Regional Refugee Response
For the Ukraine Situation

Inter-Agency Winterization Taskforce Household-level Infrastructure Survey

Final Report | December 2023

Background and Context

In 2022, Refugee Coordination Forum in Moldova launched the Winterization Plan. This plan was the result of combined efforts of Refugee Coordination Forum partners in Moldova working in various sectors to mitigate the consequences of the cold season to refugees and affected host community members. The goal of the plan was to ensure that adequate measures were put in place to ensure that refugees, Moldovans, and third country nationals had appropriate protection against the harsh climatic conditions. The implementation of the plan was coordinated with the Government of Moldova, and complemented activities foreseen by different governmental bodies such as firewood distribution, the Energy Vulnerability Fund, and APRA.

For the 2023 winter response, a new planning process was launched and coordinated by the Winter Task Force (WinTF). WinTF gathered partners to support the planning process through needs analysis and prioritization of activities based on identified needs.

One of the tasks identified by WinTF was to assess conditions and insulation arrangements to cope with winter situations of individual accommodations where refugees can be hosted or have a security of tenure.

The assessment findings, which are presented in this document, provide RCF partners with a baseline to identify households in need of a light- or medium-level shelter intervention to protect them from harsh climatic conditions.

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The findings in this report are expected to serve as a reference for humanitarian and development organizations planning to conduct winter house repairs projects.

Methodology of the Survey

WinTF agreed to conduct the household infrastructure survey by interviewing randomly chosen households regarding the condition of their houses in two modalities: household visits and phone surveys. The surveys consisted of the following steps:

- Identification of random household for refugee-hosting households and refugee households
- Development of an assessment tool
- Training of data enumerators and allocation of households to the data enumerators
- Data collection and data cleaning
- Data scoring
- Data analysis

Considering the nature of the survey, which required a proper assessment of the physical condition of infrastructure in each household, the WinTF recognized that household surveys conducted by data enumerators would provide more reliable data than phone surveys, where enumerators cannot see the actual condition of households. However, due to time constraints and the operational capacity of the organizations contributing to the surveys, WinTF decided to conduct household visits for refugee-hosting households and phone surveys for refugee households. As an exception, data for refugee-hosting households in the Transnistrian region was collected through phone surveys to ensure smooth data collection.

1. Sampling strategies

Data was collected using a combination of methods. The findings are representative for hosting househols and indicative for the refugee population renting property.

The sample size for refugee-hosting households was calculated using two-stage cluster sampling (non-stratified, 93+/-7% confidence level, and margin of error) based on the total population distribution according to the WFP achievements reported to the Activity Info on the Refugee Response Plan 2023 in Moldova.

The number of surveys to be collected from refugee households was assigned using quota distribution, with findings well indicative of the overall population.

Data for 4,861 random refugee-hosting households (raion, city/village, address, phone number) and 2,065 random refugee households (raion, gender of the head of household, number of people in the household, phone number) were extracted from the WFP and UNHCR beneficiary databases, respectively.

Chart 1: List of Sample Number per Locations

	Sample Size	
Locations	HHs	Refugees
TOTAL	469	451
Anenii Noi	10	5
Balti	10	25
Cahul	17	13
Calarasi		4
Causeni	30	10
Chisinau	220	178
Criuleni		6
Floresti		5
Leova	10	
Ocnita	50	86
Transnistrian region		30

	Sample Size	
Locations	HHs	Refugees
Orhei	119	8
Rezina	61	20
Soldanesti	6	
Stefan Voda	286	20
Straseni	57	5
UTA Gagauzia	564	36
Singerei	10	
Cimisilia	10	
Briceni	5	
Drochia	15	

2. Development of an assessment tool

A series of questions was developed to understand the level of winter preparedness of average households, including A) demographics, B) general housing condition, C) affordability, D) availability of services and infrastructure, E) accessibility, and F) habitability for identification of insulation needs in the accommodation (see Appendix 1: the List of Questions). The questions were put into a kobo form so that the data enumerators could easily access and input the data collected through household visits and phone calls.

3. Training of data enumerators and allocation of households to the data enumerators

To collect the data, 30 enumerators who spoke Romanian, Russian, and/or Ukrainian were nominated by 5 agencies (UNHCR, IOM, WFP, ACTED, and DRC). The 1,135 households were allocated to these enumerators based on their duty station, area of responsibility, logistical feasibility, and the languages needed in the respective regions to conduct household visits and phone calls.

IOM Information Management team conducted a two-hour online training for the enumerators on how to correctly input data into the Kobo form. In addition to this technical training, each agency was responsible for providing their enumerators with further explanations on the survey, such as the overall objective, methodology, and timeline.

4. Data collection and data cleaning

The data enumerators were initially asked to conduct 10-20 household visits and 15-25 phone calls each, depending on their availability, within two weeks from July 31 to August 11, 2023. Due to unexpected additional workload for the enumerators and a low rate of household availability and willingness to participate, the WinTF extended the survey by an additional two weeks, and it officially closed on August 25, 2023.

A total of 827 responses were collected (481 from refugee-hosting households and 346 from refugee households), with a completion rate of 72.86% against the initial target. IOM and UNHCR Information Management teams cleaned the data and produced frequency tables.

5. Data analysis

UNHCR analysed the collected data by scoring each answer according to the level of winter infrastructure needs. The responses were categorized into five levels, and characteristics and trends were identified in each level.

1. Scoring

UNHCR scored each response in the assessment tool based on how well the household infrastructure was suited to coping with the winter period. An example of the scoring can be seen below (see Appendix 2: Scores' List).

Question E4. What is the material of your accommodation?		Question I3. What material is the external door made of?		Question I17. What is the typology of roofing?	
Thermal Brick	7	Timber	6	Clay roof tiles	4
Brick	6	PVC	5	Bituminous tile	3
Wooden	5	Wood	4	Metal sheets (tiles)	2
Cement Block/Panel	4	Plywood	3	Corrugated tiles (azbest tiles)	1
Stone	3	Steel	2		
Concrete (foamed concrete/gasbeton)	2	Aluminum	1		
Clay	1				

2. Categorization

After scoring all the measurable questions (except for the demographics questions), each household received a total score. The total scores ranged from 78 (highest) to 1 (lowest). Based on their total scores, the households were categorized into five levels, which provides an overall indication of their level of winter resilience.

Category	Score Range
Adequate	60 - 78
Liveable	51 - 60
Basic	36 - 50
Sufficient	21 - 35
Substandard Living	1 - 20

Given that this assessment exercise aimed to identify the habitability of private housing in the winter period and create a list of infrastructural criteria to ensure the minimum standard of living, it was assumed that the higher three categories (adequate, livable, and standard) can ensure the minimum standard of living, while the lower two categories (sufficient and substandard living) need some sort of repairs to attain the minimum standard.

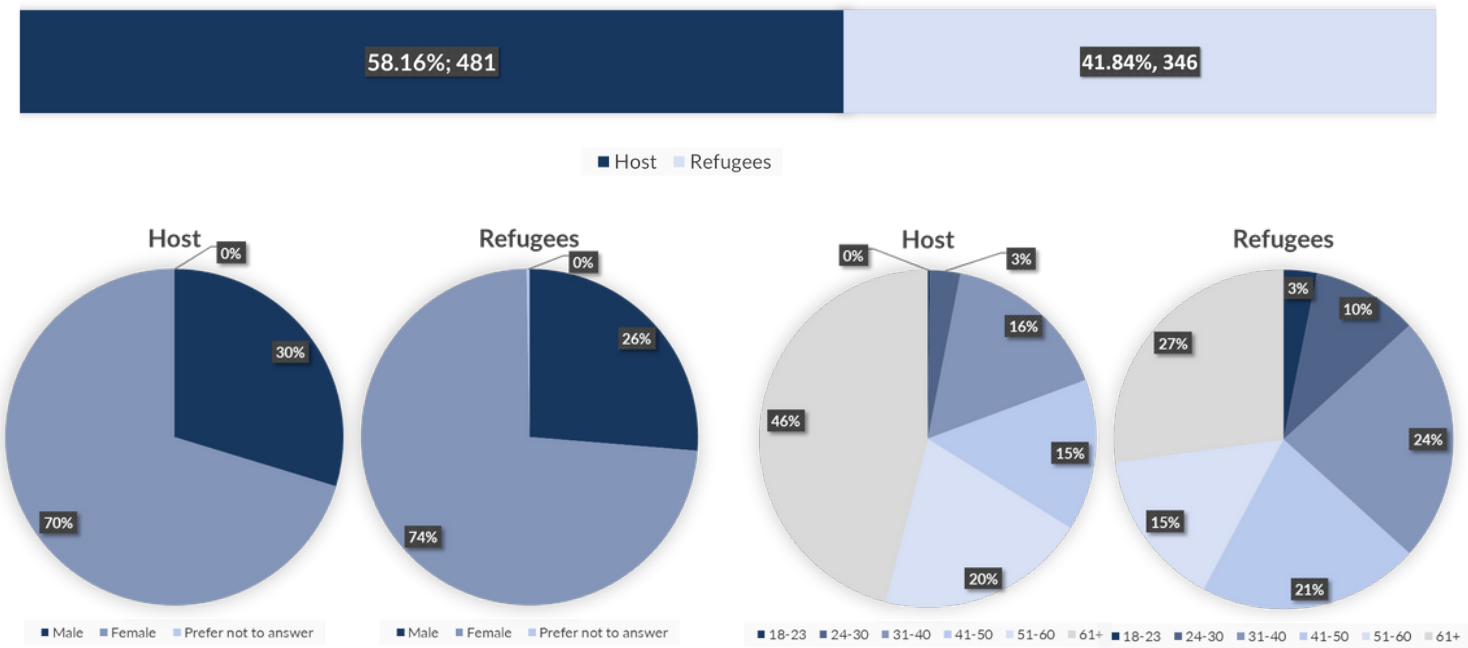
3. Characterization

To conclude, the analysis delved into each household's infrastructure details according to assigned category to identify patterns in the materials used, the time since the last repair, and other relevant factors. The data analysis sought to establish a list of essential infrastructure elements that every household should possess to meet the minimum standards for adequate winter living conditions in the Republic of Moldova

Result

1. Demographics

The demographics of 827 respondents are shown in the graphs below.

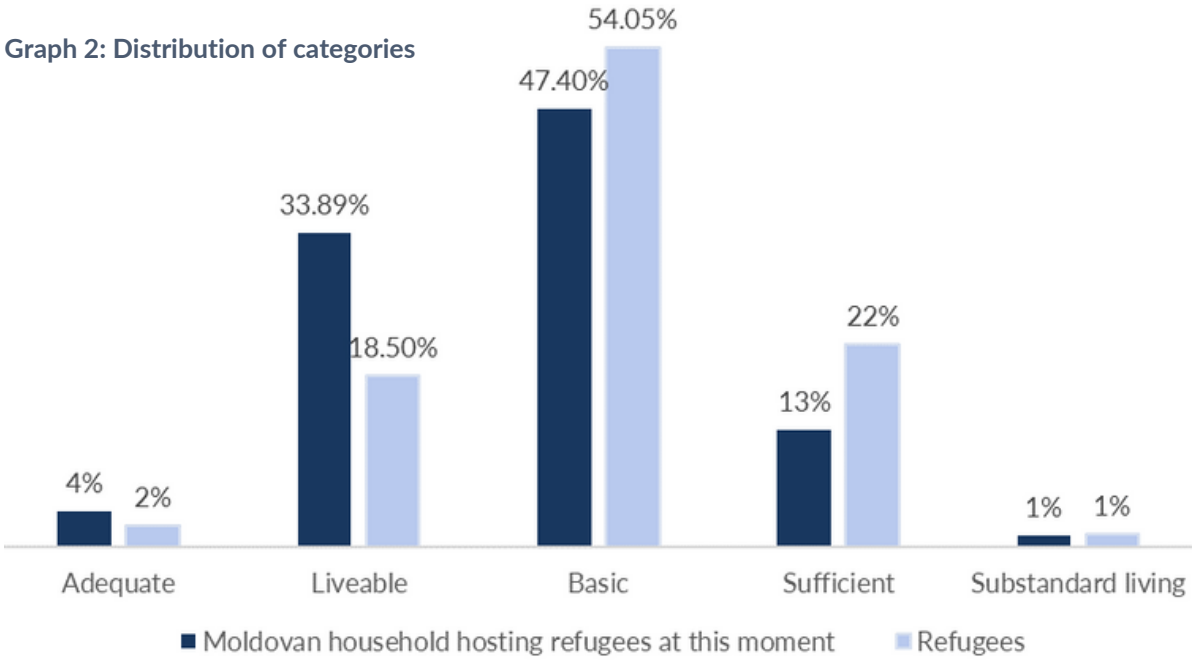


2. Scoring and Categorization

The scoring and categorization led to the distribution of levels as shown in the graph below. In this exercise, we consider the lower two levels (sufficient and substandard living) as the levels of households in acute need of some sort of infrastructural repairs to ensure the minimum standard of living during the winter period.

Considering findings are statistically representative for refugee-hosting households and indicative for refugee households, the graph shows that more than 85% of the refugee-hosting households and more than 75% of refugee households are living in houses with an acceptable level of infrastructure. This result is reinforcing the general perception among practitioners that house repairs are not the priority when it comes to life-saving winter infrastructural support.

Graph 2: Distribution of categories



3. Identification of significant aspects for each category

To further analyze the findings from the scoring and categorization analysis, we examined the trends within each one of the five categories. We calculated the average score for each indicator across categories and compared the discrepancies between these scores. This analysis revealed that some indicators had significant discrepancies between the categories, while others had minimal or no differences.

For instance, if a household classified as "adequate" and another classified as "substandard living" received similar scores for a particular indicator, it suggests that this specific indicator has a relatively small impact on a household's category. Conversely, indicators with substantial discrepancies between categories are likely to have a more significant influence on winter living conditions. We set the threshold to be more than 100% of difference level between the highest category “adequate” and the lowest category “substandard living”. As for an analysis method, the following two adjustments were made to correctly grasp the significance of each indicator: (1) some indicators which are irrelevant to this analysis were excluded (questions regarding safety equipment or questions with yes/no answers), and (2) when the average score of the lowest category is below zero, an adjustment was made to calculate the correct difference rate.

This analysis generated the chart below which indicates the average score of each question and the difference rate between the highest and the lowest categories. Based on this, we can identify two groups of indicators: those with high significance and those with low significance. Indicators deemed highly significant are considered to have a substantial impact on winter living conditions and should be prioritized when addressing housing needs during the winter period.

Graph 3: Average score of each question per category

No.	Indicators	Average score per category					Difference rate
		Adequate	Liveable	Basic	Sufficient	Sub-standard	
E.3	What is the thickness of the walls?	2.39	2.16	1.87	1.59	1.82	31.22%
E.4	What is the material of your accommodation?	4.61	3.75	3.17	2.48	1.82	152.65%
E.5	When was the last time the accommodation was renovated?	4.29	3.86	2.46	1.79	1.59	169.84%
G.5	What type of fuel does your household use most for heating?	1.00	1.00	0.99	0.97	0.94	6.25%
G.6	What is your household main source of electricity?	2.00	1.98	1.98	1.94	1.76	13.33%
I.1	What are the conditions of the doors external?	1.82	1.33	1.00	0.67	0.00	282.14%
I.2	What are the conditions of the doors internal?	1.86	1.27	0.93	0.67	-0.06	291.60%
I.3	What material is the external door made of?	3.68	3.32	3.14	3.45	3.88	-5.25%
I.5	What are the conditions of the windows?	1.86	1.33	0.94	0.45	-0.53	338.66%
I.6	What is the material of the windows frame?	1.00	0.91	0.73	0.41	0.00	200.00%
I.7	For how long this frame windows have been installed?	3.43	3.00	2.09	1.36	1.24	177.55%
I.8	What are layers of glazing in the windows?	2.11	2.00	1.85	1.45	1.18	79.11%
I.13	What are the conditions of the walls?	1.93	1.28	0.97	0.80	0.35	446.43%
I.15	What is the condition of the roof?	1.79	1.13	0.72	0.51	0.18	911.90%
I.17	What is the typology of roofing?	2.32	1.56	1.08	1.12	1.65	40.94%
I.19	What is the floor material?	4.32	4.27	4.35	3.77	3.53	22.44%

Based on the assumption that these criteria have an impact on the level of comfort in private housing in the winter period, an attempt was made to establish a list of criteria ensuring the minimum standard of private housings during the winter period.

4. Development of the minimum standard checklist

Based on the considerations explained above, a checklist of infrastructural conditions was created (*Appendix 2*). The list includes (1) indicators considered in the previous analysis to have a substantial impact on winter living conditions and (2) indicators related to subjective feelings by houseowners including such questions as whether air is passing through windows into the house or whether additional clothes are needed inside the house.

The list can be used by humanitarian and development actors when conducting an assessment of private housings in preparation to house repair projects to cover winter needs. It should be noted that the considerations regarding the materials on the list focus solely on the efficient insulation and the level of comfort during the winter period, and not on the resilience of the building itself.

The assessment criteria are divided into two parts, blue-marked criteria and orange-marked criteria, marked on the first row of the list. The blue-marked criteria should be assessed through consultation with the houseowner or residents of the assessed housing. The orange-marked criteria should be assessed by a technical staff.

	Water			
	o Gas boiler	1		
	o Electricity boiler	1		
	o Fireplace with wood		0	
	o There is no access to hot water.			-2
	The material of housing (Indicator E.4)			
	o Thermal brick	3		
	o Brick	2		
	o Wood	1		
	o Cement block or panel		0	
	o Stone		0	
	o Concrete (foamed concrete or gasbeton)			-1
	o Clay			-2
	SUBTOTAL			
	TOTAL POINTS			

The three columns on the right side show the level of appropriateness of each material for winter comfort (green: suitable, yellow: acceptable, red: inappropriate). These three categories were also drawn from the average score of the five categories explained above. The detailed explanation of each material is provided in the *Appendix 3*. Once an assessment is done, all the scores will be added. If the total point is below zero, it is highly possible that the assessed housing needs some sort of infrastructural repairs for increased winter comfort.

E.3 What is the thickness of the walls?	
More than 40 cm	3
Between 20 and 40 cm	2
Less than 20 cm	1
Don't know	0
E.4 What is the material of your accommodation?	
Thermal brick	7
Brick	6
Wooden	5
Cement block/panel	4
Stone	3
Concrete (foamed concrete / gasbeton)	2
Clay	1
Don't know	0
E.5 When was the last time the accommodation was renovated?	
Less than 5 years ago	5
5-9 years ago	4
10-14 years ago	3
15-19 years ago	2
20 and over	1
Don't know	0
G.1 Does your shelter have any of the following issues (due to damage and/or defects)?	
None of the above	10
Other	0
Lack of insulation from cold (windows, walls, doors, floor, roof)	-1
Leaks during rain	-1
Limited ventilation (no air curculation unless main entrance is open)	-1
Presence of dirt or debris/ mold	-1
Unsafe (doors or windows missing, broke, unable to shut properly, cracks in roof or walls)	-1
Lack of water supply	-1
Lack of or defective sewage system	-1
Heating system	-1
Don't know	-1
Total collapse or shelter too damaged for living	-10
G.2 Do you have access to hot water?	
Yes	2
No	0
G.4 Do you have a functional heating system in your accommodation?	
Yes	2
No	-2
Don't know	-2
G.5 What type of fuel does your household use most for heating?	
Centralized heating grid	1
Electricity	1
Gas from autonomous system	1
Stove	1
Other	1
Don't know	0
G.6 What is your household main source of electricity?	

Private generator	2
Neighborhood generator	2
Main network / grid	2
Solar panels	2
No source of electricity	-2
Don´t know	-2
Prefer not to say	-2
G.7 Do you anticipate any difficulties for your household in terms of availability of fuel/heating for this winter?	
No difficulty - there will be enough fuel for the whole winter season or no issues anticipated with the heating	1
Some difficulty - there will be enough fuel/the heating will be there to cover the most of the winter season	0
Considerable difficulty - there will be enough fuel/the heating to cover only a part of the winter season	-1
Extreme difficulty - there will be little to none fuel\limited heating to cover the winter season	-2
Don't know	-2
G.8 Do you have any of the following safety devices?	
Smoke detectors	2
Fire extinguishers	2
Ventilation ducts	2
None of them	0
Don't know	0
H.1 Does the interior of the accommodation have sufficient dimensions (width of doors and corridors) and	
Yes	1
No	0
Don't know	0
I.1 What are the conditions of the doors external?	
Excellent	2
Acceptable	1
Poor	0
Extremely sub-standard	-1
Don't know	-1
I.2 What are the conditions of the doors internal?	
Excellent	2
Acceptable	1
Poor	0
Extremely sub-standard	-1
Don't know	-1
I.3 What material is the external door made of?	
Timber	6
PVC	5
Wood	4
Plywood	3
Steel	2
Aluminum	1
Don't know	0
I.4 During winter, does the air pass through the external doors inside the house?	
No	1
Yes	-1

Don't know	-1
I.5 What are the conditions of the windows?	
Excellent	2
Acceptable	1
Poor	0
Extremely sub-standard	-1
Don't know	-1
I.6 What is the material of the windows frame?	
PVC (vinyl)	1
Wooden	1
Aluminum	1
Don't know	0
I.7 For how long this frame windows have been installed?	
1 - 5 years	4
5-10 years	3
10 - 20 years	2
More than 20 years	1
Don't know	0
I.8 Layers of glazing in the windows are ?	
Triple	3
Double	2
Single	1
Don’t know	0
I.9 During winter, does the air pass through the windows inside the house?	
No	1
Yes	-1
Don’t know	-1
I.10 Does the accommodation have enough natural ventilation?	
Yes	1
No	0
Don’t know	0
I.11 During winter, do you need to put additional clothes while inside of your house?	
Yes	-1
No	1
Don’t know	-1
I.12 Does the heating allow to preserve sufficient heat for one room?	
Yes	1
No	0
Don’t know	0
I.13 What are the conditions of the walls?	
Excellent	2
Acceptable	1
Poor	0
Don’t know	0
I.14 Is there any sign of mold in the walls?	
No	1
Yes	-1
Don’t know	-1
I.15 What is the condition of the roof?	

Excellent	2
Acceptable	1
Poor	0
Don't know	0
I.16 Is there any sign of mold in the roof?	
No	1
Yes	-1
Don't know	-1
I.17 What is the typology of roofing?	
Clay roof tiles	4
Bituminous tile	3
Metal sheets (tiles)	2
Corrugated tiles (azbest tiles)	1
Don't know	0
I.18 Is your floor insulated?	
Yes	1
No	0
Don't know	0
I.19 What is the floor material?	
Parquet	6
Wooden planks/clay covered with wooden planks	5
Laminate	4
PVC floor	3
Ceramic	2
Concrete	1
Don't know	0

1	Criteria	Check		
	The blue criteria should be assessed through consultation with houseowners.			
	The orange criteria should be assessed by a technical staff.			
	Water			
	○ Gas boiler	1		
	○ Electricity boiler	1		
	○ Fireplace with wood		0	
	○ There is no access to hot water.			-2
	Heating system			
	○ Air conditioner	2		
	○ Electricity boiler	1		
	○ Gas boiler	1		
	○ Fireplace with wood		0	
	○ There is no functional heating system.			-2
	Air passing through windows into the house			-2
	Additional clothes are needed inside the house			-2
	There are signs of mold on the walls.			-2
	There are signs of mold on the roof.			-2
	The material of housing (Indicator E.4)			
	○ Thermal brick	3		
	○ Brick	2		
	○ Wood	1		
	○ Cement block or panel		0	
	○ Stone		0	
	○ Concrete (foamed concrete or gasbeton)			-1
	○ Clay			-2
	The latest renovation conducted (Indicator E.5)			
	○ Less than 5 years ago	2		
	○ 5 to 9 years ago	1		
	○ 10 to 14 years ago		0	
	○ 15 to 19 years ago			-1
	○ 20 years ago and older			-2
	Condition of External doors (Indicator I.1)			
	○ Excellent	2		
	○ Acceptable	1		
	○ Poor		0	
	○ Extremely sub-standard			-1

2	Criteria	Check		
	Condition of Internal doors (Indicator I.2)			
	○ Excellent	2		
	○ Acceptable	1		
	○ Poor		0	
	○ Extremely sub-standard			-1
	Condition of Windows (Indicator I.5)			
	○ Excellent	2		
	○ Acceptable	1		
	○ Poor		0	
	○ Extremely sub-standard			-1
	Material of Window Frames (Indicator I.6)			
	○ PVC (Vinyl)	1		
	○ Aluminum	1		
	○ Wood		0	
	Years of Floors (Indicator I.7)			
	○ Excellent	2		
	○ Acceptable	1		
	○ Poor		0	
	○ Extremely sub-standard			-1
	Conditions of Walls (Indicator I.13)			
	○ Excellent	2		
	○ Acceptable	1		
	○ Poor		0	
	○ Extremely sub-standard			-1
	Conditions of Roof (Indicator I.15)			
	○ Excellent	2		
	○ Acceptable	1		
	○ Poor		0	
	○ Extremely sub-standard			-1
	SUBTOTAL			
	TOTAL POINTS			

Criteria	
The material of walls	
○ **Thermal brick** provides excellent insulation while reducing energy consumption and improving comfort. The materials are durable and fire-resistant, and offer sound insulation, making them an eco-friendly and long-lasting choice for walls. It may be more expensive.	**+3**
○ **Brick** used for house walls provide moderate insulation due to their thermal mass, which can help stabilize indoor temperatures and reduce temperature fluctuations. However, they are not as effective as specialized thermal bricks or modern insulation materials. To enhance insulation, additional measures like cavity insulation, exterior insulation for house walls are needed in regions with extreme climate conditions.	**+2**
○ **Wooden walls** can offer good insulation properties, with wood's natural insulating capabilities helping to maintain comfortable indoor temperatures. The thickness and quality of the wood, along with the presence of insulation within the walls, play a significant role in determining the overall insulation characteristics. Properly designed and constructed wooden walls can provide effective insulation, making wood a popular choice in many residential buildings for its thermal performance and aesthetic appeal.	**+1**
○ **Cement block or panel** generally provides better insulation compared to traditional concrete blocks or bricks. They can be pre-engineered with insulation layers, enhancing their thermal performance. However, the specific insulation characteristics of concrete panels can vary depending on the design, thickness, and the type of insulation used, and they are typically more efficient than single-layer concrete walls but may still require additional insulation in extreme climate conditions for optimal energy efficiency.	**0**
○ **Natural stone** walls typically have poor insulation properties as they are dense and have limited insulating capacity. They may contribute to thermal mass, which can help regulate indoor temperatures but do not offer the same level of insulation as modern insulating materials	**0**
○ **Concrete (foamed concrete or gasbeton) walls** have poor natural insulation properties as they are dense and conductive. Without additional insulation, they are prone to temperature fluctuations and may not provide adequate thermal comfort.	**-1**
○ **Clay walls**, such as adobe or rammed earth, offer moderate insulation properties due to their thickness and thermal mass. In regions with mild climates, well-designed clay walls can contribute to energy efficiency. However, it is not recommended to use this material for new renovations as this type of material is an old-fashioned material and is no longer used in construction.	**-2**
Water / Heating System	
○ **Air conditioner** is relatively efficient as a heat source and provide the convenience of year-round climate control in a single system. They are often cost-effective to install, especially in regions with milder winters, as they utilize the same infrastructure as the cooling system. However, their efficiency may decrease in colder climates, and they may require supplemental heating during extreme cold spells.	**+2**

○ **Gas boiler heating system** is an efficient, cost-effective, quick way of heating a housing with low greenhouse gas emissions. It can be used for both space and central heating systems.	**+1**
○ **Electric heating system** is easy to install and good for zone heating. It requires minimal maintenance no combustion or emissions are expected. It has a high compatibility with various types of heating elements.	**+1**
○ **Fireplace with wood** offers heat in the housing with renewable fuel source and works with a relatively low operating cost. As an additional advantage, it can provide heating during power outages.	**0**
○ There is no functional heating system / There is no access to hot water.	**-2**
The condition of external doors / internal doors	
○ **Wood doors** provide excellent insulation and can help maintain indoor temperatures during winter. These can be highly energy efficient.	**+1**
○ **Timber doors** offer natural insulation thanks to the properties of wood, helping to keep indoor spaces warmer during the winter effectively, reducing heat loss when well-sealed. These are durable and can withstand cold weather conditions with proper maintenance, making them a timeless and energy-efficient choice for winter.	**+1**
○ **PVC (Vinyl) doors**, often made from uPVC (unplasticized polyvinyl chloride), provide excellent insulation and are highly effective at retaining heat during winter. They have low thermal conductivity, reducing heat loss and preventing drafts, which helps maintain a comfortable indoor environment and lowers energy costs. Additionally, PVC doors are resistant to moisture and don't rot or warp, making them a durable and low-maintenance option for winter weather.	**+1**
○ **Steel doors** are strong, secure, and can offer decent insulation with the addition of a thermal core. They are less likely to warp or crack, making them a practical choice for harsh winter conditions.	**0**
○ **Aluminum doors** have weak insulating properties, and they can conduct cold temperatures, potentially leading to heat loss and drafts in winter. However, they are highly durable and weather-resistant, making them suitable for winter weather in terms of longevity and resistance to corrosion.	**0**
○ **Plywood doors** offer affordability and can provide a degree of insulation in the winter. While they are not as effective as some other door materials, they can help reduce drafts and maintain indoor temperatures, making them a budget-friendly option for those looking to improve insulation during the colder months.	**-1**
The condition of windows	
○ **PVC (Vinyl) windows** offer excellent insulation properties, helping to keep indoor spaces warm and energy-efficient during the winter. Their low thermal conductivity reduces heat loss and prevents drafts, which can result in lower heating costs. These are also highly durable, resistant to moisture and rot, making them a reliable and low-maintenance choice for cold weather.	**+1**
○ **Aluminum windows** are designed with thermal breaks or insulating components to enhance their energy efficiency and reduce heat loss. This makes them a viable option for winter if they are appropriately engineered to provide better insulation.	**+1**

○ **Wood windows** offer natural insulation, helping to maintain indoor temperatures during the winter. When properly sealed and maintained, they are effective at preventing drafts and heat loss, making them energy efficient. Wooden windows are also durable and can withstand cold weather conditions with appropriate care. However, wood windows do not have thermal breaks as PVC or aluminum windows do, which make them more vulnerable for cold air.	**0**
The condition of floors	
○ **Laminated floors** are a budget-friendly choice for winter, offering a warmer and more comfortable surface compared to tile or stone. They are relatively easy to maintain.	**+1**
○ **Parquet floors** are often installed with an insulating base layer, which can improve their thermal properties, making them comfortable to walk on and a good choice in cold weather.	**+1**
○ **Ceramic floors (tiles)** are a good choice for winter due to their durability and ease of maintenance. They have a hard, non-porous surface that is resistant to moisture, making them ideal for withstanding wet, and they can be easily cleaned of salt and debris often brought in during winter. However, it has a higher thermal conductivity compared to wooden floors, and thus, the floor can be quite cold in winter.	**0**
○ **Concrete floors** can be cold during winter due to their high thermal conductivity, although they have the advantage of retaining heat efficiently once warmed.	**-1**
The condition of roofs	
○ **Clay tile roofs** are well-suited for winter conditions. Their natural thermal mass helps regulate indoor temperatures and reduce heating costs by retaining warmth during the day and gradually releasing it at night. They are also durable and resistant to frost and snow, making them a reliable and long-lasting choice for snowy regions, while their curved shape encourages snow and ice to slide off, reducing the risk of heavy accumulation and damage.	**+2**
○ **Metal sheet roofs**, such as steel or aluminum, have several advantages for winter. They shed snow and ice easily, reducing the risk of heavy accumulation and damage. Additionally, they are durable and long-lasting, providing reliable protection against harsh winter weather. However, metal roofs can be susceptible to noise from falling precipitation, so appropriate insulation or underlayment may be necessary to mitigate this.	**+1**
○ **Reinforced concrete roofs** are durable and able to withstand the weight of snow and ice accumulated during the winter months. Their thermal mass can help regulate indoor temperatures and reduce heating costs by storing and gradually releasing heat. However, it is possible to increase energy efficiency in wintertime only with additional insulation, as concrete can be conductive and lead to heat loss if not properly insulated.	**0**
○ **Corrugated tiles (Asbestos tiles) / slate sheets** are a durable roofing material, offering good resistance to winter weather conditions, including snow and ice. They are known for their longevity and ability to withstand harsh climates. However, it is essential to note that asbestos presents health risks when damaged or deteriorating, so its use has been phased out due to safety concerns.	**-2**