



Monitoring Visit by the Shelter and NFI Cluster in Ukraine

on the Insulation of Substandard Houses
Kyivska Oblast, 13th of November 2024

Insulation of Substandard Houses

A representative of the Shelter and NFI Cluster (hereinafter referred to as the Cluster) and representatives of ROKADA (UNHCR) conducted a monitoring visit on the 13th of November 2024.

Location: Makariv settlement, Bucha Rayon, Kyivska Oblast.

Activity: Insulation of Substandard Houses.

Activities to improve thermal insulation: Insulation of the roof , replacement of double-glazed windows with energy-efficient ones.

Status of activity: planned.

Target in the assessed households: substandard houses inhabited by owners who are not IDPs.

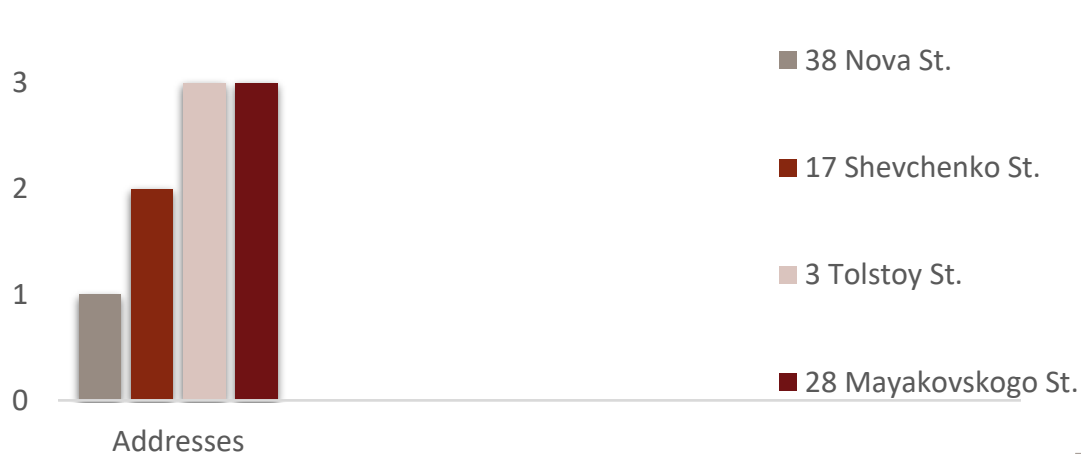
Modality of assistance: through a contractor (in-kind).

Documents required for registration: Individual tax number of all registered persons, documents of ownership of the house, technical passport. Registration is carried out through a KOBO form and by signing a bilateral document with the household owner on the provision of assistance with a registration number, by which the recipient of assistance can find out the status and schedule of works under the planned activity.

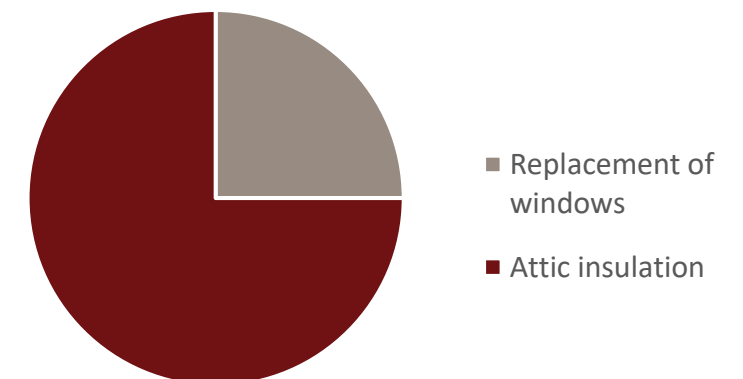
Activity implementation period: 1-2 months from the date of registration and subject to confirmation of the application by UNHCR.

Planned average budget: up to 2 500 USD / HH.

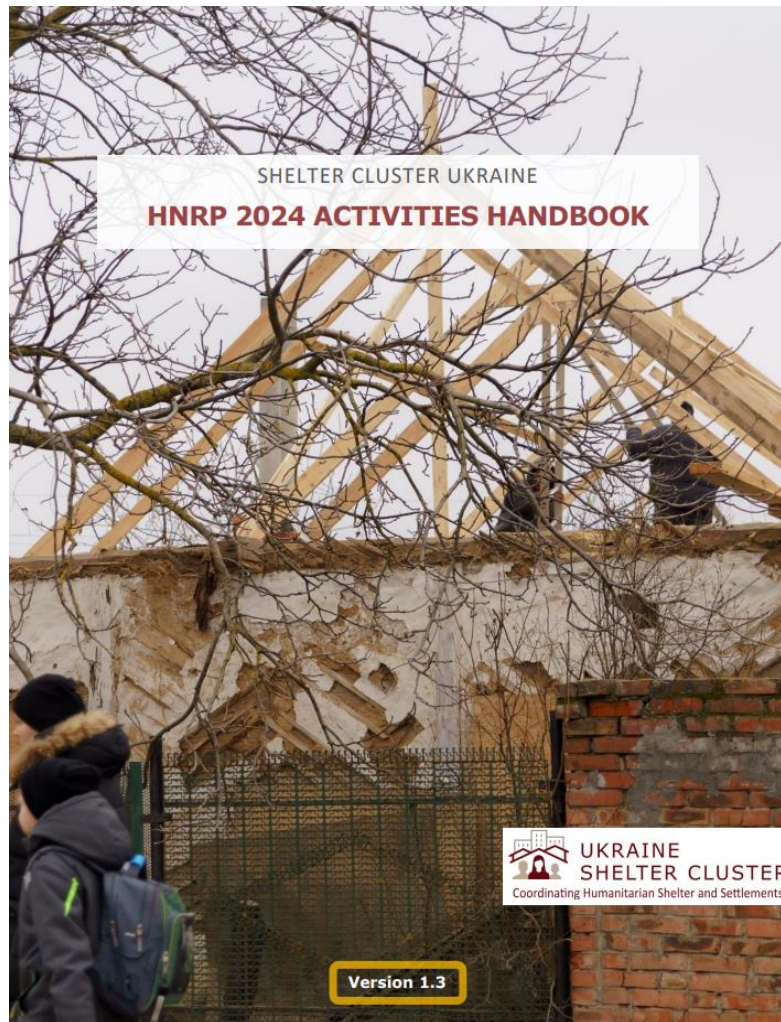
Number of beneficiaries to be covered in the houses covered by the visit



Types of activities in the homes covered by the visit



Technical recommendations for insulation of houses



pages 20-22



pages 28-30

Technical documents covering the Shelter Cluster activities are available at [Shelter Cluster Website](#).

For the description of the activities related to the insulation of substandard houses, please refer to the [HNRP 2024 Activities Handbook](#) on pages 20-22 and the [Winterization Recommendations 2024-2025](#) in section 9.1.2, pages 28-30.

Measures to improve the efficiency of thermal insulation include: insulation of the roof, installation of energy-efficient windows and doors, and repair of internal engineering networks.

Target:

- Houses recently allocated to displaced families that did not participate in the government's thermal modernization program or required additional interventions. The house must be provided for use for at least 6 months from the date of the insulation works to prevent the risk of eviction and, as a result, misuse of assistance.
- substandard houses in which the host family has accommodated IDPs.
- Substandard houses, inhabited by owners who are not IDPs

The average cost of an activity recommended by the Cluster:

- from 268 USD to 3,000 USD per HH.

Replacement of windows in private households

Replacement of wooden windows with plastic ones significantly reduces heat loss and is one of the measures to improve energy efficiency. About 30-35% of heat is lost through old wooden windows. Plastic windows with modern double-glazed units can reduce these losses by up to 10-15%.

As of 2024, this type of activity is quite relevant in Kyivska Oblast for houses inhabited by their owners who are not IDPs.

Efficiency of window replacement:

- Reduced heat loss: plastic windows provide better airtightness.
- Improved microclimate: drafts and blowing disappear.
- Improved sound insulation.
- Reduced heating costs.

Standards of Ukraine:

- DBN B.2.6-31:2016 “Thermal insulation of buildings”: This document establishes minimum requirements for the heat transfer resistance of windows, which is important for ensuring the energy efficiency of buildings.
- DBN B.1.2-11:2021 “Energy Saving and Energy Efficiency”: These norms define the main provisions for ensuring energy saving and energy efficiency of buildings and structures.
- Law of Ukraine “On Energy Efficiency of Buildings”: Establishes requirements for the energy efficiency of buildings, including the need for energy certification.

Eligibility criteria:

- Replacement of wooden windows with energy efficient ones in residential premises only.

CHALLENGES:

The procedure takes 1-2 months from the moment of registration of the recipients of assistance with the ROKADA Charitable Foundation to the moment of window installation. The Red Cross implements a similar project in 10 days.

As a result, there are cases of duplication of activities.



Insulation of the roof

Attic insulation is one of the measures to improve energy efficiency. About 20% of heat is lost through the upper floor.

Various thermal insulation materials are used to insulate the cold roof slab, which should not be too strong in compression and too moisture resistant. Mineral wool with a density of 30-40 kg/m³ is well suited as insulation.

Technology of attic floor insulation:

- The minimum thickness of the insulation is calculated in accordance with **DBN B.2.2-31:2021**, the minimum thickness of mineral wool boards is 200 mm.
- A vapor barrier film is placed under the insulation to prevent moisture condensation.
- The insulation is placed between the beams or lags of the wooden frame.
- To avoid “cold bridges”, insulation is performed in several layers.
- To maintain the attic space, a running ladder is additionally mounted from the overlapping boards of 25x100 mm and supports.
- A detailed scheme of insulation of the unit and a diagram of the design of the running ladder are on the next [slide](#).

CHALLENGES:

- Roofs are mostly cluttered with garbage. A condition for project implementation is free access to the attic. The beneficiaries need to remove the garbage so that the contractors can install the insulation.
- There are cases when the beneficiaries want to fully exploit the roof surface after the insulation.



Roof slab insulation unit and design scheme of the insulation ramp in attic

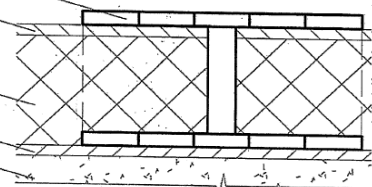
roof slab insulation unit

4. Конструкція ходового трапу

3. Гідроізоляція

2. Мінералізовані плити
(щільність матеріалу $\rho=30-40 \text{ кг/м}^3$)

1. Пароізоляція
Перекриття



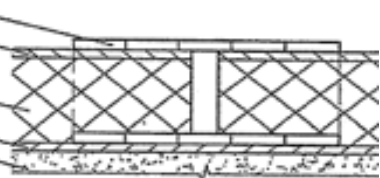
design scheme of the insulation ramp in attic

4. Конструкція ходового трапу
(форма витрат матеріалу на улаштування = $0,027 \text{ м}^3/\text{м}^2$)

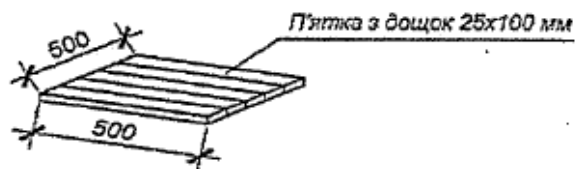
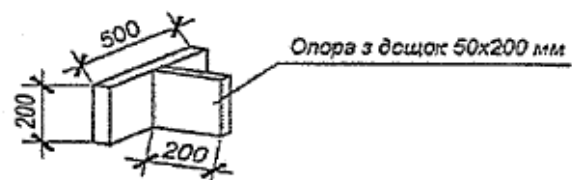
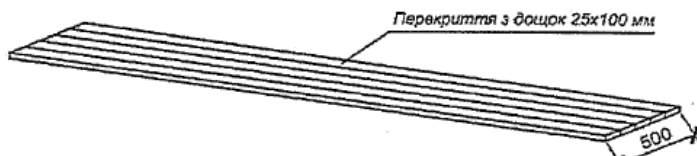
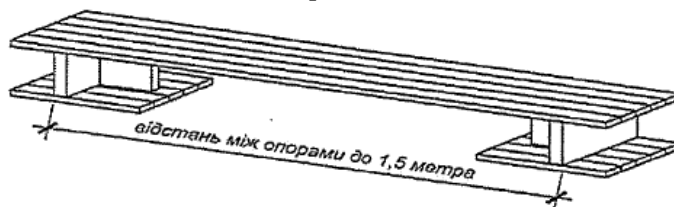
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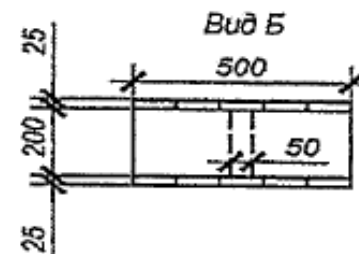
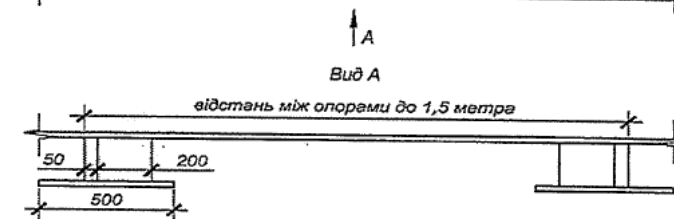
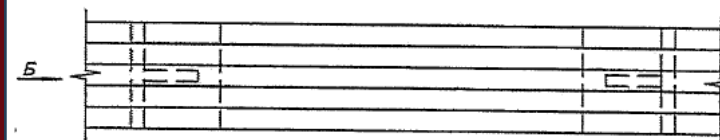
1. Пароізоляція
Перекриття



design scheme of the insulation ramp in attic



design scheme of the insulation ramp in attic



Challenges. Recommendations

Challenges:

1. Duplication

(replacement of windows with energy efficient ones)

2. Cluttered roofs

Adding addresses to the SIDAR platform

Cooperation with local authorities to support beneficiaries in organizing and cleaning attics

Reporting in Activity Info

Involvement of volunteers or other community organizations

Raising and discussing issues at Hub meetings

When planning a project with flexible funding for vulnerable populations, consider the cost of waste removal



Recommendations:

Participants of the Monitoring Visit

Shelter and NFI Cluster:

1. Olena Vovk, Shelter Associate.

ROKADA CF:

1. Oleg Kovalenko, engineer
2. Bohdan Sidliarenko, assistant

