



Shelter Cluster Iraq
ShelterCluster.org
Coordinating Humanitarian Shelter

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GUIDANCE NOTE ON EMERGENCY REPAIRS OF WAR DAMAGED SHELTER

V2.4

SHELTER AND NFI CLUSTER - IRAQ

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INTRODUCTION

In line with the [HRP 2019](#), humanitarian actors are performing emergency repairs of War Damaged Shelter (WDS). This contributes to a process of durable return, in which highly vulnerable families are supported to reside in minimum shelter conditions, whilst they re-establish their lives in areas affected by the recent conflict and avoid secondary displacement.

In view of the scale of shelter repair needs across the country, and within the limited resources available, this guidance note provides technical and strategic support for stakeholders, in line with humanitarian principles, and in order to maximize the impact of the shelter response in a harmonised manner. Scope of works that goes beyond this guideline would be embraced by the RRP.

THE PROCESS

Partners engaging in emergency shelter repairs should follow the below minimum steps which are essential to ensure the humanitarian imperative and protection principle of “do no harm” are achieved:

1. Identification of beneficiaries, based solely upon humanitarian need (principle of impartiality) and through clearly established vulnerability criteria¹
2. Communication with communities for awareness raising on the selection criteria of beneficiaries
3. Verification of ownership to ensure House, Land and Property (HLP) rights do not complicate ownership
4. The Owner(s) knowledge about and willingness in applying for a compensation claim
5. Categorization of the WDS, using the Categories of War Damaged Buildings in Iraq, conducted by a qualified engineer (see [Annex 1](#))
6. Preparation of a Bill of Quantity by qualified engineers², taking into consideration the minimum scope of repairs (see [Annex 2](#))
7. Communication with, and consent from, beneficiaries on the scope and timing of repairs prior to execution
8. Communication with, and consent from, beneficiaries on the collection of the geographical coordinates of their house for reporting purposes
9. Implementation of emergency shelter repairs according to the minimum scope of repairs (see [Annex 2](#))
10. Monitoring during and after execution of works, and evaluation upon expiration of the liability period, run by technical experts only (i.e. civil engineers)

¹ The SNFI Cluster recommends the use of the socioeconomic vulnerability assessment tool developed by the Cash Working Group in Iraq to identify households that may be eligible for shelter and NFI assistance

² Please check the [Standard BoQ for Minimum Repairs of War-Damaged Shelter V3 En/Ar](#) and the [Guidance Note on BOQ for Minimum Repairs for War-Damaged Shelter v1.2](#)

ON IDENTIFICATION OF BENEFICIARIES

As per the Shelter and NFI Cluster strategy set in the [HRP 2019](#), beneficiaries should be identified through the socio-economic vulnerability assessment tool developed by the Cash Working Group in Iraq to identify highly vulnerable families unable to undertake repairs without assistance. Failing to undertake and communicate this fundamental step risks creating tensions between, and within communities, with families not selected for emergency shelter repairs. Thus, it is critical to involve specialist staff trained in protection and socio-economic assessments that can determine vulnerabilities and communicate to families and local leaders the selection process.

ON HLP ISSUES

In order to maximise impact and avoid community tensions, beneficiaries of emergency repairs must prove ownership of the house, show intention to reside there and not have any other place where to live. Verification of proof of ownership is an essential action required before starting a technical assessment. The verification process should be considered as a preventive measure against falsified/fraudulent documents, potential illegal occupation and secondary occupations or forced eviction. If the verification is not completed, shelter actors should refer the case to HLP specialists and put on hold the implementing of shelter activities, as they may result to HLP violations. At the same time, as many families lack such official documentation, alternative solutions should be sought for those who are unable to prove property ownership (such as electricity bills, previous house acquisition contract, combined with letter from the local authorities/leaders/mukhtar). More guidance is provided in the [HLP Rights in Shelter Due Diligence Guideline](#) prepared by the HLP Sub-cluster.

Shelter partners should also verify whether the house owner has filed, or intends to file, a request for property-related compensation³. If not, the owner may wish to do so before the works commence. For more guidance refer to the [Property Compensation Guidelines](#) for Iraq prepared by the HLP Subcluster.

ON THE CATEGORIZATION OF THE WAR-DAMAGED SHELTER ([ANNEX 1](#))

- [Annex 1](#) provides the criteria that should be used to categorise war damaged shelters. **This assessment and categorisation should be undertaken only by qualified expert engineers.** Failing to use qualified personnel may result in either; underestimating the damage level and putting beneficiaries at risk of undetected structural issues, or an overestimation of the damages and an exclusion of others houses from repair.
- It is possible for the same housing unit to fall under two or more categories i.e. one side of the house may be structurally damaged (thus falling under the [cat. III](#)), whilst another side could be structurally sound with minimum damages (thus falling under the [cat. I](#)). In such case partners should **report the highest category level, while targeting the least damaged side of the house for the repair works.**

³ As per Article 1 of Law 57 (first amendment), in relation to the compensation of all Iraqi citizens affected by damages caused by war operations, military accidental mistakes and terrorist actions

- The recommended financial value of repairs indicated in [Annex 1](#) is an indicative average across Iraq. Thus, prices may vary but justification should be provided in cases of significant increase. In order to meet the needs of as many highly vulnerable families as possible, humanitarian actors bear the responsibility for ensuring each emergency repairs is not above minimum standard and that materials and labour are costs effective.

ON THE MINIMUM SCOPE OF WAR DAMAGED SHELTER REPAIRS ([ANNEX 2](#))

- Only residential housing units, damaged by the consequences of the war, should be repaired using humanitarian funding. Public, commercial or other type of buildings that do not serve as a dwelling, and residential buildings not damaged by the war, are excluded from the scope of humanitarian shelter interventions.
- It is recommended that as many vulnerable families as possible are reached meaning the value of the repair needs to be considered when selecting the beneficiaries. War damaged shelter falling in the [category II](#) is recommended as optimal by the [Shelter Cluster in Iraq](#). This also avoids humanitarian interventions negatively affecting potential future compensation claims, if available, where humanitarian intervention could be comparatively lower in value than the compensation. Other categories are less relevant for humanitarian interventions – although the severity of the vulnerability of the beneficiaries would drive the decision:
 - WDS in cat. I may already meet minimum level of quality living standard and can likely be repaired in time
 - WDS in cat. III that would require a limited budget may be considered, choosing the side of the house that has been least affected and ensuring that the structurally damaged part of the building will not pose safety risks to people.
 - WDS in cat. IV would require a significant budget that would fall beyond the scope of the humanitarian shelter interventions. Alternative low-cost solutions such as transitional shelter should be considered for highly vulnerable families.
- The minimum recommended standard is **5.5 m² of covered space per person including circulation, kitchen, bathroom and toilet facilities**. That results in a target of a minimum of **33 m² per family of 6**. Thus, after categorizing the WDS, the main and only **focus should be on determining minimum repairs for the portion of the housing unit that can be rehabilitated with least effort both in terms of budget, timeframe, type of works and specialised labour required**.
- Building within the existing foundations is highly recommended to ensure compliance with existing urban plans and simplify works. This implies that the recommended minimum space of 5.5 m²/person may be exceeded or diminished, based on the technical engineering evaluation, but preferably not below 3.5 m²/person. Taken into consideration the pre-conflict space per person in very dense urban areas regardless of the standard.

ON IMPLEMENTATION MODALITIES

The coping mechanisms of potential beneficiaries should be taken into consideration when targeting beneficiaries and planning for repairs. Only those families which are unable of meeting their own minimum shelter needs should be prioritized for assistance. Carrying out repairs could be done through different modalities, but should preferably contribute to local economies by engaging in local capacities, skilled workers or cash-for-work.

FURTHER NOTES AND TECHNICAL ADVICES

- **WARNING: Any structure, irrespective of war damage category, where there is presence of Explosive Remnants of War (ERW), or where there is an imminent threat of collapse from a neighbouring building should not be considered safe for habitation.**
- Clearance of ERW, dead body handling and rubble removal are outside the scope of the humanitarian shelter activities and minimum standard repairs. These issues should be addressed by the relevant entities before commencing assessment or shelter repair.
- **Local building codes and regulations must be strictly respected.**
- Coordination at field level may be challenging due to the extent of damage, the numbers of actors involved, stage of project or modality. To avoid duplication of activities, the [Shelter Cluster](#) highly recommends partners to refer to the [Iraq War Damaged Shelter Rehabilitation Interactive Dashboard](#) developed by [Shelter Cluster](#) and [UNHABITAT](#)⁴ which will centralise all data on assessment and repair.
- **Buildings with cultural and historical value:** buildings affected by the effects of the war that have historical and cultural value must be restored in their original layout, preserving specific historical characteristics, using specific materials and specialised craftsmanship. Partners that do not have necessary competencies are strongly advised not to engage in shelter repairs in such areas, while referring cases to the expertise of [UNESCO](#).
- **In assessing burnt shelters:** shelters affected by fire must be assessed by an expert technical engineer looking into the causes, consequences and spatial variability of burn severity to determine the safety of the structure.
- **Vulnerable households** who managed to partially rereconstruct their WDS [category III](#) or [category IV](#), yet not matching the minimum standards, can be supported in emergency WDS repairs. The support can be in many types of intervention resulting in providing adequate shelter of 5.5 m² per person and within the budget allocated for [category II](#) WDS repairs.

⁴ Our partners are advised to report their WDS Repairs activities using the [War-Damaged Shelter Reporting Tool](#) developed by the [Shelter Cluster](#) and UNHABITAT. For further information please contact Emmanuel Lokoya Otika im3.iraq@sheltercluster.org or Ali Hamad Ammen ali.hamadameen@unhabitatiraq.org

ANNEX 1 - CATEGORIES OF WAR DAMAGED BUILDINGS IN IRAQ

Indicative description to support the technical assessments to be conducted by qualified engineers only

CATEGORY	Level / type of damage	Structural elements		Windows and doors	Internal elements	Structure safe for habitation ⁵
		Walls and loadbearing elements	Roof slab and roof covering	External doors and windows including glazing and ironmongery	Walls, floor finishes, WC/shower, water and electrical connections	
0	No damage /Negligible damage	No damage caused by war activities OR Damage limited to external finishes or boundary walls.	Slight cosmetic/external war traces to roof or parapets (bullet holes, superficial shell damage).	Broken glass on windows or doors, no damage to window frames or doors.	None, OR Slight internal damage due to overuse/overcrowding or limited damage to internal floor and wall finishes. No fire damage.	YES
I	MINOR Houses with limited damage to walls, doors, windows	Slight/superficial cracking with no observable deformation of structural elements OR Limited mortar and shell perforations to walls.	Limited mortar and shell perforations to roof or parapets.	Minor damage to windows and frames. External doors missing, or damaged.	Slight internal damage due to overuse/overcrowding or limited war damage to internal floors and walls. Light fire damage evident affecting finishes, limited to parts of the building (soot and smoke deposits, colour changes, peeling, minor spalling).	YES
II	MAJOR Houses with extensive damage, but no structural damage	Extensive shell perforation or damage to non-bearing walls, partially inhabitable unit. No damage OR light damage to structural elements (columns, slabs, loadbearing walls). E.g. localized damage over a small area of columns or beams (concrete spalling or loss of material due to impact) No observable deformation of structural elements. Few or repairable cracks.	Can be patched without structural repairs. E.g: Minor damage by shells penetrate roof, but roof structure is otherwise intact, not buckling.	Damage to window frames, external doors missing or damaged.	Internal spaces damaged by shells (internal walls, floors) or fragments, damaged/degraded building materials. Damage across multiple floors. Houses with tunnels that need to be covered/filled, no damage to foundation. Fire damage can be repaired, and/or limited to some areas of the house. (e.g. spalling, exposed reinforcement).	Partially ⁶

⁵ Refers only to the physical stability of the building not to the adequacy of the living spaces.

⁶ The building may have extensive non-structural damage, but it is possible to safely inhabit it while the repairs take place.

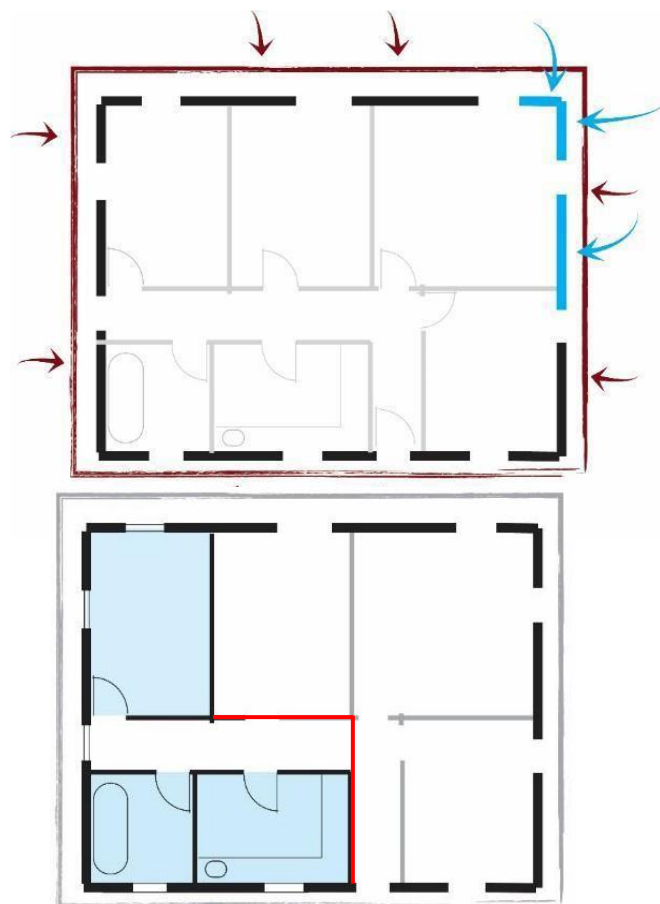
III	<p>SEVERE</p> <p>Houses that have sustained significant structural damage and require extensive repairs</p>	<p><u>Structural damage involving several loadbearing members</u> (foundation, loadbearing walls, columns and slabs) e.g.: significant cracking with observable permanent deformations of the structural elements, crushing of concrete, deterioration of bond between steel and concrete, fracture or buckling of reinforcement, or rupture of ties and stirrups, <u>however it could be repaired.</u></p>	<p>Damage by large shells penetrating roof. Engineering solutions required to conduct structural repairs of roof.</p> <p>Buckled or broken reinforcement.</p> <p>Roof partially collapsed, but repairable.</p> <p>Damage across multiple floors.</p>	<p>Damage irrelevant if structure is compromised.</p>	<p>Houses with tunnels that <u>caused damage to foundation.</u></p> <p><u>Severe fire damage</u> that can be repaired but so widespread that renders the house inhabitable.</p>	<p>NO (until retrofit)</p>
IV	<p>DESTROYED</p> <p>Structural damages so important that rehabilitation is not feasible</p>	<p>Totally in rubble (only foundation or debris remains) or <u>at least 60%</u> of the structure of the house is <u>destroyed.</u></p> <p><u>Complete failure of two or more major structural components</u> - e.g. collapse of columns, load-bearing walls, foundation.</p> <p><u>Imminent threat of collapse</u> due to damage or confirmed imminent danger - e.g. impending collapse of neighbouring building, extensive damage to ground around the house compromising foundation.</p> <p>Extensive cracking or loss of material with gross local or overall deformations.</p>	<p>Partial or complete collapse of roof, combined with partial or complete collapse of other structural members</p> <p>Excessively deflected roof, weakened structure at risk of collapse.</p>	<p>Damage irrelevant if structure is compromised.</p>	<p>Non-repairable fire damage, affecting structural members.</p>	<p>NO</p>

Category	Damage level	Damage value for average house of 200m ²	Recommended value of repair assistance to minimum standards (*)
0	NO/NEGLIGIBLE	<1,000	0 - 500\$
I	MINOR	1-5,000	500\$ - 1,500\$
II	MAJOR	5-10,000	1,500\$ - 5,000\$
III	SEVERE	10-20,000	5,000\$ - 15,000\$
IV	DESTROYED	>50,000	N/A

(*) These are average values per family of 6 members, thus corresponding to the repair of 33 m²/family. Regional variation should be considered because of different market prices.

ANNEX 2 – MINIMUM SCOPE FOR EMERGENCY SHELTER REPAIRS

Repair interventions will ensure the structural integrity of the building is secured, and provide minimum adequate living space for all residents. Repairs to cosmetic features (e.g. painting, tiling, etc.) are beyond the scope of humanitarian action and should not be included (except where strictly necessary, such as for waterproofing toilet/shower spaces: see below for more details).



Step 1: Ensure structural integrity of the building.

Red line: Inspect and stabilize any damaged structural elements, and ensure slabs are properly supported shoring as required.

Blue line: Where deemed necessary remove, replace or repair damaged materials/elements.

Step 2: Provide adequate covered living space

Blue line: Sealing the covered living space (based on minimum 5.5 m²/person) to improve protection from harsh weather, security, privacy, and access to kitchen and sanitation facilities are the primary concerns of cluster interventions.

Red line: As necessary seal-off non-repaired areas to ensure safety of residents.

The remaining area will be repaired by beneficiaries themselves over time, according to their capacity and Government support.

Technical requirements - Minimum standards for repair of **Category I (minor), II (major) & III (severe)**

In addition to the items described below, Category III buildings will require major structural repairs. The required works will be determined by a structural inspection and must be designed by a qualified engineer. Works may include: underpinning foundations, cement or chemical filling of cracks, wall stitching, jacketing columns and beams, applying shear collars, removal and replacement of crushed concrete, replacement/splicing of damaged reinforcement, pouring new or repairing floor/roof slabs, etc.

Item		MINIMUM TECHNICAL REQUIREMENTS	Remarks
Structural safety	1	Structural cracks, spalling, loss of material, and /or holes are repaired as needed in columns, beams, lintels, loadbearing walls, and slabs to protect structural integrity of the <u>entire building</u> .	The load carrying capacity and stiffness of structural elements must be restored in order to reduce the risk of structural failure due to deterioration. This should be completed at the discretion of the lead engineer.
Covered living space	2	Minimum 5.5 m ² of covered space per person including circulation, kitchen, bathroom and toilet facilities. To calculate, add the complete covered floor area of the housing unit and divide by the number of people in the household. E.g. floor area required for a 6 person household is 33m ² .	Calculation must include all persons living in the housing unit, including hosts, IDPs, and /or returnees. Most housing units will be larger than the required standard. In this case <u>only the required covered area will be repaired</u> . Smaller housing units will also be repaired and if possible additional covered space created (e.g. extensions, covered patio, etc.).
Fire damage	3	All evidence of fire damage is removed (soot, smoke deposits, peeling, minor spalling) from required covered living space.	
Boundary walls	4	Where security and privacy are a concern and where there is no capacity for beneficiaries to do this themselves, repair damaged boundary walls and repair/provide a solid lockable entry gate.	
External Walls	5	All external walls of the required covered space are free from cracks or holes. Note: non-structural plaster cracking is acceptable.	<u>Plastering or painting is outside the scope of repairs.</u> Use concrete block, or bricks to fill larger holes. Small holes may be repaired with expanding foam.
Roof	6	Roof and ceilings are free from cracks and holes, and there are no leaks, or stagnant water.	Where necessary apply waterproof silicon compound to fix leaks, and/or a layer of asphalt over concrete roof.
Floor slab	7	Cleanable, level floor in the required covered space (e.g. smooth concrete screed), sealed around the edges to prevent insects and rodents. If damaged evident, repair to smooth surface. Note: non-structural plaster cracking is acceptable	<u>Tiling of floors is outside the scope of repairs.</u>

Stairs, balconies and roof terraces	8	Stair shafts, balconies, and/or roof connected to stairs have a stable parapet to prevent children and adults from falling (including common stairs in multi-unit buildings). Required parapet height min 1 - 1.2m, however where parapets already exist lower than 1m, and are considered stable and safe they do not need to be replaced.	Cement block wall preferred, but other materials may be acceptable if they are stable and well secured (e.g. metal or wooden guard).
External and internal doors	9	All external doors into the housing unit (including roof access door) are solid, lockable, and securely fixed to frame.	Metal, wood, or UPVC insulated doors may be used.
	10	Solid lockable doors into toilet/shower.	
	11	At least one room/bedroom with solid lockable door per household.	Particularly important to ensure privacy where there is sharing/hosting arrangements.
Ventilation / Windows	12	Natural light opening area per habitable room is minimum 10% of floor area.	To calculate natural light add the area of windows and any internal wall openings to bring light from one room to another. For ventilation add all openings (closable or permanent) directly into external air including openable windows, ventilation grills or louvers, air bricks, or any external door. Divide this by the area of the room. E.g. 1m ² of natural light / 10m ² room = 10%, 0.5m ² of ventilation / 10m ² room = 5%. Mechanical ventilation may be an option where other openings are not feasible. <u>Optional:</u> Where feasible fly mesh may be applied to openable windows.
	13	Ventilation openings per habitable room of a minimum 5% of floor area.	-
	14	All window units in the required covered area are sealed from rain, water, and wind, and have solid panels (glass, polycarbonate sheet or equivalent) securely fixed to frame.	<u>Existing/damaged windows can be reused if the frame and pane are repaired to ensure no gaps or leakage.</u> <u>Optional:</u> Where security is a concern and where there is no capacity for beneficiaries to do this themselves, protection bars may be installed on the ground floor of the required covered area.
Internal walls	15	Interior walls in habitable spaces are free from holes. No signs of structural problems. Note: non-structural hairline cracking is acceptable.	<u>Plastering or painting of internal walls is outside the scope of repairs, except in wash facilities (see below).</u>
Internal partitions	16	Where privacy is a concern, provide minimum 1 internal partition separating sleeping and living spaces.	Use concrete block, gypsum, plywood, metal, or plastic materials.

Water supply	17	The housing unit is connected to municipal water network where it is available, and there is a minimum of 1 functioning water tap per plot.	<u>Optional:</u> Where feasible provide 3 water sources per housing unit (1 in kitchen sink, 1 hand wash basin in toilet, and 1 shower tap). All must have sewage network connection and be functioning and free from leaks.
	18	1 functioning 1,000 litres water tank is required if there is no municipal water connection available.	Calculated for a family of 6, assuming 50-60 litres/person/day, storage capacity for 2-3 days.
Kitchen	19	Housing unit has 1 adequate space for sanitary food storage, preparation, and cooking separated from toilet facility by solid wall.	Recommended minimum space for kitchen of 3m ² , based on counter length of 2m, depth of 60cm, and 90cm space in front of counter for safety.
Toilets and showers	20	Minimum 1 toilet and shower/bathing space per housing unit of with lockable door, and means of ventilation.	Shower and toilet space may be combined. Recommended minimum area of 3.5 to 4m ² . Toilet type (squatting/sitting) according to beneficiary preferences.
	21	Toilet with no marks of leakage, trapped and vented to the outside, and connected to public sewage system, or to private sewage disposal system (e.g. cesspit, septic tank).	
	22	Toilet/shower floors are smooth and cleanable, shower walls are plastered up to 1.5m.	<u>Tiling is outside the scope of repairs.</u>
Electrical connection and lighting system	23	Damaged / burnt electrical wiring, distribution boxes and circuit breakers are removed from the housing unit or disconnected to prevent fire hazards.	
	24	Housing unit is connected to the electricity network where it is available according to applicable regulations.	
	25	Electrical panel, outlets, switches and fixtures are in good working condition without risks of electrical fires, and wherever possible wiring is concealed in electrical conduits.	
	26	In the required covered areas, minimum 1 outlet and 1 light per room.	Outlets in kitchen, or shower room are covered (waterproof) to prevent electrical fires. Light in shower must be waterproof.
Accessibility	27	If there are persons with disabilities they have safe access to the housing unit facilities (toilet/shower, kitchen) and can safely exit the housing unit.	For further guidance refer to the following guidelines: HI General Accessibility Guidelines for Iraq, 2016 All Under One Roof Disability-inclusive shelter and settlements in emergencies