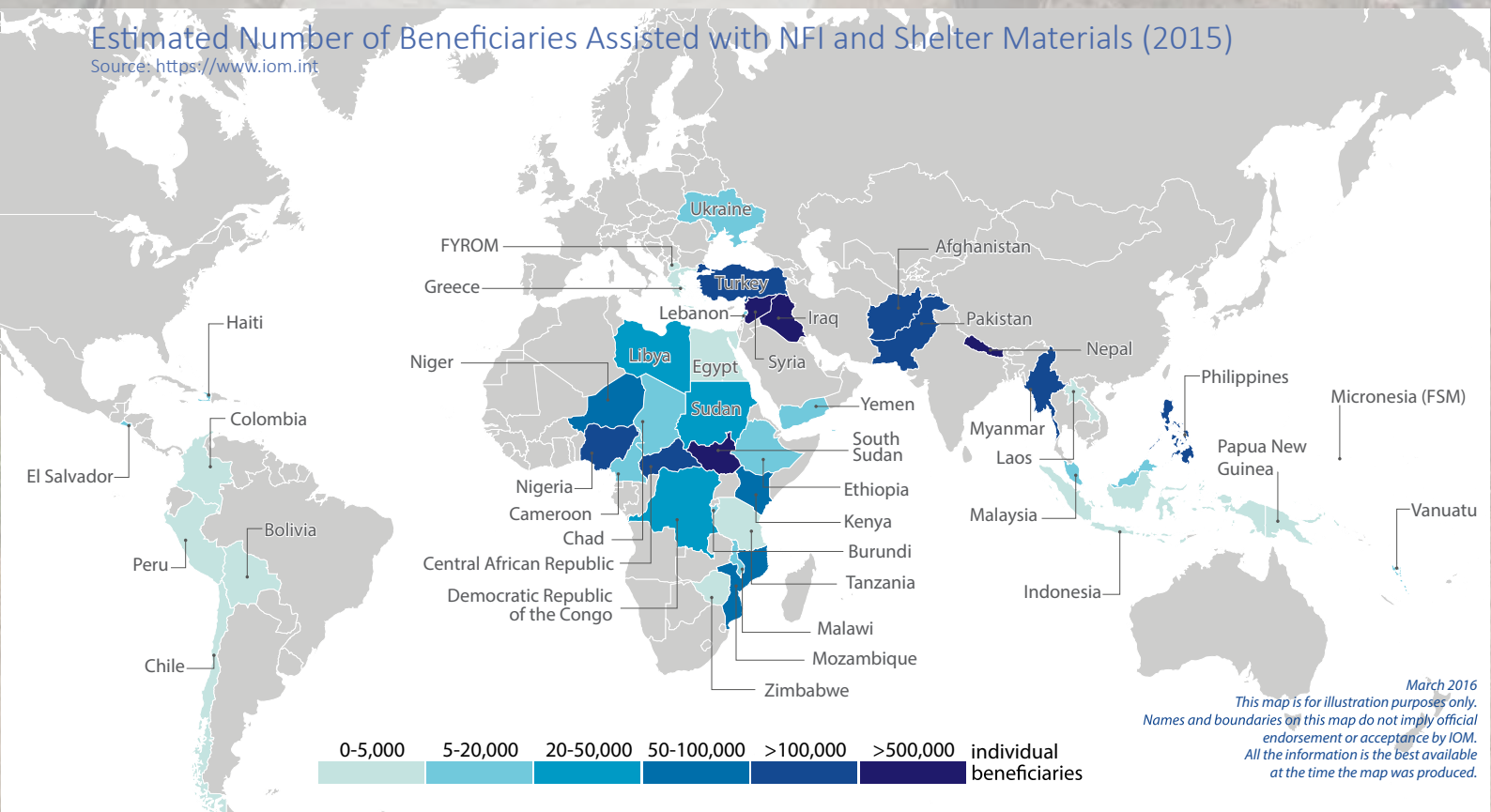
Some items such as family tents should not be procured to any other specifications unless clear justification based on appropriate national standards are identified, and clear relationships with suppliers established. Failure to do so may result in the delivery of items that do not meet basic humanitarian standards, thus compromising IOM's commitment to providing health, safety, security and dignity to populations in need.

Additional guidance on quality control will be developed, while it is currently available by contacting the Shelter Support team at IOM: nfipipeline@iom.int.



Estimated Number of Beneficiaries Assisted with NFI and Shelter Materials (2015)

Source: <https://www.iom.int>



March 2016
 This map is for illustration purposes only.
 Names and boundaries on this map do not imply official endorsement or acceptance by IOM.
 All the information is the best available at the time the map was produced.

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IOM delivers many different types of shelter and NFI kits worldwide. The contents of the kits are adapted at country level to meet the specific needs of the population and ensure cultural and contextual appropriateness.

- ✓ These kits contain basic household items.
- ✓ These kits can be complemented with additional items once they have arrived in country.
- ✓ Items are transported in bales to save on volume – and kitted at distribution sites.

Kits may contain following items:

Item	Quantity	Unit
Plastic Sheet (4m x 6m)	1	Piece
Blanket	2	Piece
Sleeping Mat	2	Piece
Mosquito Net	1	Piece
Rope (7mm, 30m)	1	Roll
Kitchen Set	1	Set
Bag	1	Piece



Material Description	Material	Item Code
Blanket,Type1,Woven 80% Wool, 1.5x2m H		1100000016
Blanket,Type2,Woven50%Wool,1.5x2m,MTemp		1100000017
Blanket,Type3,Synthetic,1.5x2m,H Temp		1100000018
Blanket,Type4,Synthetic,1.5x2m,M Temp		1100000019
Jerrycan,Type 1, 10L, plastic flat bag		1100000021
Jerrycan,Type 2, 10L, plastic foldable		1100000022
Jerrycan,Type 3, 15L, plastic foldable		1100000023
Jerrycan,Type 4, 20L, plastic foldable		1100000024
Jerrycan,Type 5, plastic rigid		1100000025
Kitchen set A- cooking&servng, 18pcs		1100000006
Kitchen set B- cooking&servng, 36pcs		1100000026
Bag 100x100cm, 50kg cap, 200 gsm tarp		1100000007
Sleeping mat, 1.80mX090m, twill weave		1100000027
Mosquito net, 190x150x180m, LLIN, PE		1100000028
Rope, polypropylene, black, 8mm twisted		1100000053
Sheet, plastic 4mX6m, holes 1mm+eyelets		1100000012
Sheet, plastic 4mX6m, reinforcement bands		1100000013
Sheet, plastic 4mx5m		1100000052
Sheet, plastic rolls 4mx60m		1100000054
Tent,Type 1, Standard Family 6.5x4x2.2m		1100000029
Tent,Type 2, Frame Family 5.2x4.15x2.4m		1100000030
Winterized liner kit for frame tent		1100000031
Tent, Multi-purpose, 7.5 x 6m, 45m2		1100000064
Tent, Warehouse Rubbhall,10x24m		1100000032
Shelter Tool Crowbar /Wrecking Bar 18"		1100000033
Shelter Tool, Handsaw for timber		1100000034
Shelter Tool, Shovel, round point, Y han		1100000035
Shelter Tool, Claw Hammer		1100000036
Shelter Tool, Hoe, long handle, large		1100000037
Shelter Tool, Shears for metal sheet		1100000038
Shelter Fixings,Nail for roof Sheets		1100000039
Shelter Fixings, Nail for wood, large		1100000040
Shelter Fixings, Nail for wood, Small		1100000041
Rope, polypropylene, black, 10mm twisted		1100000042
Tie Wire galvanized		1100000043
Bucket, plastic, 14L, Heavy duty plastic		1100000020

1

IOM Bag



The bag is designed to carry the NFI Kit that is to be given to beneficiaries at the distribution site.

Item code	110000007
Unit weight	~ 500g
Packed volume	0.019m ³

Bag 100x100cm, 50kg cap, 200 gsm tarp

Colour	Blue.
Marking	IOM logo on each side.
Size	100cm x 100cm.
Material	190g/m ² +/- 20g/m ² tarpaulin with handles and ropes.
Finish	Sewn with interlocking stitching on the sides.
Strength	Strong and sturdy enough to carry 50kg.
Packing	Procured in bales of 50 pieces.





Blankets can be synthetic or woollen. The synthetic blankets are made of virgin fibres such as polyester or acrylic. Some cotton may be included in the yarns. The recycled woollen fibres blankets are made from second hand clothes and various fibres. New fibres may be included as well. Recycled wool is cheaper than virgin wool, and is appropriate to all types of climates, under the condition that our minimum specifications are met, and good manufacturing practices are respected.

The insulation capacity of a blanket depends of the TOG (Thermal Resistance of Garments) and of the air permeability of the material. The TOG depends on the weight or the raw material, the fibre quality, the type of weaving or knitting, and fibre raising.

- High thermal type, with a TOG of 4, is appropriate for cold climates.
- Medium thermal type, with a TOG of 2.5, is the minimum for hot or temperate climates (even in hot countries, nights can be cold).

Note: TOG Value can only be tested in laboratories.

The specification below is after IFRC/ICRC with the addition of IOM markings

Markings: Logo printed in white or CMYK. C = 100% M = 81% Y = 11% K = 1%.

Dimensions 400 mm across in centre of blanket.

Note: Blankets must not be soaked in salt at manufacturing.

2.1. Woolen blanket - High thermal resistance

Item code	1100000016
Unit weight	2-3kg
Packed volume	0.02m ³

Blanket, woven, 80% wool, 1.5x2m, high thermal resistance

Test Conditions	Normal textile test conditions to ISO139 are 65% moisture and 20°C for 24h.
Sample for Testing Purposes	Blankets used in sampling must be from compressed bales. The same sample must pass all testing criteria. (Sample must consist of 5 blankets, each folded in two at a 40% compression ratio. It must remain compressed for a minimum of one week before testing).
Make	Woven, dry raised both sides
Content ISO1833 Dry Weight	80% wool fibres +/-5%, 50% other textile fibres. Recycled fibres accepted.
Colour	Grey, brown or other dark colours. Avoid dyed colours.
Size	150cm x 200cm +3%/-1%. To be taken from a flatten sample without folds.
Weight	670 to 1,000g/m ² . Weight determined by total weight/total surface.
Thickness ISO5084	5mm minimum (1KPa on 2000mm ²)
Tensile Strength ISO13934-1	250N minimum warp and weft
Tensile Strength Loss After Washing ISO13934-1 and ISO6330	Maximum 5% warp and weft after 3 consecutive machine washing at 30°C and one flat drying.
Shrinkage Max. ISO6330	Maximum 5% warp and weft after 3 consecutive machine washing at 30°C and one flat drying.
Weight Loss After Washing	Maximum 5% after 3 consecutive machine washing at 30°C and one flat drying.
Thermal Resistance ISO5085-1	TOG 4 (or 0.4m ² K/W) minimum, rounded to the nearest 0.1 on samples from compressed bales after 3 consecutive machine washing at 30°C and one flat drying.
Resistance to Air Flow ISO9237 under 100Pa Pressure Drop	Maximum 1000 L/m ² /s
Finish	Whipped seam at 10mm from the edge with 10 to 13 stitches/10cm or stitched ribbon or hemmed on 4 sides.
Organoleptic Test	No pungent odour, no irritation to the skin, no dust. 4<pH<9. Free from harmful VOC (Volatile Organic Components).
Fire Resistance ISO12952-3&4	Non-washed sample. Flame Retardant.
Packaging	<ul style="list-style-type: none"> • Bales to be wrapped in a water-tight micro perforated plastic film and covered with a polypropylene or jute woven bag. • Quantity per bale: 20 pieces. • Compressed and strapped with 5 straps (2 lengthwise, 3 crosswise). • Bales dimensions: Length approx. 0.8m, width approx. 0.5m • Height of the bales to be compressed by maximum 40% from free state to final compressed and strapped state. (e.g if the bale is 1m high at free state, it should be compressed to a height of 0.6m at final and strapped state).
Marking on Packaging	<ul style="list-style-type: none"> • Blankets, 50% wool, 150cm x 200cm- 20 pieces. IOM Logo • Other markings/logo as specified in contract.

2.2. Wollen blanket - Medium Thermal Resistance

Item code	1100000017
Unit weight	1.7-2.01kg
Packed volume	0.02m ³

Blanket, woven, 50% WOOL, 1.5x2m, medium thermal resistance

Test Conditions	Normal textile test conditions to ISO139 are 65% moisture and 20°C for 24h.
Sample for Testing Purposes	Blankets used in sampling must be from compressed bales. The same sample must pass all testing criteria. (Sample must consist of 5 blankets, each folded in two at a 40% compression ratio. It must remain compressed for a minimum of one week before testing)
Make	Woven, dry raised both sides
Content ISO1833 Dry Weight	50% wool fibres +/-5%, 50% other textile fibres. Recycled fibres accepted.
Colour	Grey, brown or other dark colours. Avoid dyed colours.
Size	150cm x 200cm +3%/-1%. To be taken from a flatten sample without folds.
Weight	570 to 670g/m ² . Weight determined by total weight/total surface.
Thickness ISO5084	3mm minimum (1KPa on 2000mm ²)
Tensile Strength ISO13934-1	250N minimum warp and weft
Tensile Strength Loss After Washing ISO13934-1 and ISO6330	Maximum 5% warp and weft after 3 consecutive machine washing at 30°C and one flat drying.
Shrinkage Max. ISO6330	Maximum 5% warp and weft after 3 consecutive machine washing at 30°C and one flat drying.
Weight Loss After Washing	Maximum 5% after 3 consecutive machine washing at 30°C and one flat drying.
Thermal Resistance ISO5085-1	TOG 2.5 (or 0.25m ² K/W) minimum, rounded to the nearest 0.1 on samples from compressed bales after 3 consecutive machine washing at 30°C and one flat drying.
Resistance to Air Flow ISO9237 under 100Pa Pressure Drop	Maximum 1,000 L/m ² /s
Finish	Whipped seam at 10mm from the edge with 10 to 13 stitches/10cm or stitched ribbon or hemmed on 4 sides.
Organoleptic Test	No pungent odour, no irritation to the skin, no dust. 4<pH<9. Free from harmful VOC (Volatile Organic Components).
Fire Resistance ISO12952-3&4	Non-washed sample. Flame Retardant.
Packaging	<ul style="list-style-type: none"> • Bales to be wrapped in a water-tight micro perforated plastic film and covered with a polypropylene or jute woven bag. • Quantity per bale: 20 pieces. • Compressed and strapped with 5 straps (2 lengthwise, 3 crosswise). • Bales dimensions: Length approx. 0.8m, width approx. 0.5m • Height of the bales to be compressed by maximum 40% from free state to final compressed and strapped state. (e.g if the bale is 1m high at free state, it should be compressed to a height of 0.6m at final and strapped state).
Marking on Packaging	<ul style="list-style-type: none"> • Blanket, 50% wool, 150cm x 200c, IOM Logo, 20 Pcs • Other markings as specified in contract.

2.3. Synthetic fleece blanket - high thermal resistance

Item code	110000018
Unit weight	1.5- 2.4kg
Packed volume	0.02m ³

Blanket,Type3,Synthetic,1.5x2m, High Temp

Test Conditions	Normal textile test conditions to ISO139 are 65% moisture and 20°C for 24h.
Sample for Testing Purposes	Blankets used in sampling must be from compressed bales. The same sample must pass all testing criteria. (Sample must consist of 5 blankets, each folded in two at a 40% compression ratio. It must remain compressed for a minimum of one week before testing)
Make	Knitted or woven, dry raised both sides
Content	ISO1833 on dry weight: 100% pure polyester and/or acrylic fibres or polyester/cotton
Colour	Dark uniform colour. Black, red, brown, blue
Size	150cm x 200cm +3%/-1%. To be taken from a flatten sample without folds.
Weight	500 to 850g/m ² Weight determined by total weight/total surface.
Thickness ISO5084	5mm minimum (1KPa on 2000mm ²)
Tensile Strength ISO13934-1	250N minimum warp and weft
Tensile Strength Loss After Washing ISO13934-1 and ISO6330	Maximum 5% warp and weft after 3 consecutive machine washing at 30°C and one flat drying.
Shrinkage Max. ISO6330	Maximum 5% warp and weft after 3 consecutive machine washing at 30°C and one flat drying.
Weight Loss After Washing	Maximum 5% after 3 consecutive machine washing at 30°C and one flat drying.
Thermal Resistance ISO5085-1	TOG 4 (or 0.4m ² K/W) minimum, rounded to the nearest 0.1 on samples from compressed bales after 3 consecutive machine washing at 30°C and one flat drying.
Resistance to Air Flow ISO9237 under 100Pa Pressure Drop	Maximum 1000 L/m ² /s
Finish	Whipped seam at 10mm from the edge with 10 to 13 stitches/10cm or stitched ribbon or hemmed on 4 sides.
Organoleptic Test	No pungent odour, no irritation to the skin, no dust. 4<pH<9. Free from harmful VOC (Volatile Organic Components).
Fire Resistance ISO12952-3&4	Non-washed sample. Flame Retardant.
Packaging	<ul style="list-style-type: none"> Bales to be wrapped in a water-tight micro perforated plastic film and covered with a polypropylene or jute woven bag. Quantity per bale: 20 pieces. Compressed and strapped with 5 straps (2 lengthwise, 3 crosswise). Bales dimensions: Length approx. 0.8m, width approx. 0.5m Height of the bales to be compressed by maximum 40% from free state to final compressed and strapped state. (e.g if the bale is 1m high at free state, it should be compressed to a height of 0.6m at final and strapped state).
Marking on Packaging	<ul style="list-style-type: none"> Blanket, Synthetic, High Thermal 150cm x 200cm- 20 pieces. IOM logo Other markings as specified in contract.

2.4. Synthetic Fleece blanket medium thermal resistance

Item code	110000019
Unit weight	1.02kg
Packed volume	0.02m ³

Blanket, synthetic, 1.5x2m, medium thermal resistance

Test Conditions	Normal textile test conditions to ISO139 are 65% moisture and 20°C for 24h.
Sample for Testing Purposes	Blankets used in sampling must be from compressed bales. The same sample must pass all testing criteria. (Sample must consist of 5 blankets, each folded in two at a 40% compression ratio. It must remain compressed for a minimum of one week before testing)
Make	Knitted or woven, dry raised both sides
Content	ISO1833 on dry weight: 100% virgin polyester and/or acrylic fibres or polyester/cotton
Colour	Dark uniform colour. Black, red, brown, blue
Size	150cm x 200cm +3%/-1%. To be taken from a flatten sample without folds.
Weight	350 to 670g/m ² Weight determined by total weight/total surface.
Thickness ISO5084	3mm minimum (1KPa on 2000mm ²)
Tensile Strength ISO13934-1	250N minimum warp and weft
Tensile Strength Loss After Washing ISO13934-1 and ISO6330	Maximum 5% warp and weft after 3 consecutive machine washing at 30°C and one flat drying.
Shrinkage Max. ISO6330	Maximum 5% warp and weft after 3 consecutive machine washing at 30°C and one flat drying.
Weight Loss After Washing	Maximum 5% after 3 consecutive machine washing at 30°C and one flat drying.
Thermal Resistance ISO5085-1	TOG 2.5 (or 0.25m ² K/W) minimum, rounded to the nearest 0.1 on samples from compressed bales after 3 consecutive machine washing at 30°C and one flat drying.
Resistance to Air Flow ISO9237 under 100Pa Pressure Drop	Maximum 1000 L/m ² /s
Finish	Whipped seam at 10mm from the edge with 10 to 13 stitches/10cm or stitched ribbon or hemmed on 4 sides.
Organoleptic Test	No pungent odour, no irritation to the skin, no dust. 4<pH<9. Free from harmful VOC (Volatile Organic Components).
Fire Resistance ISO12952-3&4	Non-washed sample. Flame Retardant.
Packaging	<ul style="list-style-type: none"> Bales to be wrapped in a water-tight micro perforated plastic film and covered with a polypropylene or jute woven bag. Quantity per bale: 50 pieces. Compressed and strapped with 5 straps (2 lengthwise, 3 crosswise). Bales dimensions: Length approx. 0.8m, width approx. 0.5m Height of the bales to be compressed by maximum 40% from free state to final compressed and strapped state. (e.g if the bale is 1m high at free state, it should be compressed to a height of 0.6m at final and strapped state).
Marking on Packaging	<ul style="list-style-type: none"> Blanket, Medium Thermal, 150cm x 200cm- 50 pieces. IOM logo Other markings as specified in contract.



3.1. Bucket - Plastic

Item code	110000020
Unit weight	780g minimum
Packed volume	tbc

Bucket, plastic, 14L, Heavy duty plastic

Description	Heavy-duty plastic bucket, with handle and lid with attached clip-on cap.
Manufacturing process	Injection moulded.
Material	Virgin HDPE high density polyethylene, and virgin LDPE low density polyethylene
Dimension +/-5%	Height: 300mm, top diameter: 300mm, base diameter: 240mm. Cover with outlet of 50mm +/- 10% and clip cap.
Capacity	14l minimum
Minimum weight	Bucket 600g, cover 150g, handle 30g
Design	<ul style="list-style-type: none"> Reinforced bottom ridge to prevent scraping of the base. Reinforced top to prevent bucket distorting to an oval shape. Curved join inside base to wall for easy cleaning.
Colour	White. Preferably red for lid and handle.
Marking	Manufacturer identification plus manufacturing month and year.
Lid test	The bucket must resist one fall on the side without opening when full.
Drop test	The bucket must resist two consecutive vertical drops from 2m to smooth flat concrete floor when full, without being damaged. The bucket must be elevated on a remote-activated rocking platform, so that the lowest point is 2m from the ground.
Flexibility test	The bucket must return to its original shape without damage, after applying pressure on the two sides of top rim so they touch in the middle.
Handle test	The handle must resist being folding flat on the cover, pushed on the left end and the right end. The handle must also resist 28kg of tension in the normal usage position.
Packaging	<ul style="list-style-type: none"> In strong boxes of 20 buckets and covers, with clipped-on handles. Boxes must have a minimum of 5 ply and reinforced corners. Filled boxes must resist a weight of 230kg applied on a strong rigid board on top of the box (equivalent weight to 6m high stacking) without damage. The board size to be at least 100mm larger than the box in width and length (e.g. plywood with 20mm thickness). The packing must guarantee that the buckets will not be pressed one in other to avoid blocking the buckets together.
Marking on boxes	<ul style="list-style-type: none"> Product name and quantity. IOM Logo. Any other requirements as per contract.

3.2. Jerrycan, plastic flat bag, zip closing

Item code	110000021
Unit weight	145g
Packed volume	0.1 m ³ for 250pcs

Jerrycan, Type 1, 10L, plastic flat bag

Capacity	10 litre
Weight	145g
Materials	Made of Polyamide 38micron - Polyethylene 280micron UV stabilized with non-toxic coating
Fittings	<ul style="list-style-type: none"> • A built-in carrying handle • Zipper seal, closed top opening, 140mm
Impact resistance/drop test	The collapsible jerrycan must be impact resistant on a hard smooth concrete surface when fully filled at an ambient temperature. The complete drop test consists of 10 consecutive drops from 2m high. The jerry can must be elevated on a remote-activated rocking platform, so that the lowest point is at 2m from the ground. The products are ranked according to the number of drops without damage or any leakage. The products must resist a minimum of 3 drops.
Packaging and shipping	<ul style="list-style-type: none"> • 250 jerrycans in a box, weight of 38kg, dimensions 600mm x 400mm x 400mm • 16 boxes stacked and strapped to a Euro pallet 800mm x 1200mm x 1750mm - weight of 630kg.

3.3. Jerrycan - Plastic, Foldable



Jerrycan, Type 2, 10L, plastic foldable

Item code	110000022
Unit weight	140g+/-5% (10l)

Jerrycan, Type 3, 15L, plastic foldable

Item code	110000023
Unit weight	-

Jerrycan, Type 4, 20L, plastic foldable

Item code	110000024
Unit weight	270g+/-5%

Capacity	10l, 15lor 20l according to contract specifications
Weight	140g+/-5% for the 10l type upto 270g+/-5% for the 20L type
Materials	Manufactured food grade LDPE must not contain toxic elements. Must stand by itself, even when filled to a quarter of its maximum volume.
Average thickness	0.6mm. Corner thickness 0.5mm minimum.
Fittings	Plastic Handle 9 cm long and 3 cm high minimum, with no sharp edges, OR Plastic Handle attached to the bag with two galvanized steel rings. A screwable cap connected to the container by polyamide string, diameter 1mm and 120mm length minimum.
Inner cup diameter	30mm to 35mm for the 10L type, and 45 to 55mm for the 15l and 20L types.
Impact resistance/drop test	The collapsible jerrycan must be impact resistant on a hard smooth concrete surface when fully filled at an ambient temperature. The complete drop test consists of 10 consecutive drops from 2m high. The jerry can must be elevated on a remote-activated rocking platform, so that the lowest point is at 2m from the ground. The products are ranked according to the number of drops without damage or any leakage. The products must resist a minimum of 3 drops.

3.4. Jerrycan - Plastic, Rigid

Jerrycan, Type 5, plastic rigid	
Item code	110000025
Unit weight	1kg

Material	Virgin HDPE plastic (high density polyethylene). Blow moulded. Recycled plastic prohibited.
Suitability for potable water	(containing no toxic elements) to be certified by approved official body.
Manufacturing	Injection moulded screw cap of 50mm diameter minimum.
Approximate wight	1kg per piece
Colour	Light colour only (white, yellow). UV treated for long-term outdoor use.
Impact resistance/drop test	Should resist 5 drop tests from 2m high, full with water.



Kitchen set A- cooking & serving, 18pcs

Item code	1100000006
Unit weight	4Kg
Unit volume	0.019m ³

4.1. Kit Contents

A package of kitchen set consist of:

Item	Unit	Quantity
Cooking Pot, 5L, Stainless Steel, diameter 22 cm, with handles and lid	pcs	1
Cooking Pot, 7L, Stainless Steel, diameter 25 cm, with handles and lid	pcs	1
Cup, 300ml, Stainless steel, with handle	pcs	4
Plate, deep, 0.75L capacity, stainless steel, dia 22 cm,	pcs	4
Table Spoons, Stainless Steel	pcs	6
Serving Spoons, Stainless Steel	pcs	2

Note: kit contents may be adapted to the local context

Specifications below are as per www.procurement.ifrc.org/catalogue

4.2. General Comments

- When ordering a kitchen set, if time allows, the composition of the set can be adapted. All items are preferably made of stainless steel. Only one alternative is accepted:
- Aluminium cooking pots and frying pan instead of stainless steel. The specifications below indicate the minimum quality standards for stainless steel and aluminium materials. Alternative plastic packaging, if available, can be re-used for food or water storage.

4.2.1 Material specifications

Stainless steel

For tableware (plates, cups, bowls, forks, spoons and knives):

- 200 series stainless steels of appropriate grades
- ISO type 1.4016 (American grade 430)
- ISO type 1.4301 (American grade 304)

For cookware (cooking pots and pan):

- 200 series stainless steels of appropriate grades
- ISO type 1.4016 (American grade 430)
- ISO type 1.4301 (American grade 304)
- All the steel grade must be officially recommended by the steel manufacturer for such applications. The supplier will provide all documentation showing the origin of the steel, the steel manufacturer recommendations, and evidence proving the quality of the steel grade. The steel manufacturers must be International Stainless Steel Forum members.
- Food grade to be certified in conformity with EU regulations no.1935/2004 on materials and articles intended to come into contact with food.
- Applicable standard as per publication EN10088-1.

Aluminium, alternative material for cooking pots and frying pan:

Aluminium Al99,0 or above as per publication ISO209-1 (minimum 99% aluminium). Other grades as per EN602.

Publications with applicable standards:

- ISO 209-1: Wrought aluminium and aluminium alloys – alloys- Chemical composition and forms of products- Part 1: Chemical composition.
- EN 602: Aluminium and aluminium alloys- Wrought products- Chemical composition of semi products used for the fabrication of articles for use in contact with food.

Black steel

Black steel, cold-hammered common mild steel.

4.2.2 Item design

Manufacturers and suppliers are invited to submit designs that improve the performance of the material, considering different types of bends/veins on the pots, lids, bowls, plates, spoons, forks, knives and cups.

4.3. Item Specification

4.3.1 Cooking pot, 7L, fitted lid fits

Capacity	7 litres minimum
Material	Stainless steel (or aluminium where specified in contract)
Internal diameter	25cm minimum, 28cm maximum
Thickness	0.8mm minimum at the base and 0.6mm minimum 20mm from the top of the side (aluminium 1.75mm minimum)
Handles	Two stainless steel handles, attached with leakage-proof rivets, or welded, bent upward to allow a hanging bar to pass through (aluminium handles for aluminium pot). Handles to resist to 20kg load in the normal usage position.
Lid	0.6mm minimum (aluminium 1mm minimum) with strong durable handle. Handle must resist 2kg minimum load
Finish	No sharp edges, food grade surface finish

4.3.2 Cooking pot, 5L, with lid

Capacity	5 litres minimum
Material	Stainless steel (or aluminium where specified in contract)
Internal diameter	22cm minimum, 24cm maximum
Thickness	0.8mm minimum at the base and 0.6mm minimum 20mm from the top of the side (aluminium 1.75mm minimum)
Handles	Two stainless steel handles, attached with leakage proof rivets, or welded, bent upward to allow a hanging bar to pass through (aluminium handles for aluminium pot) Handles to resist to 16kg load in the normal usage position.
Lid	0.6mm minimum (aluminium 1mm minimum) with strong durable handle . Handle must resist 2kg minimum load
Finish	No sharp edges, food grade surface finish

4.3.3 Plate 0.75L

Capacity	0.75 litres minimum
Material	Stainless steel
Thickness	min 0.5mm in the center of the bottom
Diameter	24 to 25cm (must be adapted to the size of the cooking pot to be packed inside)
Finish	No sharp edges, food grade surface finish

4.3.4 Cup, 0.3L

Capacity	0.3 litres minimum
Material	Stainless steel
Handle	Secure weld. Handle to resist to 1kg load
Thickness	
Finish	No sharp edges, food grade surface finish

4.3.5 Spoon, table, 10ml, stainless steel

Capacity	10ml minimum
Material	One-piece solid stainless steel
Length	17cm minimum
Thickness	min 1mm in the centre of the scoop
Finish	No sharp edges, food grade surface finish

4.3.6 Serving spoon, 35ml

Capacity	35ml minimum
Material	One-piece solid stainless steel
Length	30cm minimum
Thickness	1mm minimum in the center of the scoop
Finish	No sharp edges, food grade surface finish

4.4. Packaging and Logo

Type	1 carton box, outer dimensions 0.3 x 0.3 x 0.25m
Height	Dimension to be adjusted to the box contents
Material	Double-corrugated cardboard, 5 ply, export-quality cardboard
Strenght	withstand 6m high stacking for more than 48h and up to 10 handlings. The final package should resist a weight of 120kg applied on a strong rigid board on top of the box, without suffering any damage.
Seal	tape plus 4 plastic 10mm straps
Marking	to be marked with IOM logo

5

Sleeping Mat - Woven Plastic



Item code	110000024
Unit weight	800gr minimum
Unit volume	tbc

Description	Tightly woven twill weave fabric (2/1, 3/1, 2/2, 3/2) of net appearance.
Wrap	Pure virgin polypropylene (PP) multifilament 500 deniers minimum
Weft	Recycled polypropylene (PP) hollow tubes not containing any filler. Minimum 1000 tubes in weft/meter length
Finish	The short sides to be secured with a first stitch folded hem, plus one bias 40mm binding tape of 10g/m minimum with stitches through the fabric of the mat, OR with a double folded stitched hem. Four sides trim finished. Binding must be secured and durable to prevent the fraying.
Colour	Assorted, neutral design.
Size	1.80m x 0.90m minimum
Weight	500g/m ² minimum
Packing	Bales of 50 pieces, compressed. Package to be wrapped in a protective outer PP woven canvas, with 4 straps. No individual



@ IOM 2016 (Photo: Bannon)

Pre-treated long lasting impregnated mosquito net (LLIN). Must be WHO/WHOPES approved. (<http://www.who.int/whopes/en>) (full or interim).

Mosquito net, 190L x 180W x 150H, LLIN, PE

Item code	110000028
Unit weight	800g

Fabric Weight	30 g/m ² ±1 0%,
Enhanced Durability	21+ washes
Flammability Test	Class 1 (16-CFR 1610 CS191-53)
Size	190cm x 150cm x 180cm
Suspension Point	6 point loops
Colour	White
Materials	100% polyester or PE (impregnated)
Packaging	Bale of 100 pieces. IOM logo

6.1. Background Information

Following WHO recommendations, only Long Lasting Insecticidal Nets (LLIN's) which require no further treatment during their expected life span (of average 3 to 5 years according to the use, type and fabric origin) should be purchased. LLIN's allow a better and effective protection against mosquitoes and other insects and must be considered as part of an overall strategy related to malaria control. Impregnated nets can decrease the morbidity rates between 50%-70%.

There are different types of netting material (polyester, polyethylene, and polypropylene). The most commonly used for LLIN, and for which WHO recommendations have been developed, are polyester (PES) and polyethylene (PE).

In the WHO Position statement document for Insecticide Treated Mosquito nets, the WHO recommends a move away from polyester made nets.

<http://www.who.int/entity/malaria/publications/atoz/itnspospaperfinal.pdf>

Approved LLIN. WHOPES (WHO Pesticide Evaluation Scheme).

<http://www.who.int/whopes/en>

It is important to keep in mind that "LLIN" does not mean "WHO approved". Many wholesalers propose LLINs which are not WHO approved, and should not be supplied

7

Plastic Sheet / Tarpauline



@ IOM 2016 (Photo: Ilyas)

7.1. Plastic sheet: 4m x 6m tarpauline

Sheet, plastic 4mX6m, reinforcemt bands	
Item code	110000013
Unit weight	4.488kg- 5.544kg
Unit volume	0.00864m3

Finishing: Reinforced bands along edges, punched at 100mm intervals.

Note: In laboratory testing this system has proven to be stronger than when eyelets are used.

7.2. 4m x 60m rolls

Sheet, plastic rolls 4mx60m	
Item code	110000054
Unit weight	-
Unit volume	tbc

Finishing: Reinforced bands along edges, punched at 100mm intervals.

7.3. Plastic sheeting specifications

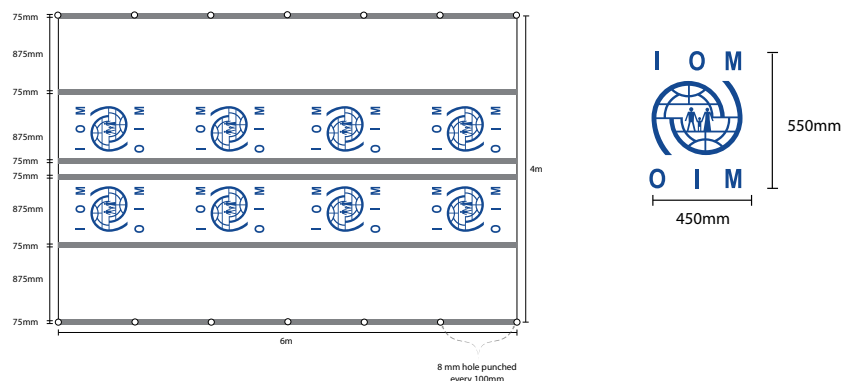
Notes

IOM have moved its standard specification to 4m x 6m sheets with reinforcement bands and pre-punched holes rather than eyelets. This specification is in line with IFRC / ICRC and is based on over fifteen years of laboratory testing and proven field experience.

For further information please visit plastic-sheeting.org or contact sheltersupport@iom.int . This is the current ICRC/IFRC standard specification below in line with www.procurement.ifrc.org/catalogue

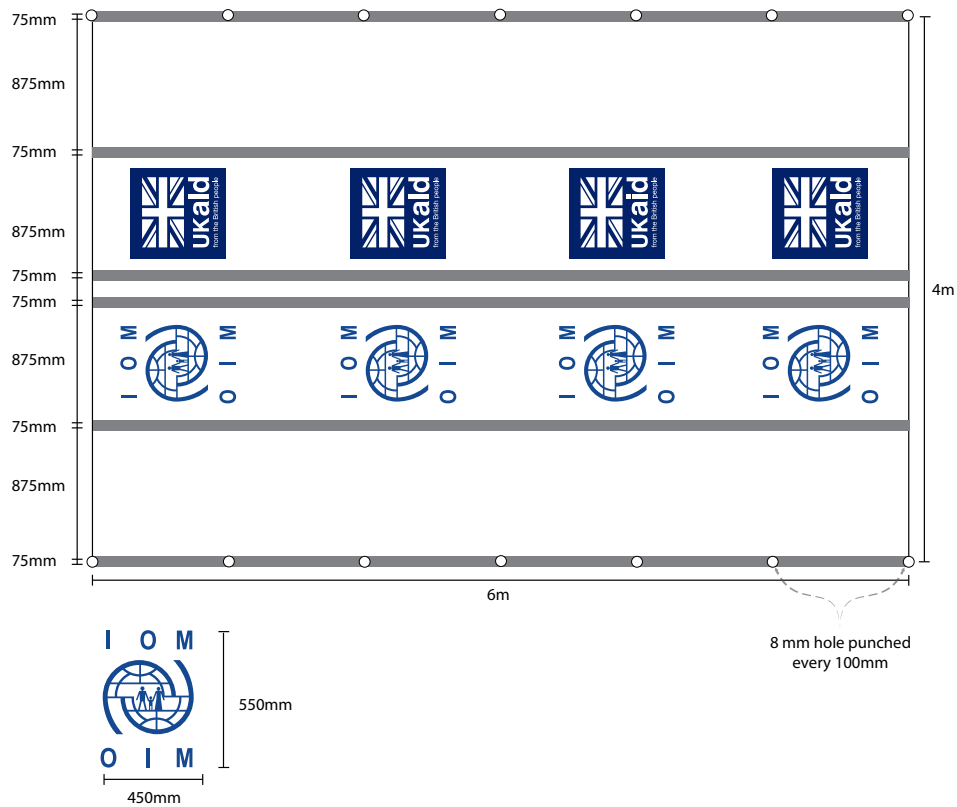
IOM logo size and placement

Colour: C:100 M:82 Y:10 K:2



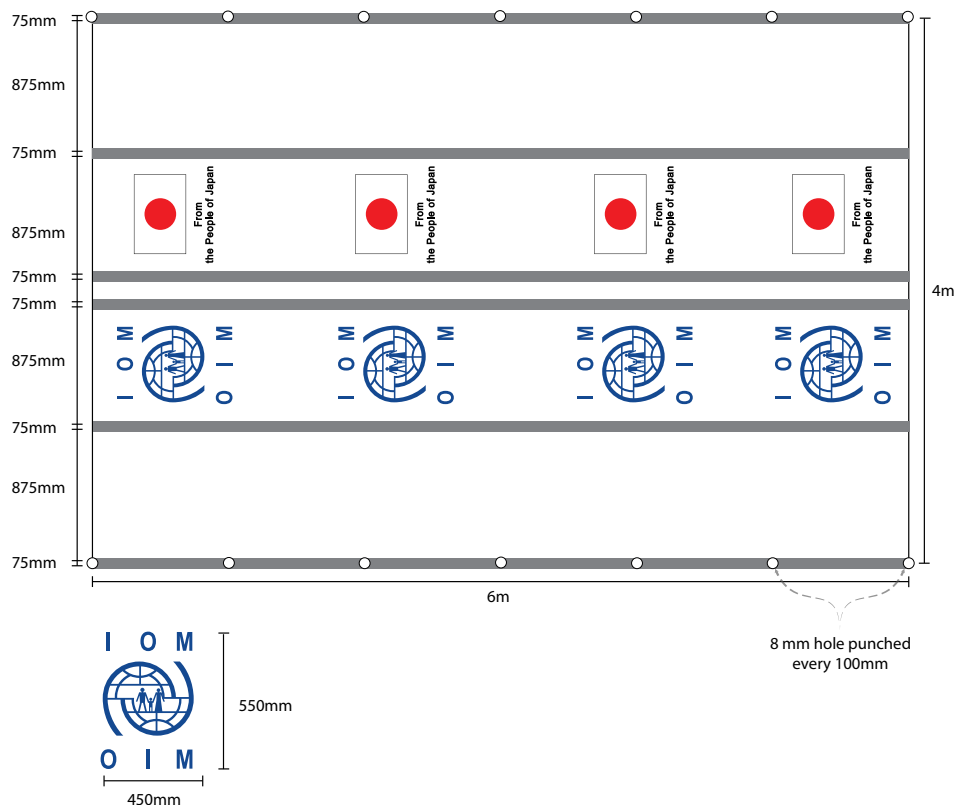
IOM with donor logo (UKAID)

Colour: IOM (C100 M82 Y10 K2), UKAID (spot or Pantone- for single colour printing (blue))



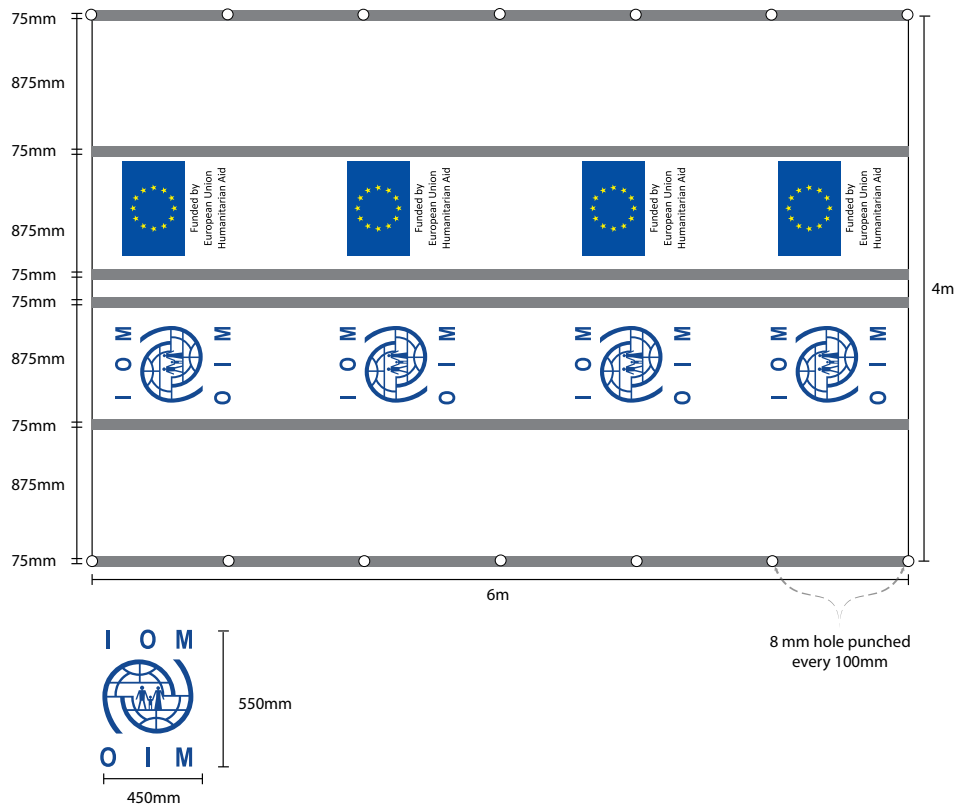
IOM with donor logo (Japan)

Colour: IOM (C100 M82 Y10 K2), Japan logo (from the people of Japan)



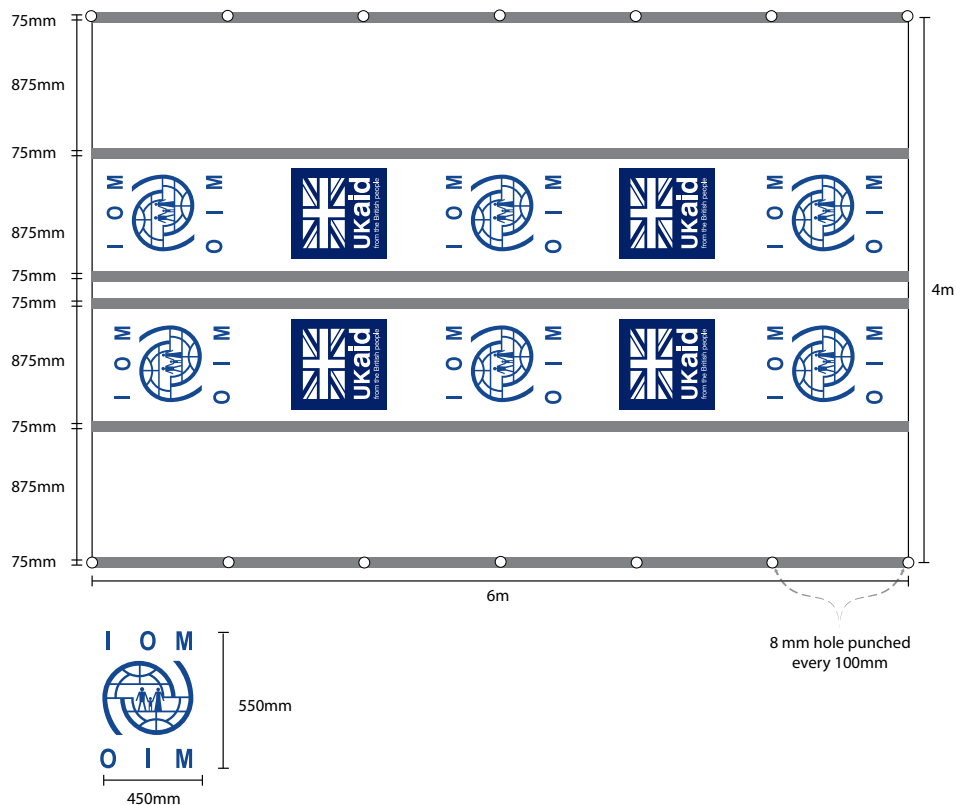
IOM with donor logo (European Aid/ECHO)

Colour: IOM (C100 M82 Y10 K2)



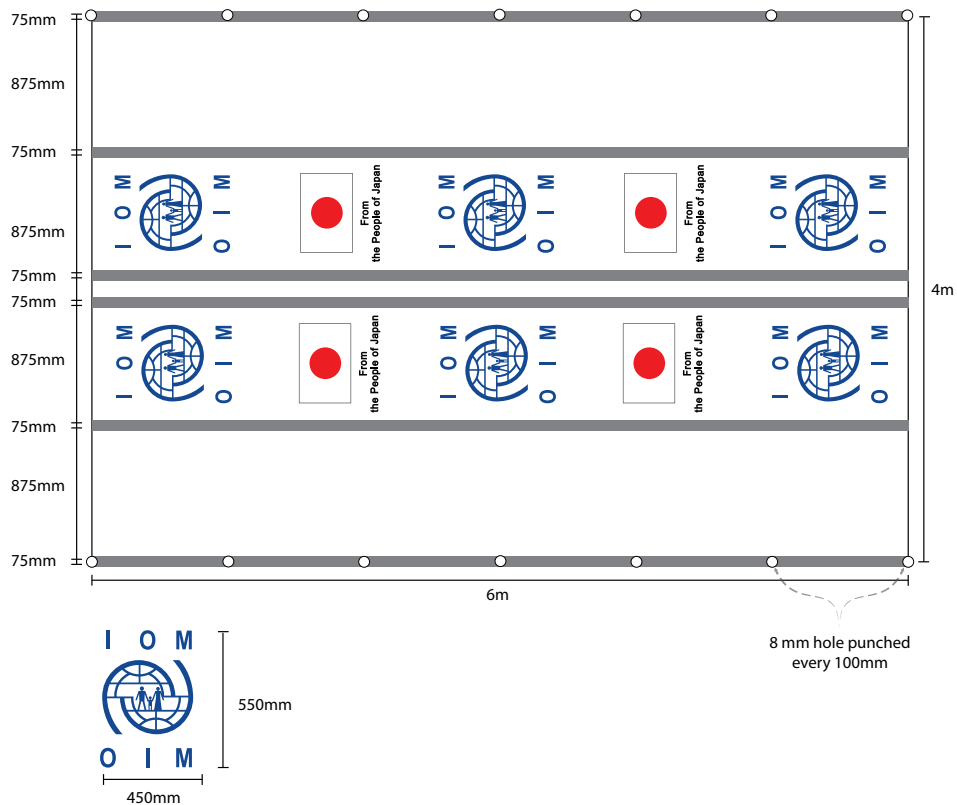
IOM with donor logo (UKAID) on both side

Colour: IOM (C100 M82 Y10 K2), UKAID (spot or Pantone- for single colour printing (blue))



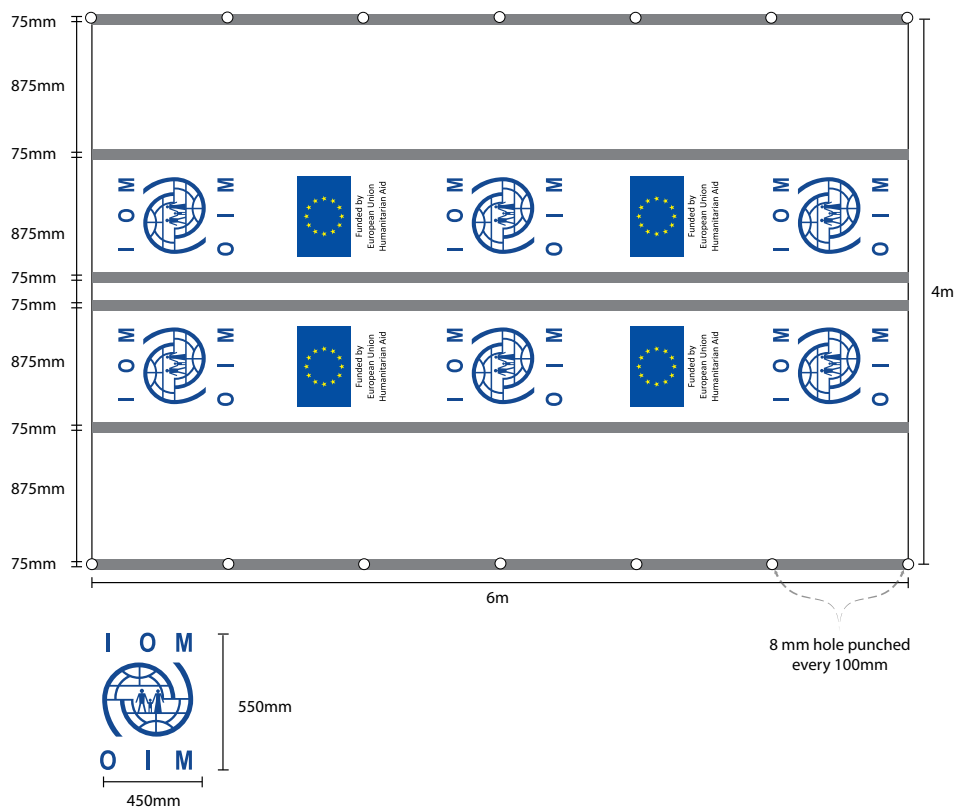
IOM with donor logo (Japan) on both side

Colour: IOM (C100 M82 Y10 K2), Japan logo (from the people of Japan)



IOM with donor logo (European Aid/ECHO) on both side

Colour: IOM (C100 M82 Y10 K2)



Summary of material requirements

Material for plain sheet	Woven high-density polyethylene (HDPE) black fibers fabric laminated on both sides with white low density polyethylene (LDPE) coating.
Material for the reinforced attachment points	<ul style="list-style-type: none"> • 6 bands of 7.5cm width made of woven black HDPE fibers fabric and coated with grey LDPE on the outside. • Pre-punched 8mm holes on the 2 side bands at 0.1m +/-10% intervals, positioned in the center of the bands (only the reinforcement bands are pre-punched, not the tarpaulin itself). • Position of the 6 bands and pre-punched holes as per drawing above.
Tear strength in plain sheet at state of origin	Minimum 100N under ISO4674-1 2003, strip of 200x200mm, in plain sheet
Tensile strength in plain sheet at state of origin	Minimum 500N and 15% to 25% elongation in warp and weft in plain sheet under ISO 1421-1.
UV resistance of the plain sheet, measured as remaining tensile strength after UV exposure	<ul style="list-style-type: none"> • The tarpaulin tensile strength under ISO1421-1 after 1500 hours UV under ASTM G53/94 (UVB 313 nm peak) must be: • Minimum 80% of the original value of the actual product, AND not less than 475N. • To be tested in the plain sheet.
Tensile strength in the reinforcement bands at state of origin ISO1421-1	Minimum 700N inside the reinforcement bands, pulling lengthwise in a pre-punched hole of 8mm with a hook of 8mm wire diameter. Test in 2 holes in each side bands.
UV resistance of the reinforcement bands measured as remaining tensile strength after UV exposure	<ul style="list-style-type: none"> • The reinforcement bands tensile strength under ISO1421-1 after 1500 hours UV under ASTM G53/94 (UVB 313 nm peak) must be: • Minimum 80% of the original value of the actual product, AND not less than 665N. • To be tested inside the reinforcement bands as described above.
Welding number and strength at state of origin ISO1421-1	<ul style="list-style-type: none"> • Only one welding allowed, in the middle of the sheet, length wise. The tarpaulin tensile strength crossways at the place of the welding under ISO1421-1 must be: • Minimum 50% of the original value of the actual product, AND not less than 400N. • Size, weight, colour, fire resistance
Width	4m ± 1% net width
Length	6m ± 1% net length
Weight, plain sheet only, excluding the bands weight	190g/m ² ± 20g under ISO 3801 (equivalent to 170g/m ² minimum to 210g/m ² maximum)
Weight, complete sheet including bands weight.	<ul style="list-style-type: none"> • Plain sheet specific weight plus 10% additional weight for the reinforcement bands under ISO3801. • Total weight from 187g/m² minimum and 231g/m² maximum • Specific weight of the bands from 150g/ m² minimum and 200g/m² maximum
Flame retardant	Not mandatory.
Colour	White sun reflective on both sides of the sheet. Grey coating on the outside of the bands. Inner black fibers to ensure opacity. White Coating colour definition: L.a.b Coordinates <ul style="list-style-type: none"> • L.a.b Coordinates under ISO 105J01 • L : 82 • "a" value between -1.7 and +1.5 • "b" value between -4.5 and 0
Opacity	<ul style="list-style-type: none"> • Minimum reflection and absorption percentage, measured under ISO 13468-1, in the range of visible light and near infrareds (respectively from 350 to 750nm, and from 750 to 2500nm wavelength). • Minimum total reflection in visible light + infrared: 35% Minimum total absorption in visible light + infrared: 60% • All percent above 35% in reflection can be deducted from the 60% absorption in the limit of 15% to reach a maximum of 50% reflection. • Marking, packing, and accessories
Printing	Continuous indelible printing in white colour of the manufacturer name, the month and year of production (Letters of 2.5cm high +/-10%). Length indicator marks every metre. IOM logo.

Bale dimension	Length 600mm; Width 400mm; Height 180mm (+/-20%) There must be 5 tarpaulins per bale
Bale marking	As specified in contract.
Bale protection	<p>The bale must be wrapped with a piece of similar material as the tarpaulins. The wrapping must be properly folded, closed tight over the sheets to making a cubic bale.</p> <p>The tarpaulins should not be individually wrapped.</p>
Bales strapping	The bale must be strapped with 2 heat-sealed plastic straps lengthwise and widthwise.

Tent, Type 1, Standard Family 6.5x4x2.2m

Item code 1100000029

Unit weight 55Kg

Specification available on request, but after ICRC/IFRC. This is consistent with UNHCR and IRC family frame tents. Family tent (standard version ridge type)

This canvas ridge tent is the current humanitarian standard as procured by IFRC/ ICRC and UNHCR. The specification has been developed over time and reflects many years of product development and testing.

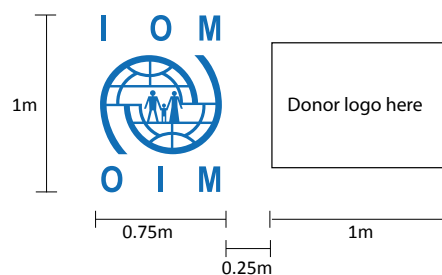
Given that detailing the design of tents is relatively complex, the attached specification allows for quality control and resolution of any disputes that may arise with suppliers. For more on quality control, usage and checklists, please look at ICRC/IFRC catalogue at <http://procurement.ifrc.org>.

8.1. Specification to IOM Standard

Logos

IOM logo is to be placed on both sides of the tent or as specified in the contract.

Colour: CMYK values: C100 M82 Y10 K2, or black.



8.2. Materials Properties

8.2.1 Specifications for the outer tent roof canvas

Composition ISO1833	Polyester and cotton blended fibres yarns. cotton 40% (± 10), polyester 60% (± 10)
Specific weight (g/m²) ISO3801	350g/m ² (± 15 %) finished state.
Colour	Natural white, not dyed
Water-vapour permeability ISO17229	Minimum 2000g/m ² /24h
Tensile strength (N)	Warp and weft 850N minimum.
Apply ISO13934-1 to 10 test pieces of plain canvas.	5 test pieces in warp direction, 5 test pieces in weft.
Apply ISO13935-1 on 5 test pieces with seams, cut from the tent perpendicular to the seam, in the roof.	On seams, the test is applied to 50mm width on the sample
Tear resistance, started (N) –ISO9073-4	Warp and weft 60N minimum.
Water-penetration resistance ISO811	30hPa minimum, increasing speed at 100mm per minute.

Rain-penetration resistance ISO5912:2003. The test piece is the complete tent.	Apply procedure as per point 4.2.11 in ISO5912:2003 in point 5.6 plus following: <ul style="list-style-type: none"> • A visual control from the inside of the tent, while the artificial rain is on, must be done after 2h and 5h, with the complete tent. • The test operator should ensure that the set-up of the test will not create condensation inside the tent that could be interpreted as leakages.
(attention: ISO 5912:2011 does not apply) Outer tent: There should be not more than 10 drops of water in maximum 2 places, penetrating inside the outer tent, including through wick effect. Only the 4 places at the top of the door poles may have some leakages through the eyelets.	
Inner tent: There should be no water penetrating inside the inner tent, or wetting the inner tent canvas.	
Dimensional variation when soaked in water ISO7771	Maximum 3%
Tensile strength resistance after exposure to micro-organisms as per ISO13934-1 and ISO13935-1 after completing BS6085 (soil burial -28 days).	<ul style="list-style-type: none"> • 330% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product. • For plain canvas test: 5 test pieces in warp direction, 5 test pieces in weft. • On seams, 5 test pieces, the test is applied to 50mm width on the sample, as described in ISO13935-1 page 7
Efficiency of water-repellent treatments after soaking in water as per ISO7771 without wetting agent.	30hPa minimum, increasing speed at 100mm per minute.
Efficiency of fungicides product after soaking in water.	10% maximum additional loss to 3% dimensional variation.
Same test as samples soaked in water as per ISO7771 without wetting agent.	
Tensile strength after exposure to UV and moisturising (climatic simulation).	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product.
Exposure in a climatic chamber as per ISO48922, type A, 360 hours, followed by tensile test as per ISO13934-1.	3 test pieces in warp direction, and 3 test pieces in weft.

8.2.2. Specifications for the outer tent wall canvas

Composition ISO1833	Polyester and cotton blended fibres yarns. cotton 40% (± 10), polyester 60% (± 10)
Specific weight (g/m²) ISO3801	200g/m ² (± 15) finished state.
Colour	Natural white, not dyed
Water-vapour permeability ISO17229	Minimum 2000g/m ² /24h
Tensile strength (N)	Warp and weft 650N minimum.
Apply ISO13934-1 to 10 test pieces of plain canvas.	For plain canvas test: 5 test pieces in warp direction, 5 test pieces in weft.
Apply ISO13935-1 on 5 test pieces with seams.	On seams, the test is applied to 50mm width
Tear resistance, started (N) –ISO9073-4	Warp and weft 40N minimum.
Water-penetration resistance ISO811	20hPa minimum, increasing speed at 100mm per minute.
Dimensional variation when soaked in water ISO7771	<ul style="list-style-type: none"> • Maximum 3%

Tensile strength resistance after exposure to micro-organisms as per ISO13934-1 and ISO13935-1 after completing BS6085 (soil burial -28 days). Apply on 10 test pieces of plain canvas and 5 test pieces with seams.	<ul style="list-style-type: none"> • 30% maximum strength loss on minimum required value and 50% maximum strength-loss on original value of the same product. • 5 test pieces in warp direction, 5 test pieces in weft. • On seams, the test is applied to 50mm width on the sample
Efficiency of water-repellent treatments after soaking in water as per ISO7771 without wetting agent.	20hPa minimum, increasing speed at 100mm per minute.
Efficiency of fungicides product after soaking in water.	10% maximum additional loss to 3% dimensional variation.
Same test as samples soaked in water as per ISO7771 without wetting agent.	
Tensile strength after exposure to UV and moisturising (climatic simulation).	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product.
Exposure in a climatic chamber as per ISO48922, type A, 360 hours, followed by tensile test as per ISO13934-1.	3 test pieces in warp direction, and 3 test pieces in weft.

8.2.3. Specifications for the inner tent canvas

Composition ISO1833 Polyester and cotton blended fibres yarns	Cotton 40%(±10), polyester 60%(±10) Or cotton 100%.
Specific weight (g/m²) ISO3801	130 g/m ² ±10% finished state.
Colour	Dyed, sand or cream.
Water-vapour permeability ISO17229	Minimum 2000g/m ² /24h
Tensile strength (N) ISO13934-1	Warp and weft 300N minimum.
Tear resistance, started (N) –ISO9073-4	Warp and weft 20N minimum.
Tensile strength resistance after exposure to micro-organisms as per ISO13934-1 and ISO13935-1 after BS 6085 (soil burial - 14 days).	30% maximum strength loss on minimum required value and 50% maximum strength-loss on original value of the same product. 5 test pieces in warp direction, 5 test pieces in weft.

8.2.4. Specification for mud flap PE fabric

Specifications for standard plastic sheeting can also apply.

Composition	Woven, high-density polyethylene black fibres, fabric laminated on both sides with low-density polyethylene coating.
Specific weight (g/m²) ISO3801	180g/m ² (±5%)
Tensile strength (N) Apply ISO13934-1 on 10 test pieces of plain PE fabric. Apply ISO13935-1 on 5 test pieces with seams, cut from the tent perpendicular to the seam, at the junction of PE and canvas.	<ul style="list-style-type: none"> • Warp and weft 650N minimum. • Elongation 15% to 25%. For plain PE fabric test: 5 test pieces in warp direction, 5 test pieces in weft. • On seams, the test is applied to 50mm width on the sample, as per ISO13935-1
Tear resistance (N) ISO4674-1 (method B)	Warp 100N minimum, weft 100N minimum.
Resistance to micro-organisms	No test required.
UV resistance as percentage of tensile strength loss as per ISO1421, after 1500 hours UV as per ASTM G53/94 (UVB 313nm peak)	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product. 5 test pieces in warp direction, and 5 test pieces in weft.
Colour	White if made with standard plastic sheeting or any other colour except military green, green, brown or various kaki colours

8.2.5. Specifications for the groundsheet PE fabric

Specifications of standard plastic sheeting can also apply. In this case the original lab report from the PE factory will be accepted if still valid.

The same type of PE as per the one used for the mud flaps can be used for the ground sheet. In this case the criteria below do not apply.

Composition	Woven polyethylene fabric, coated on both sides with low-density polyethylene.
Specific weight (g/m²) ISO3801	180g/m ² (± 5%)
Tensile strength (N) ISO1421	Warp 300N minimum, weft 300N minimum.
Tear resistance (N) ISO4674-1 (method B)	Warp 60N minimum, weft 60N minimum.
Resistance to micro-organisms	No test required.
UV resistance as percentage of tensile strength- loss under ISO 1421 after 300 hours UV under ASTM G53/94 (UVB 313nm peak)	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product. 5 test pieces in warp direction, and 5 test pieces in weft.
Colour	White if standard plastic sheeting. Any colour is acceptable with the exception of military green, green, brown or various kaki colours.

8.2.6. Specifications for the mosquito net, inner-tent doors and windows- Frame Tent

Type and norms	Required minimum values
Material ISO1833	Polyester 100%, or PE 100%
Colour	White
Fabrication ISO8388	Warp knitted
Denier	75/100 for polyester. 100/150 for PE
Filament	Multi-filament 36 or higher for polyester. Monofilament for PE
Mesh size	25 holes/cm ² (156 holes/inch ²)
Weight ISO3801	40 g/m ² minimum for polyester. 47g/m ² minimum for PE.
Shrinkage ISO5077	5% maximum
Bursting strength ISO13938	250 kPa minimum for polyester. 320 kPa minimum for PE 320 kPa minimum for PE
Bursting strength after exposure to UV and moisturising (climatic simulation). Exposure in a climatic chamber as per ISO4892-2, type A, 180 hours, followed by bursting test as per ISO13938 loss on original value of the same product.	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product. 3 test pieces required

8.2.7. Specifications for the outer - tent guy points

Material composition	Polyethylene, polypropylene or polyester ropes. Polyester straps, steel rings, elastic device.
Tensile strength (N) ISO13934 on the samples with a complete guy point ensemble including all of the reinforcement pieces.	3000N minimum for the 6 side guy points (3 test pieces). 3000N minimum for the rear wall guy point (1 test piece). 1400N minimum for 2 other guy points (1 test piece). Elongation of the elastic device under 1000N: 50mm minimum, 100mm maximum.
UV resistance in percentage of tensile strength-loss after exposure in a climatic chamber under ISO4892-2, type A, 360 hours	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product. 1 test piece at 1400N, 1 test piece at 3000N.
Colour	Black ropes and straps, galvanized steel.

Further notes for point on tensile strength:

- Sample size: width 300mm x length 500mm
- Samples to be cut at the centre guy line for the 6 side points (500mm length sample).
- Sample to be cut at the ridge back end for the back wall guy point (500mm length sample).
- Sample to be cut on the top corner of the outer doors for the 2 other points.
- Samples to be folded in order to fit in the traction apparatus so that the entire width of the canvas is submitted to the traction when clamped in the jaw of the apparatus. Samples must include: a canvas section from the tent roof, canvas reinforcements, strap, ring, elastic device, buckle, runner and a significant part of the guy rope (the ring and the runner do not need to be included in the UV test).
- Traction must be applied between the tent's roof canvas and the guy rope.

8.2.8. Specifications for hammer

Type	Sledge hammer, 1kg head, with 30cm wooden handle.
Specifications	In accordance with ISO15601
Handle	No chips, rough surfaces, holes or knots. Smooth surface. Strong dry flexible wood. Handle adjusted to head in order to protrude on other side and be blocked with a metal wedge; or have a conical shape (like a hoe). Moisture minimum 10% and maximum 15%, under ISO3130
Pullout test	Clamp head in a vice jaw after two series of 25 vigorous blows from varying delivery angles. Apply force of 500N while trying to pull out the handle. There should be no damage to the hammer's head or handle and the handle should remain firmly attached to the head.

8.3. General points for finished product

8.3.1. Performance

The final product must be able to withstand a 75km/h wind without any damage and remain securely attached to the ground without any loss of tension.

When closed, the tent must provide good protection against dust, wind, rain, snow, insects and small crawling fauna.

Minimum roof-load must be 300N/m² under ISO8937 (snow load for camping tent). The recommended tent weight (packed) is 55kg.

8.3.2. Seams and stitching

All seams that are subject to possible tension must be double lock stitched and waterproofed. Double lock stitching produce a strong, long-lasting, neat and professional looking seam.

The stitch count as well as UV and rot-proof sewing threads must be appropriate and suited to the fabric. Stitching must provide strong, waterproof seams with the same lifespan as the tent.

The seams must be oriented to facilitate the unimpeded runoff of rain: avoid creating water lines or water pockets. Wherever possible, the colour of the sewing thread should be compatible with the fabric colour.

8.3.3. Ropes, webbing bands, toggles, loops, reinforcement netting and all other accessories

All ropes and webbing bands must be heat cut. All ropes are knotted to the tent at the factory. All of the above-mentioned items must be rot-proof and UV-proof (to the same degree as the tent canvas). To avoid water penetration through capillarity action, no webbing or rope can be sewn using stitching that goes from the outside to the inside of the tent. Alternatively, they must be made of waterproof materials.

Outer-tent laces and loops can be made of the same canvas as the tent roof or walls, and inner-tent loops can be made of the same canvas to which they are sewn.

8.3.4. Zip fasteners

All the zip fasteners must resist 700N lateral traction as per ISO5912.

8.3.5. Eyelets

All metal eyelets must be rustproof and correctly placed, reinforced with a fabric patch and have a minimum inner diameter of 10mm.

8.3.6. Metal rings

All metal rings must be rustproof, galvanized and welded closed

8.3.7. Dimensional tolerance

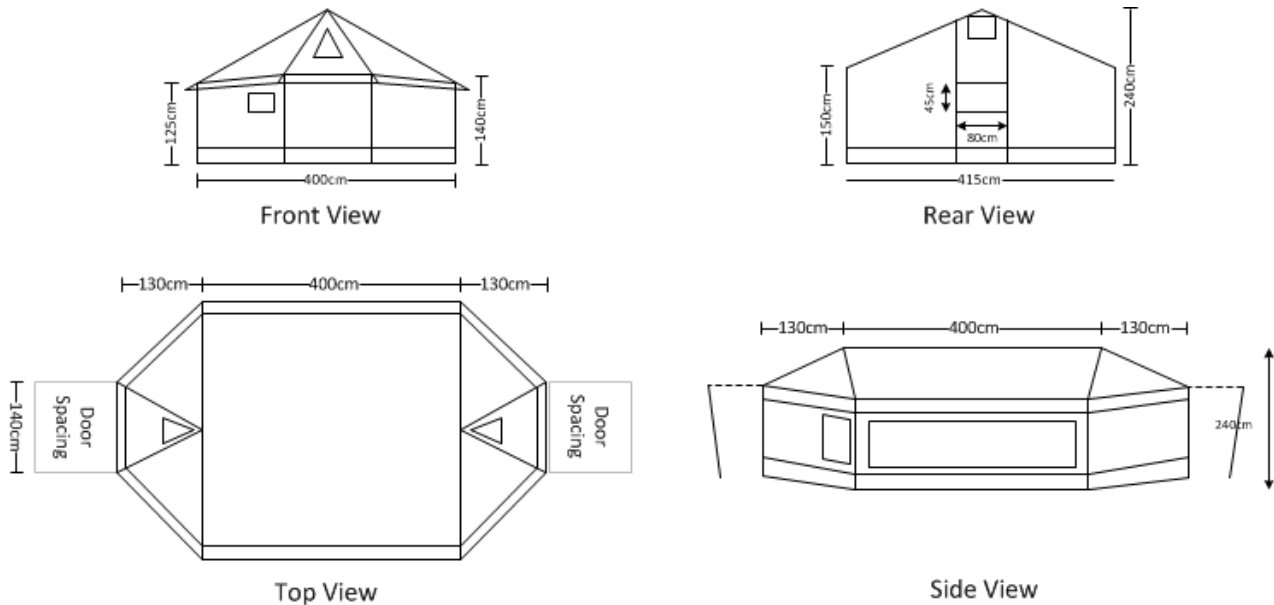
Unless otherwise specified, a maximum tolerance of +/- 3% is accepted on all dimensions.

8.3.8. Long-term storage

The tent must be treated and packed in such a way that the tent can be stored for a 5-year minimum under proper storage conditions without any damage or reduction in performance.

The tent must be manufactured and packed in clean and appropriate conditions to avoid contamination from soil, dust and other contaminants.

8.4 Characteristic of Outer Tent



8.4.1. General description of outer tent

The outer tent must be comprised of several cloth sections, forming the general shape of the tent. The seams must run from the ridge down to the edges of the roof, perpendicular to the ridge line.

The outer tent must be supported by 3 upright poles, 1 ridge pipe, 6 side poles, 4 door poles, 3 guy ropes on each side, and 2 guy ropes at each end. The attachment points for each guy rope must be reinforced

8.4.2. Dimensions/erecting system

Centre height:	2.20m
Width:	4.00m
Ridge length:	4.00m
Side wall height:	1.25m
Door height:	1.40m
Centre base length:	6.50m

The outer tent must rest on the ridge pipe supported by 3 upright poles, one at each end and in the middle of the ridge pipe. The outer tent must be maintained in position on the ridge pipe by two 100mm-long canvas sleeves with a Velcro fastening running the full 100mm length. The sleeves are placed 200mm from each end of the ridge pipe.

The side walls and the vestibules must be supported by 10 poles; metal hooks on the top of the poles hook into eyelets in the webbing band (25mm wide) sewn to the top of the wall on the inside. These poles must not protrude through the outer tent. The hooks at the top of the poles must be as flat as possible.

8.4.3. Reinforcements

The 10 guy points on the roof must be made of 50mm-wide polyester straps, and be sewn to the eave (an extension of the roof). The eave must be made of a double fold of roof canvas, 200mm in width, and run the perimeter of the tent roof, including above the doors. The eave must be part of the roof panel, without any break (seam) in the canvas. On the 6 guy points located on the sides of the tent, an additional layer of PVC-coated canvas must be added on the inside to protect against abrasion from the top of the poles.

Additionally, the 6 guy points on the side must be reinforced with a second triangular piece of canvas, 300mm in length (one side), sewn to the edge of the eave with the point extending into the roof section.

The entire length of the ridge must be reinforced on the inside with a 150mm strip, in the same fabric as the roof. The attachment sleeves for the ridge pipe must be sewn to this reinforcement.

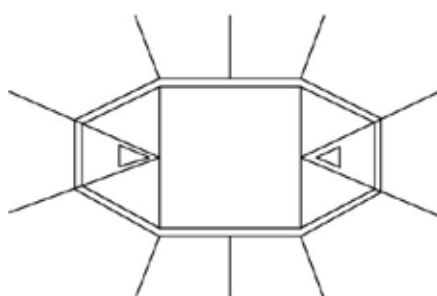


8.4.4. Attachment system (guy lines)

The outer tent must be anchored to the ground using 10 guy lines attached to 10 metal pegs. Each guy point, on both sides of the tent, require a loop made of 50mm-wide webbing. The length of the webbing allows, when folded in two, the creation of a 30mm minimum long loop, to be stitched to the tent with a strong Z sewing, 50mm minimum in length.

The webbings for the door pole guying points must be 250mm long, in order to cover the tops of the poles and to have the eyelet placed in the webbing.

The 2 central side webbing loops must be sewn perpendicular to the side edges of the tent, the 4 corners webbing loops must make an equal angle with the roof and vestibule edge and the 2 front and 2 rear webbing loops aligned with the vestibule's roof stitching. See drawing.



10 metal rings must be attached to the loops with an elastic device. The ropes pass through the 10 metal rings and when tension is applied, the ropes slide through the metal rings.

At the other end, the ropes must have a preformed knotted loop to place over the peg.

The attachment points must be made in such way that they comply with the resistance characteristics specified in part 1.7 of this specification.

Long-term storage

The tent must be treated and packed in such a way that the tent can be stored for a 5-year minimum under proper storage conditions without any damage or reduction in performance.

The tent must be manufactured and packed in clean and appropriate conditions to avoid contamination from soil, dust and other contaminants.

8.4.5. Side windows

The outer tent must have two long windows, protected with a rain flap, running the length of both sides of the tent. The inside dimensions of the windows must be 3600mm wide and 600mm high; the top edge of the window must be situated 100mm below the roof of the tent. The window openings must be reinforced either with strong reinforced netting (large holes, strong plastic net) or strips of 20mm polycotton webbing, reinforcing the window horizontally (1 webbing) and vertically (7 webbings). The webbings must be sewn to the edges of the window and/or to the netting.

The window flaps are made of PE sheet similar to the mud flap material. Each window flap must be 3960mm wide x 700mm high and stitched 50mm above the top of the window edge. The flap must have a strip of 25mm-wide Velcro webbing along the length of its vertical sides and its bottom, sewn 25mm from the edge of the window.

Loops and plastic toggles or hooks must be attached to keep the flap open when rolled up.

8.4.6. Ventilation on top of the vestibules

The outer tent requires two ventilation openings, front and back, protected with a rain flap. The vents must be triangular-shaped and situated at the top of both vestibules. The inside dimensions of the vents must be full width of the roof panel by 400mm high. The vent flap must be made such that, when opened, it remains distanced from the ventilation opening with a height of 300mm +/-50mm at the centre.

To secure the flap when closed, the cone opening must have a 25mm wide Velcro strip running its full width.

The vent openings must be reinforced either with strong reinforced netting (large holes, strong plastic net) or with two strips of 20mm cotton or polyester webbing that bisects the vent horizontally and vertically. These webbings must be sewn to the edges of the vent opening and to the netting.



8.4.7. Outer tent doors

Size	1.3m wide x 1.4m high
Door flaps:	1.4m wide x 1.6m high:
Upper part	1.4m wide x 0.9m high, made of canvas.
Lower part	1.4m wide x 0.7m high, made of woven PE fabric.

- The vestibule doors can be used as awnings by moving the front door poles to the 2 eyelets situated at the bottom corners of the doors. Rolled up, the door must be held in place by 2 loops and 2 plastic toggles or hooks.
- The doors must close with a lacing system. The loops of the lacing system must be made of 4mm rope or canvas strips (7 loops and eyelets per door side). The lacing system requires a toggle or hook in order to attach the last loop.
- The lacing system must be protected by a doubled 50mm-canvas flap to prevent rain and draughts.
- Each door must be designed so that one side closes from the inside and the other from the outside.



8.4.8. Side walls, vestibule walls, mud flaps

Total height 1.45m; i.e., a 1.25m vertical length plus a 0.2m overlay which rests on the ground.

The upper part (top 0.75m) of the walls must be made of a polyester cotton fabric and the lower part (0.7m) of PE fabric.

The mud flaps must be equipped with 22 eyelets (7 on each side including the corners, 2 on each vestibule side) placed on a strip of 50mm-wide webbing running the full-length of the flap (the entire perimeter of the tent); the webbing must be sewn or heat-sealed to the mud flap on the inside at floor level. The thread and stitch length must be appropriate to the materials to avoid tearing along the stitching (not applicable if heat-sealed). The 2 eyelets on the vestibule side mud flap must be placed one next to the door, and one half-way between the door and the tent corner.

The outer tent must be attached to the side poles with webbings or canvas strings; these must be stitched to the inner side of the outer tent where the PE joins the polycotton and in front of each side and door pole (10 points in total).



The vestibule walls must be made in the same way as the side walls, to complete the outer tent between the doors and the side walls. One of the vestibule walls requires a reinforced chimney hole.

8.4.9. Chimney reinforcement

The chimney reinforcement (non-perforated) must be located 0.5m from a corner at either end of the tent, between the side-wall corner and its adjacent tent-door corner. It must be made of heat resistant fabric (minimum 900°C), using a fabric that does not causes the fibres to be loose when cut.

The lower edge of the heat-resistant fabric must be 500mm above the ground, where the canvas joins the PE part (a band of 2cm to 3cm canvas is allowed between the PE and the fireproof material).

Net inside dimensions of the fireproofed part: 250mm wide x 600mm high.

Chimney flap dimensions: 350mm wide x 700mm high. The flap must be stitched, along the bottom, at the lower edge of the chimney opening. To secure the flap, it must have a 25mm wide Velcro webbing sewn along the entire length of its two vertical sides and upper end, and sewn to the tent 25mm outside the edge of the chimney opening.

The tent fabric must be cut away completely at the chimney opening. The edges of the chimney opening must be hemmed stitched to the inside.



8.4.10. Other accessories

Four 30mm-loops must be attached to the inside of the tent where the inner tent doors have corresponding toggles at the top of the inner tent door zips (refer to inner tent door description).

10 D-rings (25mm x 4mm thickness) must be attached inside the outer tent; the inner tent hooks to these D-rings (refer to inner tent description point 4/4): 6 D-rings must be attached to the webbings at the top of each side-pole position, the remaining 4 must be placed in intermediate positions.

6 D-rings, secured by a piece of 25mm-wide webbing, must be sewn to the mud flaps at floor level inside the tent; the inner tent attachment strings hook onto these D-rings

8.4.11. Plastic for document pouch

On the outside of each left-hand vestibule wall there must be a clear plastic document sleeve. The material must be made of UV stabilized polyurethane transparent plastic with a minimum thickness of 0.15mm. The lower edge of the sleeve must be 800mm above the ground. The sleeve must have a rain proof opening on the bottom and the two vertical sides sewn to the tent. The inside dimensions of the sleeve, after sewing, must be 230mm high by 310mm wide.

8.4.12. Manufacturer identification

Made with a strong textile tag of 10x10cm with durable print, and stitched inside the outer tent, in the vertical seam of one tent corner. The tag should include the manufacturer's name, the batch number and the production's date.

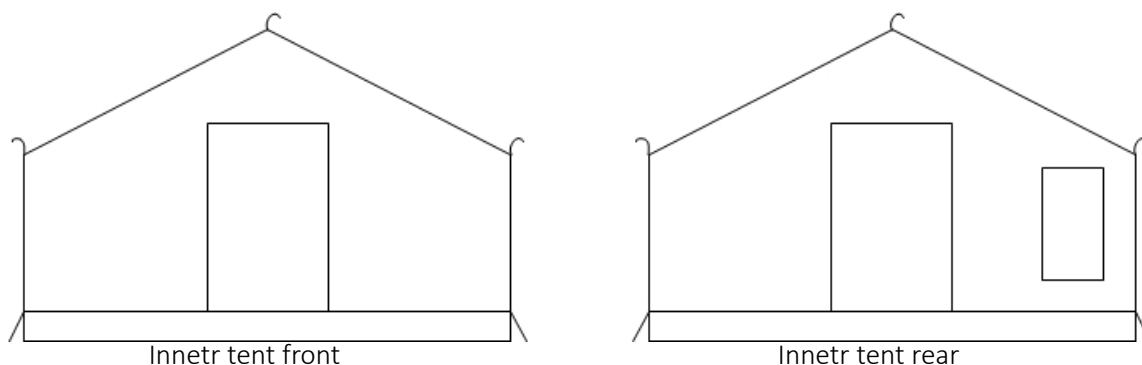
8.5. Characteristics of Inner Tent including Ground Sheet

8.5.1. General description

The inner tent must be square-shaped and hang inside the outer tent structure. All dimensions must be designed to ensure a 10cm air gap between the outer and inner tents.

The inner tent must have chimney reinforcement, 2 windows, 2 doors and 2 vents. The bathtub groundsheet (floor) must be made of woven PE fabric, and be sewn to the inner tent extending up the sides of the wall to ensure the inside remains waterproof. Stitching is not permitted on the lower part of the groundsheet to ensure 100% waterproofing.

Ridge



8.5.2. Inner tent dimension

The inner tent, when hooked to the outer tent, must have a centre height of 2.1m, a width of 3.8m, a wall height of 1.15m and a base length of 3.95m

8.5.3. Inner doors

Each door opening must be 1m wide and 1.75m high (1.55m measured from the upper edge of the groundsheet). Door panels (1.1m wide) must be placed in the centre of the front and rear walls.

The door must be made of the same material as the tent and closed with polyester n°10 coil zip fasteners on the 2 vertical sides. The zip fasteners must open from both the inside and outside. The doors must have a 200mm PE flap at the bottom, made of the same material as the groundsheet.

Black UV-stabilized ropes or canvas laces with plastic toggles or hooks must be provided to keep the door opened when rolled up. Mosquito nets (1.1m wide) must be placed on the inside of the doors. The 2 vertical sides must close with n°10 polyester coil zip fasteners. The bottom edge of the mosquito flap must close with one piece of 25mm-wide Velcro along the entire width.

To facilitate door closing:

- Two 80mm elastic webbing loops with an attached toggle or hook must be placed along the sides of each door, at the top, aligned with the zips. These attach to the corresponding 3cm loops inside the outer tent.
- Two webbing loops with eyelets must be placed at the bottom of each door, aligned with the zips. These are used to attach the tent to the ground with 6mm x 230mm pegs. The 200mm long webbing loops must be stitched into the seam where the PE joins the fabric.

8.5.4. Inner tent suspension system

The inner tent must be suspended between the 2 end poles, attached (knotted) by 2 strings or strips, 25mm by 200mm at each end. The inner tent must be suspended from the ridge pipe by 8 galvanized 4mm wire hooks mounted on 8 50mm-wide webbing loops.

The total length of a loop including its metal hook must be 100mm. One hook must be placed at each end, 2 in the centre (100mm either side of the centre pole gap) and the 4 remaining hooks equally spaced on each side.

The side walls of the inner tent must hook, using strong plastic or metal hooks mounted on webbing loops, to a corresponding D-rings on the inside of the outer tent, at the top of each side pole and in the intermediate positions. The loops are made of 25mm wide webbing bands. The complete length of the attachment including the hook must be 100mm. 5 hooks in total per side at the top of the wall; 3 hooks in total per side at the bottom of the wall. The attachment loops are elasticized for the bottom of the wall, there are non-elasticised for the top of the wall.

Elastic webbing bands for the bottom of the walls must be stitched to the tent in the seam where the PE and fabric join.

The inner tent must have twenty eight 20mm loops, made of canvas; these can be used to attach the inner lining or the inner partition, both of which are optional features. The loops must be attached to the inside of the inner tent at every place where the inner tent attaches to the outer tent or to the frame, with an additional 2 loops at the bottom of each door (8 at the ridge, 5 at the top of each side wall, 3 at the bottom of each side wall and 2 at the base of each doors).

8.5.5. Inner tent ventilation system

The inner tent must have 2 triangular vents in each gable top, made of mosquito netting reinforced with 20mm webbings. The netted triangle must fill the space from the ridge to the top of each door. The ventilation system must close from inside with a flap that rolls downwards, and seal with 25mm-wide Velcro on all sides.

The inner tent must have two long vents on each side of the ridge, made of mosquito netting reinforced with 20mm webbings. Dimension: Each side is 200mm wide x full length of the ridge. The ventilation system must close from inside with a flap stitched along the ridge, hanging freely when open, and closing with 25mm wide Velcro on all sides.

8.5.6. Accessories inside the inner tent

The inner tent must have 2 windows of equal size (and reinforcement) that align with the outer tent windows. The window openings must be reinforced with mosquito-netting combined with strips of 20mm polycotton webbing, reinforcing the window horizontally (1 webbing) and vertically (7 webbings). The webbings must be sewn to the edges of the window and to the mosquito netting.

The flaps, made of the same material as the inner tent, must be sewn from the inside and open downwards. The flaps hang freely when open and close using a 25mm-wide Velcro strip on three sides.

8.5.7. Accessories inside the inner tent

To hang light-weight items, three 20mm-hooks (mounted on 20cm webbing) and one pouch, made of netting material attached on 3 sides, of 150 x 200mm inner net dimension, must be sewn inside the inner tent at the ridge.

The pouch hangs from the ridge on the same spot as the 2nd ridge suspension hook; the 3 light weight hooks are placed at the same spots as the 3rd, 6th and 7th ridge suspension hooks.

8.5.8. Groundsheet

The integrated groundsheet must be made of PE woven fabric. The seam, attaching the groundsheet to the sides of the inner tent, must be 200mm above the floor. To avoid water infiltration no stitched seams are permitted, all groundsheet seams must be heat sealed and have a 25mm overlap. A reinforced patch, 150mm x 150mm, of the same material as the groundsheet must be glued or sealed to the centre of the groundsheet to prevent the centre pole from damaging the groundsheet.

The groundsheet must be hooked to the outer tent D-rings with 6 elastic webbings and plastic hooks, 20mm in width.

8.5.9. Chimney reinforcement

The chimney reinforcement (non-perforated) must be situated 0.5m from one of the tent corners, between the corner of one side wall and the corner of the adjacent tent door. It must be made of heat-resistant fabric (minimum 900°C).

Inside dimensions are 250mm width x 800mm height.

The lowest edge of the heat-resistant fabric must be 300mm above the ground.

The tent fabric must be completely cut away from around the chimney opening and the edges hemmed stitched.

8.5.10. Inner partition

One partition must run from either sides of the centre pole to the side walls, constructed from 2 half partitions that can be stitched together at the top. The partition must be attached to the loops on the inner tent at the roof and wall levels with minimum 6 pairs of string or hooks/toggles with loops, and to the centre pole with 2 pair of string. The partition can be maintained open with 2 additional pair of strings or Velcro.



Safety information tag

Safety information must be available inside the tent in the form of a durable print on a piece of canvas stitched inside the inner tent with the text found in the annex at the end of this specification.

8.6. Poles and Accessories

8.6.1. Poles

Each section should fit together with a male and female 100mm joint, made with a 200mm inserted pipe point-welded or crimped into one of the pipes (not to be made with press-reduced pipe diameter).

8.6.1.1. Ridge pipe

- 4m long, galvanized or painted steel pipe with a 30mm minimum outer diameter and a 1.2mm minimum wall thickness, in 2 or 4 pieces depending on the type of packaging.
- The ends of the ridge pipe must be reinforced with two short 100mm-long pipes with an outer diameter of 27.5mm, inserted and point welded at both ends of the ridge.
- 22.5mm holes drilled 20mm from both ends, into which the upright poles fit.
- The ends of the ridge pipe must be protected with a plastic cap devoid of sharp or cutting edges.

8.6.1.2. Upright poles

- 2 upright poles, 2200mm each (end plug included), galvanized or painted steel pipe with a minimum outer diameter of 25mm and minimum 1.2mm wall thickness, in one or two pieces depending on the type of packaging. The top 40mm of the 2 poles must have a narrower diameter of 21.5mm (end plug included) to insert into the ridge pipe. The top end of the 2 poles must have a protruding plastic bushing to protect the tent from the edges of the pipe.
- The base of the 2 upright poles must have a metal or plastic base plate 50mm in diameter.
- One central and upright 2170mm pole (sized without U-bracket), galvanized or painted steel pipe with a 30mm minimum outer diameter and 1.2mm minimum wall thickness, comes in one or two pieces depending on the type of packaging. This pole comes with a 30mm-long U-shaped metal bracket.
- The base of the central pole must have a soft flexible plastic or rubber base plate 50mm in diameter, that will not damage the ground sheet while keeping proper stability.

8.6.1.3. Side poles

- Six 1.25m-side poles of painted or galvanized steel pipe with a minimum outer diameter of 19mm and a 1mm minimum wall thickness, in one or two pieces depending on the type of packaging. The top of each pole must have a bent 20 to 30mm pin form into a flat hook.
- Four 1.4m-door poles, painted or galvanized steel pipe with a minimum outer diameter of 19mm and a minimum 1mm wall thickness, in one or two pieces depending on the type of packaging.
- The top of each door pole must have a bent pin 20mm to 30mm formed into a flat hook.
- Side and door pole base plates must be made from a round piece of plastic or metal, 40mm in diameter, with a pin 20mm to 30mm pointing downwards.

8.6.2. Ropes/loops/guy runners

- Six ropes, black, UV treated, each 3m long, 8mm diameter, with a minimum tensile strength of 300kg.
- Four ropes, black, UV treated, each 3m long, 6mm diameter, with a minimum tensile strength of 140kg.
- All ropes must be passed through the tent rings during manufacture.
- All ropes must have a securely knotted loop at one end, to place over the peg.
- Hardwood or strong UV proof plastic guy runners, red coloured, pre-mounted on the ropes.
- The grain of the wooden runners must run lengthwise in the runner.
- Size of the runners: 100mm x 35mm x 12mm for wood runners, 15% less if made of plastic, the holes must be the same diameter as that of the ropes and adapted to the good running and blocking of the supplied ropes.
- The ropes must be threaded through the runners in the position that represents the maximum blocking position.

8.6.3. Pegs and accessories

- Six 350mm pegs, made of angled iron 25mm x 25mm and 3mm thick, with a 50mm iron rod 6mm in diameter welded on top. At one end, both wings of the angled iron must be cut at a 45° angle to form a pointed end. At the other end, both wings of the angled iron must be pressed together until they touch and the 50mm by 8mm rod welded to the top. The rod produces a 25mm prominence bent downwards slightly.
- The 6 pegs must have 2 notches on each wing side, but not directly opposite each other, to improve their grip in soft ground. The notches should be approximately 3mm in width with a maximum depth of 3mm.

Pegs are painted or galvanized.



- Four 300mm pegs including bend, made of iron rebar 10mm in diameter, with a “candy cane” shaped hook on one end, painted or galvanized.
- Twenty six 230mm pegs, made of iron bar 6mm in diameter, with a round shaped head on one end, to avoid damaging the mud flap when pushed through the eyelets; painted or galvanized
- One 1kg metal hammer with a 300mm wooden handle.
- In the accessory bag, 1 set-up instruction sheet in English, showing step by step set-up information drawings and item content list and information, printed on durable laminated paper or durable fabric (see part 7/1)
- One repair kit including: 1 needle, 20m stitching thread, 3m polyester rope or string of 3mm used to attach the canvas spare piece around the bundle.

8.7. Packaging

8.7.1. Standard packaging

One tent with all accessories must come packed in one bundle only. The inner tent and the outer tent are folded so that the groundsheet protects the tent and accessories from dirt and moisture.

Before placing it into the outer bag, the bundle must be protected with one additional layer made from polycotton canvas as per the wall canvas minimum, 2.3m x 1m in size. This canvas is attached around the bundle with 3 ropes of 1m and 3mm diameter.

The outer bag is made of the same material as the one used for the mud flaps of the tent. Total length must not exceed 2250mm maximum, approximate diameter should be 400mm in order to allow some flexibility to facilitate re-packing.

The metal poles and pegs must be packed in 2 separate bags to avoid damaging other items inside the bundle. Both bags must be made of the same material as the outer bag. The bags must have a closure system that ensures the accessories remain in their bags during transport and handling. Particular care must be taken when packing the pegs to ensure they will not pierce the bag.

The package must be secured with 2 webbing straps on the outside; each strap must have a strong self-locking buckle that will not slide during transport. Each self-locking buckle can be made either with two rectangular buckles of 4mm wire, welded-closed, or with one rectangular buckle and one sliding middle bar, of 4mm steel rod, welded-closed.

The straps must not be sewn to the outer bag. Each strap provides 2 handles. The buyer’s markings must be printed on the outside in indelible ink.

The standard international warning sign “protect from water” must be printed on the outside of the package.

8.7.2. Optional Packaging

The poles can be divided into pieces in order to obtain a package of 1.2m in length.

The packaging must be a polycotton bag of 1.2m x 0.4m x 0.3m with a zip closure. The bundle must be secured with 2 webbing straps, each with a self-locking buckle that will not slide during transport. Each strap provides 2 handles. The straps must not be sewn to the bag.

All other aspects as per standard packaging instructions.

8.8. Specification Annexes

8.8.1. Instruction sheet

Available at: <http://www.ifrc.org/PageFiles/95186/208600-Shelter%20instruction%20flyer-EN-HR.pdf>

8.8.2. Safety instruction tag

The text of the instruction tag should be:

- Do not use an open flame in the tent, use a stove with flue pipes
- Locate stove away from the walls, use protective flooring. Make a cut in the fireproof fabric patch to use the flue pipe
- Always consider ventilation when the stove is in use
- If possible, cover the stove with heavy fire resistant material (clay or equivalent)

8.8.2. Safety instruction tag

The following points, already exposed in the specification above, require printing: Manufacturer ID as described in part 3/12

Safety information tag as described in part 4/11 and in part 7/2 Instruction sheet as described in part 5/3 and in part 7/1

Buyer marking on Outer bag as described in part 6/1

Protect from water on Outer bag as described in part 6/1



Note this version if the family tent is for cold climates / winter conditions. It is similar to the family tent apart from the fact that it has a steel frame. This frame makes it self standing, and hence more suitable for use on hard ground (or concrete).

This tent is to the specification of IFRC/ICRC (see www.procurement.ifrc.org/catalogue).

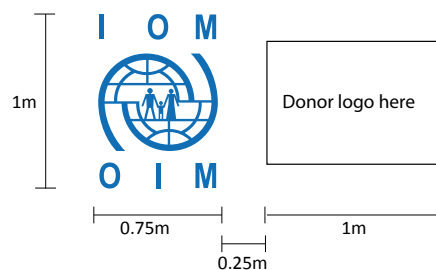
Tent, Type 2, Frame Family 5.2x4.15x2.4m

Item code	110000030
Unit weight	800gr minimum
Unit volume	tbc

9.1. Specification to IOM Standards

9.1.1 Logos

IOM logo is to be placed on both sides of the tent or as specified in the contract. In colour: CMYK values: C100 M81 Y11 K1, or black.



9.2. Materials Properties - frame tent

9.2.1 Specifications for the outer tent roof canvas

Composition ISO1833	Polyester and cotton blended fibres yarns. cotton 40% (± 10), polyester 60% (± 10)
Specific weight (g/m²) ISO3801	350g/m ² (± 15) finished state.
Colour	Natural white, not dyed
Water-vapour permeability ISO17229	Minimum 2000g/m ² /24h
Tensile strength (N)	Warp and weft 850N minimum.
Apply ISO13934-1 to 10 test pieces of plain canvas.	5 test pieces in warp direction, 5 test pieces in weft.
Apply ISO13935-1 on 5 test pieces with seams, cut from the tent perpendicular to the seam, in the roof.	On seams, the test is applied to 50mm width on the sample
Tear resistance, started (N) –ISO9073-4	Warp and weft 60N minimum.
Water-penetration resistance ISO811	30hPa minimum, increasing speed at 100mm per minute.

Rain-penetration resistance ISO5912:2003. The test piece is the complete tent.	<ul style="list-style-type: none"> Apply procedure as per point 4.2.11 in ISO 5912:2003 in point 5.6 plus following: A visual control from the inside of the tent while being tested, must be done after 2h and 5h. The test operator should ensure that the set-up of the test will not create condensation inside the tent that could be interpreted as leakages. Outer tent: There should be not more than 10 drops of water in 2 places maximum, penetrating inside the outer tent, including through wick effect. Only the 4 places at the top of the door poles may have some leakages through the eyelets. Inner tent: There should be no water penetrating inside the inner tent, or wetting the inner tent canvas.
(attention: ISO 5912:2011 does not apply)	
Outer tent: There should be not more than 10 drops of water in maximum 2 places, penetrating inside the outer tent, including through wick effect. Only the 4 places at the top of the door poles may have some leakages through the eyelets.	
Inner tent: There should be no water penetrating inside the inner tent, or wetting the inner tent canvas.	
Dimensional variation when soaked in water ISO7771	Maximum 3%
Tensile strength resistance after exposure to micro-organisms as per ISO13934-1 and ISO13935-1 after completing BS6085 (soil burial -28 days).	<ul style="list-style-type: none"> 330% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product. For plain canvas test: 5 test pieces in warp direction, 5 test pieces in weft. On seams, 5 test pieces, the test is applied to 50mm width on the sample, as described in ISO 13935-1 page 7
Apply on 10 test pieces of plain canvas and 5 test pieces with seams.	
Efficiency of water-repellent treatments after soaking in water as per ISO7771 without wetting agent.	30hPa minimum, increasing speed at 100mm per minute.
Efficiency of fungicides product after soaking in water.	10% maximum additional loss to 3% dimensional variation.
Same test as samples soaked in water as per ISO7771 without wetting agent.	
Tensile strength after exposure to UV and moisturising (climatic simulation).	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product.
Exposure in a climatic chamber as per ISO48922, type A, 360 hours, followed by tensile test as per ISO13934-1.	Number of test pieces: 3 test pieces in warp direction, and 3 test pieces in weft.

9.2.2. . Specifications for the inner tent canvas Frame Tent

Composition ISO 1833 Polyester and cotton blended fibres yarns	cotton: 40%(±10), polyester: 60%(±10) i.e., 50 to 70% polyester with balance in cotton or cotton 100%.
Specific weight (g/m²) ISO3801	130 g/m ² ±10% in finished state.
Colour Dyed	sand or cream colour.
Water-vapour permeability ISO17229	Minimum 2000g/m ² /24h.
Tensile strength (N) ISO 13934-1	Warp and weft 300N minimum.
Tear resistance, started (N) ISO 9073-4	Warp and weft 20N minimum.
Tensile strength resistance after exposure to micro-organisms under ISO13934-1 after BS 6085 (soil burial - 14 days).	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product. 5 test pieces in warp direction, 5 test pieces in weft
Apply on 10 test pieces of plain canvas	

9.2.3. Specifications for mud flap PE fabric and the tent packing- Frame Tent

Specifications for standard plastic sheeting can also apply.

Composition	Woven, high-density polyethylene black fibres, fabric laminated on both sides with low-density polyethylene coating.
Specific weight (g/m²) ISO3801	180gr/m ² (±5%)
Tensile strength (N) Apply ISO13934-1 on 10 test pieces of plain PE fabric. Apply ISO13935-1 on 5 test pieces with seams, cut from the tent perpendicular to the seam, at the junction of PE and canvas.	Warp and weft 650N minimum. Elongation 15% to 25%. For plain PE fabric test: 5 test pieces in warp direction, 5 test pieces in weft. On seams, the test is applied to 50mm width on the sample, as described in ISO 13935-1
Tear resistance (N) ISO4674-1 (method B)	Warp 100N minimum, weft 100N minimum.
Resistance to micro-organisms Insensitive to micro-organisms.	Not to be tested.
UV resistance as percentage of tensile strength-loss under ISO1421, after 1500 hours UV under ASTM G53/94 (UVB 313nm peak)	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product 5 test pieces in weft direction, 5 test pieces in warp.
Colour	White if made with standard plastic sheeting or any other colour except military green, green, brown or various kaki colours

9.2.4. Specifications for the groundsheet PE fabric- Frame Tent

Specifications of standard IFRC/ICRC plastic sheeting can also apply. In this case the original lab report from the PE factory will be accepted if still valid.

The same type of PE as per the one used for the mud flaps can be used for the ground sheet. In this case the criteria below do not apply.

Composition	Woven polyethylene fabric, coated on both sides with low-density polyethylene.
Specific weight (g/m²) ISO3801	180gr/m ² (± 5%)
Tensile strength (N) ISO1421	Warp 300N minimum, weft 300N minimum.
Tear resistance (N) ISO4674-1 (method B)	Warp 60N minimum, weft 60N minimum.
Resistance to micro-organisms Insensitive to micro-organisms. Not to be tested.	Not to be tested
UV resistance as percentage of tensile strength- loss under ISO1421 after 300 hours UV under ASTM G53/94 (UVB 313nm peak)	30% maximum strength-loss on minimum required value and 50% maximum strength-loss on original value of the same product. 5 test pieces in weft direction, 5 test pieces in warp
Colour	White if made with standard plastic sheeting or any other colour except military-green. green, brown and various kaki colours.

9.2.5. Specifications for the mosquito net, inner-tent doors and windows- Frame Tent

Material ISO1833, colour	Polyester 100%, or PE 100%, white
Fabrication ISO8388 Warp knitted	
Denier	75/100 for the polyester 100 to 150 for the PE
Filament	Multi-filament 36 or higher for the polyester Monofilament for the PE
Mesh size	25 holes/cm ² (156 holes/inch ²)
Weight ISO3801 M inimum 40 g/m² for polyester	Minimum 47 g/m ² for PE
Shrinkage ISO5077	5% maximum
Bursting strength ISO13938 2	50 kPa minimum for polyester 320 kPa minimum for PE
Bursting strength after exposure to UV and moisturizing (climatic simulation)required value and 50% maximum strength.	30% maximum strength-loss on minimum Number of test pieces: 3 test pieces
Exposure in a climatic chamber under ISO 4892-2, type A, 180 hours, followed by bursting test under ISO13938	

9.2.6. Specifications for the mosquito net, inner tent doors and windows

Type and norms	Required minimum values
Material composition	Polyethylene, polypropylene or polyester ropes, Polyester straps, steel rings, elastic device
Tensile strength (N) ISO13934 on the samples with a complete guy point ensemble including all of the reinforcement pieces.	3000N minimum for the 6 side guy points (3 test pieces). 3000N minimum for the rear wall guy point (1 test piece). 1400N minimum for 2 other guy points (1 test piece). Elongation of the elastic device under 1000N: 50mm minimum, 100mm maximum.
Refer to note (below)	
UV resistance in percentage of tensile strength-loss after exposure in a climatic chamber under ISO4892-2, type A, 360 hours.	30% maximum strength-loss on minimum. required value and 50% maximum strength-loss on original value of the same product 1 test piece at 1400N, 1 test piece at 3000N.
Colour	Black ropes and straps, galvanized steel.

Notes for point no 2:

- Sample size: width 300mm x length 500mm
- Samples to be cut at the centre guy line for the 6 side points (500mm length sample). Sample to be cut at the ridge back end for the back wall guy point (500mm length sample). Sample to be cut on the top corner of the outer doors for the 2 other points.
- Samples to be folded in order to fit in the traction apparatus so that the entire width of the canvas is submitted to the traction when clamped in the jaw of the apparatus. Samples must include: a canvas section from the tent roof, canvas reinforcements, strap, ring, elastic device, buckle, runner and a significant part of the guy rope (the ring and the runner do not need to be included in the UV test).
- Traction must be applied between the tent's roof canvas and the guy rope.

9.2.7. Specifications for hammer

Type	Sledge hammer, 1kg head, with 30cm wooden handle.
In accordance with ISO 15601 and the specification listed below.	
Handle:	No chips, rough surfaces, holes or knots. Smooth surface. Strong dry flexible wood. Handle adjusted to head in order to protrude on other side of the head, and be blocked with a metal wedge; or have a conical shape (like a hoe). Moisture minimum 10% and maximum 15%, under ISO 3130
Pull apart test:	Clamp head in a vice jaw after two series of 25 vigorous blows from varying delivery angles. Apply traction of 500N while trying to pull out the handle; there should be no damage to the hammer's head or handle, and the handle should remain firmly attached to the head.

9.3. General points for finished product - frame tent

9.3.1. Performance

The final product must be able to withstand a 75km/h wind without any damage and remain securely attached to the ground without any loss of tension.

When closed, the tent must provide good protection against dust, wind, rain, snow, insects and small crawling fauna.

Minimum roof-load must be 300N/m² under ISO 8937 (snow load for camping tent). In combination with additional central 31 mm support pole included in optional winter package

The recommended final packed tent weight is 76kg

9.3.2. Seams and stitching

All seams that are subject to possible tension must be double lock stitched and waterproofed. Double lock stitching produce a strong, long-lasting, neat and professional looking seam.

The stitch count as well as UV and rot-proof sewing threads must be appropriate and suited to the fabric. Stitching must provide strong, waterproof seams with the same lifespan as the tent.

The seams must be oriented to facilitate the unimpeded runoff of rain: avoid creating water lines or water pockets. Wherever possible, the colour of the sewing thread should be compatible with the fabric colour.

9.3.3. Ropes, webbing bands, toggles, loops, reinforcement netting and all other accessories

All ropes and webbing bands must be heat cut. All ropes are knotted to the tent at the factory. All of the above-mentioned items must be rot-proof and UV-proof (to the same degree as the tent canvas). To avoid water penetration through capillarity action, no webbing or rope can be sewn using stitching that goes from the outside to the inside of the tent. Alternatively, they must be made of waterproof materials.

Outer-tent laces and loops can be made of the same canvas as the tent roof or walls, and inner-tent loops can be made of the same canvas to which they are sewn.

9.3.4. Zip fasteners

All the zip fasteners must resist 700N lateral traction as per ISO5912.

9.3.5. Eyelets

All metal eyelets must be rustproof and correctly placed, reinforced with a fabric patch and have a minimum inner diameter of 10mm.

9.3.6. Metal rings

All metal rings must be rustproof, galvanized and welded closed

9.3.7. Dimensional tolerance

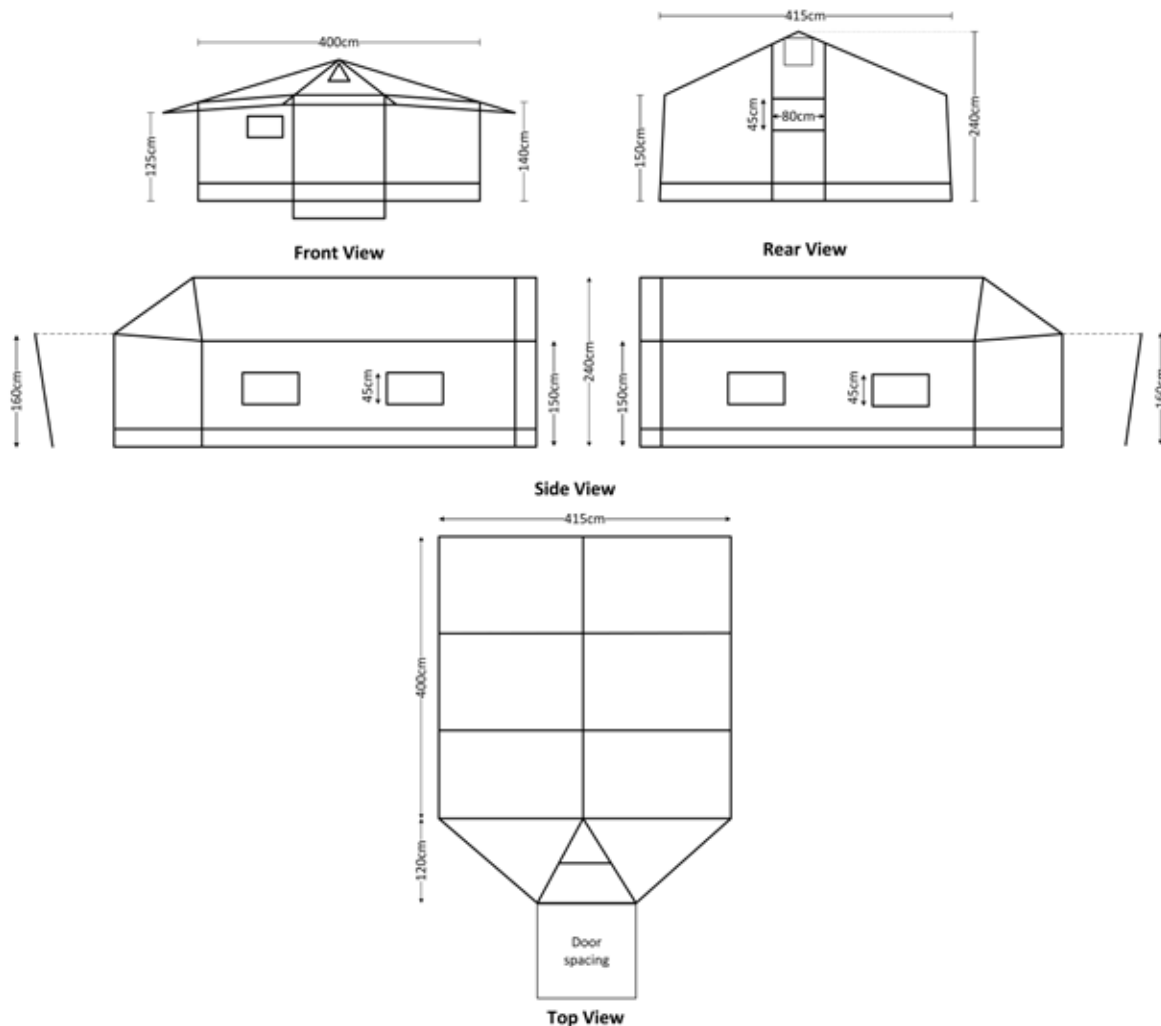
Unless otherwise specified, a maximum tolerance of +/- 3% is accepted on all dimensions.

9.3.8. Long-term storage

The tent must be treated and packed in such a way that the tent can be stored for a 5-year minimum under proper storage conditions without any damage or reduction in performance.

The tent must be manufactured and packed in clean and appropriate conditions to avoid contamination from soil, dust and other contaminants.

9.4. Characteristics of outer tent



9.4.1. General description of outer tent

The outer tent must be comprised of several cloth sections, forming the general shape of the tent. The seams must run from the ridge down to the edges of the roof, perpendicular to the ridge line.

The outer tent must be supported by a metal frame with 2 vertical poles supporting the ridge of the frame, 3 guy ropes on each side, 2 guy ropes at front end and 1 guy rope at the back. The attachment points of each guy rope must be reinforced.

9.4.2. Dimension/erecting system

Centre height:	2.40m
Width:	4.15m
Ridge length:	4.00m
Side wall height:	1.50m
Door height:	1.60m
Centre base length:	5.20m

The outer tent is placed on the frame and maintained in position by using strings, Velcro straps and webbing bands with hooks (§ 3/8).

9.4.3. Reinforcements

The 9 roof guy points are made of 50mm wide polyester straps, sewn to the fabric in extension of the roof. On the 9 guy points an additional layer of PVC coated canvas is added on the inside

The entire length of the ridge is reinforced on the inside with a 150mm strap using same fabric as the roof.



9.4.4. Attachment system (guy lines)

The outer tent must be anchored to the ground using 9 guy lines which are attached to 9 metal pegs. Each guy point on both sides presents a loop made of 50mm wide webbing. The length of the webbing allows, when folded in two, the creation of a 30mm minimum long loop, to be stitched to the tent with a strong Z sewing, 50mm minimum in length.

The webbing loops must be placed perpendicularly to the tent edge on the sides, at 30° angle in the corners, and in the alignment of the vestibule roof shape. 9 metal rings are attached to the loops by the means of an elastic device. The ropes pass through the metal rings. When tensioning, the ropes will be sliding through the metal rings. At the other end, the ropes have a fixed knotted loop to place over the peg.

The attachment points are made in such way they comply with resistance specified in chapter 1.7.

9.4.5. Side windows

The outer tent must have 6 windows. 5 must be fitted with mosquito netting and a rain flap running on both sides of the tent and one on the back side. 1 small window must be fitted with transparent PE fabric on the vestibule. The inside dimension of the large windows are 80cm wide and 45cm high and the top edge of the window is placed 30cm below the roof of the tent. The 5 window openings are reinforced either with strong reinforcement netting (large holes strong plastic net) or with standard netting and strips of 20mm polycotton webbing, that reinforce the window horizontally (1 webbing) and vertically (1 webbing). These webbings must be sewn to the edges of the tent opening and to the mosquito netting.

The window flap is 90cm wide x 55cm high. The flap is held by 25mm Velcro webbing which is placed along the length of the vertical sides and bottom and at a 25mm distance from the window opening.

Loops and plastic toggles or hooks are used to keep the flap rolled up when the window is opened.

9.4.6. Ventilation on top of the vestibules

The outer tent requires two ventilation openings in the front and the back with reinforcement netting and a rain flap. The front vent must be triangular and is placed on the top of the vestibule. The inside dimensions of the vent is 280mm wide and 250mm high. The vent flap should be distanced from the ventilation openings when open, making a ½ cone shape of 250mm in the middle.

The flap should be closed with a 25mm Velcro attached to the full width. The back ventilation opening is rectangular and placed on top of the wall, 300mm x 300mm.

The vent openings are reinforced either with strong reinforcement netting (large holes strong plastic net), or with standard netting and with two strips of 20mm cotton or polyester webbing that bisects the vent horizontally and vertically. These webbings are sewn to the edges of the vent opening and to the netting.



9.4.7. Outer tent doors

FRONT DOOR

- Size: 1.5m wide x 1.5m high
- Door flaps: 1.5m wide x 1.6m high
- Upper part 1.5m wide x 1.08m high, made of canvas.
- Lower part 1.5m wide x 0.52m high, made of woven PE fabric.

REAR DOOR

- Size: 1.0m wide x 2,1m high
- Door flaps: 1.0m wide x 2.1m high
- Upper part 1.0m wide x 1.58m high, made of canvas.
- Lower part 1.0m wide x 0.52m high, made of woven PE fabric.

The vestibule doors can be used as awnings. Rolled up, the door must be held up by 3 loops and 3 plastic toggles or hooks.

The doors can be closed by means of lacing/loop system. The loops are made of 4mm rope or canvas strips (7 loops and eyelets per door side). For each lace/loop system, a toggle or a hook is placed in order to attach the last loop. The lacing/loop system is protected by a double 50mm flap to prevent rain and draughts.

Each door must be designed so that one side closes from the inside and the other from the outside.

9.4.8. Side walls, vestibule wall, mud flaps

Total height 1.80m; i.e., a 1.50m vertical length plus a 0.3m overlay which rests on the ground.

The upper part (1 m) of the walls is made of polyester cotton fabric and the lower part (0.7m) of PE fabric.

The mud flaps must be equipped with 12 eyelets (2 on each side, 4 in the front and 4 in the rear), placed on a line reinforced with a full length 50mm webbing sewn to the mud flap at floor level, on the inside. Alternatively, plastic sheeting can be used instead of webbing bands; reinforcement bands are acceptable. Stitch length and thread to be appropriate for the materials to prevent the mud flap tearing off along the stitching.

The outer tent is attached to the frame and poles with 8 velcro straps from the roof pipes.

The mud flaps are hooked with 25mm large adjustable webbing band hooked to the base plates.

9.4.9. Chimney reinforcement

A chimney reinforcement with non perforated opening is placed at side wall, between the corner and the window. This is made of heat resistant fabric (minimum 900°C). The type of fabric that keeps the fibres not loose when cut.

The lower edge of the heat-resistant fabric must be 500mm above the ground, where the canvas joins the PE part (a band of canvas of 2 to 3cm is allowed between the PE and the fireproof material).

Inside dimensions: 250mm width x 600mm height.

The chimney flap outside is 350mm wide x 700mm high. The flap is stitched at the bottom 50mm under the lower edge of the chimney opening. The flap is held by 25mm Velcro webbing which is placed along the entire vertical sides and upper end at a 25mm distance from the chimney opening.

The tent fabric is cut away completely at the position of the chimney opening. The edges of the chimney opening are hemmed stitched to the inside.

9.4.10. Connection flap

To be made of same fabric as outer tent; must be designed to connect two tents together lengthways.

9.5. Make up of Inner tent with ground sheet - frame tent

9.5.1. General description

The inner tent is square in shape and is hanging inside the outer tent structure and is hooked to the frame. All dimensions are meant to allow a 10cm air gap between the outer tent and the inner tent.

At the ground sheet level it is hooked to the frame base plates with 6 elastic webbings and plastic hooks of 20mm width.

The inner tent has one chimney reinforcement, 5 windows, 2 doors and 2 vents.

The bath tub ground sheet (floor) is made of woven PE fabric sewn to the inner tent and extends up the sides of the wall to assure the inside remains waterproof. No stitchings allowed at the lower part of the groundsheet to assure 100% waterproofing.

The ridge of the inner tent has 3 equally divided holes reinforced with PVC fabric to allow protruding of the support poles to join the frame.

9.5.2. Inner tent dimensions

The inner tent, when hooked to the outer tent must have a centre height of 2.3m, a width of 3,95m, a wall height of 1.45m and a base length of 3.80m.

9.5.3. Inner doors

- The door opening is 1m wide and at 1.70m high from the floor (1.50m measured from the upper edge of the ground sheet).
- The door panel (1.0m wide) is placed in the centre of the front wall.
- The doors are made of the same material as the inner tent and close with polyester n°10 coil zip fasteners at the 2 vertical sides. The zip fasteners can be opened from the inside and outside.
- The doors have a 200mm PE flap at the bottom, made of same material as the ground sheet.
- Black UV stabilized ropes or canvas laces with plastic toggles or hooks are used to keep the door opened when rolled up.
- Mosquito nets (1.0m wide) are placed on the inside of the doors. The 2 vertical sides are closed with n°10 polyester coil zip fasteners. The bottom edge of the mosquito flap closes with one piece of 25mm Velcro along the entire width.

To facilitate the door closing:

- 2 webbing loops with eyelets are placed at the bottom of each door side aligned with the zips. They are used to attach the tent to the ground with pegs of 6mm x 270mm. The webbing loops are stitched into the seam where the PE join the fabric, and are 200mm long.

9.5.4. Inner tent suspension system

The inner tent is suspended from the frame with 24 metal galvanized 4mm wire hooks mounted on webbing loops of 50mm wide. The total length of the loops including the metal hook is 100mm.

The hooks are positioned as per below drawing : 6 at the ridge, 5 on each side wall pipe and 4 on each gable pipe

The side walls of the inner tent are hooked with plastic hooks mounted on webbing loops to the corresponding rings of the base plates of the frame.

These elastic webbing bands are stitched to the tent in the seam where the PE and fabric are joined

The inner tent has 26 loops of 20mm, made of canvas, for the attachment of the optional inner lining or the inner partition. The loops are placed in the inside of the inner tent at every place where the inner tent is attached to the frame, plus 2 loops at the bottom of the front door where the webbings for the ground attachment are placed (6 at the ridge, 5 at the top of each side wall, 3 at the bottom of each side wall, 2 at the base of the front door).

9.5.5. Inner tent ventilation system

The inner tent must have two triangular vents at each gable top made of mosquito net and reinforced with 20mm webbings. The triangle must be 900mm x 300mm (from the ridge to the top of each door). The ventilation system can be closed with a flap opening downwards, and sealed with 25mm Velcro on all sides.

9.5.6. Inner tent windows

The inner tent must have 2 doors and 5 windows, one on each side wall and one at the back wall and of same size and same reinforcement, corresponding to the outer tent windows. The flaps, made of same material as the inner tent, must be placed inside and opens downwards. It should close with 25mm Velcro on all sides and hang freely when open.

9.5.7. Accessories inside the inner tent

To hang light weight items, 2 pouches should hang above 2 windows, secured by hooks to the webbing at the ridge.

9.5.8. Ground sheet

The integrated ground sheet must be made of PE woven fabric. The seam that attaches the ground sheet to the sides of the inner tent should be 200mm above the floor. To avoid water infiltration no stitching seams are allowed in the groundsheet. All seams must be heat sealed and have a 25mm overlap.

9.5.9. Chimney reinforcement

A chimney reinforcement with non-perforated opening is placed at the side wall corresponding the chimney reinforcement of the outer fold. This is made of heat resistant fabric (minimum 900°C).

Inside dimensions: 250mm width x 800height.

The lower edge of the opening is 300mm above the ground.

The tent fabric to be cut away completely at the position of the chimney opening. The edges of the opening are hemmed stitched.

9.5.10. Inner partitions

One inner partition must be made of the same material as the inner tent. The partition must run from one side wall to the other in order to divide the inner tent in two equal parts. It should be made with 2 pieces of semi-partition. These partitions must be attached to the inner lining loops at the roof and the wall levels, and to the centre pole.

9.6. Frame, poles and accessories - Frame tent

9.6.1. Frame and poles

Frame sections

All frame parts must be constructed using 25 x 1.2mm thick galvanised or painted steel pipe. The male fittings of the cross pieces are to be minimum 8cm long

Each section should fit together with a male and female 80mm joint, made with a 160mm long inserted pipe point welded or crimped into one of the pipes (not to be made with press-reduced pipe diameter).

Support poles

- Two support central poles of 239cm each (size without U-bracket), with an outer diameter 25mm minimum galvanised or painted steel pipe, 1.2 mm minimum wall thickness. This pole should come with U-shape metal bracket of 30mm long.
- The base of each pole must have a metal or plastic base plate of 50mm diameter and protrude the inner tent at PVC reinforced positions on the ridge

9.6.2. Ropes/loops/guy runners

- Six ropes, black, UV treated, 3m long, 8mm diameter, tensile strength of 300kg minimum.
- Two vestibule ropes, black, UV treated, 3m long, 6mm diameter, tensile strength of 140kg minimum.
- One back gable rope, black, UV treated, 5m long, 8mm diameter, tensile strength of 300kg minimum
- All ropes must be passed through the tent rings during manufacture.
- All ropes must have a securely knotted loop at one end, to place over the peg.
- Hardwood or strong UV proof plastic guy runners, red colour, pre-mounted on the ropes.
- The grain of the wood runners must run lengthwise in the runner.
- Size of the runners: 90mm x 30mm x 12mm, holes must be the same diameter of the rope.
- The ropes must be threaded through the runners in the position the represents the maximum blocking position.

9.6.3. Pegs and accessories

Five 350mm pegs, made of angled iron 25mm x 25mm and 3mm thick, with a 50mm iron rod 6mm in diameter welded on top. At one end, both wings of the angled iron are cut at a 45° angle to form a pointed end. At the other end, both wings of the angled iron must be pressed together until they touch and the 50mm by 6mm rod welded to the top. The rod produces a 25mm prominence bent downwards slightly. The 5 pegs must have 2 notches on each wing side, but not directly opposite each other, to improve their grip in soft ground. The notches should be approximately 3mm in width with a depth 3mm maximum.

- Pegs are painted or galvanised.
- Six 300mm pegs including bend, made of iron rebar 10mm in diameter, with a “candy cane” shape hook on one end, or cross shaped; painted or galvanised.
- Sixteen 270mm pegs, made of iron bar 6mm in diameter, with a round or cross shaped head on one end, to avoid damaging the mud flap when pushed through the eyelets; painted or galvanised.
- One 1kg metal hammer with a 300mm wooden handle.
- One set-up instruction sheet in English plus step by step drawings or photos printed on durable fabric and stitched to the outside of the accessory bag, or printed on pole bag.

9.7. Packaging -Frame Tent

9.7.1. Standard packaging

One tent with all accessories must come packed in one bundle only. The inner tent and the outer tent are folded so that the groundsheet protects the tent and accessories from dirt and moisture.

The bundle is made of woven PE fabric described in 1.3.

Total length is maximum 2250mm, approximate diameter is 300mm.

The outer bag is made of the same material as the one used for the mud flaps of the tent. Total length must not exceed 2250mm maximum, approximate diameter should be 400mm in order to allow some flexibility to facilitate re-packing.

The metal poles and pegs must be packed in 2 separate bags to avoid damaging other items inside the bundle. Both bags must be made of the same material as the outer bag. The bags must have a closure system that ensures the accessories remain in their bags during transport and handling. Particular care must be taken when packing the pegs to ensure they will not pierce the bag.

The bundle is closed with 2 webbing straps, each strap with a self-locking buckle that will not slide during transport. Each strap has 2 handles, (PE or polyester). These straps are not sewn to the bundle.
















The buyer’s markings are printed on the outside in indelible ink.

The international standard warning sign “protect from water” is printed on the outside of the package.

9.7.2. Pallets

It is recommended to use stackable metal frame pallets. Such pallets help avoid multiple manual handlings of the bags, prevent the bags from being torn, allow fast loading and assures adequate ventilation between the tents while stored in hot and humid climates, which is requirement for long duration storage.

Packing list

	(A)	2 X CENTRALE POLE - (239 cm)
	(B)	2 X AWNING POLE - (156 cm)
	(C)	6 X FOOT POLE - (139 cm)
	(D)	12 X ROOF POLE - (179 cm)
	(E)	1 X DOOR RIDGE - (180 cm)
	(G)	4 X VESTIBULE POLE - (135 cm)
	(H)	1 X TOP FRONT CROSS PIECE V
	(I)	2 X SIDE FRONT CROSS PIECE IV
	(K)	3 X CROSS PIECE IV
	(L)	3 X CROSS PIECE III
	(M)	2 X HALF INNER SEPARATION
	(X)	5 X "V" PEG - (35 cm)
	(Y)	6 X NAIL PEG - (30 cm)
	(Z)	16 X NAIL PEG - (27 cm)
		1 X HAMMER

10 Tent - winterized liner kit - frame tent

Based on the UNHCR standard tent winter kit, but with only the following components:

1. Winter liner with partition
2. Insulating flooring

Must be packed in a bag showing the IOM logo, the manufacturer name, batch number and date.

Winterized liner kit for frame tent	
Item code	1100000031
Unit weight	N/a

10.1 Winterization Liner

10.1.1. General Information

The inner liner for the standard Family Tent is recommended to improve insulation against the cold. This inner liner is designed to fit together to the attachment points of the liner and the heater flue pipe protection material. This inner liner includes an inner partition.

10.1.2. Material

Material weight: 130 g/m² ±10% finished state (not including fire retardant weight).

Tensile strength: ISO13934-1, warp and weft 300N minimum.

Tear strength: ISO 9073-4, warp and weft 200N minimum.

Colour: Yellow, beige, cream or sand.

Fire retardant: CPAI84 chapter 6.

User's health safety: The materials and additives used in the kit should be non-toxic for humans, free from asbestos and other toxic products, according to the EC regulations.

10.1.3. Design

The inner liner must be made from one fold of breathable, rot proof and fire retardant canvas. To be hung inside the inner tent, to cover the roof and the four walls down to ground level.

10.1.4. Dimension/size

All dimensions must follow the inner dimensions of the standard Family Tent.

Centre height: 2.50m

Width: 3.80m

Wall height: 1.65m

Base length: 3.80m

10.1.5. Packaging

Tent must be packed in a strong waterproof plastic bag, if supplied individually. If supplied with the winter kit, no individual package is required

The product name must be indicated on the outer package with indelible marking.

10.1.6. Features

- The inner liner has 24 pairs of canvas strings to attach to the original loops of the inner tent.
- Both ends are made in a curtain shape that opens in the middle with a 600mm-overlap.
- Inside the inner liner, in the center, five loops allow attaching the inner partition.
- One inner partition is supplied with the inner liner, made with the same fire retardant canvas. This partition is of the same design as the original partition of the tent.
- At the ridge, four openings of 150mm Velcro straps allow access to the three hooks and to the pocket of the tent. These are positioned at the level of the 2nd, 3rd, 6th and 7th ridge attachment points.

- The inner liner has 4 windows, reduced in size compared to the long windows of the tent, and with zipper seal. These windows are 300mm x 800mm, horizontally oriented, with 2 round corners at the top, the flaps opening downwards (one zipper per window runs on left, top and right sides). These windows allow access to the original windows of the tent, thus are placed in the centre of each section of the tent sides, in front of the actual inner tent windows.
- There are four pockets of 400mm x 300mm, one under each window, for storage of goods.
- At one end, the inner liner has a patch made of fire proof material of 450mm x 800mm, vertically oriented, lower edge positioned at 300mm above the ground.

10.2. Insulating Floor Mat

- The Insulating mat is use as a protection against the cold from the ground in the standard Family Tent, or in any other floor in cold situation.
- The insulating mat is open at one end to allow it to be filled with local material that may form a basic mattress.
- Normally 5 insulating mats are provided per tent. This item can be bulky for transporation

10.2.1. Material

First layer, plastic mat

- Plastic floor mat should be made in a tightly woven twill structure, double thickness (2/1, 3/1, 2/2, 3/2) virgin polypropylene (PP) multi-filament 500 deniers in warp and virgin polypropylene (PP) hollow tube in weft, not containing any filler.
- Tight woven, with minimum 1,000 tubes per meter length
- Fire retardant to CPAI84/5
- Weight: 500g/m² minimum
- Colour: any colour
- Quantity: 5 pieces per one unit of Family Tent

Second layer, aluminized canvas

Strong synthetic canvas with durable aluminium coating, soft and noiseless, fire retardant to CPAI84/5

Third layer fleece blanket

Refer to our standard synthetic blanket specifiacaation, medium thermal. Fire retardant to CPAI84/5

10.2.2. User health safety

The materials and additives used in the kit should be non-toxic for human, free from asbestos and other toxic products, according to the EC regulations.

10.2.3. Design

The insulating mat is an assembling of three layers:

- First layer, on the ground-side, a plastic mat, double weave.
- Second layer, an aluminized canvas, aluminium face upward.
- Third layer, on upper-side, a fleece blanket.

The assembling is done with a heavy-duty ribbon strongly stitched all around the mat. The second and third layer are also stitched together, lengthwise in the center, and crosswise in 3 lines equally spaced.

At one end, the mat is open on the whole width, to allow access in between the plastic mat and the aluminised canvas. This opening closes with a fold like a pillowcase.

A pair of strong laces is sewn to the mat at one end in the center, to secure the mat when rolled up for transport or storage.

10.2.4. Dimension/size

1.8m x 0.9m

10.2.5. Packaging

If supplied individually, the mat is rolled and wrapped in a protective outer sheet, such as a PP woven canvas, and strapped. The product name must be indicated on the outer package with indelible marking. If supplied within the Winter kit, no individual packing is required.

11 Warehouse



@ IOM 2016 (Photo: Bannon)

Tent, Warehouse Rubb hall, 10x24m

Item code	tbc
Unit weight	n/a
Unit volume	n/a

Length	24m
Width	10m
Height	Approximately from 3m on side to 6m at ridge
Materials	Steel structure and UV proof PVC coated canvas cover
Logo/branding	Banners that can be attached or printed directly on the canvas



12.1 Crowbar

Shelter Tool Crowbar /Wrecking Bar 18"	
Item code	1100000033
Unit weight	n/a
Unit volume	n/a

Type & dimensions: crowbar for general site work , 18" (45cm)

Description	18" (45cm). Hexagonal or octagonal section with 1/2" diameter (shortest section). Hooked on one end with a claw, and flat with a chisel end at the other.
Thickness	Protected against oxidation
Material	High carbon steel
Quality	The bar shall be manufactured from one piece of steel. Cutting ends of the bars may be rounded off. Overall Good finish without any imperfections like Cracks, Burrs, Pits, Scales e.t.c. and such other physical defects.
Strength testing	When set up in a leveraging position to remove a fixed bolt it is not possible to deform the bar with human strength.

12.2 Handsaw, for timber

Shelter Tool, Handsaw for timber	
Item code	1100000034
Unit weight	n/a
Unit volume	n/a

Type and dimensions	Carpenter handsaw, 400mm-450mm blade, lacquered, overall length 550mm +/-50mm
Blade thickness	1mm +/- 0.05mm, protected against oxidation
Blade protection	Protective cardboard, teeth protection with hard, plastic cover.
Seal type	Laminated carbon steel, hardened and tempered
Number of teeth	7 teeth per inch
Quality of make	Soft edges but no dents, cracks or broken teeth
Hardness Rockwell	45 HRC to 50 HRC for the whole blade, 48 HRC to 52 HRC at teeth level
Carbon content	0.47% to 0.55%
Manganese content	0.5% to 0.8%
Handle	Wooden dismountable handle, minimum 3 fixations, polished varnish hardwood, large 85mm x 35mm opening for hand comfort when wearing gloves. Optional 45/90° square. Moisture 10% minimum, 15% maximum.
Strength testing	With the blade is inserted into a 10mm wide slot to a depth equal to 1/3 the blade's length, but not exceeding 150 mm, a deflection of 90° is applied 25 times in each direction without breakage or permanent deformation of the blade.

12.3 Shovel

Shelter Tool, Shovel, round point, Y handle	
Item code	1100000035
Unit weight	n/a
Unit volume	n/a
Material	Pressed carbon-steel, hardened and tempered
Corrosion protection	Black or green paint
Quality	No excess metal in the eye, no dents, no cracks, soft edges
Hardness Rockwell	35 minimum to 48 maximum HRC
Carbon content	0.4% to 0.6%
Manganese content	0.5% to 1%
Silicone	0.37% maximum
Phosphorus and Sulphur	0.06% maximum
Dimensions	295mm x 225mm +/-15mm
Hole diameter	Front side 36mm, back side 40mm, +/-5%
Weight	1kg +/- 50g, without handle
Strength testing	<p>Using a fitted, standard hardwood handle, clamp the blade of the shovel near the handle in a horizontal position. Gradually apply a load of 45kg and maintain it for 2 minutes. This should not result in any damage to the blade, loosening of the handle, and no permanent deformation in excess of 25mm.</p> <p>Using 1cm of the end of the blade secured in a clamp, move the handle back and forth 30 degrees. There should be no permanent deformation greater than 25mm.</p> <p>With the shovel held in a digging position, hit a 40mm diameter piece of wood hard against it; the blade should not buckle or break.</p>
Handle	<p>There should be no chips, rough surfaces, cracks, holes or knots. The handle should be made of dry, strong and flexible wood and the surface should be smooth with a polished varnish finish.</p> <p>Moisture 10% minimum, 15% maximum.</p> <p>Total length 1070mm +/- 50mm (head included).</p> <p>The other end of the handle should be made in a Y-shape with the same quality of wood. The branches of the Y handle must be made of good-quality iron, securely fitted to the handle.</p>

12.4 Claw Hammer

Shelter Tool, Claw Hammer	
Item code	1100000036
Unit weight	n/a
Type	Carpenter hammer, head and handle, hammer head with flat and claw side
Material	High-carbon steel head, treated to achieve a martensitic structure, with dressed striking faces
Quality	Smooth surface and edges with no dents or cracks; no excess metal in the eye
Weight of hammer	Total weight 750g ±50g
Hardness Rockwell	50 HRC minimum to 58 HRC maximum on striking faces, 35 HRC maximum close to the eye
Handle:	No chips, rough surfaces, cracks, holes or knots. Smooth, polished varnish surface. Dry, strong, and flexible wood. Handle adapted to head so that it protrudes and can be blocked on other side with a metal wedge on the other side of the head. Moisture minimum 10%, maximum 15%.
Pull-apart test	ISO15601. After two series of 25 vigorous blows with a varying delivery angle, secure head in a clamp, apply a minimum traction of 50kg to pull the handle out. This should not damage the hammer head or the handle, and the handle should remain firmly attached to the head.

Bending test	ISO15601. For the claw hammer only, apply a load perpendicular to the axis of the handle and close to the end, so as to obtain a 125Nm torque, irrespective of the size of the hammer. Start the load at zero and increase gradually, without jerking. Hold the test load for at least 10s. This should not create any damage to the hammer head or handle.
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12.5 Hoe - with handle

Shelter Tool, Hoe, long handle, large	
Item code	1100000037
Unit weight	n/a

Material	Hot forged carbon steel, hardened and tempered, the hardened zone should reach halfway up the back of the blade
Corrosion protection	Black paint
Quality of make	No excess metal in the eye, no dent on the cutting edge, reinforced head with a rib from the eye to the middle of the blade length
Hardness Rockwell	35 HRC minimum to 48 HRC maximum in the hardened zone of the blade
Carbon content	0.5% to 0.8%
Manganese content	0.6% to 1.2%
Silicone	0.37% maximum
Phosphorus & Sulphur	0.06% maximum
Dimensions, full piece	180mm x 310 mm ±10mm including the eye
Hole diameter	High raised neck, front side 43 mm, back side 48 mm ±2mm
Weight	1.250kg ±150g, without handle, depending on the type of hoe
Strength testing	Using a fitted, standard hardwood handle, clamp the blade of the shovel near the handle in a horizontal position. Gradually apply a load of 45kg and maintain it for 2 minutes. This should not result in any damage to the blade, loosening of the handle, and no permanent deformation in excess of 25mm. Using 1cm of the end of the blade secured in a clamp, move the handle back and forth 30 degrees. There should be no permanent deformation greater than 25mm. With the hoe held in a digging position, hit a 40mm diameter piece of wood hard against it; the blade should not buckle or break.
Handle	There should be no chips, rough surfaces, cracks, holes or knots. The handle should be made of dry, strong and flexible wood and the surface should be smooth with a polished varnish finish. Moisture 10% minimum, 15% maximum. Total length 1100mm to 1150mm

12.6 Shears

Shelter Tool, Shears for metal sheet	
Item code	1100000038
Unit weight	n/a
Unit volume	n/a

Type	Tin snips for intensive use and easy maintenance
Make	Each blade and handle forged as one piece, symmetrical blades
Capacity	0.8mm semi-hard iron sheet
Material	Hot forged carbon steel, hardened and tempered, special treatment applied to the blade edge
Rust protection	Protected against corrosion with special paint
Dimensions	Overall length 250mm to 260mm
Maintenance	Dismountable in 2 parts only, with bolt and self-locking nut

13.1. Roofing Nail

Shelter Fixings, Nail for roof Sheets	
Material group	NFI-TOI
Item code	1100000039
Unit weight	n/a
Unit volume	n/a

Type	Iron nails, made of polished low-carbon steel, cold processed, not heat treated except for galvanization.
Shape	Spiral rolled or twisted shank, sealed umbrella type spring-head.
Corrosion treatment	Hot-dip galvanized at 300g/m ² ±10%
Tensile strength	650N/mm ²
Accessories	attached rubber washer with each nail
Dimensions (±5%)	Shank: 75mm x 3.6mm, head diameter 20mm minimum
Rubber washer	Diameter 26mm x thickness 2mm
Packing	Packed in a strong, thick PE 130g/m ² plastic bag, which can be zipped or locked
Quantity	Net weight: 0.5kg

13.2 Wire Nail

Shelter Fixings, Nail for wood, large	
Material group	NFI-TOI
Item code	1100000040
Unit weight	n/a
Unit volume	n/a

Type	Iron nails, made of polished low-carbon steel, cold processed, not heat treated except for galvanization
Rust protection	hot dip galvanized at 300g/m ² ±10%
Tensile strength	650N/mm ²
Shape	Flat, smooth, circular head; plain, round shank and diamond point
Dimensions (±5%)	Shank: 75mm x 3.6mm, head diameter: 7.7mm
Packing	Packed in strong, thick PE 130g/m ² plastic bag, which can be zipped or locked
Quantity	Net weight: 0.5kg

13.3 Nail, iron, for wood, small

Shelter Fixings, Nail for wood, Small	
Material group	NFI-TOI
Item code	1100000041
Unit weight	n/a
Unit volume	n/a

Type	iron nails, made of polished low carbon steel, cold processed, not heat treated except for galvanisation
Rust protection	hot dip galvanised at 300g/m ² +/-10%
Tensile strength	minimum 650N/mm ²
Shape	flat smooth circular head, plain round shank and diamond point.
Dimensions (±5%)	length x diameter: 40x2.2mm, head diameter: 5mm to 5.5mm
Packing	packed in strong thick PE 130g/m ² plastic bag, which can be zipped or locked
Quantity	Net weight: 0.5kg

13.4 Rope

Rope, polypropylene, black, 10mm twisted

Item code	1100000042
Unit weight	n/a
Unit volume	n/a

Ropes can be made from various types of material, properties of some of the most common materials are summarised below.

Properties of the most common types of rope (Reprinted (after MSF) on p44 of Plastic sheeting: A guide to the specification and use of plastic sheeting in humanitarian relief" http://plastic-sheeting.org/ref/Plastic_Sheeting_2007.pdf)

	Natural fibre	Polypropylene	Nylon / polyester
Strength	-	+	++
UV resistance	+++	-	+
Elasticity	+	++	++++
Wear resistance	+	+	++
Resistance to rot	-	++++	++++
Cost	Cheap	Average	Expensive

13.4.1. Polypropylene Rope

Rope, polypropylene, black, 10mm twisted

Item code	1100000053
Unit weight	n/a
Unit volume	n/a

Below is the specification of rope used with plastic sheet as part of IOM prepositioned kits.

Diameter	10mm ± 0.5mm
Length	30m
Weight	1.9kg
Number of strands	3 minimum
Type	Twisted
Material	Polypropylene, no recycled fibres, UV stabilized
Colour	Black
Tensile strength	250kg

13.5 Tie wire

Tie Wire galvanized	
Item code	1100000043
Unit weight	n/a
Unit volume	n/a

Material	Low carbon steel, hot dip galvanised 40g/m ² minimum, binding /tie wire.
Quantity	25m roll
Dimension	Diameter 1.5mm ±5%
Tensile strength	340 N/mm ² to 500N/mm ²

14

Tent: Multi-purpose

Multi-purpose
Tent



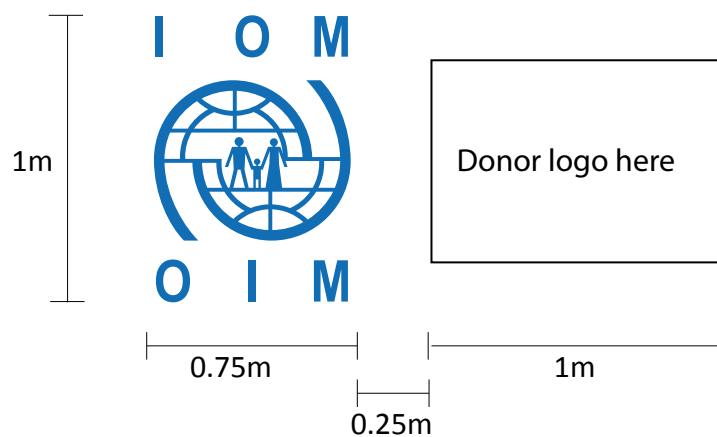
Tent, Multi-purpose, 45m ³	
Item code	1100000064
Unit weight	194kg
Unit volume	0.68m ³

Below is the specification of rope used with plastic sheet as part of IOM prepositioned kits.

14.1 Specifics to IOM

Logo:

IOM logo to be placed on both sides of the tent or as agreed by the mission. In colour, CMYK values: C100 M81 Y11 K1, or black.



14.2 General Information

Standard tent for emergency field hospital, health center, storage, etc.

Can be attached one to another to make a longer structure.

The tent can be delivered without options or with the following:

- A bathtub ground sheet to cover the complete surface of the tent.
- An inner tent, with its own bathtub ground sheet, to increase the protection from heat, cold, wind, dust, insects, etc.
- A set of 5 partitions to create separate areas and closed cabins inside the inner tent.
- A shade net for hot climate to place over the tent (includes a specific frame), for an increased protection from heat.

This type of tent is especially designed for its resistance to wind, rain, micro-organisms. The polyester/cotton canvas combines strength, durability, waterproof, and breathing capacities.

Expected life span is 1 year in a tropical environment.

Disinfection: Chlorine will damage the canvas (0.2% concentration is a maximum advisable).

Setting up requires 8 persons, and take 2 hours (instructions included). Avoid setting it up under trees as this will lead to canvas rotting. Use all ground fixings to ensure the maximum wind resistance.

Selection of types and manufacturers is to be handled by HQ technical and purchasing departments. Full specifications can be obtained at your HQ. The specifications below defines the minimum quality for the main material of the tent. Adherence to these specifications is a good indication for pre-selecting interested manufacturers.

14.3 Specifications

14.3.1 Make up

- Ridge frame tent with sloped sides.
- Outer tent dimension: 7,5 m long by 6 m width. Ridge height 3m. Side height 2.1m
- Inner tent dimension: 7,1 m long by 5,8 m width. Ridge height 2.9m. Side height 2,0 m
- Four doors: 1 on each end with fast opening/closing system, and 1 on each side.
- Full width opening possible on both ends.
- 3 high ventilation windows on each side, with sun-visors/shutters, grill, and mosquito netting.
- 1 high ventilation window on each gable with shutter, canopy/sun-visor, and mosquito netting.
- Velcro strips on both sides for logo attachment. 2 Electric cable passage at each gable (top of side wall).
- 58 elastic tighteners and 10 storm guy ropes.
- Aluminium frame with 40x2mm pipes (same length) and steel connectors (same angle).
- Packed in 1 bundle with 8 carrying handles, detachable in two parts, frame bag with 6 carrying handles.
- Special stackable pallets for 3 tents

14.3.2 Specifications for the outer tent canvas

Composition ISO 1833	Polyester/Cotton blended fibres yarns. Cotton: 40%(±10), polyester: 60%(±10) Polyester: 50% to 70%, balance cotton
Specific weight (g/m²) ISO 3801	440 g/m ² ±10% in finished state for the roof 320 g/m ² ±10% in finished state for the walls
Colour	Natural white, not dyed

Breatheability	Minimum 2000g/m ² /24h
Tensile strength (N) - ISO 13934-1	Warp and weft 1200N minimum
Tear resistance, started (N) – ISO 9073-4	Warp and weft 60N minimum.
Water-penetration resistance ISO 3811 Test pieces of plain canvas.	45hPa minimum for the roof, with increasing speed at 100mm per minute. 30hPa minimum for the walls, with increasing speed at 100mm per minute.
Water penetration resistance ISO 3811 Test pieces with seams.	12hPa minimum, with increasing speed at 100mm per minute. Pieces of canvas with seam in the middle, to be immers in water for 12h before testing.
Dimensional variation when soaked in water ISO 7771	Maximum 2%
Resistance to micro-organisms on tensile strength under ISO 13934-1 after BS6085 (soil burial - 28 days). To apply on 10 test pieces of plain canvas and 10 test pieces with seams.	Maximum 30% of strength loss on minimum required value and maximum 50% strength loss on original value of the same product. For each type of test: 5 test pieces in warp 5 test pieces in weft.
Efficiency of water-repellent treatments after soaking in water. Same test as point 7 on samples soaked in water in point 9.	45hPa minimum, with increasing speed at 100mm per minute.
Efficiency of fungicides product after soaking in water. Same test as point 10 on samples soaked in water in point 9.	Maximum 30% of strength loss on minimum required value and maximum 50% strength loss on original value. of the same product. For each type of test: 5 test pieces in warp 5 test pieces in weft
13. Tensile strength after exposure to UV and moisturizing (climatic simulation). Exposure in a climatic chamber under ISO4892-2, type A, 360hours, followed by tensile test under ISO13934-1.	Maximum 30% of strength loss on minimum required value and maximum 50% strength loss on original value of the same product. For each type of test: 5 test pieces in warp and 5 test pieces in weft

14.3.3 Specifications for the PVC coated fabric for the mud flaps

Composition	Polyester 1100 dtex, PVC coated 2 sides.
Number of yarns per cm	chain and weft: 7 x 7 min.
Specific weight (g/m²) ISO 3801	540 g/m ² ±10%.
Tensile strength ISO 1421	Warp 2000N minimum Weft 2000N minimum Elongation 15% to 30%
Bursting strength ISO 3303-B (10cm²)	2500Kpa
Tear resistance - ISO 4674-1 (method B)	Warp 300N minimum Weft 100N minimum

15 Plastic Bucket with Lid



Bucket with
Lid

Item code | tbc

Material	Plastic
Size	20L with removable tight fitting lid Height 320 mm, Top Diameter 300mm Base Diameter 270mm
Colour	White
Weight	900g
Handle	Wire handle with plastic grip
Packing	15 pieces packed in Bale or Box and 15 lids packed separately
Logo	IOM + donor logo (if required)



Item code	tbc
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Material	100% Durable Cotton, thick, not transparent Edges should be non-fray.
Size	1m x 3m
Colour	Assorted colours. No images, pictures, words or messages. Designs only
Weight	400g/piece
Packing	Each bale should have 50 pieces and labelled: No. of Pieces (50) Weight (17kg) & Volume (0.05) Bale Dimensions : L60 x W45 x H20 (cm) or Each bale should have 200 pieces and labelled: No. of Pieces (200) Weight (88.4kg) & Volume (0.144) Bale Dimensions : L120 x W40 x H30 (cm) Bales should be tightly packed with packing strips
Logo	If possible to print: IOM + donor logo (if required) on bales

17 Solar Lamp



Item code tbc

Charge Time	<8 hours
Hours of Light/Charge	6+ hours
Output	3W
Solar Panel	0.6W
Rechargeable Batteries	3 x AA 600mAh Ni-MH (replaceable)
Warranty	1 year
Luminance	40+ lumens
Number of LEDs	12
Dimensions	11cm diameter x 2.5cm high
Dimensions in box	11.5cm x 11.5cm x 4cm
Weight	220g gross, 240g net in box
IP rating	IP44 (Protection against splashed water from all directions, and solid foreign bodies with $\varnothing > 1\text{mm}$.)
Information Package	Each individual solar lamp box should contain information leaflet (how to use) in English and graphics
Hanging Wires	Should include in box
Logo	Sticker with IOM logo + donor logo on each Solar Lamp

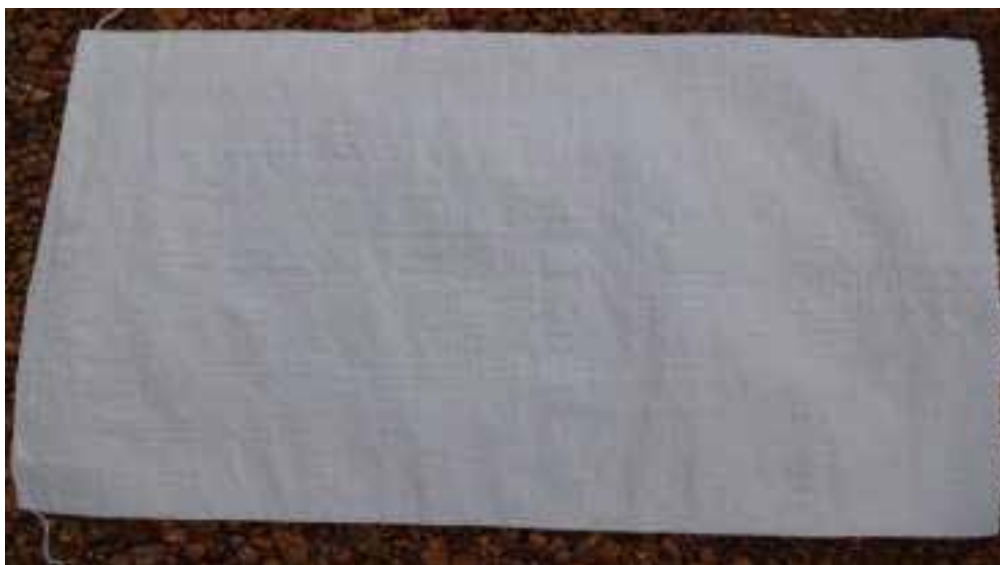
18 Nylon Rope



Item code | tbc

Material	Good quality nylon
Thickness	6.5mm- 7.0mm
Length	30m each roll
Weight	700g each roll
Packing	Individual rolls should be packed in bales and labeled: Size of bag, No. of roll (1 bale should = 70 rolls) Weight
Colour	Any, preferably white
Logo	If possible to print: IOM + donor logo (if required) on bales

19 Sandbag



Item code	tbc
Material	Polypropylene Sandbag
Weaving	Thick Weaving
Size	16" x 30" (41cm x 76cm)
Packing	Each bale should be labelled: Weight Volume Quantity 1000 pieces per bale
Colour	White
Logo	If possible to print: IOM + donor logo (if required) on bales



Item code	tbc
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Material	Teak Wood, from plantation
Length	4m, straight
Thickness	4" diameter minimum at bottom and 2.75" diameter minimum at theTop
Quality	Sturdy, straight, No signs of rot
Packing	Loose
Colour	Not applicable
Logo	Not applicable

21 Bamboo



@ IOM 2016 (Photo: Bannon)

Item code | tbc

Length	3m
Thickness	1" diameter minimum
Quality	No signs of rot
Packing	10 bamboo pieces in one bundle, firmly bundled with recycled material
Colour	Not applicable
Logo	Not applicable



Item code | tbc

Material	Recycled material from used tyres
Length	1m for each bundle minimum
Bundle Description	Each bundle has 10 strips and each strip has 10 strings Each Strip has minimum 0.8" (2cm) wide
Labelling	Each bale should be labelled: Weight Volume Quantity 100 Bundles
Packing	100 bundles/bale
Colour	Black
Logo	Not Applicable

23 Fishing Kit and Twine



Item code | tbc

Material of Fishing Hooks	Stainless Steel
Size & Length of Fishing	Size No. 9, 4cm long with ring type at the top to tie twine
Hooks	100 pieces per box
Fishing Hooks Packing	Size No. 210D/15, white colour, weight 500g each



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