IOM Iraq
العراق

REHABILITATING, REPAIRING AND UPGRADING CRITICAL SHELTERS AND DAMAGED HOUSES

IOM Disclaimer

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Foreword

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Displacement in Iraq affects more than 3 million Iraqis across the country. Their lives have been uprooted, their communities scattered, and their homes are destroyed or inaccessible. In these conditions, shelter provision becomes a main priority for the displaced and humanitarian partners, government authorities and host communities a like. The objective is to assist the displaced with basic shelter rehabilitation so they can live with dignity in temporary critical shelters such as religious and unfinished buildings and informal camp settings, or with basic repairs of the returnees' damaged houses when they go back to their retaken areas.

Since the on set of the emergency in January 2014, IOM, as one of the largest shelter/NFI partners in Iraq and as the co-chair of the sub-national Shelter/NFI and CCCM Cluster, has continued to respond to the overwhelming shelter needs of displaced families through the provision of emergency shelters such as tents and prefabricated caravans, sealing-off kits and rehabilitation of critical shelters where internally displaced families live. Different shelter solutions are offered to internally displaced persons (IDPs) who are newly displaced and to those who have been displaced for a longer period of time.

By December 2016, IOM had reached 22,444 families (a total of 134,664 individuals) through shelter interventions: 11,271 emergency tents, 6,040 sealing-off kits and1,054 prefabricated caravans have been distributed and 811 critical shelter arrangements have been rehabilitated. IOM's shelter units provides shelter and WASH repairs to upgrade these critical shelters in accordance with international humanitarian Sphere standards and safety requirements to improve the protection of vulnerable population groups, especially women and girls.

IOM Iraq is working in cooperation with the Government of Iraq to provide for the urgent shelter needs of displaced Iraqis. As the displaced attempt to find shelter, IOM, with the support of donors, stands ready to facilitate carrying out the needed improvements.

We strive to achieve shelter solutions that meet the minimum humanitarian standards for accommodation and safety requirements. Shelter repair, upgrades and rehabilitation require technical expertise and field supervision and guidance from experienced shelter and camp management and camp coordination engineers and experts.

Resulting from hands-on experience on the ground, this booklet presents Shelter guidelines that aim to offer step-by-step guidance in repairing and upgrading critical shelters and damaged houses. It is directed at the humanitarian aid community, IDP community members, and camp technical working committees, who are applying innovative skills so they can use the available resources to shelter the displaced. Moreover, IOM's shelter capacity building coordinators provide on-the-job training skills for displaced communities in awareness and livelihood skills.

We look forward to continue supporting communities, displaced Iraqis, and those who are working inside and outside camps to assist those who have lost everything, until they can return to their homes.

Dr. Thomas Lothar WEISS
Chief of Mission, IOM Iraq

Acknowledgement

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In late 2015, IOM's Iraq Shelter and Settlement Programme, with a kind contribution from the Office of Foreign Disaster Assistance of the United States Agency for International Development, conducted a rapid shelter assessment to select 700 collective shelters and damaged houses for emergency rehabilitation and upgrades.

Based on this assessment, IOM successfully implemented various works on the selected collective shelters and returnees' residences. These guidelines on critical shelter rehabilitation were developed to show practical examples of rehabilitation, repairs and upgrades, as well as step-by-step maintenance methods, in accordance with the international humanitarian Sphere standards.

On the occasion of this guideline's publication, I would like to thank the Government of the United States for its generous contribution, the Ministry of Displacement and Migration of the Government of Iraq for its endorsement, the Cluster Coordination Team of the Shelter/NFI Cluster for Iraq for its technical support and guidance, and Dr. Thomas Lothar Weiss, Chief of Mission for IOM Iraq for his support and supervision.

I would also like to acknowledge Eng. RajaSegaran Kuppusamy, Shelter and Settlement Engineer, for his technical leadership and for writing this guideline, and Eng. Ala Sktany, Shelter and Settlement Programme Support Assistant, for her dedicated work. Finally, these guidelines would not have been complete without the technical reports and photographs provided by the field staff of IOM's Shelter and Settlement Programme.

IOM hopes that these guidelines will help all humanitarian agencies involved in shelter interventions to continue promoting a safe living environment for all IDP families living in collective shelters in critical conditions and to returnees when they go back to their damaged houses.

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Purpose of the Guidelines for Critical Shelters and Damaged Houses Rehabilitation

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This booklet provides basic critical shelter rehabilitation guidelines for repairs and upgrades, and step-by-step maintenance instructions in accordance with international humanitarian standards. IOM's shelter unit intervention programme targeted a total of 700 critical shelters and returnees damaged houses throughout the northern, central and southern regions in Iraq. The rehabilitation primarily focused on basic repairs and replacement parts of water, sanitation and hygiene (WASH) equipment, such as repairing damaged pipes, on providing gender protection by installing internal wall partitions with locks, improving the ground infrastructure, repairing roof leakages and rewiring damaged electrical lines to prevent electrocutions.

This simple repair and maintenance step-by-step approach has improved the basic living conditions, dignity and gender protection of IDPs. Moreover, IOM's shelter field engineers implemented on-the-job training and capacity building in basic shelter reconstruction activities to the selected IDPs who reside in critical shelters to improve the safety of their living environment. The two-in-one approach provides skills training to IDPs to further enhance the livelihood opportunities of Iraqi men and women when they return to their areas of origin.

My engineering and project management experience in humanitarian crises and emergency response with many IOM field missions and my skills in shelter, WASH and Camp Coordination and Camp Management (CCCM) care and maintenance have all positively contributed to these technical guidelines, which I hope will become a reference to humanitarian organizations and displaced communities.

The IOM shelter team has provided invaluable contributions to the field reports and technical research studies carried out throughout Iraq's central belt and southern regions.

IOM hopes that these shelter rehabilitation guidelines will develop a culture of safety in all unfinished settlement buildings and returnees' damaged houses repair works, not just by applying the minimum Sphere standards, but also by safeguarding the dignity of displaced families in times of emergency crises and providing safety awareness and livelihood opportunities to IDPs when they return to their retaken areas.

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65 YEARS عـام
International Organization for Migration
المنظّـــمة الدوليّـــة للهِجْـــرة

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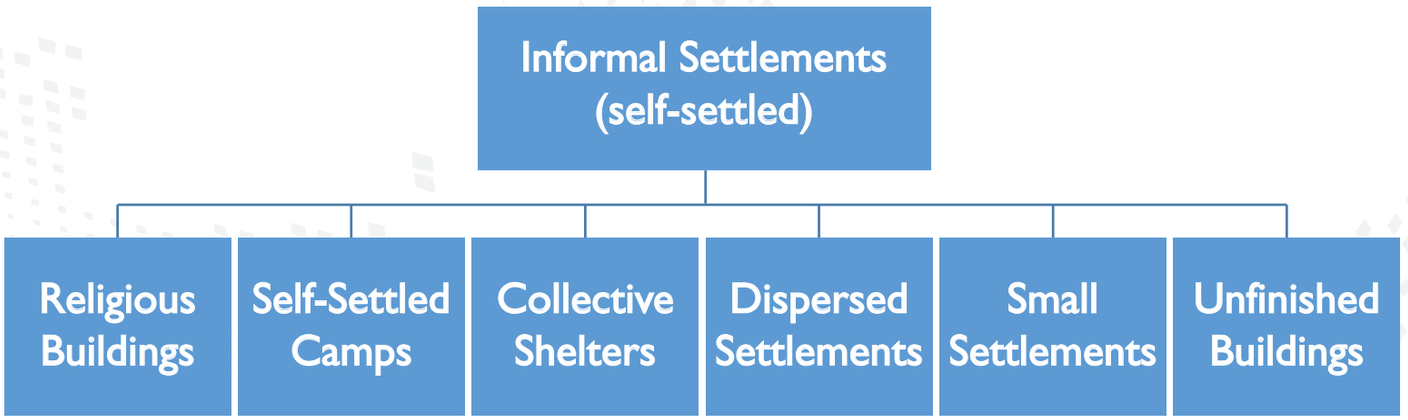
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Section A: Project Summary

Rehabilitation of Collective / Critical Shelters (Religious Buildings)

- **Emergency Crisis Context:** The current armed conflict in Iraq, concentrated most heavily in the northern, central and south central governorates, has resulted in the mass displacement of civilians.
- **Date of Crisis:** January 2014 – Present

A) People affected: IOM's Displacement Tracking Matrix (DTM), as of December 2016, identified 3,064,146 IDPs and 1,273,834 returnees since January 2014. Approximately 518,568 individuals (17% of all IDPs) are currently living in critical shelter arrangements: these include unfinished buildings, informal settlements, religious buildings and schools. An estimated 97,230 (3%) are staying in religious buildings (including Husseinyas – Shiite prayer hall), most of which do not meet minimum shelter standards.

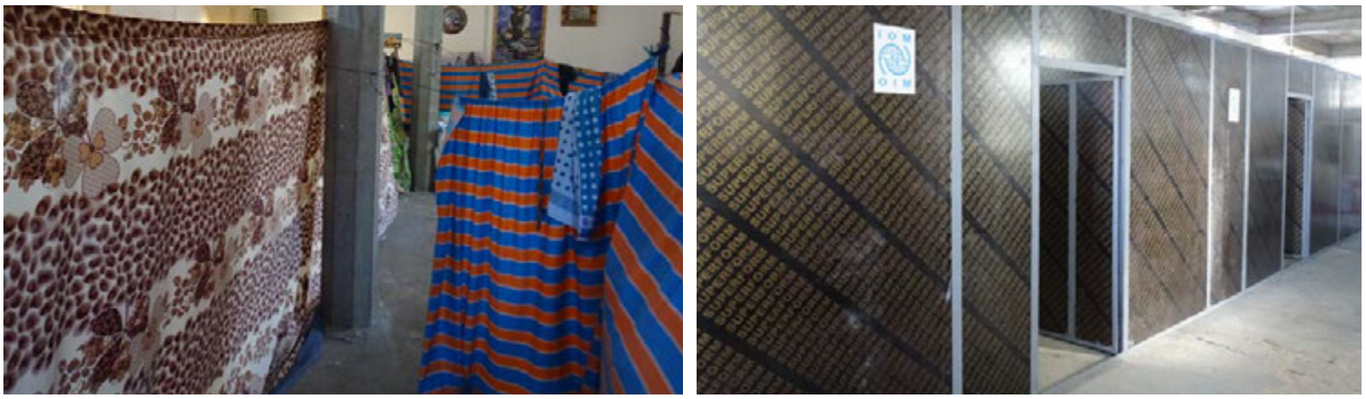
B) Project location: Central and Southern Iraq

C) Targeted beneficiaries: 300 religious building units (Husseinyas/critical shelter) arrangement upgrades for a total of 10,221 individuals.

D) Collective / Critical Shelter Size: More than 5 families (approximately 35 individuals in each informal settlement) each critical shelter site.

E) Rehabilitation Cost: Building rehabilitation: US$2,000 per family unit.

Photos: Critical shelter (religious building), Baghdad, Iraq. 2016 IOM Iraq



Informal Shelters / Settlements – Definitions.

Informal settlements are self-settled on sites that are not built to accommodate the displaced community but are serving that purpose. Humanitarian assistance may be available but is often not provided regularly. Informal settlements are not recognized, managed or significantly assisted by government authorities, and are more complex or diverse compared to formal settlements. Informal settlements are generally considered the most vulnerable temporary settlements and should be considered as shorter-term places of accommodation. Assistance including rehabilitation upgrades in privacy and living conditions to uplift dignity and protection should be prioritized.

The pictures above provide an example of the before and after rehabilitation construction with privacy and protection for vulnerable families. Before rehabilitation walls were covered and separation of spaces created with blankets and rugs without adequate lighting. Safety and security of the displaced communities were scarified living in unprotected separate rooms. Risk exposure levels are high as there is often open-floor living space in many "informal" settlements. Poorly constructed and inadequate WASH facilities are highest case unwarranted incidences in many informal /critical settlement with women, children, and person with disabilities. After rehabilitation of internal walls with adequate privacy and safety protection. environmental safety and security measures were placed with corridor lighting, safety locks.

- **Donor: OFDA** (Office of U.S. Foreign Disaster Assistance)
- **Implementing Agency:** International Organization for Migration (IOM) Iraq Mission

IOM Achievements:

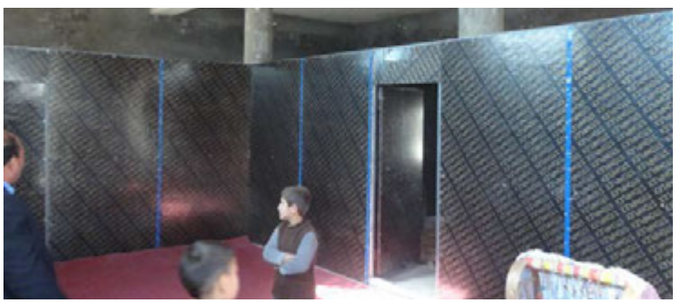
- Improved protection for families by providing privacy through the installation of walled partitions with privacy safety locks for each family.
- Improved lightings along hallways, wash areas, and water collection points and in dark areas.
- Repaired and upgraded WASH facilities for women, men and people with disabilities
- Sealed exposed roofs and walls from leaking and provided thermal protection against extreme weather condition.
- Implemented on-the-job training for selected IDPs on rehabilitation works, and provided capacity building training and awareness raising programmes in hygiene, fire protection and electricity safety.

1. Internal Wall Partition (Privacy and Protection)

Best Construction Practices

Steps to Improve Privacy and Protection

- **Bedroom and living areas must be separated by internal wall partitions; bedroom partitions should be distanced from bathrooms, toilets and kitchen corridors.**
- **Internal doors must have internal and external locks.**
- **Adequate lighting should be provided in the hallways and open areas leading to toilets, bath-rooms and communal water points.**
- **Ramps for physically challenged IDPs should be provided.**



Before Rehabilitation

Lack of Protection and Privacy
The family room partition was covered with plastic canvas, tarpaulin, and blankets, making women and children highly vulnerable.

After Rehabilitation

Protection and privacy provided through internal plywood partitions with doors and lock sets.

Safe Construction: Step by Step Rehabilitation

Step one:

- Start floor layout with string adjustment for wall framing.
- Tools and materials required :
measuring tape, string, chalking and straight edge (long wood pole) for marking.
- Use plumb rule/ plumb bob to ensure that corners are plumb and square.

Step two:

- Install Metal Framing along marked floor line.
- Secure metal frames in floor with cross bracing support.
- Secure bottom plate by rivet into floor.
- Secure each vertical frame wall.
- Align metal frame with plumb rule and string.

Step three:

- Install and secure 75 mm plywood along the metal frames
- Use rivets in each plywood sheet (4" x 8"/ 10.1cm x 20.3cm) in between metal studs and secure the plywood wall to each corner of wall.
- Provide door and ventilation openings in each partition family room.

Step four:

- Align plywood wall in line with straight edge along wall corners.
- Install plywood door in each family bedroom with privacy lock for protection.
- Plywood wall partitions ready for occupancy.
- Install doors with hinges, align and test.

A.2. WASH – Plumbing Repair

Bathrooms, Toilets, Septic Tanks and Water Tanks

Best Practices

Steps for WASH Rehabilitation and Protection

- **Access to 35L of potable water per person per day for all needs including water dedicated for drinking.**
- **Install water tank with a 1,000L capacity for washing, cleaning and drinking.**
- **Install 3" – 4" (75mm–100mm) UPVC pipes to discharge waste water into open channel drains that lead to an open pond (storm drain).**
- **Install 4" – 6" (100mm–15mm) UPVC pipes to discharge sewerage including 12"–18" (300 – 450 mm) hand hold into septic tank or holding tank.**
- **A manhole should be placed at least every 3m, with a 2% slope towards the septic tanks.**
- **Install at least one 3m² CMU or UPVC septic tank for every 10 families (60 individuals) in any informal settlement.**

Before Rehabilitation

Common toilets and bathrooms were shared by women, children and men, leading to highly vulnerable and unsafe conditions for women and children.

After Rehabilitation

New toilets and bathrooms segregated by gender and for physically challenged IDPs.

Safe Construction: Step by Step Rehabilitation

Step one:

- Demolish/remove unstable walls, metal door, and broken plumbing network pipes.
- Clean and remove any debris inside toilets and bathroom floors.
- Begin setting out new toilet and bathroom for women and men.

Step two:

- Install prefabricate sandwich panel walls as well as roofs and doors.
- Install new toilet and bathroom units (one unit for every 20 families).
- Separate men and women's bathrooms.
- Separate the units of physically challenged IDPs.

Step three:

- Install new plumbing pipes and tap points for bathroom and toilets.
- Provide at least one 1,000L new water tank and piping networks for every 20 families.

Step four:

- There should be a minimum 1 - bar pressure in each outlet, and gravity flow in every bathroom, toilet, and washing facility.
- Test drinking water with the health department for contamination.
- Test all plumbing pipes connected to sewage systems.
- Test black water (sewer) flows, ensuring there is a minimum slope of 2% into the septic tank.

A.3 Fencing Installation

Best Practices

Criteria for unwarranted intrusion

- **Fencing protects IDP communities living in open or unsecured buildings against external threats and intrusions, and offers privacy and protection through a metal door equipped with locks.**
- **Use fencing materials made from corrugated metal sheeting, at least 2m high, 8x8cm, secured with 75mm - thick vertical and horizontal frames.**
- **The fenced perimeter should be lit with 100-watt flood lights (at least).**
- **A vertical frame (pole) 75mm should being stalled every 2m, center-to-center (CC) and buried 0.5m underground with concrete.**
- **Metal sheets should have cross bracing protection.**

Before Rehabilitation

Unprotected shelter, vulnerable to intrusions; lack of privacy.

After Rehabilitation

Fenced perimetre offers protection against vulnerabilities such as intrusions.

Safe Construction: Step-by-Step Rehabilitation

Step one:

- Use nylon strings, plumb lines and plumb bobs for the layout of wall alignments.
- Excavate a 0.5 m foundation pole, 1m CC.
- Pour fresh concrete (1:2:4 mix) with a compressive strength 24MPa.
- Let concrete dry for 3–5 days and continue the watering/ moistening process.

Step two:

- Install plumb lines and bobs to straighten frame pole inside the concrete foundations.
- Once concrete is poured, moisten with water (cure) for three days to keep it moist and prevent fast drying.
- Install fencing metal sheets, secured to each pole and riveted.

Step three:

- Install standard 8m x 4 manti - oxidized, painted, corrugated 100mm metal sheet with horizontal overlap every 8m.
- Rivet metal sheet lapping on metal poles every 1m CC.
- Install cross bracing at 1m CC to protect the metal sheets from wind damage.

Step four:

- Secure the metal fencing with cross bracing and diagonal support every 1m to prevent falls due to wind.
- Paint metal fence with acrylic metal coat and include (optional) acrylic metal paint.
- Provide privacy doors equipped with locks if necessary.

A.4 Roof Repair

Best Practices

Steps to protect against leaking roofs:

- **Use anti-oxidized roof sheeting to extend the life span of roof sheets and framing members.**
- **Perform periodic maintenance inspections to the roofs with water-proofing sealant and protecting compounds.**
- **Keep stock of water-proofing silicon compound and use when necessary.**
- **Keep repair tool kits / boxes ready.**
- **Use tarpaulin roof sheets (canvas / nylon) for immediate protection against leaking roofs until a permanent solution is found.**

Before Rehabilitation

Roof leaking due to the poor quality of the roof support and of roofing sheets and frames.

After Rehabilitation

New roof with metal frame and sheet sealed with water proof silicon compound to prevent leaking.

Safe Construction: Step-by-Step Rehabilitation

Step one:

- Remove damaged roof - framing members.
- Remove useable roof sheeting and set aside for reuse if necessary.
- Install new roof frame structure (50x50 mm/ 75x75 mm) on top of CMU wall.
- Secure the top sheet of steel roof beam with a 100mm ridge capping that overlaps top of frame.
- Secure roof with roofing nails.

Step two:

- Install reusable or new roof metal sheet on top of roof frame (with a 2% slope).
- Overlap the 100mm roof sheet and secure it on the roof frame with a metal clip every 1m.
- Align new roofing frames and sheets with internal walls.
- Install waterproof sealant in all roof sheeting overlaps, and in the corners of the roof joints.

Step three:

- Paint roof sheeting with anti-oxidant galvanized paint (optional).
- Carry out a rood water-flooding test to check for leakages.

A.5 Waste Water Drainage Repair (Black and Gray Water)

Best Construction Practices

- Wastewater disposal should be connected to an open drainage channel that leads to the nearest pond or pit outside the plot, existing sewer network, improved pit latrine or storm drain.

Note: Formal approval is required from the relevant local authority when connecting to an existing pond or storm drain.

- Floor surfaces in latrines/ bathrooms should have adequate drainage and be floored with smooth concrete or tiles to allow easy cleaning and improve hygiene.
- Toilet/bathroom with adequate waste water drainage.
- Wastewater disposal should be done through channelled pipes in open drainages, collected either in storm drains or open ponds.
- Black water must be channelled to the nearest septic tank and an overflow cesspool must be installed.

Before Rehabilitation

After Rehabilitation

Safe Construction: Step by Step Rehabilitation

Step one:

- Remove damaged waste water pipes.
- Replace new 4" (100mm) UPVC pipes with connectors and tees (45°) with access to clean out connections.
- Channel new wastewater PVC pipes to open channel drains outside buildings (at least 1m away from building and 3m from the water supply network).
- Channel black water (sewage water) into septic tank.

Step two:

- Install waste water open channel concrete drains.
- Every 3m, construct 24" (600mm) x 24" (600mm) waste-water retention pond.
- Channel waste water with a 2% slope to nearest storm drain or pond.

Step three:

- Provide WASH awareness to community.
- Develop maintenance schedule and reporting tool for regular WASH upkeep.

A.6 Community Awareness

A.6.1 WASH (Water, Sanitation and Hygiene)

Best Practices

Steps for WASH Awareness

- **Conduct focus group discussion.**
- **Appoint a focal point (community group leader).**
- **Conduct capacity building training for community.**
- **Conduct hands-on training on water conservation and hygiene and critical center cleanliness and upkeep with communities.**
- **Develop schedule for regular maintenance programmes.**

Prior to the Rehabilitation and Awareness Campaign

After the Rehabilitation and Awareness Campaign

WASH Awareness Program

One:

- Coordinate with Shelter / NFI / WASH NGOs regarding the displaced community case loads in pre-selected critical shelter locations.
- Conduct shelter rapid assessment reports.
- Coordinate with health authorities in preparation for WASH awareness programme.

Two:

- Conduct group discussions with displaced communities.
- Identify critical awareness and conservation.
- Identify critical awareness and conservation program necessary for displaced communities.
- Hand out WASH leaflets and brochures.

Three:

- Conduct hands on community participation WASH training
- Conduct water conservation training for the community's children, women and men.

Four:

- Appoint a WASH focal person from the community.
- Provide the focal person with the contact details of the health department and other local government authorities in case there are emergency needs.
- For emergency responses, use call center hotline number (800699999) for follow-up by local authorities.

A.6.2 Electrical Safety and Hazard Prevention

Best Practices

Steps for protection against electrocution.

- **Conduct community focus group discussion.**
- **Appoint a focal person from the community (group leader).**
- **Provide community focal persons with electricity tool kits.**
- **Develop a care and maintenance on-the-job training for selected IDPs and develop a maintenance programme schedule for the upkeep of informal settlements.**
- **Demonstrate and distribute community awareness materials on electrical hazards / safety procedures.**

Unsafe Conditions in Critical Shelter

Unsafe conditions in critical shelters: Communities were living with exposed electrical cables, which made them highly vulnerable to electrocution.

Post Rehabilitation and Awareness Campaign

New electrical switches and plug points installed with electrical earth grounding.

Safety Electrical Awareness Processes

One:

- Coordinate with Shelter / NFI / WASH NGOs for displaced community case load study report in pre-selected regions
- Conduct shelter rapid assessment report

Two:

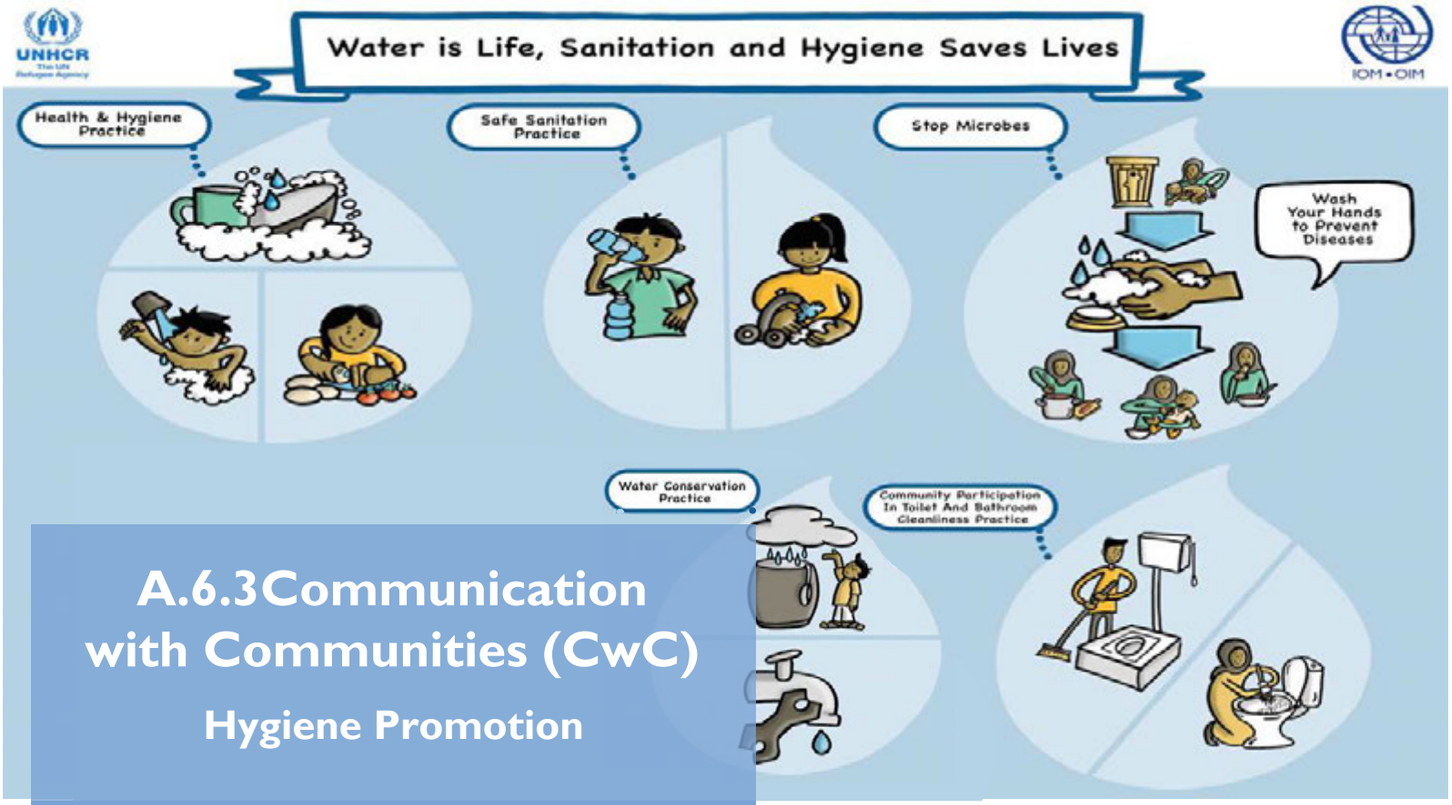
- Conduct focus group discussion with displaced communities.
- Identify critical electrical hazard type and locations and safety hazard type in surrounding shelter.

Three:

- Conduct a community participation (pre-selected skilled community) maintenance hands on training.
- Jointly conduct fire safety and prevention campaign.

Four:

- Appoint electrical focal point 3 - 4 maintenance technicians to carry out repair.
- Provide electrical repair tool box kit.
- Install fire brigade (water pail and axe, sand bag kits) in each community block to safety against fire hazard.



A.6.3Communication with Communities (CwC)

Hygiene Promotion

Handouts Awareness

Diarrhea , Cholera, Viral Fever (Dengue)

- **Systems Watery Stool, Fever, Nausea and Vomiting.**
- **Environmental Risk Factor: contaminated drinking water, Food and poor sanitation.**
- **Control measures:**

(I) Conduct health and hygiene awareness training in camp schools and outside camp.
(II) Keep building ground clean at all times.
(III) Clean and chlorinate RO water storage tanks, open drainage in camp ground.
(IV) Cover food and wash hands before and after eating to prevent contamination.

Before Rehabilitation and Awareness Campaign

Poor living environment in critical shelters.

After Rehabilitation and Awareness Campaign

Hands-on community awareness training on WASH maintenance and distribution of hygiene awareness materials.

Protection and Hygiene Promotion in an Emergency Environment

- Health & Hygiene Prevention, Control Measures;
- Respiratory Tract Infection:
  - (I) Prevent overcrowding in camp and shelters.
- Diarrhea & Cholera:
  - (I) Adopt good hygiene practices such as hand washing and covering food and water with lids for protection against bacterial contamination.
  - (II) Attend health and hygiene awareness trainings.
  - (III) Keep camp grounds clean at all times with the community's participation.
  - (IV) Clean and chlorinate RO water storage tanks and open drainages in the camps' grounds.

Malaria and Dengue Fever and Hepatitis A

- (I) Conduct routine insecticide spraying.
- (II) Install mosquito nets for protection when sleeping.
- (III) Conduct regular community site cleaning exercises in open drainages, ponds, and sewer systems.

Awareness Processes

One:

- Conduct focus group discussion with displaced communities.
- Identify any major health, safety and environmental hazards in surrounding facilities.

Two:

- Distribute awareness materials in all facilities.
- Raise awareness with heads of households focal persons in each community, including women.

Three:

- Share the appropriate public health department contact numbers with focal persons (community leaders) for routine follow-ups.

SECTION B:

Rehabilitating Damaged Houses

Section B: Project Summary
Rehabilitating Damaged Houses

- **Brief Project Description:** The current armed conflict in Iraq, concentrated in the northern, central and south central governorates, has resulted in the massive displacement of civilians. The December 2016 IOM DTM report indicates that there are currently more than 3 million IDPs since January 2014. It is estimated that 162,019 families have returned to their area of origin in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din and out of these,105,091 families (or 87% of the total estimated return population) have returned to their private homes.
- **Emergency Crisis:** The conflict in Iraq's northern, central belt and south central regions.
- **Date of Crisis:** In early 2015, IDP families from districts that were retaken by the Iraqi Security Forces (ISF) and /or Kurdish Peshmerga began slowly returning to their areas of origin. IOM field assessments show that approximately 70–80 % of the displaced families' private houses were substantially or partially damaged due to the conflict in the region.
- **Project Location:** Salah al-Din and Diyala Governorates
- **Beneficiaries:** 400 units of damaged houses were rehabilitated, benefiting 2,807 individuals.
- **Critical Shelter Size:** 400 units of damaged homes were rehabilitated. Family dwellings were partially rehabilitated to preserve dignity and basic living standards of returnees, in compliance with the Sphere recommended minimum standards of living floor space per person. Protection from extreme winter and summer conditions was also considered.
- **Rehabilitation Cost:** US$2,000 per family unit.

Photos: Returnees' damaged house, Diyala, Iraq 2016 IOM Iraq

- **Returnees Damaged Houses:** The illustration above is an example of the "before and after" rehabilitation of returnees damaged private homes. Basic rehabilitation in electricity, walls, ceilings, roofs and windows and toilet doors (repairs and upgrades) in a family's living room were carried out. Minor repairs in sanitation and plumbing in toilets and bathrooms were carried out to increase privacy and protection.
- **Donor: OFDA** (Office of U.S. Foreign Disaster Assistance)
- **Implementing Agency:** International Organization for Migration (IOM), Iraq Mission
- **IOM Achievements:**
  - Improved returnee families' living floor space in the damaged houses by fixing leaking roofs, providing electrical safety measures and sealing-off walls, windows, and other openings to provide protection against extreme weather conditions.
  - Improved electrical rewiring and earth grounding to protect against electrical hazards and improve safety.
  - Repainting walls and ceiling with installation of electrical fixtures
  - Repainted walls and ceilings and installed electrical fixtures.
  - Repaired broken plumbing pipes (WASH) leading to septic tanks in bathrooms and toilets.
  - Beneficiary satisfaction survey recorded more than 90% satisfaction.
  - Conducted community participation on-the-job training in construction to contribute to the livelihoods of returnees.
  - Conducted community awareness on hygiene, electrical and fire safety training.

B.1 Wall Plastering and Painting

Best Construction Practices

Steps for Plastering and Repainting Houses

- **Check masonry wall (Concrete Masonry Unit -CMU) for damage. In burned houses, check whether the walls require replacement.**
- **If house walls have suffered major damage, remove and replace damaged CMU blocks, frames, windows and doors.**
- **The plaster on the internal walls should be completely scraped off until CMU blocks are exposed.**
- **Clean internal walls and exposed ceiling. Fill cracked surfaces with cement putty (cement plaster). Install new concealed wiring before beginning plastering.**
- **Mix cement plaster (1:3) with ordinary Portland cement and fines and aggregates (sifted to remove large foreign objects). Apply 20–25mm gypsum plaster coat. Let dry for 3–5 days to get rid of moisture in plaster before painting.**
- **Start with one undercoat layer (base coat of white paint) to seal the plaster and two coats of water-based emulsion paint finish (colour variable).**
- **Let it dry for 3–5 days before any fixtures such as curtains and/or wall decorations are installed.**

Before Rehabilitation

The walls, roof, doors and ceiling of the returnee's house were badly damaged during the conflict.

After Rehabilitation

Minimal rehabilitation completed in the family's living room area with new CMU wall; electricity wiring replaced, new windows and doors installed and leaking roofs sealed.

Safe Construction: Step by Step Rehabilitation

Step one:

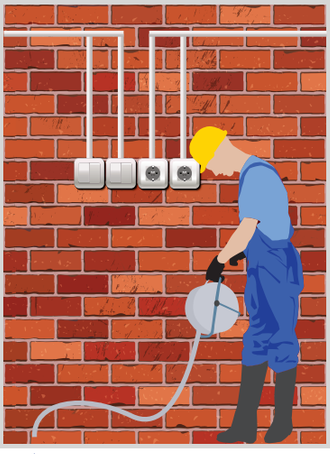
- Demolish and remove rubbles and debris to approved disposal site.
- Scrape burned walls and ceiling plaster materials, and clean floor with chemical wash.
- Patch all holes in walls and ceilings with cement putty compound.

Step two:

- Install electricity conduit relays inside recessed walls and ceilings.
- Install new cable wiring (2 x 2.5mm) for each socket and plug points connecting to single distribution box with minimum 20 - amp circuit breakers in each house.

Step three:

- Start wall and ceiling finishing: plaster walls and ceilings with one layer base coat (white emulsion), allow to dry and repaint with two coats of final coating (emulsion paint).
- Install electrical wall socket and switch points.
- Install 20-amp circuit breakers.



Step four:

- Test electricity circuit breakers and earth grounding(s).
- Install new doors and windows.
- Install new linoleum (vinyl sheet) flooring materials.
- Install new tap points and plumbing fixtures.
- Clean the house to prepare it for occupancy.

B.2 Electrical Rewiring

Best Construction Practices

Steps for Electrical Rewiring

- **Check house for damaged or burned electrical wires to prevent fire hazards and potential electrocution.**
- **Check whether distribution boxes/ circuit breakers are damaged and/ or burned.**
- **Check that the power supply to the meter and the circuit breaker's capacity is adequate for the house.**
- **Check the house wiring is earth-grounded (minimum 5 Ohms).**
- **Ensure that new wiring size is single- phase (2x4mm) and concealed in electrical conduits from point to point.**
- **Conduct test and start up of electrical points (socket, wall plugs, switch, breakers, overload trip and earth grounding) to ensure they are functioning and ready for use.**

Before Rehabilitation

Damaged wall with exposed electricity creates unsafe conditions.

After Rehabilitation

A family's living room is rehabilitated with new electrical wiring, light fixtures, and electrical earth grounding.

Safe Construction: Step-by-Step Rehabilitation

Step one:

- Demolish and remove rubble and debris to approved disposal site.
- Scrape off burned wall plaster and ceiling plaster materials.
- Set up recess inside walls for electrical conduits and install electrical wiring from distribution point to socket /switch points.

Step two:

- Patch recessed walls, ceiling and cracks with cement putty compound.
- Install switch, plugs and distribution boards with circuit breakers (minimum 20 amps per household).
- Install electrical fixtures (fan, ventilation fans and light fittings).

Step three:

- Repaint walls, window door openings and ceiling.
- Family room ready for occupancy.

B.3 Ceiling Repair and Painting

Best Construction Practices

Steps for Ceiling Repair and Painting

- **Inspect roof ceilings for leakages.**
- **If leaking is found, remedy with waterproof silicon compound. Clean and apply one layer of compound on all roof corners, in overlapping coats.**
- **If there is a major leakage, remove roof debris and plaster.**
- **Apply a layer of asphalt (ISO GAM) on top of concrete ceiling and seal the corners with 100mm overlap to prevent water from seeping inside the house.**
- **Apply one layer of waterproof undercoat sealant paint below ceiling (internal) and complete ceiling with two layers of water-based emulsion paint.**

Before Rehabilitation

Roof ceiling damaged by fire. Ceiling structure may collapse and is unsafe for living.

After Rehabilitation

Roof ceiling rehabilitated: roof frame replaced with cement plaster; new painting and electrical fixtures.

Safe Construction: Step-by-Step Rehabilitation

Step one:

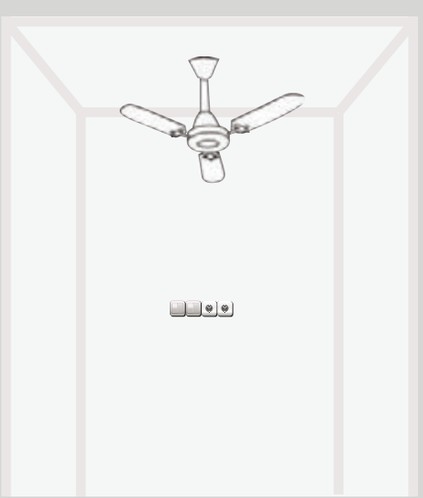
- Scrape and remove fire-damaged ceiling plaster and cracked or exposed concrete frames.
- Repair ceiling with new concrete slab / timber frame.
- Allow the newly plastered ceiling structure to dry.

Step two:

- Smooth out with one layer of plaster coat to cover uneven spaces.
- Cover ceiling with under-coat (one layer) of white emulsion paint.
- Cover ceiling with two topcoats of emulsion white paint.

Step three:

- Install new electrical fixtures (light fittings, fan, etc.)
- Living space is ready for occupancy.

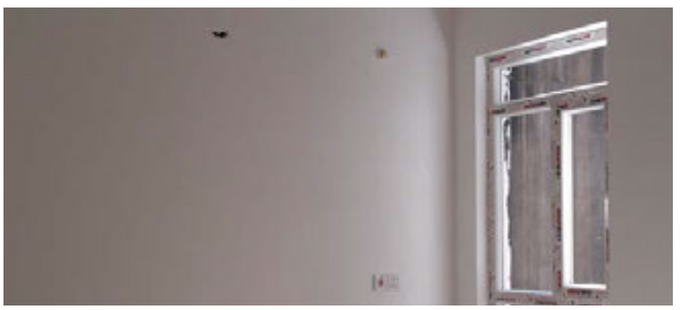


B.4 Door and Window Replacement

Best Construction Practices

Steps for Door and Window Replacement

- **Replace old windows and doors with new UPVC-insulated windows and doors for thermal protection.**
- **Install thermal glass (4–6mm) in windows.**
- **Provide privacy protection locks, door handles and window security locks**
- **Install wooden or concrete beam lintels on top of new windows or doors to provide additional support to the upper wall areas.**



Before Rehabilitation

Damaged and burned masonry wall led to an unsuitable living environment.

After Rehabilitation

Family room wall rehabilitated with electrical fixtures; painting completed.

Safe Construction: Step by Step Rehabilitation

Step one:

- Demolish/ Remove damaged windows, doors and wall plaster debris to safe disposal site.
- Measure wall openings for windows and doors casement.
- Make rough wall opening to install new windows and doors.

Step two:

- Install, align and secure UPVC and/ or wooden door frames and UPVC window frames in wall openings.
- Align window frames for fixing insulated window glass.
- Install internal wooden doors and external UPV doors with necessary thermal/ insulating protection.

Step three:

- Complete door and window adjustment setting for install and repaint walls and doors.

B.5 Concrete Floor Repair

Best Construction Practices

Steps to Repair Concrete Floors

- **Prepare flat, dry 10cm-thick undercoat base layer with 20mm coarse aggregates and ensure adequate compacting.**
- **Place 5mm plastic sheet vapor barrier as thermal protection underground.**
- **Install 15cm x 6mm x 6mm BRC steel reinforcement with 5mil vapor barrier.**
- **Mix concrete according to IGTS technical specifications with clean aggregates mix design (1:2:4 15MPa, 100mm slump test result makes strong concrete for floor.)**
- **Water-moisten continuously (curing) for 3–5 days to harden the concrete and prevent structural floor cracking.**

Before Rehabilitation

Concrete floor damaged; a new floor is needed.

After Rehabilitation

A family's living room floor is rehabilitated with 10cm reinforced concrete floor and structural column.

Safe Construction: Step by Step Rehabilitation

Step one:

- Demolish and remove concrete debris to safe disposal site.
- Excavate ground to 10cm sub base layer and hand tamper ground with 5cm fine aggregate gravel.
- Tools required:
  - Wheelbarrow
  - Shovel
  - Plumb rule
  - Mixing platform

Step two:

- Place plastic sheet thermal barrier (5mm) below of BRC reinforcement bar.
- Place BRC -15cm, 6cm by 6cm reinforcement bar.
- Floor is ready for concreting.

Step three:

- Prepare job site concrete mix with ordinary Portland cement , fine aggregate and coarse aggregate (ratio 1:2:4).
- Pour 10 cm reinforced concrete floor
- Complete with trowel and finish.

Step four:

- Allow 7 days for curing concrete floor by watering to prevent premature drying and cracking.
- Floor is ready for occupancy.

SECTION C:

Technical Standards and Tips to Rehabilitate Informal Shelters and Damaged Houses

C.1 Sphere Minimum Standards in Shelter and Settlement projects

(http//www.spherehandbook.org/en/-1shelter)

The Sphere Project handbook is well known for introducing considerations of quality and accountability to humanitarian responses.

The Sphere Project philosophy: "The Right To Live With Dignity"

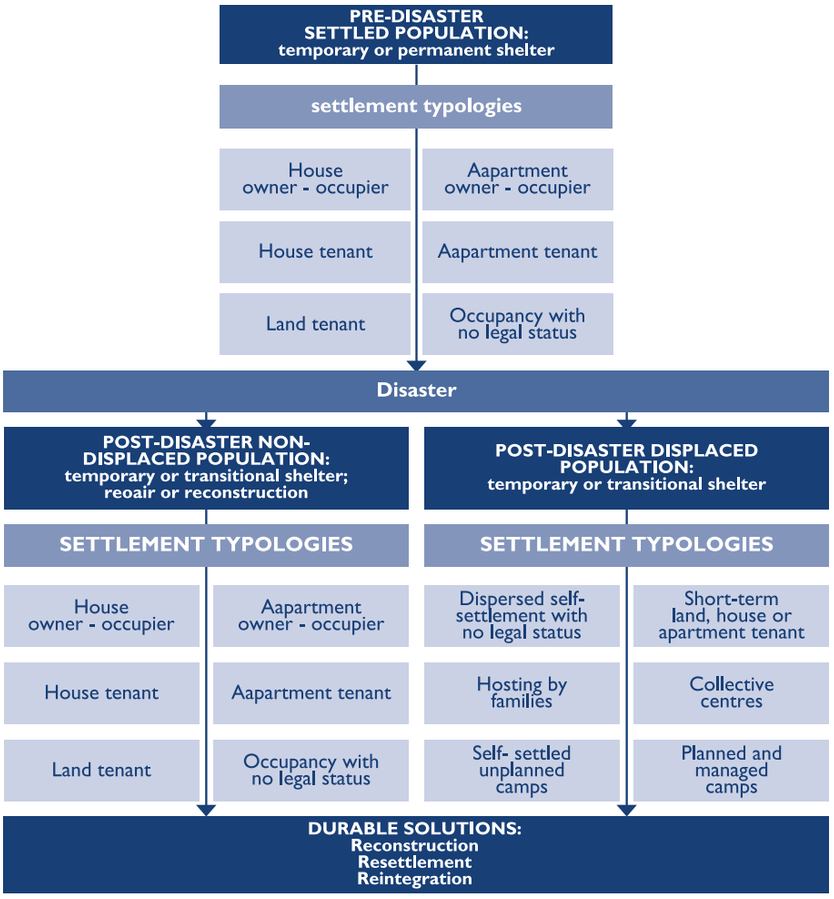
Founded on the principle of humanity and reflected in international law, these principles include the right to life in security, peace and dignity with security of tenure, as well as protection from forced eviction and the right to restitution. The Sphere instruments define adequate housing as ensuring the following:

•Sufficient space and protection from cold, humidity, heat, rain, wind or other threats to health, including structural hazards and disease vectors.

•Sustainable access to natural and common resources; safe drinking water; energy for cooking, heating and lighting; sanitation and washing facilities; means to store food; refuse disposal; site drainage; and emergency services.

•Thermal comfort, protection from the effects of the climate and personal safety and dignity are achieved by meeting a combination of needs at the level of the individuals themselves, the covered space they inhabit and the location in which their covered area is situated. Similarly, meeting these needs requires an appropriate combination of the means to prepare, cook and eat food; clothing and bedding; an adequate covered area or shelter; a means of space heating and ventilation as required; and access to essential services.

Shelter and Settlement Options and Response Scenarios:



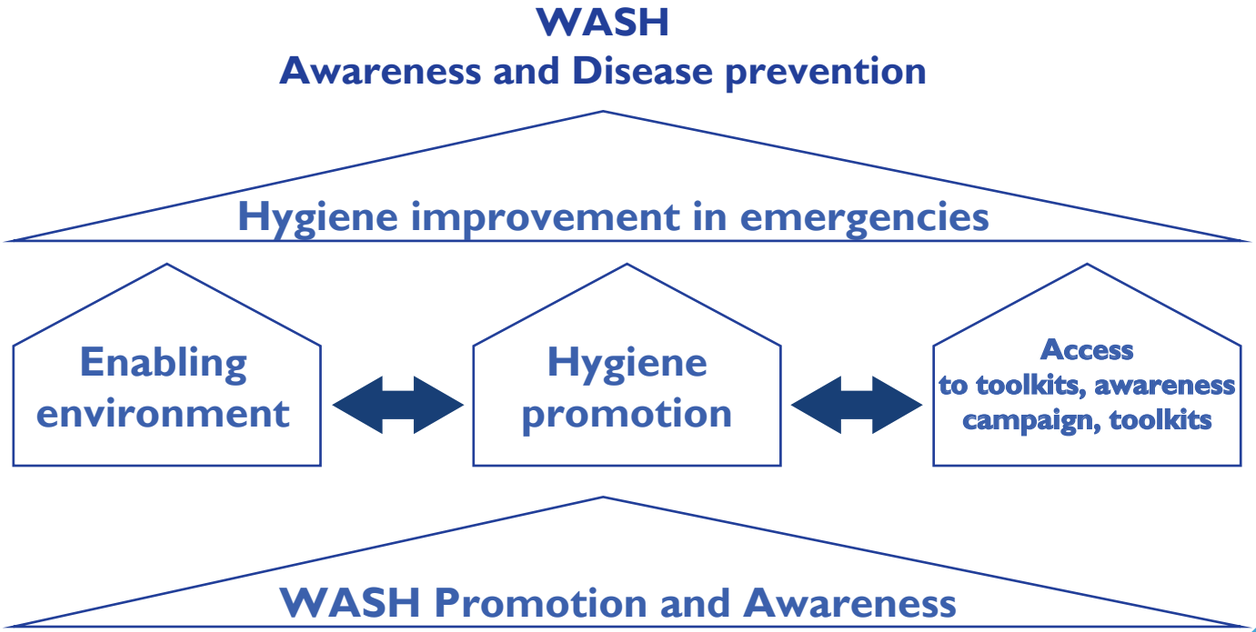
Source: Sphere Handbook

C.1.1 Minimum standards in water supply, sanitation and hygiene promotion

(http://www.spherehandbook.org/en/water-supply-sanitation-and-hygiene-promotion-wash)

Although primarily intended to inform humanitarian response to a disaster, the minimum standards may also be considered during disaster preparedness and the transition to recovery activities.
The aim of any WASH programme is to promote good personal and environmental hygiene in order to protect health, as shown in the diagram below. An effective WASH programme relies on an exchange of information between the agency and the disaster-affected population in order to identify key hygiene problems and Culturally appropriate solutions. Ensuring the optimal use of all water supply and sanitation facilities and practicing safe hygiene will result in the greatest impact on public health.
Hygiene promotion is vital to a successful WASH intervention. The focus on Hygiene promotion is general and specific. In general terms, hygiene promotion is integral to all of the sections and is reflected in the indicators for water Supply, excreta disposal, vector control, solid waste management and drainage.
More specifically, the focus narrows on two hygiene promotion standards in this chapter and relates to particular hygiene promotion activities.

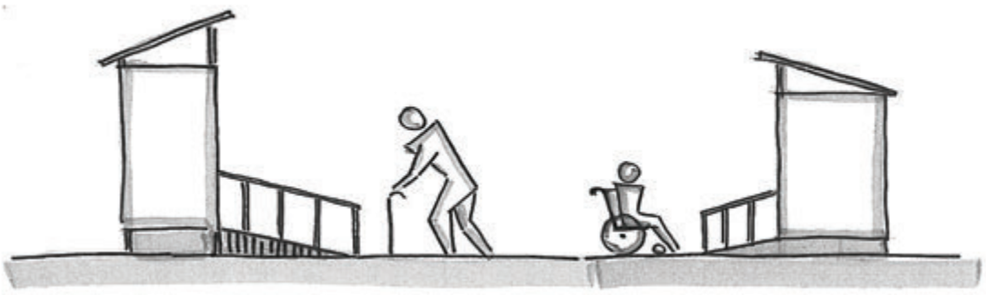
Water, Sanitation and Hygiene Intervention (Shelter and Settlement)



C.2 Technical Standards and Tips for Rehabilitation of Informal Settlements and Damaged Houses

I. External toilets and bathroom facilities in critical shelters for vulnerable and physically challenged people should be located next to exit routes.

• Access for the physically challenged.



• Water supply, sanitation, latrines and communal bathing facilities (WASH), 1 to 20 people within 50m of shelter with adequate lighting along walkways, and close to water source.

II. Daily survival water intake needed for drinking, washing, basic hygiene and cooking shall be:

1.5 liters - 15 liters per person per day (PPPD)
Communal water point should be:
• Communal Tap: Minimum 6 taps each point
• Open bore hold: one per 400 people
• Hand pump: one per 500 people

III. Waste water open drainage system

Minimum requirement in every informal/ critical settlement: Waste water perimeter drainage should be open ditch U channel with minimum 1%- 2% slope towards nearest open pit or Wadi.

IV. Refuse/garbage disposal for health safety and environmental (HSE) concerns

Minimum requirement in critical settlements: 1 unit 100L garbage container for every 10 families.

V. Roofing

Sealed with appropriate rainwater gutter drainage (additional protecting layer on damaged concrete roofs only). Where no other insulation is available, such as under metal roofing with no ceiling, insulation or a separate ventilated roof space should be introduced.

VI. Internal Partition

•Internal partition should provide privacy and protection need of family, single female headed household, and female members highly vulnerable to exploitation.
•Partition shall be constructed with solid 3ply plywood (75mm thick) and or drywall or sheet rock (50mm). Privacy lock set are necessary to keep out intruders from accessing family rooms
•Partition shall provide necessary lighting and air circulation/ ventilation support.
Internal partition shall have separate sleeping and living room and safe distance from bathroom, toilets and kitchen

VII. Walls (Internal and External)

•Internal partitions must be provided to separate sleeping/ living areas from bathrooms and kitchens. Dry sheet rock walls- 75mm plywood walls with metal frame.
•External Walls- Plastering recommendations:
Toilets (up to 1.20m), bathrooms (up to ceiling) and kitchens (only behind sink, 2m wide, 1.70m high) inside; prepare all necessary equipment and follow the engineer's instructions.

VIII. Flooring

- Create dry floors (ground floor).
- Reinforce concrete floors (not less than 10cm sub-base thickness). Use 200 kg/m3, C15, sulphate-resistant cement, with well-compacted sub-grade and damp-proof membrane (thick plastic sheeting) below the slab where possible and appropriate.
- Install concrete slabs for toilets and bathrooms, with a 2% slope towards floor drain.
- Make sure any holes on the floor are safe (above ground for multi-story buildings).
- For any holes less than 100mm x 100mm, seal them with plywood, min 19mm (3"/4") or steel plates of at least 3.175mm.
- For holes in excess of 100mm x 100mm, use an engineering design. This could take the form of a steel frame with rectangular tubing of at least 4cm x 8cm x 40cm in the centre. Fasten to surrounding material with anchor bolts (min 6mm dia.). However, exact specifications will be provided by the engineer on site.

IX. Wall

- Build a wall, 20cm x 20cm x 40cm with cement mortar (1:3) for exterior walls and plastering. An optional alternative is to build the walls with bricks.
- Supply materials and pour, in-situ, reinforced concrete lintel or use precast lintel for doors and windows (top of opening).
- Repair damaged block walls with hollow concrete blocks (40cm x 20cm x 10cm) or (40cm x 20cm x 20cm) with cement mortar as appropriate. Ventilation is required in wall openings.

C.1.2 WASH Standards in Rehabilitation (www.Sheltercluster.org)

Informal Settlements and Damaged Houses

Technical Standards and Tips

Standards relevant to each building should be agreed upon between occupants and owners; however, the following standards serve as normative guidance. The implementing staff of the WASH agency ensure the quality of workmanship in relation to the WASH design and scope of work. Every effort should be made by the agencies to select supervisory staff with the right competencies, to provide appropriate training, and to set up effective referral mechanisms where the supervisory staff can elevate an issue to senior staff to resolve any issue between the household and the contractor. Supervisors, contractors and the IDP family must be briefed on good contract management. The supervisors' primary role is to ensure that works are carried out with an acceptable quality and in line with the agreed scope of work (that is, it may be necessary to pointing out building requirements to the contractor).

I. Water Supply

- 35L of potable water per person per day for all needs including 2–3L as drinking water.
- Hot water is optional.
- Water storage tank capacity should be of 70–100L per family / day.
- Water fittings should be specified to minimize water use.
- Water saving or self-closing taps (spring or pressure type) should be used. Water saving showers and toilets could also be considered.
- Water tanks should be equipped with floating valves (in case of network supply) or floating switches (in case of pumped supply) to prevent overflowing.
- Leaks in the building should be found and fixed.
- If possible, the installation should allow grey water to be reused for toilet flushing (optional).
- If possible, rainwater harvesting should be reused for non-drinking use (washing, bathing, cleaning and watering plants).

II. Sanitation

Toilets: 1 per 15–20 persons with hand-washing basin less than 30m away from toilet.

- Each toilet should include a hand wash sink, plumbing fittings, black water discharged to closed pit/ septic tank and/ or holding tank with cesspool.
- Toilet/bathroom located at the same floor of the housing unit(s).
- Toilet/bathroom should be enclosed and private and separate from sleeping or food preparation area to avoid faecal-oral contamination.
- Toilet/bathroom with smooth concrete floor or tiled.
- In case of communal toilet, toilet will be gender-segregated.
- All excreta containment measures, except holding tanks, are at least 30 metres away from any groundwater source.
- Shower: one per 15 people
- Wastewater: Connection to outlet (cesspit, septic tank, sewerage line).
- Wastewater disposal should be by connection to a septic tank, existing network, improved pit latrine or other recognized means. Note: formal approval is required from the relevant local authority when connecting to an existing network.
- Electrical water heating should be safe and earthed to ground.
- As defined by the WASH standard. Floor surfaces within latrines/bathrooms should have adequate drainage and be floored with smooth concrete or tiled in order to allow easy cleaning and improve hygiene.
- Sanitation facilities should be enclosed and private and separated from sleeping or food preparation areas to avoid fecal-oral contamination.

III. Drainage

- Storm water drains has to be kept clear.
- Toilet/bathroom should have adequate drainage.
- Wastewater disposal should be collected either in holding tank or septic tank or to be connected to existing sewage network.

IV. Specific needs of People with Disabilities (PwD)

- PwD who use a wheelchair or have limited mobility should be allocated shelters with obstacle-free access, on the ground floor when possible, and with sufficient turning space in the toilet.
- PwD with limited eyesight should have step edges in their shelters painted with a white strip for visibility, if appropriate.
- PwD who have difficulty using their hands or arms should be allocated shelters with lever door handles rather than round door knobs.
- Low level hand wash sinks should be considered for PwD with limited reach.

V. Fire Safety Provision in Critical Shelter Facilities

- There should be one 5 to 8 kg fire extinguisher in each kitchen, and one fire blanket in each family room.

Vi. Solid Waste Disposal

- Access to waste container: one for every 10 families, with a capacity of 100L, less than 100m from the critical shelter.

SECTION D:

References and Annexes

D.1 References

1. The UN Guiding Principles on Internal Displacement
2. 2015 Camp Management Tool kit
3. CCCM Cluster Urban Displacement and Out-of-Camp Review
4. The Sphere Handbook – Humanitarian Charter and Minimum Standards in Humanitarian Response
5. UNHCR Handbook for Emergencies
6. Guidelines for Integrating Gender-Based Violence Interventions in Humanitarian Action.
7. Unfinished & Abandoned Building (Shelter Cluster Iraq /Sheltercluster.org)
8. Wash Cluster Emergency Standards (Shelter Cluster Iraq /Sheltercluster.org)
9. Technical Standards and Practices (Minimum Sphere Standards)
10. Handbook on Good Building Design and Construction in Philippines (ISDR, special unit for south south cooperation, GTZ, European Commission)
11. How to Build a Safer Shelter (UN-Habitat)

IOM Communication with Communities (CwC)

1. Fire safety 01 V1 https://www.youtube.com/watch?v=MgpnLrb6X5o
2. Fire safety 01 V2 https://www.youtube.com/watch?v=Eo8OZUIKBhs
3. Kerosene PSA: https://www.youtube.com/watch?v=z8wwMqZKFlo
4. Electricity PSA: https://www.youtube.com/watch?v=wtGvvVGSOxA

Water conservation

1. Superhero: https://www.youtube.com/watch?v=LqojnVnPKfM
2. Save water now: https://www.youtube.com/watch?v=w8hvxux40OA
3. Save water in camps-short https://www.youtube.com/watch?v=naKLFanOhmQ

Cholera

1. Training version: https://www.youtube.com/watch?v=BkzW-wMX2zE
2. Camp version: https://www.youtube.com/watch?v=giodAGNyz7g

Waste management

1. Working together: https://www.youtube.com/watch?v=36x1OJ1MjO4
2. Training version: https://www.youtube.com/watch?v=VxaX9BnakX049

D.2 Annexures

Informal Shelter and Damaged House Assessment Project

I.

Form Reference No		Date	DD MM YY

II. SITE DEMOGRAPHIC PROFILE

Governorate	District	Sub district	Village / Town	Lat (N)	Long (E)	Location Description (Name of Critical Shelter building / Damaged House)

Type of Shelter	Damaged House	Unfinished building	Religious Building	School Building	Unknown /
	☐	☐	☐	☐	☐

Total # of Population	# Female	# Male	No. persons /family	No. disabled or special Need

	IDPs	Refugees	Host	Others
Nos. of Families				
Total population				

	# Female Headed Households	# Children Headed households (younger than 18 years)	# Physically Challenged Person Headed (Vulnerable)	# Elderly Headed households
Nos. o Families				

Source Of Information ((Name of Assessors)

Name	Organization / Dept.	Responsibility	Phone Number /email	Other Information / Remarks

III. Optional Needs for other Program Action Plans [NFI / Sealing-off kits (SOKs), Health, Psychosocial, GBV Protection]

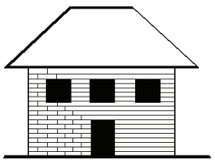
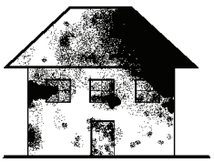
Families Request / other Needs	Hygiene Kits	Child Protection (UASC / child labor, early marriage)	Jerry Cans (10 lit)	NFI / SOK	Tools Kits for repairing shelters and WASH	Health / Psychosocial	Protection (at risk of or survivor of gender based violence)	Legal aid (at risk of eviction, in need of registration, documentation)	Others (specify)
	☐		☐	☐	☐	☐	☐	☐	

Any other suggestions:

_____

_____

IV. Critical Shelter Category Guide (Damage condition):

CATEGORY 0	CATEGORY 1	CATEGORY 2	CATEGORY 3
			
• Damaged house / Unfinished critical building basically habitable with adequate protection available against severe weather (summer & winter) condition • Partial completed building with adequate roof & walls available • Unfinished windows and doors opening need rehabilitation • Unfinished floor need final concrete base with thermal protection • Electrical , water supply and sewer connection adequately provided /connected to nearest septic tank • Fencing protection against intrusion available • WC /Bathroom plumbing need upgrades / repair • Gender protection risk not an issue. Privacy, walkways and lighting provided. Not a threat to IDP	• Unfinished critical building is habitable with **less than 30% damage** to roof and walls • Damaged house **are less than 30% damaged** in walls and roofs, and floor • Damaged house / critical shelter can be rehabilitated with minimum rehabilitation living condition with safety, privacy protection and dignity of IDP's • Building undergone light shelling damage to structure. Can be repaired • Wall and roof partial fire damage, can be repaired and repainted • Electric and water sewer connection damage, can repair • Prone to electrical hazard. need repair and upgrades • Incomplete fencing around building - insecure perimeter • WC /Bathroom need separation between women and men • Faulty locks or no locks on doors and windows • Inadequate lighting in walkways • ***Overall rehab and repairable condition***	• Unfinished critical building , more than 30% damage to wall and roof structure • Damaged house more **than 30% damaged** walls and roofs, and floor • Minor structural damage is visible, in walls, column and beams. Need further assessment to evaluate rehabilitation, repair, and replacement of wall, roof, and floor to be carried out. • Fire damage to walls, roof, can be repaired and repainted • Need roof replacement, privacy partitions for vulnerable population needed • Doors and windows mostly damaged, need replacement , • Electrical, water supply &sewer connection to septic tank damaged. Need major rehabilitation • Prone to electrical hazard. need repair and upgrades • Need fencing to prevent unauthorized person inside building • No privacy - need installation of partition for dignity of women • No gender segregated bathroom or toilets - need to be installed • No locks on bathroom or toilet doors • No locks on doors or windows • No lighting in walkways • ***Overall rehab and repairable condition***	• Unfinished critical building Severely Destroyed • Damaged house severely burned and damaged beyond repair • Building and damaged house needs complete knockdown & reconstruction • Severe fire damage • Electrical water supply and sewer piping connection totally damaged • ***Building is unsafe for occupants , Relocation suggested***
☐	☐	☐	☐ , cost over budget

Type of material used in construction	1. Brick/ CMU ☐ 2. Concrete ☐	3. Mud ☐ 4. Wood ☐	5. Improvised shelter ☐ 6. Other☐, explain ……

WASH INFRASTRUCTURE Available and need Rehabilitation (Yes / No)	**Toilets / Bathroom (no's)**	**Water supply / Sewer (no's)**	**Electrical (points)**	**Perimeter Drainage (Open /closed channel) (Length in mtr.)**	**Is water fit for drinking / Treated Yes / No/ Don't Know**	**Is water contaminated Yes / No/ Don't Know**
Explain (what need Rehabilitation / replacement)						

Nos =numbers

V. Rehabilitation Items for Damaged House and/ or Critical Shelter

Items	Required	Unit	Quantity	Remarks / Specifications
1) Concrete floor rehabilitation	☐	M2		
2) Electrical: Repair and upgrade (electrical lighting, sockets, wiring, breakers, and earth ground from electrical shocks)		M		Clarify assessment is for damaged house and or critical shelter
3) Rehabilitation / construct internal wall partition wall with plywood framing , ventilation, doors and privacy locks and repair damaged / burned walls & re painting		M2		Replace Internal walls for critical shelter only
4) Repair / rehabilitation water supply and plumbing system. Rehabilitation sewer and waste water piping and upgrade new septic tank (if necessary).		M		Specify if person with disability / critical illness residing in the critical shelter and damaged house
5) Rehabilitation Sanitation sewer and waste water piping and upgrade new septic Tank (if necessary)		M		For critical shelter only
6) Install water Tank (minimum 1000 liters/ damaged house)		Nos		Specify how many liters (m3) needed for critical shelter
7) Replacement new doors and windows with privacy locks		Nos		Provide Size (LxW):
8) Rehabilitation / Upgrade/ replacement Roofing		M2		Repair roof leakage for damaged critical
9). Rehabilitation / Replacement new Toilet (WC) and bathroom for women and men (privacy & protection)		Nos		Clarify assessment is for damaged house and or critical shelter

Note: Cross reference BOQ schedule for assessment of damaged house and critical shelter

VI. Submitted for approval

Report submitted by (Staff name)		**Approval for Rehabilitation**	
Hub		**Shelter unit (FP) , Name :**	
Position:		☐ **Yes , Received / Reviewed , Date :**	
Date:		**Approve of PM**	☐ **Yes** ☐ **No**
Recommended for Rehabilitation	☐ **Yes** ☐ **No**		
If No, state your reason		**Date of PM approval**	

Vii. Attach Site photographs to match BOQ assessment by item number

ANNEX 1: Check List

No.	Items	Unit
1	**Concrete floor rehabilitation**	
A	**Perform site assessment by category of damages referenced in shelter assessment report. Remove damaged floor and debris, fill and compact ground. Supply necessary equipment, and labor for concrete repair work. Supply material, labor and equipment for repair concrete floor with BRC 15x15x6mm, 1:3:6 mix with 15 MPA according to technical specification and instruction of site Engineer.**	**m2**
2	**Electrical : Repair and upgrade lighting in open areas, walkways and water points to ensure safety of women (protection)**	
A	**Supply materials, installing, connecting and testing electrical points for Florescent lights 40 X2 and or 40 watt bulb fixtures with all annexed parts (holders, starters, lights) using (2x1.5) mm2 wires connected to DB.**	**m**
3	**Rehabilitation / construct new internal wall (partition wall for dignity and privacy (protection), repair damaged walls & repainting**	
A	**Demolish damaged walls and reconstruct with hollow concrete block (40*20*10) cm with cement mortar plastering with (1:3) mix. ratio 2 Cm thick and SPR 200 Gr for Cm2 and cover it with pressed coarse texture finish rendering using white cement mortar and lime mixture (Stucco) plus. Painting interior / exterior walls with three coats of top quality emulsion / exterior paint. Provide internal wall partition with gender protection / privacy. Provide any other necessary work according to instruction of site engineer.**	**m2**
4	**Repair / rehabilitation water network plumbing system**	
A	**Check for old damaged plumbing pipes. Remove/ dispose any debris to approve outside dumping site. Supply, replace, and install materials and laborer with new plumbing UPVC pipes 3/4 -1" for all damaged water plumbing water network system. Optional: if required only install and connect aluminum sink wash basin with all necessary connection and fittings where necessary. Install suitable water tap (bibcock) 15 mm (1/2 inch) dai. Test water supply pressure 2 bar with all necessary work completed and connections to water tank. Optional: check / test water well (WHO std per DOH) water acceptable for drinking if necessary. Take proper remedial action if necessary.**	**m**
5	**Rehabilitation sanitation system / Replace Septic Tank (if necessary)**	
A	**Check / replace and or clean all existing sanitation sewer piping (black and grey water system) including hand /manholes. Install with required sanitation UPVC sewer pipes grade 4-6"dia and necessary fittings and related works, Work according to the instruction of site engineering. Install any pipes connection to shower and toilets. Replace if needed eastern WC toilet with complete outlet connected to gully trap, sewage pipes connected to clean outs, manhole and to septic tank. Replace /install new FRP type pre-approved turkey made septic tank (4 m3 tank capacity family). All-inclusive excavation, concrete base with BRC reinforcement 15x15 x 8mm 15cm thick foundation. Ventilation pipe as instructed by site engineer. Refer sphere minimum standard code of practice as guideline during installation.**	**m**
6	**Install water Tank (min.1m3)**	
A	**Supply / install material and laborer FRP quality plastic water tank (1000 liter) installed on solid block plastered pedestal and or steel frame elevated to 2-3 meter above ground with all necessary related connections, fittings, and accessories. Pressure test min. 3-4 bar into water network pipes.**	**nos**
7	**Rehabilitation / replacement / Doors and Windows**	
A	**Check/ repair/ replace window and door materials good quality UPVC insulated window PVC Steel reinforced insulted Windows: Supply and install windows (0.5X0.5) m, with frame 2x2 inch steel angle for ventilation and UPVC steel reinforced (R value) door with steel hinged doors (2x0.9) m, with similar type steel frame 2x2inch steel angle plated on one side (steel plate gauge 18) all metal surfaces should be painted (primed) with anti-rust paint and finished with suitable oil paint. Provide switch type locks, handles and 6mm insulated thickness glass according to the drawings details and instructions of site engineer. Turkish made switch type locks, two latches and a peephole besides all required products approved by field engineer. insulated aluminum windows with 2 MM thickness and 6mm glass and aluminum framed fly screen for windows openings and handles as well as a steel sub-frame made of metal pipe with square section 6 mm and all required works**	**m2**
8	**Rehabilitation / Upgrade/ replacement Roofing**	
A	**Roofing rehab and repair shall be with sandwich panel fixed on steel frame and provide cantilever of 15 cm from all sides and or shall be structural frame (rectangular steel hollow pipe 2cm x8cm x 2mm) on welded plate top wall with one cross in the center for both direction 4cmX8cm, 1.8mm thickness for roofs and extended with corrugated metal steel sheet 0.6 mm thick, 20cm from the main roof include paint all the frame with anti-rust paint and two layer of synthetic paint. whicher is practical and cost savings.**	**m2**
9	**Rehabilitation / Replacement Toilet (WC)**	
A	**Preparation and excavate trench with casting concrete base for oriental eastern toilet. Complete with fittings/accessories and connections necessary. Removing / replace pvc door and partitions if necessary and any related work necessary. Supply material, install and connect, flush tank with mounted hose, high pressure connection steel hose, chromium plated stop valve, connected to wall with brackets. install and connect wash basin if necessary 50x60cm, with self -contained overflow, mixer, steel grill, high pressure connection steel hose, chromium plated stop valves, flexible hose dia. 40mm, floor drain and complete with supporting brackets, properly fastened with screws, nuts and washers.** Special note: ensuring separate facilities for women and men, with lockable doors. Involve women in choosing location of female latrines and bathing areas (protection).	**nos**

D.2.2 Shelter, WASH, CCCM Winterisation Guidelines Tools

CAMP CONSTRUCTION AND MANAGEMENT
A JOINT TECHNICAL GUIDANCE NOTE FOR CAMP CONSTRUCTION IN IRAQ
(Shelter /WASH / CCCM cluster, Iraq 2016)

OVERVIEW

The volatile and increasingly complex situation in Iraq, and the consequent, continuously erupting emergencies, have forced stakeholders including IDPs themselves, local authorities, and agencies that assist IDPs, to allow, construct, or establish camp settings that do not necessarily meet minimum humanitarian standards. Moreover, mainly due to funding shortages and inadequate planning, many of those camps are left incomplete.

Besides increasing the suffering of the persons of concern, due to their humanitarian imperatives, UN agencies and NGOs often have to divert programmed funding to address critical shortcomings in these "below standard" or incomplete camps. This in turn deprives other IDPs from assistance targeted to assist the most vulnerable.

This inter-cluster document, developed by the three clusters of Shelter and NFI, WASH, and CCCM is meant to briefly list the minimum requirements to be considered as a camp is being planned and developed. This technical document is meant to serve agencies and various stakeholders, including local authorities, as a reminder of the elements essential to ensure the functionality of camps and minimum standards. Moreover, the document is a reminder of the potential grave consequences to the safety and dignity of IDPs should camps be started and left without completion or follow up on services and management. While there will always be spontaneous and/or underfunded camps, efforts to reduce this phenomenon and rendering it an exception is evidently for the benefit of the persons of concern.

"The Camp" as an alternative: Camps are an option of last resort and wherever possible alternative sheltering solutions (such as assisting people to connect with extended family, access rental accommodation, sealing and repairs- including WASH - to unfinished and abandoned buildings) should be considered. Camps offer "temporary" provision of protection and assistance. It is the responsibility of national authorities to identify a site in which a camp should be located in order to ensure that the displaced populations enjoy exclusive rights to use selected sites.

Camp establishment and basic services: While often set up for a short-term, planning should always aim for longer-term needs. Services must meet basic needs and ensure sustained, safe and dignified access, basic requirements, target and standards.

Providing for the needs of the camp population and the existing needs of the host community should be considered in relation to the services, infrastructure and assets established for the camp including on potentially shared resources such as water sources, or existing public solid waste management systems, always with the objective of reducing conflict.

Close coordination, collective decision making and joint implementation and monitoring between Shelter and NFI, WASH, and CCCM is essential when establishing services in camps to ensure standardized quality of service provision, timely completion of facilities, efficient operation and maintenance costs and effective longer term management.

A collective perspective and agreement over who will assume responsibility for operation, maintenance and administration of facilities in the longer term is crucial, and should be agreed upon before initiation of activities. For all facilities, provisions must be made to sustain operation costs (fuel/electricity, treatment chemicals, spare parts, operators, desludging etc.) and systems put in place for O&M. Ideally long term O&M cost should be covered by government partner and systems integrated with public utilities. Durable solutions (e.g. solar pumping with generator backup) should be considered in set up.

Camp Site Selection: Camp site selection depends on many factors, including the size and conditions of the site and availability of resources; the safety, security and protection it offers and cultural and social considerations. Choosing a site involves consideration of access, coexistence with surrounding communities, topography, trees and vegetation, the potential impact on the environment, environmental causes of disease and other public health issues.

Camp management: The aim of camp management is to ensure that services and protection provided are in line with national and international law, guidelines and standards. The Camp Management Agency plays a central role to coordinate and ensure the provision of assistance and protection for the displaced by taking into account their physical, psychological, cultural, social, and emotional well-being. Whether an NGO or a national authority, responsibility for camp management involves adherence to the humanitarian principles of humanity, neutrality, impartiality, and operational independence, and promote protection main streaming in all sectoral interventions. Wherever possible, the camp management agency should establish a camp management committee with representatives from the IDPs who are to be served, in order to be involved in the design of the camp and to continue to share the burden of its management.

Camp Closure: Camp closure should be linked to durable solutions and be planned from the very beginning of a camp operation. Careful planning and coordination is carried out by the Camp Management Agency in collaboration with national authorities and other key stakeholders including the camp population and the host community.

A list of necessary actions, technical considerations, and standards covering the three clusters is attached to this guidance note as an Annex.

C 2.2 (a) Annex: Camp Establishment and Management Techincal Guidelines - Checklist

ACTIVITY	CONSIDERATIONS	STANDARDS	COMMENTS
Site Selection	Slope	3%-7%	
	Soil		Free draining soil if possible
			Consider Flood Risk
	Communications	Mobile phone network	Assess mobile phone network coverage
Security	Safe distance from hostilities	50 kms from borders for refugees. For IDPs it is different as they are in their own country, and the main consideration is for their security and protection.	This is a refugee camp standard; Not be close to military facilitates that may be a targets. Fenced site, but free access for residents should be ensured.
	Camp security	Fencing	Camp should be fenced but providing for free movement by residents
Access to Services	Communications	Mobile phone network	Assess to mobile phone network coverage
	Roads	6m minimum width Road design must consider drainage All weather roads to be used throughout	Camp is accessible by all-weather road. All shelters and facilities should be accessible by all-weather internal roads.
	Utilities	Water, electricity	The site should have access to municipal power and water
	Health care		Proximity to full service hospital should be assessed
	Education		Existence and accessibility of schools to be assessed
	Livelihoods		Possibilities for labor to be assessed. Easy and safe access to existing markets, particular for women and girls, should be considered.
Camp Areas	Total Open Space	30-45m2 per person	The minimum of 37.5m2 total area includes space for accommodation, clinics, access roads, fire breaks, education facilities, wash facilities and other facilities.
		If allocating a plot per household, allocate 114m2 for family size of 6 or less. This is only for the shelter, cooking and WASH facilities of the household	
	Covered Space	3.5 m2/person minimum	Where tents are used this will require the use of the largest family tents, such as the 23m2 UNHCR family tent. Note that if the camp is expected to remain into the winter a larger covered living space should be allowed, of a minimum of 4.5m2 since more time and activities will be undertaken inside.
	Climate		The shelter must be able to resist winds and the rain expected during the life of the camp, it also needs to be suitable for both summer and winter.
	Seasonal considerations		In the summer: shield the shelter from the sun and provide adjacent to shelter shaded areas. In the winter: ensure the shelter is insulated and heated.
	Duration		
	Cultural practices, safety and privacy		Consult with beneficiaries to ensure this is considered. As a minimum provide internal screening, to assist with subdivision of internal space. Consider safety and ventilation related to cooking and heating.
	Household and livelihood activities		Consider where beneficiaries will sleep, wash, dress, care for infants, children or ill, store food, water, assets, cook and eat as a minimum.
	Shelter solutions, materials and construction		Choose appropriate materials for the shelter considering the realistic likelihood of the camp remaining for an extended duration and the needs for beneficiaries to repair the shelter.
	Participatory Design		
	Ventilation and vector control		The shelter should allow the ventilation for moisture and smoke. Consider vector control measures to limit communicable diseases and general nuisance.
	Firebreaks & Fire Safety	50 meters of empty space every 300 meters of built-up area	Camp management committees should be involved with producing a fire safety plan, including organizing muster
			points, evacuation drills, and be involved in firefighting training.
		Minimum of 2m between individual shelters but preferably twice the height of the shelter.	
		There should be Fire muster points and fire stations (safety and fighting equipment) regularly spaced and maintained.	
Shelter Infrastructure	Electricity	Allow 6 amps per shelter. Circuit breaker per shelter. Wires and connections secure and above ground.	
	Lighting	One light per facility (kitchen, latrines, shower, living accommodation)	

ACTIVITY	CONSIDERATIONS	STANDARDS	COMMENTS
WASH[1]	Water Supply	Quantity sufficient for drinking, cooking, personal and domestic hygiene. Target: 35 to maximum 50 liters /person/day. Drinking water must be palatable, with turbidity below 5NTU and sufficiently chlorinated to ensure a free chlorine residual of 0.2-0.5mg/l at the point of collection. Water collection points should serve maximum 70 people; located less than 500m from households; less than 30 minutes queuing time	A technical WASH assessment should be part of site selection process to ensure site meets basic criteria for available water supply, surface drainage, and ensure that surrounding environment, including water resources are protected. Water sources must be close by, adequate for planned population throughout the year. Water point distribution should ensure equal access to minimum standard of daily water supply, including for those with limited mobility. Chemical analysis should be carried out at every borehole at completion and every 6 months thereafter to ensure that the source water meets national standards for chemical water quality.
			Storage household, water point level should be sufficient to compensate for any gaps in supply. Water trucking should NOT be considered as a primary water source/distribution system. If necessary, plans must be made, implemented to rapidly transition to piped networks. Durable solutions (e.g. solar pumping with generator backup) should be considered in set up Provisions must be made to sustain operation costs (fuel/electricity, treatment chemicals, spare parts, operators, desludging etc.) and systems be put in place for O&M.
	Latrines, bathing and laundry facilities	Household level to 1 latrine/bathing facility for maximum 20 people Latrine/bathing facilities should be located less than 50m from household. If communal, facilities must be gender segregated, internally light, lockable from inside, have hand washing facilities. The specific needs of children, the elderly and disabled should be taken into account Provisions for laundry and dishwashing should be made, either at the household level, or at convenient locations close to households. Cesspits should be located at least 50m from any water source; be lined and fitted with an access hatch for desludging that can be locked and sealed. During site	Design, location should ensure accessibility, utility for all users (children, elderly, disabled). Provisions must be made to sustain operation costs (operators, desludging etc.) Systems must be put in place for O&M.
		selection a safe, properly organized and well-marked final disposal site for excreta should be identified Cesspits should be at least 6 meters deep, of suitable capacity to minimize desludging frequency and be accessible to desludging vehicles. Only black water should drain in to cesspits.	
	Waste management	Refuse collection bins to allow for 50 liters of waste/family Refuse Bins should be located at least 100 meters from communal areas Solid waste disposal sites should be located away from water sources, and accessible by vehicle to enable waste collection	Provisions must be made to sustain operation costs (operators, transport, final disposal) Systems be put in place for O&M.
	Surface Drainage	Surface drainage must consider drainage direction, infiltration rates to avoid flooding and be adequate to ensure rainwater and grey water run-off does not form stagnant pools. Surface drains should be connected to a mains drainage network / open channel NOT Cess pits for black water	

[1] **Basic requirements, target and standards, are as per Iraq WASH Cluster Minimum Standards.**

ACTIVITY	CONSIDERATIONS	STANDARDS	COMMENTS
Health Care Facilities	Referral Hospital	1 per 10 camps (200,000)	
	Lighting		To promote protection, ensure safety and permit use of the facilities at night
	Health Centre	1 per camp (20,000 people)	
	Latrines	1 per 10-20 beds and 1 per 20-50 out-patients	Centralized, but with adequate access for ambulances and other transport
	Water Supply	5 litres per outpatient; 40–60 litres per inpatient per day Additional quantities may be needed for laundry	
		equipment, flushing toilets, etc.	
	Medical Waste Facilities		
Feeding Centers	Feeding Centre	1 per camp (20,000)	
	Latrines	1 per 20-50 adults and 1 per 10-20 children	
	Lighting		To promote protection, ensure safety and permit use of the facilities at night
Schools	School Block	1 per sector (5,000)	
	Classroom Size Guidelines:	in general the standard size for a classroom for 40 students should be: 6.20 x 5.75 meters to 6.20 x 6.50 meters	
	Pre-primary Classes	up to 40 students=1m3/student; up to 48 students=0.74m3/student	
	Lighting		To promote protection, ensure safety and permit use of the facilities at night
	Classes 1-3	up to 40 students= 1m3/student; up to 48 students= 0.83m3/student	
	Classes 4-6	Up to 40 students = 1 m3/student	
	Tent Class-room Guideline:	55 m2 tent can accommodate 40-45 children	
	Water Supply:	3 litres per pupil per day for drinking and hand Washing; 1–2 litres per user per day for hand washing; 2–8 litres per cubicle per day for toilet cleaning; 20–40 litres per user per day for conventional flushing toilets connected to a sewer	
	Latrines	1 per 30 girls and per 60 boys	Ensure separated facilities for boys and for girls
Markets	Market	1 per camp (20,000 people)	The market should be in a location easily accessible for both camp residents and local population so as to encourage social and economic exchanges, enlarge the market opportunities and the demand for goods and services.
	Latrines	1 per 20-50 stalls	On higher ground to facilitate walking with
			heavy items
Distribution Points		4 per camp (20,000 people)	30 meters from groundwater sources; determine if space is available within host community
Graveyards			
Reception/Transit Area	Latrines	1 per 50 people (3:1 female to male)	
	Lighting		To promote protection, ensure safety and permit use of the facilities at night
Administration Areas	Including offices for government authorities/security, UN agencies, NGOs, meeting areas and warehouses tracing service		
	Usually near entrance so trucks are not driving in the camp and for warehouse security		
	Latrines	1 per 20 staff	
	Lighting		To promote protection, ensure safety and permit use of the facilities at night
Non Food Items	Mattresses, bed sheets, blankets, cooking equipment, hygiene kits, heating stoves, lights, water jerry cans, kerosene jerry cans amongst other items.	Per person/per family, as appropriate	

D.2.3 .Technical Standards, Tips, and Best Practices Care and Maintenance Checklist Informal Shelter and Damaged Houses

WASH Maintenance (Water, Sanitation, Hygiene and Health Control Measures in IDP Sites)

Personal Hygiene & Cleanliness

- **Wash hands with soap**
- **Cover food and water drums with lids**
- **Wash food with clean warm water**
- **Wash hair regularly with dandruff shampoo**
- **Comb hair regularly**

Waste / Garbage disposal in Camp Ground

- **Encourage regular community participation in waste /garbage disposal in designated area**
- **Store unwanted and chemical waste materials in sealed drums away from reach of children's**
- **Maintain community based maintenance plan in keeping living environment free from insects, rodents, and dangerous animals**

Waste Water control measures in latrines, bathrooms and washing areas:

- **Regularly clean toilets and bathrooms with disinfectant after every use**
- **Provide drainage pipes to discharge waste water into pits, open channel discharged outside to open stream outside camp round**
- **Clean drains, cesspool and septic tank pit by desludging regularly**
- **Encourage community clean up in open drains by removing debris in collection ponds**
- **Periodically empty and maintain septic tanks and cesspools**

Protection against vector borne & communicable diseases

- **Use traps and poison for rodents in garbage sites and near shelter grounds**
- **Keep drains clean from insects and destroy breeding sites.**
- **Sleep under mosquito nets**
- **Regularly spray insecticides in shelter, open drains and garbage dump sites to prevent vector borne diseases**
- **Seek medical help from camp doctors**

Water Conservation Practices

- **When water is scarce during summer;**
- **Harvest rainwater for washing and cleaning**
- **Recycle water if possible**
- **Limit water use to 7.5 litres to maximum 20 litres per person per day for bathing, washing and drinking**
- **Always chlorinate water storage tanks from harmful water borne diseases**
- **Ensure drinking water is minimum 10 meter to 20 meters distance from underground sewer system**
- **Store clean drinkable water safely in closed lids**

Rainwater can be used for washing and cleaning only

Data courtesy of:

- **UNHCR Handbook for Emergencies**
- **Sphere Project's Humanitarian Charter and Minimum Standards in Humanitarian Response.**
- **CCCM Camp Management tool kit 2015**
- **IFRC**
- **RCS**
- **IOM Iraq Shelter**

Prepared by: Eng. RajaSegaran Kuppusamy M.Sc.; DM (IFRC)
IOM Shelter Engineer/ CCCM Trainer

D 2.4 RASP Tool

CCCM CLUSTER
SUPPORTING DISPLACED COMMUNITIES

Risk Assessment Site Priority Tool

CCCM Cluster of Iraq - Technical Assessment Tool Capturing Humanitarian Needs & the Basic Health, Safety and Environment (HSE) Situation of Temporary Settlements

i. GENERAL INFORMATION

Date DD MM YY	Assessor Name	Assistant Name
/ /		

Ensure site representatives are present and approve of this assessment and photos being taken.

ii. SITE INFORMATION

Site Name	Site Number	GPS - Latitude N Longitude E
		N E
Governorate	**District**	**Sub-District**

iii. SITE CONTACTS

Site Focal Point Name	Site Focal Point Telephone #	Site Focal Point Email
1)	1)	1)
2)	2)	2)
Site/Land Owner Name	**Owner Contact Telephone #**	**Owner Contact Email**

iv. SITE PROFILE

Formal Managed Settlement Typoplogy

Camp	Collective Center	Transit Centre	Reception Centre

Informal Self-Settled Site Typoplogy

Spontaneous Camp	Collective Shelter	Urban Dispersed	Unfinished / Abandoned buildings

Management Type

None	Self-Managed	Religious	Private	Government	Humanitarian	

Shelter Types:

Tent	Makeshift or Improvised Shelte	Prefab	Public Infrastructure
Single Family Residential U	Multi-Family residential Unit	Office Building	Storefront
Hotel	Hospital	School	Religious Building
Government Office	Factory	Warehouse	Transportation Hub
Military Base or Compound	Mall	Open Air	
Total # Rooms	# Empty Rooms		

Population Breakdown

# HH		# Individuals		# Females		# Males	
# Female HHH		# PWDs		# UASC		# Children	
# Elderly at risk		# Males		# Child HHH			

v. BASIC HOUSING, LAND, and PROPERTY STATUS

Land typology:

Agricultural		Commercial		Residential		Industrial	
Public		Mixed Use					

Ownership Typology:

Private		Government		Ancestral		Collective	
Other	Specify:						

Rental Agreement

Residents Pay Rent (amount):		Residents Provide Services		Residents pay nothing	

Lease Agreement & Socail Cohesian

Written Agreement		Verbal Agreement		No Agreement	

Residents have a positive relationship with the owner of the property:	**YES**	**NO**	**N/A**
Residents have the support of local authorities to occupy the property:	**YES**	**NO**	**N/A**

Is there any problem between the residents and the host community?	YES	NO	N/A
Have residents received or been threatened to receive an eviction order?	YES	NO	N/A
If yes, issued by whom?			
vi. SITE LEADERSHIP STRUCTURE			
Settlement has functional and recognised leadership in place	YES	NO	N/A
Leadership includes people from all ethnic and religious groups present on site	YES	NO	N/A
Leadership structure includes women	YES	NO	N/A
Leadership structure includes youth	YES	NO	N/A
Leadership structure includes people with disabilities (PWDs)	YES	NO	N/A
vii. RISK ASSESSMENT SITE PRIORITY			
INSTRUCTIONS			
For each statement, tick either green, yellow, or red, depending on the severity / risk level of the situation on the ground. Use a combination of observation, key informant interviews and FGDs with site residents to decide upon the correct risk level. Add comments if necessary. *Tick Green for satisfactory condition / low risk / no intervention needed;* *Tick Yellow for poor condition / medium risk / intervention recommended;* *Tick Red for severe condition / high risk / intervention mandatory.*			
LOW	LOW RISK - Condition is Satisfactory or Not Applicable - Regular Monitoring is Required.		
MEDIUM	MEDIUM RISK - Condition is of Concern - Maintenance or Risk Reduction is Required.		
HIGH	HIGH RISK - Condition is Severe - High Priority Maintenance or Risk Reduction is Required.		
A. ENVIRONMENT			
Trip or fall hazard (ie: uncovered pits or drains, drop-off, escarpment, unprotected edges or rooftops)			
Loose materials or rubbish at risk of falling from buildings or shelters.			
Firefighting systems (water, sand buckets, fire blankets, exitinguishers).			
Unlabled or unknown chemicals exist on or near the site.			
UXOs or explosive items exist or are suspected near the site (if yes, must be RED).			
Site location - next to unstable structures/hazardous sites			
Site location - on/near frontlines/military complexes-checkpoints			
Site design or layout - dark or isolated areas exist in or near the site (risk of GBV)			
Site design or layout - obstacles restrict safe and easy access.			
Site design or layout - disabled persons are unable to move within the site / access se			
Waste management - garbage not collected and removed from the site			
B. ELECTRICS			

Insufficient internal lighting in access ways and shelters to prevent falls (risk of GBV).			
Condition of lighting in and near latrines to ensure safe access (risk of GBV)			
Condition of internal and external electrical installation and connections.			
Condition of electric poles and mains wiring leading to the site.			
Lack of functioning smoke detectors in shelters for early warning of fire			
C. WASH			
Water quality (for GREEN water supply is clean and odourless - sphere).			
Water supply (for GREEN minimum 15 litres per person per day (0-1 month); 20-35 l/p/d (1-6 months); 50 l/p/d (6 months +).			
Water infrastructure is poorly maintained (consider condition of pipes, fittings, leaks)			
Insufficient latrines (for GREEN minimum ratio of 1 latrine per 50 persons (0-1 month); 1 latrine per 20 persons (1-6 months); 1 latrine per family (space allowing; 6			
Latrines are non-functional / poorly maintained			
Latrines are not gender separated (risk of GBV)			
Latrines lack privacy / no locks or condition of locks is poor (risk of GBV)			
Insufficient or non-functional showers or bathing areas			
Stagnant water inside dwellings (flooded areas, standing pools of water/ sewage)			
Showers / bathing areas are not gender separated (risk of GBV)			
Showers / bathing areas lack privacy / no locks or condition of locks is poor (risk of GB			
Handwashing facilities and soap are unavailable or poorly maintained			
Laundry facilities and detergents are insufficient or unavailable			
Insufficient or inaccessible water taps (consider access of women, PWDs)			
Insufficient water tanks or HH level water storage capacity (jerry cans?)			
Stagnant water (flooded areas, standing pools of water / sewage)			
Evidence of blocked drainage channels (check sinks, foul smelling water)			
Evidence of water wastage			
Evidence of open defecation			
Issues related to black or grey water desludging (check latrines)			

D. SHELTER	
Lack of shelters or condition of shelters insufficient to protect the population from the elements, heat or cold	
Insufficient shelter space per HH (for GREEN minimum 3.5m2 per person)	
Condition of infrastructure of collective or individual shelters poor (consider roof, interior and exterior walls, floor etc)	
Degree of privacy in collective shelters insufficient (consider need for private space for women and girls (risk of GBV))	
Lack of doors for entrances and individual rooms, or poor condition of doors (risk of GB	
Lack of windows or condition of windows poor	
Structures pose injury risk, (e.g. sharp edges, protrusions, esp for children)	
E. NFI	
Lacking items for basic cleaning and maintenance (e.g brooms, mops, soap)	
[illegible] tarpaulin)	
Lacking tools for minor self-repairs to shelter, WASH, Environment (e.g hand tools,shovels)	
Lacking kitchen sets (e.g bowls, buckets, plates, cutlery, stove)	
Lacking dignity kits for women (sanitary items)	
F. HEALTH	
Limited or no access to timely healthcare and medications	
Limited or no access to maternal health care	
Limited or no access to medical services for GBV survivors and/ or those in need of PS	
Significant increase in illnesses (e.g. skin disease, infections, communicable diseases)	
G. FOOD & NUTRITION	
Limited or no access to sufficient and reliable food (for GREEN 3 x meals per day)	
Limited or no ability to store food properly (off the ground, cool and dry place).	
Cooking facilities are unavailable, unsanitary and / or unsafe	
H. PROTECTION	
Reports of security incidents on or near the site (specify)	
GBV incidents reported on or near the site (specify)	
Women and girls do not feel safe on or around the site (specify areas)	

Criminal/armed groups or other persons cause harm or fear within the population			
Limited or no assistance for persons with specific needs (PWDs, elderly, widows)			
Level of case management or referral pathway in place for survivors of GBV			
Evidence of children at risk on site (e.g. unaccompanied minors, child labor, no CFS)			
Residents do not possess official documents (e.g. civil ID card)			
Residents are not registered IDPs with the Ministry of Displacement & Migration			
I. LIVELIHOODS			
Limited or no access to reliable sources of income			
J. EDUCATION			
Limited or no access to primary education for boys and girls			
Limited or no access to secondary education for boys and girls			

iix. Site Priority Comparison - Add up total scores

INSTRUCTIONS

Count the total number of red, yellow and green ticks. Generally speaking, sites with higher number of red and yellow ticks should be prioritised. However - context must be considered, as some statements have a more severe impact upon living conditions than others (for example, limited education services versus exisitence of UXOs on site). Therefore, ***sites with the highest number of red ticks should not be automatically selected for further interventions. Rather, good judgement and analysis are key.***

Total Green	0	Total Yellow	0	Total Red	0	

Guidance Note

Where danger is RED or impact on the environment is beyond reasonable control, consider evacuation of the site.
HSE issues ranked RED and ORANGE must be included on the Integrated Site Risk Management Plan (ISRMP)
Ensure photographs are taken of all threats to HSE for inclusion in the ISRMP
Ensure site representatives are informed of and give approval for an ISRMP to be drafted.
Ensure Local Government CCCM Focal Points are informed of and authorise the ISRMP.

ix Summary

Is it feasible to create a safe and liveable environment in the assessed site?	YES	NO
If no, explain:		

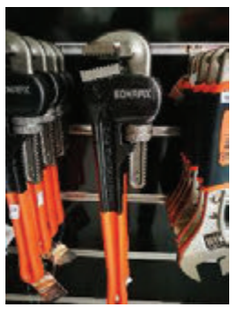
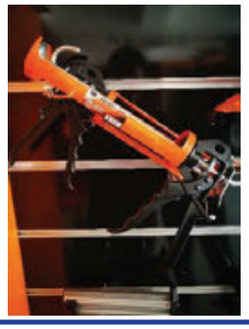
Signature:		CCCM Response URGENT	YES	NO
Date:		Photographs Attached	YES	NO

D 2.5 Shelter Maintenance Tool Kit

Description	Images	Description	Images
Hammers		Long pliers	
Screw driver set of 7 pieces (flat & philips & electrical)		Iron cutting saw	
Digital current clamp meter		Electrical drill hammer (26 ml)	
Pliers		Allen key (complete set)	
Cutter		Steel plate scissor (large size)	

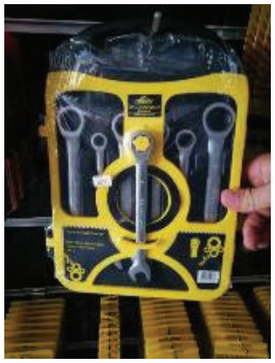
Photos by Somafix

D.2.5 .Shelter Maintenance Tool Kits

Description	Images	Description	Images
Grinder width 115ml		Adjustable pipe wrench 12"	
Safety Boots		Adjustable wrench 8"	
		Adjustable wrench 10"	
		Adjustable wrench 12"	
PPR Fitting Welding		Steel Knife	
Level balance (60 cm)		Self-retracting tape measure (10 meter)	
Adjustable pipe wrench 18"		Caulking or injector gun for silicon - with Silicon 1 Package (24 pcs)	

Photos by Somafix

D.2.5 Shelter Maintenance Tool Kit

Description	Images	Description	Images
Metal tool box		Trowel	
Shovel		Gloves 1 set (12 pieces)	
Digging ax		Electrical insulating tape (10 pieces)	
Universal wrenches nuts and bolts		7 pcs Ratchet Wrench (7 pieces)	
Adjustable pipe wrench 12"		Electrical Cordless Drill (14.4 V)	

Photos by Somafix

D.2.5 Shelter Maintenance Tool Ki

Description	Images
Foam (12PCS)	
Glue Gun-hot melt with sticks (10pcs)	 
Teflon (set)	
Ladder (5 step)	
Wire extension plug 25 meter	

These off the shelf tools and equipment are available in bazars and supermarkets.

Photos by Somafix

ACRONYMS

CCCM	Camp Coordination Camp Management
CMU	Concrete Masonry Unit
CwC	Communication with Communities
DTM	Displacement Tracking Matrix
GBV	Gender-Based Violence
HSE	Health, Safety and Environment
IDP	Internally Displaced Person
IFRC	International Federation of Red Cross and Red Crescent Societies
IOM	International Organization for Migration
ISF	Iraqi Security Forces
NFI	Non-Food Item
OFDA	Office of U.S. Foreign Disaster Assistance
PPPD	Per person per day
SoK	Sealing-off kit
UNHCR	United Nations High Commissioner for Refugees
UN-Habitat	United Nations Human Settlements Programme
WASH	Water, Sanitation and Hygiene

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