PALESTINE
SHELTER CLUSTER
Coordinating Humanitarian Shelter and Settlements

WINTERIZATION RECOMMENDATIONS 24/25

Overview

This document outlines recommendations for winterization support as part of the Shelter Cluster's efforts to mitigate the risk of humanitarian suffering during the winter months. The response requires coordinated efforts from partners and timely implementation to provide Winter NFIs or Shelter assistance.

Although Gaza does not have an extreme winter climate, with minimum temperatures above 5 degrees Celsius during nights, it suffers from rainy days, high humidity and strong winds, and the lack of adequate shelter and energy to heat them presents an additional challenge to all the multi-sectoral difficulties faced by families.

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Average high °C	27.9	24.4	20.2	18.0	19.1	20.8	23.2	26.5
Average low °C	23.4	19.8	15.6	13.3	13.7	14.9	17.0	20.7
Record low °C	19.0	13.0	8.0	6.0	6.0	8.0	12.0	14.0
Average precipitation mm	21.22	62.73	115.36	137.69	98.93	56.75	28.93	14.95
Average relative humidity (%)	61.1	55.71	57.75	62.18	61.48	61.93	61.21	59.93

The conflict has prevented essential preparation for the winter, leading to an almost complete lack of essential building materials, NFIs and energy for cooking and heating. Shelters continue to deteriorate in the local climate, offering less and less physical protection, and requiring more and more upgrading as a result. The population suffers repeated displacement with limited capacity to transport their goods and NFIs and making it difficult to assess needs and set priorities.

Given the current number of displaced persons and growing humanitarian needs, increased efforts are needed to enhance the response, prioritizing vulnerable people without proper shelter (Collective Centers and spontaneous makeshift settlements). Special attention should be given to women, children, and individuals with specific needs. The winterization programs should complement other Shelter Cluster responses.

Timeline

Winterization assistance must be received in a timely manner when it is needed most. Although the various stages of planning, procurement, and distribution are generally arduous and time-consuming, the current situation in Gaza makes these timelines even more unpredictable. Logistical restrictions and uncertainties regarding supply and distribution lines necessitate advancing the procurement processes to ensure timely delivery[1]. Cluster partners must complete their beneficiary's selection and procurement processes well in advance to begin distribution before mid-October.

Modality of Assistance

At the time of writing these recommendations, market distortions, lack of supplies and difficulty in accessing cash make in-kind distributions advisable over Cash and Voucher Assistance. However, in-kind distribution also has its limitations due to import restrictions for certain items, lack of storage capacity, and difficulties in humanitarian distribution due to fuel shortages. It is advisable to make a specific analysis before deciding on the most appropriate assistance modality and the evolution of markets and liquidity in Gaza needs to be closely monitored. Whatever assistance modality is chosen, the outcome of the activity should be to cover the identified winter needs and cash distribution cannot be considered an outcome.

[1] *At the moment, there is no reliable storage capacity in Gaza, making it unfeasible to preposition materials. Organizations need to factor logistical challenges into their plans and be flexible to adapt storage and distribution to conditions at the time of assistance.*

AAP

The different options and modalities of assistance should be discussed with the affected people and adapted, to the extent possible, to their cultural and social preferences. This is especially relevant for items such as the type of clothing, the source of energy for heating, or sleeping items.

Targeting

Given the large number of people affected, both in total number and as a percentage of the total population, it is essential to establish prioritization criteria.

Shelter vulnerability- based on current living conditions of the affected people.

Shelter typology

1. No shelter, sleeping outside.
2. Makeshift[2] shelter, substandard tents[3].
3. Humanitarian tents.
4. Damaged/substandard houses
5. Collective Centers

Shelter condition (see Annex 1)

1. Insulation
2. Ventilation
3. Heating

Individual or household vulnerability- based on protection criteria and resilience capacity.

1. Persons with medical conditions and chronic illness
2. Persons with disability or injury
6. Families with children
7. Older persons (60+)
8. Women and girls at risk
3. Women head of household
9. People with socio-economic hardship

Geographical prioritization

The climate in Gaza is not very different from one area to another. However, there are localities that deserve special attention:

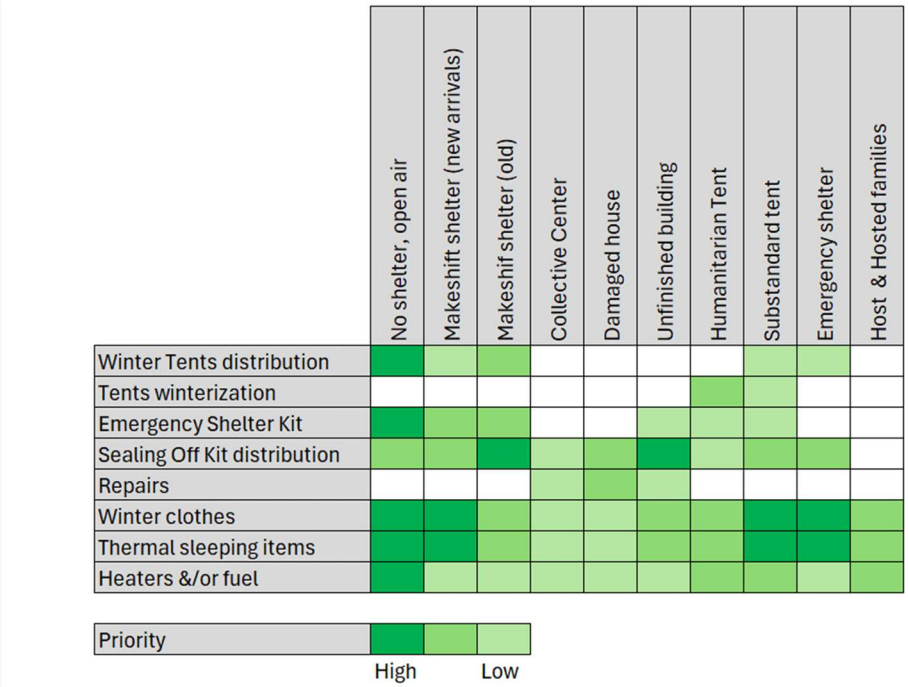
- Due to the degree of destruction of housing and infrastructure.
- Areas with the highest concentration of displaced people living in makeshift shelters or tents unsuitable for winter.
- Areas with low depression (susceptible to flooding) or close to sewage pumping stations, and stormwater lagoons.
- Coastal front and more windswept areas

[2] ***Makeshift*** *is a temporary structure built using available materials found in the immediate environment without technical or financial support from humanitarian organizations, constructed spontaneously in response to immediate need and lack the durability and standards required for long-term habitation.*

[3] *We refer to* ***tents*** *as the combination of a structural frame and a fabric cover designed to be quickly set up in a specific way. The fabric is cut and sewn to fit the structure. We differentiate here between those that meet humanitarian standards of habitability, protection, and dignity, and the substandard ones that are not designed for prolonged habitation but can provide some immediate protection (see SC Palestine note Tents. Minimum Standards)*

Activities

We present the winterisation activities we deem most appropriate, along with their prioritisation according to the relevant circumstances. However, it is essential that these activities be selected based on a thorough needs analysis and adapted to the specific context. Relevant technical specifications for some of the items can be found in Annex 2



- **Winter Tents distribution:** It is recommended that the distribution of tents during the winter period be accompanied by winterization elements such as an inner layer of fabric, a hole and an exhaust pipe for the stove, etc. Additionally recommended, insulated floor and roof and install them in a way that doors are away from the prevailing wind.

- **Tents winterization:** Summer tents can be adapted for winter use. If the outer layer is not waterproof (eg. cotton), it should be replaced with a waterproof material, preserving the original layer for spring. The outer layer should be repositioned to reduce the ventilation air gap, and the doors should be oriented away from the prevailing wind. Additionally, an insulating ground layer can be added. Drainage should be set up around the tent, and the waterproof ground cover should be repositioned to prevent rainwater runoff from entering.

- **Emergency Shelter Kits:** Distribution of kits containing the necessary elements to build an emergency shelter, from structural elements to vertical and horizontal protections. Especially suitable for homes that are outdoors or live in makeshift or other emergency shelters that do not meet minimum emergency standards and are not easily upgradable. In winter they must protect against wind, rain and ground moisture and be supplemented with the necessary winter NFIs

- **Makeshift shelter upgrading and tools distribution:** This activity involves the distribution of SOKs (Sealing Off Kits) and tool kits[4] to adapt makeshift shelters for winter. Tarpaulins and ropes enhance waterproofing and wind resistance. They can also be used to insulate the ground and prevent water infiltration. The tools should be used to create drainage systems. Drainage should be carried out collaboratively and in agreement with neighboring shelters to establish a network that channels water to an appropriate location, avoiding redirecting the problem to other shelters. If fuel heaters are used inside, chimneys must be installed to prevent fires and carbon monoxide poisoning.

- **Unfinished buildings and non-housing stock upgrading:** When dealing with spaces that are not optimal for residence (e.g., without walls, high ceilings, concrete floors, humidity, and drafts), smaller internal

[4] *Some partners have reported restrictions on bringing tool kits into Gaza. Check the situation and content with the cluster in advance.*

spaces/volumes should be created with a closed thermal envelope for spending the nights (a secure space within a larger habitable area). These spaces can be constructed using tarpaulins and ropes included in the SOK to create walls, and carpets for the floor. In industrial buildings with very high ceilings, it may be necessary to create an "interior ceiling" with tarpaulins to reduce the volume to be heated.

- **Repairs:** When possible, repairing existing houses is the most effective approach, as it helps restore a previously existing thermal envelope. Should be considered winterization activities preparing a space for spending the night (safe space), as nighttime temperatures are typically the lowest. It includes non-structural minimal upgrades such as sealing gaps in doors and windows, cracks in walls and roofs, restoration of services etc.

- **Winter NFI distribution**

    - **Winter clothes.** Distribution of warm clothes and underwear. The objective of this activity is to provide beneficiaries with suitable garments to protect them from adverse weather conditions. Therefore, it should address identified unmet needs and avoid the distribution of unnecessary or inappropriate items (incorrect sizes, garments unsuitable for the climate they are intended for, duplicate items, etc.) Due to the nature of the activity, blanket distributions are not advisable. Items in the list are not to be considered (procured, distributed and reported) as a kit. The recommended list encompasses winter jackets and shoes, thick socks, woolen hats, underwear… The specificity of this activity regarding sizes, gender, and personal preferences suggests considering the feasibility of conducting it preferably via cash or vouchers when possible.

    - **Thermal sleeping items**: Provide suitable sleeping items adapted to the needs. It can include distribution of multi-purpose ***thermal mats*** that can be used in tents and in other sleeping environments, ***sleeping bags***, for indoor use, for temperate climate, ***blankets***, medium thermal…

- **Heaters and fuel[5]:** Only recommended in very specific cases of households with very vulnerable individuals in poorly isolated shelters, especially those in tents and makeshift shelters. The distribution of stoves/heaters must be accompanied by pipe sets, insulating plate and floor protection, along with IEC materials to prevent fires. Stoves/heaters must be suitable for the fuel that is accessible in the context. Traditionally, gas cylinder heaters and gasoline* ones were preferred. However, the lack of energy supplies has led to the use of wood as fuel. Local manufacture of clay stoves may be considered.

[5] The risk of fires increases during the winter months due to multiple factors. More activities are carried out inside the shelter, including cooking; electric or fuel heaters are used; more clothing and blankets are utilized, etc. It is essential to adhere to the technical specifications of the products used and to provide IEC materials for their correct usage and fire prevention. Fire risk assessments should be carried out and appropriate prevention and mitigation measures should be taken.

Annex 1-Shelter Condition. Insulation ventilation and Heating

In addition to the housing type, we must assess its current condition, paying special attention to its waterproofing and insulating properties, its ventilation, and its ability to heat the space. Below are some parameters to consider. We have differentiated between shelters made with lightweight and temporary materials (tents and makeshift shelters) and those constructed with durable materials, although their conditions may not be optimal (housing and non-housing stock, damaged buildings, collective sites).

Tents & Makeshift shelters				
	--	Poor	Fair	Good
insulation	Floor	The floor lacks thermal or waterproof protection. It consists of compacted soil or sand. Carpets or mats may be used, but they do not cover the entire surface.	The floor has some type of continuous protection that prevents water infiltration (tarpaulin or plastic sheets in good condition). However, it does not have a continuous insulating layer. Carpets or mats may be used, but they do not cover the entire surface.	A continuous waterproof layer covers the entire surface and is raised at the perimeter to prevent infiltration from runoff water. A continuous insulating material prevents thermal leaks (carpet, wood, etc.).
	Walls, doors & windows	The structure offers little resistance to wind or lacks a rigid framework. The enclosure is made of non-water resistant materials or materials not resistant to wind (cardboard, blankets, plastic sheets in poor condition).	The vertical walls are made of waterproof materials, however, they allow air to pass between their joints. The materials are starting to deteriorate and will have to be replaced in the medium term. It has openable doors and windows, but they do not close tightly.	The structure is rigid and resistant. The vertical enclosures are waterproof on the outside and breathable on the inside (multiple layer). Materials are in good condition. The connection with the floor and roof enclosure is continuous and prevents water and wind infiltration. The doors and windows close tightly.
	Cover	The structure offers little resistance to wind or lacks a rigid framework. The enclosure is made of non-water resistant materials or materials not resistant to wind (cardboard, blankets, plastic sheets in poor condition). Water seeps through the joints.	The structure is strong but not rigid and deforms in the wind.The materials are impermeable but pockets of water form, affecting stability and causing occasional leaks.	The cover is waterproof on the outside and breathable on the inside (multiple layer). Materials are in good condition. The structure is rigid and resistant. The connection with the vertical enclosure is continuous and prevents water and wind infiltration.
Ventilation		There is no ventilation. It does not allow air circulation, the air is not refreshed, and it does not let smoke or steam escape (plastic sheets, tarpaulins, CGI sheets without openings).	Openings on only one side of the shelter. Opening into an enclosed or very narrow space (corridor, other shelter). Openings only in the lower part of the shelter. Openings are not protected and must remain closed in cold or rainy weather. Smoke vents are not ducted.	It has cross ventilation. The ventilation flow can be adjusted according to needs. The openings are oriented towards open spaces allowing for free air circulation. The openings are protected from rain and the penetration of insects and rodents. Smoke extraction is ducted and forced.
Heating		No heating or cooking appliances or there is no suitable fuel/energy available.	Heaters or cookers that are energy-inefficient or that are not optimal for the available fuel type. Access to an insufficient amount of fuel.	The appliances are energy-efficient, or/and the household has access to the appropriate type and sufficient quantity of fuel.

Buildings (housing units, damaged houses, non-residential stock, collective sites)				
	--	Poorly insulated	Medium	Well-insulated
insulation	Floor	The floor lacks thermal or waterproof protection. It consists of compacted soil,sand or uncovered concrete slab. Does not prevent moisture or infiltration. It lacks drainage, and water pools. Carpets or mats may be used, but they do not cover the entire surface.	Continuous floor made of hard material (concrete, mortar, etc.). Possibility of dampness in certain seasons. No water infiltration. It does not have a continuous insulating layer. Carpets or mats may be used, but they do not cover the entire surface.	Hard surface, no moisture or infiltration. Smooth surface protected by flooring or carpeting
	Walls, doors & windows	The enclosures are incomplete or damaged, leaving large uncovered spaces. Enclosure gaps are covered with non-water-resistant materials or are not resistant to wind (cardboard, blankets, plastic sheets in poor condition).Doors or windows are missing or broken, leaving poorly covered gaps.	Continuous enclosure without holes or with small gaps or cracks covered with emergency materials such as tarpaulin, plastic sheets or fabrics. There are no water infiltration, but there is surface humidity. Thermal losses occur through cracks or openings.. It has openable doors and windows, but they do not close tightly.	Materials are in good condition. There are no cracks allowing air or water passage. The doors and windows close tightly.
	Roof / ceiling	The roof structure is damaged or absent, allowing water and wind to enter. The materials used to cover the gaps are non-water-resistant or are not resistant to wind (cardboard, blankets, plastic sheets in poor condition). Water seeps through the joints.	There are some cracks or the drainage system does not function properly, resulting in occasional located leaks. There is surface dampness. The roof lacks insulation, leading to significant thermal losses.	No cracks or water infiltration or moisture. No thermal losses due to convection. The thickness or composition of the roof avoids large heat conduction losses.
Ventilation		There is no ventilation. It does not allow air circulation, the air is not refreshed, and it does not let smoke or steam escape. No exhaust pipe. Doors and windows are not operable to allow ventilation.	Openings on only one side of the shelter. Opening into an enclosed or very narrow space (corridor, other shelter). Openings only in the lower part of the shelter. Openings are notprotected and must remain closed in cold or rainy weather. Heating or cooking smoke flows through a exhaust pipe	It has cross ventilation. The ventilation flow can be adjusted according to needs. The openings are oriented towards open spaces allowing for free air circulation. The openings are protected from rain and the penetration of insects and rodents. Smoke extraction is ducted and forced.
Heating		No heating or cooking appliances or there is no suitable fuel/energy available.	Heaters or cookers that are energy-inefficient or that are not optimal for the available fuel type. Access to an insufficient amount of fuel.	The appliances are energy-efficient, or/and the household has access to the appropriate type and sufficient quantity of fuel.

The lowest level of insulation among the three parameters (floor, walls & joineries, and cover) will determine the overall insulation level of the shelter.

Annex 2-Technical Specifications

Item	Description	Dimensions	Equivalent IFRC Ref
Winter Tent	Geodesic or ridge family tent, UNHCR or IFRC models, including winterising supplements . Slow flame spread material	18 sqm	HSHETENTF18
Inner Linner	Linner to improve the insulation of tents against the cold. made from one fold of breathable, rot-proof and fire retardant canvas in order to hang inside the inner tent, to cover the roof and the four walls down to ground level, plus 20cm on the ground. Fire retardant: pass the CPAI84 chapter 6.	Adequate for the tent model	HSHETENTF16L
Winter Clothes	Culturally appropriate winter clothing.		
Thermal mats	Multi-purpose thermal mat that can be used in tents and in other sleeping environments. 3 Layer (Plastic mat+Alumnized canvas+Fleece blanket)	1,80x0,90m	HSHEMATTPLI1
Sleeping bags	For temperate climate, non-woven synthetic material covered on both sides with a synthetic/cotton sheet. 100% synthetic filling is recommended to avoid being rotted by moisture	0,70x1,90m	HSHESLEBSU
Blankets	Medium thermal type, with Rct=0.25 m².K/W. Woven, cotton or woollen fibres.	1,20x1,80m	HSHEBLANWMT1
Heaters	To be defined, depending on the availability of the energy source.		
Floor Protection	Fibrocement sheets to protect the groundsheet of a tent or makeshift shelter when using a heater.	0,50x1,00m	HSHETENTFFH1