

IRAQ: Sealing-Off Kit (SOK) Technical Guidance

Version 2 (September, 2018)

INTRODUCTION

In humanitarian crises, both in emergency and post-emergency phases, access to adequate shelter is essential to provide security and personal safety, protection from the climate, and reduced exposure to some health risks. It ultimately contributes to the dignity and protection of people in need. In situations of both rapid and protracted displacement, as well as of return of large numbers of people, it is important to provide shelter solutions as quickly as possible. Failing to do so may force people to move in search of better shelter options, or cheaper ones, which clearly hampers their capacity to rebuild their lives in a resilient manner. For IDPs living outside of formal camps, there are a number who occupy Unfinished and Abandoned Buildings (UAB)¹, with or without owner's permission. Alternatively, they may occupy shelters that do not meet the minimum conditions for adequacy², including collective centres and informal settlements. Delaying in the identification of transitional shelter solutions may increase the vulnerability of those occupying substandard housing options. In such cases, basic shelter relief items such as plastic sheeting, wooden poles, rope, basic tools and fixings can provide the basis for a simple shelter, or can be used to repair or upgrade substandard and war-damaged shelters. This was the driving factor in development of Sealing Off Kits (SOK).

This document has been developed by the Shelter Cluster in Iraq to provide specific guidance on the design and implementation of SOK, and their deployment as a critical part of emergency, lifesaving sheltering solutions, with consideration given to populations "on the move", as well as part of longer term shelter strategies.

¹ Reference to UAB guidance note on the webpage

² Reference to Adequacy of shelter (new version to be reviewed)

SEALING-OFF KITS (SOK)

The SOK are designed to provide families with an essential package of items to seal their living space as quick relief, short term shelter solutions. While SOK are not intended to provide the same level of assistance as a full-scale rehabilitation project, they can already assist as part of a longer, incremental approach where more durable interventions will be obtained over time.

Due to the comparatively low cost of this approach compared to other shelter interventions, distribution and installation of SOK can be viewed as a cost-effective way to rapidly reach large numbers of affected families with life-saving shelter assistance, in a wide variety of different locations, urban and rural, in order to provide at the minimum adequacy of shelter.

The SOK should be designed to improve sub-standard shelters for the most vulnerable families by achieving the following:

PROTECTION FROM CLIMATE

- Close openings (doors, windows, walls) providing protection from rain, wind, heat, cold and dust.
- Close gaps in doors and window frames, preventing draughts and leaks.
- Seal off small holes / cracks in shelters, reducing draughts, leaks and insects or vermin.
- Enhance the thermal insulation of doors, windows and floors.
- Reduce condensation on cold walls and ceilings.

PRIVACY AND DIGNITY

- Construct temporary partitions within shelters, for example where multiple families may be living together, separating male and female areas in communal facilities, or separating family living spaces from shared / communal spaces.
- Fix broken (or install) locks on doors and windows.
- Seal bathroom fixtures and fittings using silicone sealant to ensure effective, safe use and proper disposal of wastewater.
- Allow segregation of areas

HEALTH, SAFETY AND SECURITY

- Repair temporary walls or doors to the exterior perimeter to reduce likelihood of intruders.
- Ensure the shelter is closed, reducing risk of theft, vandalism or damage.
- Install handrails, barriers and balustrades on the roof or other communal areas (e.g. stairs) to reduce the risk of falling, tripping and injury.
- Cordon off unsafe or hazardous areas, such as piles of debris or structurally damaged parts.



KEY CONSIDERATIONS

Tailoring SOK contents to needs and context - The SOK content and items specifications presented below have been prepared based on the best knowledge of Shelter Cluster partners in Iraq. Their usage may vary depending on each situation, with diversified approaches. The prioritisation of items will depend largely on specific needs identified in a specific context. It is recommended to conduct specific assessments (done by shelter experts, i.e. engineers) at target locations (e.g. Collective Centre or site level) in order to tailor the kit to the needs and context, thus eliminating the procurement of items that would not usefully meet identified needs. In any case, technical advice should be sought from the Iraq shelter and NFI cluster when there is a requirement to adapt the contents.

Distribution of SOK - Shelter partners should consider the range of methods available to distribute SOKs (such as house-to-house/family distribution, distribution from a central location, market-based etc.). A number of considerations will define the most appropriate means, including security, geographic spread, local community (including host) context, timeframes and deadlines, operational capacity, availability of local or community-based organisations, contractors, shops to provide support, expectations from communities and local authorities, and norms of practice agreed with other cluster partners.

Training, awareness, orientation and guidance - It is crucial to provide families with clear, basic training on how to use the materials and tools included in the kits, to enable them to carry out repairs and basic upgrades independently without causing themselves or others any harm. Awareness should also be raised amongst beneficiary families of key safety measures and good practices, and guidance should be given on repair, operation and maintenance of shelters and settlements. Families unable to carry out the repairs and basic upgrades themselves (for example, elderly, female-headed or those with specific needs) should be identified and supported by external, skilled people to have their kits installed.

Cash Based or Local Market Responses – In some instances more flexible approaches could be considered, such as those that are cash-based: vouchers, conditional cash grants, and other market-based solutions may be considered as an alternative for meeting shelter needs. Market surveys should be undertaken before considering cash responses, to ensure availability of the items, as well as the potential impact on an increased demand of certain specific items over the local prices.

Protection - Provision of shelter assistance should be coordinated with and accompanied by parallel assistance in other sectors and special consideration should be given to potential Housing, Land and Property (HLP) issues prior to implementation. Land owners should be consulted and agree in writing before commencing any shelter activity, even if temporary, to avoid eviction risks. Other key protection concerns are around the contamination from Explosive Remnants of War in and around the shelter to upgrade. Agencies specialised in these areas should be consulted, before commencing any shelter work.

SEALING-OFF KIT SUGGESTED CONTENTS

The below list of items has been developed as general guidance to partners and organisations, based on recent programmes implemented in Iraq and the region. It covers the main groups of items that are likely to be required in a SOK in order to make the implementation of activities effective and improve the adequacy of shelter. A SOK should aim to provide all the items, affected families may require, in order to bring a shelter up to an adequate level.

It is recommended that SOK includes the following items:

- 1- CONSTRUCTION MATERIALS
 - Tarpaulin and plastic sheeting
 - Framing materials – square-cut timber
 - Other framing material
 - Exterior grade plywood sheeting
 - Fixings and rope
 - Sealants and adhesives
 - Metal straps and angles
 - Insulation materials
- 2- TOOLS
- 3- PERSONAL AND SITE SAFETY EQUIPMENT

The tables provide suggested lists of items that could be included in a Sealing-Off Kit, generic descriptions, and estimated cost³. The final lists of materials and quantities should be defined based on assessments carried out at selected sites and/or households, and be balanced by the overall **recommended cost package** defined for Sealing-Off Kit assistance, as well as the security of tenure of the beneficiaries.

All dimensions and specifications are to be considered in the context of availability and ability to respond to the required needs. Items should be **fit for purpose** but may change based on need, context and availability. Please refer to additional Shelter/NFI Cluster Iraq guidance for more detailed specifications.

³ Estimates provided by Shelter Cluster Iraq partners as of September 2018 and reflect market prices. All costs in this document are in US Dollars (USD / \$).

KEY TRAINING AND AWARENESS MESSAGES

As SOKs are intended to be distributed directly to families, it is crucial that they receive sufficient technical support to ensure that the kits are deployed effectively and meet their intended purpose. Support to beneficiaries should include safety awareness to prevent harm or injury to those involved in the installation of the SOK, or others. SOK assistance should not be provided without the following knowledge and support to beneficiary communities:

- Training in safe use of tools and personal safety equipment.
- Training on good practices of construction using the materials provided in the kit.
- Providing guidance on a range of construction options available within acceptable scope.⁴
- Raising awareness of potential risks, hazards and dangers within the shelter or settlement, and means of their mitigation.
- Fire prevention and response.
- Regular installation guidance and frequent follow up to ensure that materials are used to the best of their potential according to the families' unique preferences.

Partners should also consider the requirements of families with specific needs and other aspects of local contexts that may require additional technical support and oversight in the implementation of SOK.



Photos: Courtesy of UNHCR

⁴ This may be defined by a number of factors, such as likely period of time to remain in that shelter, intentions and likelihood of ongoing movement, and acceptance by land / building owner and/or local authorities. Agencies should define the SOK kit contents to take these (and other) factors into consideration, and should tailor guidance and training to specific contexts.

SUGGESTED SOK ITEMS AND SPECIFICATIONS⁵

Notes:

- 1- All values in this document are stated in United States Dollars (USD / \$)
- 2- Quantities of each item to be determined by needs assessments of targeted areas/communities. The list contains multiple options for some items where the selection must be justified by the needs..
- 3- 1 kit per family (6 persons)
- 4- SOK = \$250 - \$300 per kit

SEALING OFF KIT – CONSTRUCTION MATERIALS

#	Item and Description	Unit	Unit cost (US\$)	Use	IMAGE
TARPAULINS AND PLASTIC SHEETING					
1	Tarpaulin - Shelter-grade, 4m x 5m	piece	13	Roof/wall covering for protection from heat, cold, rain and wind. If coloured can also provide minimal forms of privacy. <i>Refer to Shelter/NFI Cluster Guidelines for full specifications.</i>	 1
2	Clear Plastic Sheeting - 190 GSM (gram per square meters)	m ²	1.5 / m ²	Clear plastic sheet for sealing windows and doors as well as general uses. Market price is likely to be in kg rather than m ² .	 2

⁵ In the construction sector it is common practice to refer to high quality commercial brands as a substitute for detailed technical specifications. Any reference to brands in this document is for the purpose of reference to technical standards only and does not imply connection, preference or any other form of support, insomuch as any brand with equivalent specification is also accepted.

FRAMING MATERIALS - SQUARE CUT TIMBER				
3	Square Cut Timber - 2cm x 6cm x 3m	piece	5	For building doors and windows.
4	Square Cut Timber - 2.5cm x 10cm x 3m	piece	4	For securing plastic sheeting and general sealing off.
5	Square Cut Timber - 4cm x 9cm x 2.50m	piece	6	For construction of temporary wall framing (internal or external)
OTHER FRAMING MATERIAL				
6	Round Local Softwood - diam 4cm, length 4m	piece	4	Round timber poles for construction of temporary wall framing (internal or external)
7	Wall Frame Rail - U Shaped; Galvanized Steel; 3 meters long, 45x18 mm, 0.6 mm thickness	piece	5	To set up frames for plywood / plastic sheeting walls (separation/partitioning)
EXTERIOR GRADE PLYWOOD SHEETING				
8	Exterior Grade Plywood - 4mm thick x 1200mm x 2400mm	sheet	12	Panels for partitioning; providing cover for openings in exterior wall
9	Exterior Grade Plywood - 12mm thick x 1200mm x 2400mm	sheet	18	Panels for partitioning; providing cover for openings in exterior wall
10	Exterior Grade Plywood - 18mm thick x 1200mm x 2400mm	sheet	25	Panels for partitioning; providing cover for openings in exterior wall

3, 4 and 5



7



6



8, 9 and 10

FIXINGS AND ROPE				
11	50mm Common Nail - 6 D. 3 mm x 50mm, High quality low carbon steel Q195 or Q215 or Q235	kg	2	Fixing timber together; fixing sheet materials to frames.
12	75mm Common Nail - 8 D. 3 mm x 75mm, High quality low carbon steel Q195 or Q215 or Q235	kg	2	Fixing timber together; fixing sheet materials to frames.
13	100mm Common Nail - 10 D Common Nail 3.8 mm x 100mm, High quality low carbon steel Q195 or Q215 or Q235	kg	2	Fixing timber together; fixing sheet materials to frames.
14	65mm Galvanized Steel Common Nail - 3.4 mm x 65mm, High quality low carbon steel Q195 or Q215 or Q235	kg	2	Fixing timber together; fixing sheet materials to frames. Resistance to corrosion so useful for external purposes.
15	Concrete Nails - 2.8 mm x 40 mm, spiral splined, hardened steel, electrogalvanized	kg	3	For fixing timber and sheet materials to concrete and other hard materials.
16	Concrete Nails - 4.00 mm x 80mm, spiral splined, hardened steel, electrogalvanized	kg	3	For fixing timber and sheet materials to concrete and other hard materials.
17	Nails with Washer Head / Roofing nail with umbrella head - Electrogalvanised / twist shank with washer. Size: 2.70mm x 70mm	kg	3	For fixing plastic sheeting/tarpaulins (washer prevents tearing)
18	Screws for Wood - Gauge 4 x 20 mm	kg	3	For securely fixing framing and metal straps, angles and hinges together.


11, 12 and 13


14


15 and 16


17


18

19	Galvanized Washer - 2cm (adapted to the screws)	kg	2	To secure nail and screw fixings more securely to sheeting and framing materials	 19  20  21
20	Duct Tape – Extra Heavy Duty, 50mm x 25m	roll	2	For taping plastic sheeting together and other simple fixing of materials together	
21	10m Rope – Polypropylene	m.l.	1	General purpose rope	
SEALANTS AND ADHESIVES					
22	Silicone Caulking - 100%, clear, 10 oz tube	tube	2	Sealing small gaps and cracks	 22  23  24
23	Expanding Spray Foam - Compressed can with nozzle, 2-3x expansion, 24 hours or less cure time, polyurethane-based insulating foam sealant. 750ml can.	can	3	Sealing large gaps	
24	Construction Adhesive	tube	6	Securing timber to concrete block, door construction, etc	
METAL STRAPS AND ANGLES					
25	L-Shaped Galvanised Steel Angle - 42x42x40mm, Thickness 2 mm	piece	0.2	To fix together timber to make secure frames	 25  26
26	Flat L-Corner – Galvanized Steel, 50mm x 50mm / 5cm x 10cm Metal Plates With Screws	piece	0.5	For door and window frame construction	

27	Metal Handle For Door – Zinc or Aluminium, with screws (for wood) 10 to 15 cm length	piece	10	For door installation	 27  28	
28	Hinges With Screws	piece	1.5	For door installation		
29	Latch - Steel Galvanised - 6mm diam and 5-10 cm long	piece	2	For securing and locking doors		 29
30	Open Shackle Padlock – 60 mm, with keys	piece	3	For locking doors and windows		 30
INSULATION MATERIALS						
31	Mat - polypropylene reed-woven mat, 3m x 4m	piece	14	Providing a protective covering to flooring	 31  32	
32	Carpet - thickness 1-1.5cm, (4mX4m); preferably dark colour	m ²	16	Providing an insulating layer to flooring		

SEALING OFF KIT – PERSONAL AND SITE SAFETY EQUIPMENT

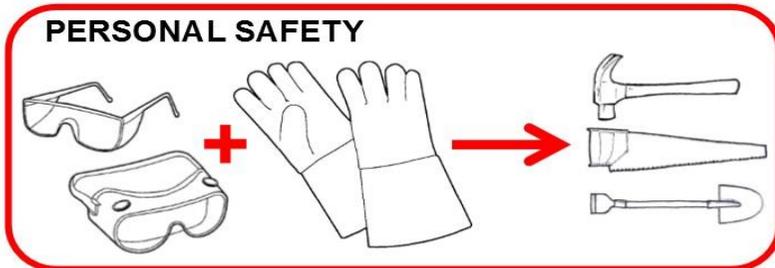
#	Item and Description	Unit	Unit cost (US\$)	Use	IMAGE
QUANTITY AND TYPE OF EQUIPMENT TO BE BASED ON CONTEXT AND AVAILABILITY					
1	Safety Work Gloves - medium duty work gloves, leather/fabric mix	piece	3	Protecting hands during labour	
2	Safety Work Glasses - clear polycarbonate Class 1 safety glasses	piece	3	Protecting eyes during labour	
3	Polypropylene Rope - diameter: 8 mm, length: 200m; in a roll, preferred colour: black / dark green. Woven with 3 strands, with the possibility of being unravelled.	piece	0.2	For securing around the perimeter of buildings as well as to secure off voids and holes to prevent falling.	
4	Webbing - polyester flat belt sling, 6cm x 30m	piece	1	For securing around the perimeter of buildings as well as to secure off voids and holes to prevent falling.	
5	Braided Steel Cable – 12 Gauge, 30 meter roll	piece	1	For securing around the perimeter of buildings as well as to secure off voids and holes to stop people falling.	
6	Smoke detector - battery operated; 2 year warranty.	piece	20	To install in sealed off areas to assist with fire protection.	

SEALING OFF KIT – TOOLS

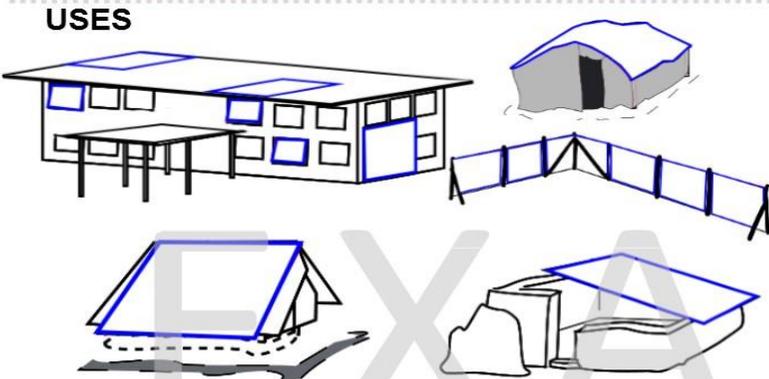
#	Item and Description	Unit	Unit cost /\$	Use	IMAGE
QUANTITY AND TYPE OF TOOLS TO BE BASED ON CONTEXT AND AVAILABILITY					
1	Handsaw - All-Purpose, total length 750mm, for wood, good quality, teeth from tempered and hardened steel. Unbreakable handle. Saw blade	piece	3	For general cutting of square cut timber, plywood sheeting and soft plastics.	
2	Tape Measure – 5 metre steel	piece	3.5	For accuracy of measuring during construction	
3	Utility Knife	piece	1.5	For general uses including cutting plastic sheeting,	
4	Pliers - steel bull nose pliers with cable cutter,	piece	3	For cutting and securing metal wires and cables.	
5	Shears - 9 inch straight pattern tinner's snip	piece	4	For cutting metal wire, cables and sheeting.	
6	Caulk Gun - 10 oz metal ratcheting caulk gun	piece	3	10 oz metal ratcheting caulk gun	
7	Screwdriver – Flat Head	piece	1.5	For 4x20mm screws and general uses.	
8	Screwdriver – Cross Head	piece	1.5	For 4x20mm screw and general uses.	

9	Shovel - Head with sharpened tip in forged steel which is tempered and hardened. Supplied with a handle. Total length: 100 to 110 cm.	piece	5.5	For digging holes, levelling earth and general uses including mixing concrete.
10	Wheelbarrow - approx. 90L dry solids, strong	piece	25	For general uses including moving materials.
1	Claw Hammer - Weight: 0.750 kg. Wooden handle, replaceable. Head in forged steel. Good quality.	piece	3	For general carpentry uses.
12	Small hoe - Head size is 15cm, sharpened tip in forged steel which is tempered and hardened. Supplied with a wooden handle.	piece	10	For digging holes, levelling ground and general tasks.
13	Plastic Bucket with Handle – 5 gallon	piece	2	For general construction related activities.
14	Water Hose - PVC Nylon Braided, 1" - 10	roll	10	For general construction related activities.

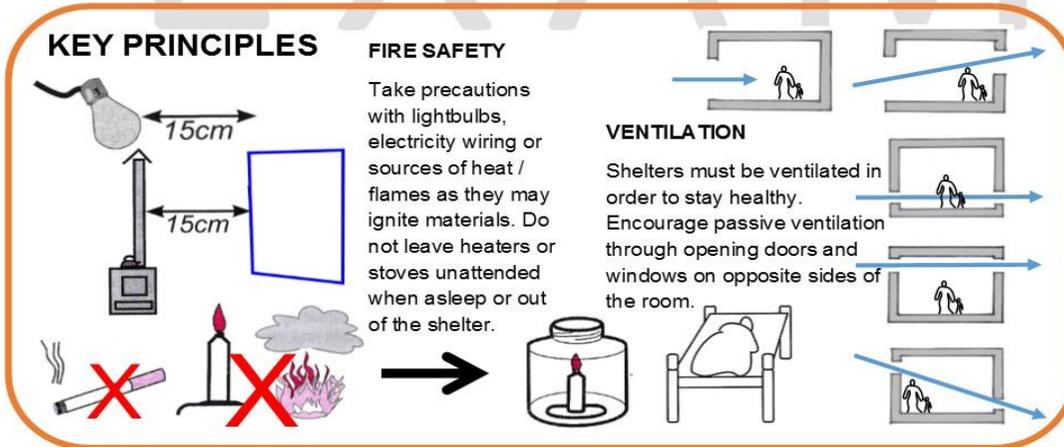




This leaflet provides guidance to help with the appropriate and safe deployment of Sealing-Off Kits (SOK) to address critical issues in inadequate shelters.



Sealing missing windows, doors and gaps / cracks in walls
Covering roofs
Preventing draughts and leaks
Partitions, fences and screens
Constructing lockable doors / windows
Balustrades and handrails
Ramps and stairs



INTENDED USE OF THE KIT

- 1) Sealing up shelters to protect from the climate and weather (heat, dust, rain, wind, snow, cold...)
- 2) Provide a means to improve privacy and dignity.
- 3) Provide a means to assure health, safety and security.

GENERAL ADVICE

- If you don't know or don't have the technical knowledge, ask someone who does.
- Do not encroach upon or block access to public spaces such as streets, pathways and communal water/sanitation facilities or upon the designated areas for other households.
- Measure twice, cut once.
- Use the proper tools and safety equipment to carry out the work.
- Safely remove and dispose of refuse / unused material in designated locations.

1 of 2
SOK

Seal small gaps/cracks with **silicon caulk**, and large gaps with **expanding foam**.

JOINTS AND CONNECTIONS
Securely fix timber posts together using:
- Angled nails - Plates
- Metal angles - Joints
- Screws

SHEET MATERIAL
Use plywood sheet or tarpaulin / plastic sheet to form walls and partitions, and seal openings (windows, doors). Use material (timber, washers, rubber, bottle caps) to prevent tearing. Fold and overlap plastic sheet.

BRACING
Make timber frames stronger by bracing corners—using timber, wire or metal plates. The strongest frames use a combination of joints and bracing.

Max. 30cm

2 of 2

SOK

Further reading and image credits:

[The IFRC Shelter Kit Guidelines](#), International Federation of Red Cross and Red Crescent Societies, 2010

IFRC Shelter Kit Flyer

[Plastic Sheeting: A Guide to the Specification and Use of Plastic Sheeting in Humanitarian Relief](#), IFRC and Oxfam International, 2007

[Timber: A Guide to the Planning, Use, Procurement and Logistics of Timber as a Construction Material in Humanitarian Relief](#), IFRC, UN/OCHA & CARE International, 2009

[Handbook for the Protection of Internally Displaced Persons](#), Global Protection Cluster Working Group, Dec 2007

[Transitional Settlement Displaced Populations](#), Corsellis, T. and Vitale, A., Shelter Centre & Oxfam GB, 2005

[Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters](#), Jha, A., Barenstein, J., Pittet, D. and Sena, S., World Bank & GFDRR, 2010

[Shelter After Disaster: Strategies for Transitional Shelter and Reconstruction](#), Shelter Centre, UN-OCHA and DfID

[Sphere Project Humanitarian Charter and Minimum Standards in Humanitarian Response](#), 2011

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