

Peer Review of Plastic Sheeting Guidelines

Oxford, 11 Dec 2006

Meeting Minutes

This Peer Review aimed to review the proposed contents of the guidelines on plastic sheeting use and procurement. Additionally it aimed to provide a technical forum for those organisations involved in the use of plastic sheeting.

The format of the peer review was of open discussion sessions as well as smaller breakout group sessions.

This document contains conclusions (page 1), the revised table of contents (page 2) and minutes (arranged by relevance to the table of contents) (pages 3-6)

Key conclusions

- **The basic Table of contents was agreed, although care would need to be taken to avoid unnecessary repetition of pre-existing guidelines. A section on climate should be included.**
- **It was agreed that fixings would be included as series of “do and don’t” drawings**
- **“Kits” (or kit lists of other materials that are required for use with plastic sheeting for various constructions) should be included.**
- **A decision making diagram would be developed and circulated on when to use plastic sheeting.**
- **The standards for sheeting covered in the guidelines should be limited to: 200gsm sheeting, translucent sheeting (cold window repairs), shadenet, flooring (missing specification) and potentially ITPS (dependent on anticipated WHO guidelines).**
- **A peer review of a draft of the document would be welcomed.**

Agreed guideline aims:

To collate and disseminate best practice guidelines on plastic sheeting use and procurement through a concise, practical field guide for humanitarian relief organisations and their field staff.

Meeting attendees

Rick Bauer (Oxfam GB),
John Howard (Oxfam GB),
Sally Crook (Oxfam GB),
Graham Barnes (Oxfam GB)
Maxwell (Oxfam GB),
Hannah Claire (Oxfam GB).
Omar Horacio Rincon (IOM),
Tom White (CHF),
John Adlam (DfID),
Rob Kissick (DfID),

Naomi Bourne (Save the Children UK),
Jerome Michon (MSF),
Richard Allen (Mentor Initiative),
Andrew Loven (Mentor Initiative),
Vicki Wooding (Habitat for Humanity),
Gordon Browne (Southampton Institute),
Liam Florey (Southampton Institute),
Joseph Ashmore (Oxfam consultant),
Lizzie Babister (independent),
Bill Flynn (independent)

Revised Table of Contents (Draft 5)

This page contains an outline of the contents of the booklet on the use and procurement of plastic sheeting. This draft incorporates comments from the first peer review.

Section A: Introduction

1. Booklet overview
 - What is included?
 - What is not included?
2. Construction - think before you build.
 - Settlement options
 - Shelter, Watsan, Infrastructure

Section B: Using plastic sheeting

3. Planning a response
 - Choosing when to use plastic sheeting (decision making diagram)
 - Alternatives to plastic sheeting (what can be used instead of plastic sheeting)
 - Tents, canvas tarpaulin, tarred sheet, construction using local materials, sacks/fabric (walling)
 - Build in the best place – Basic settlement planning.
4. Supply chain
 - transport
 - warehousing
 - distribution
 - monitoring
5. What can you build?

Shelter –design details <ul style="list-style-type: none">- Kits- Transitional shelter- Repairs	Sanitation / public health <ul style="list-style-type: none">- Latrines	Infrastructure <ul style="list-style-type: none">- Sheds- Walling / screening	Other uses
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6. Fixing details
 - How to attach plastic sheeting (design details and materials needed)
7. Climate – and winterisation
8. Insecticide Treated Plastic Sheeting
9. Disposal of plastic sheeting

Section C: Procurement and specification

10. Specification
 - Rolls and sheets- Roofing / walling / flooring -Msf '98/ICRC/IFRC/Oxfam/UNHCR specifications
 - Transparent sheeting - Windows / insulation
 - Lower specifications - Latrines / partitions / fencing
 - Shade Net

Annexes

Glossary
Bibliography

Meeting minutes

A1 introduction : Booklet overview: aims / audience

- A field guide, similar to the 'Guide to Tents' will be developed, for field staff + programme managers.
- Interest was expressed in there being something "A4 copyable" that could go in to distribution for a beneficiary who is given a piece of plastic sheeting. However the challenge with this is that different circumstances are different (eg. different laws or policies). However, there may be specific issues on which such beneficiary level guidance can be given and appropriate to all circumstances.
- Will the booklet be distributed with the sheeting itself? – It will be targeted at field workers not beneficiaries, but options for including a few copies with shipments should be explored.

A2 introduction: Basics: shelter, wider settlement issues, sanitation/public health, infrastructure:

- One of the failings of handbooks is that they often don't quite tell you enough. Is it worth it? What can I do with it? It should read something like "when you look at plastic sheeting, you must consider x, y, z. Think about this..."
- The booklet must answer questions. There must be enough to put something on paper and to say the answer to this question is x, y, z...
- Need to be careful not to reproduce existing guidelines and lose readers with unnecessary context.
- Need to avoid repetition (internally to the document and of other guidelines).
- Materials are always used in the field for longer than we think they will be. We need to put plastic sheeting into the reconstruction context.

The plan is to have a working draft by Feb 2007. The Important point is to avoid replication. If it does include broader issues, the guideline needs to highlight that one needs to look elsewhere for further information and to think about other issues more widely.

B3 using plastic sheeting: planning a response - Using Plastic sheeting

A summary of points from a breakout group on when to use plastic sheeting is summarised below. A draft of the resulting decision making diagram will be distributed with these meeting notes.

When is basic shelter needed?

- when you need to cover holes / quick repairs
- when you need 'cheap solution'
- when you think it's a useful addition to combine with local materials
- as very temporary shelter
- when the situation would strip local materials (environmental concern)

Advantages of plastic sheeting

- low value to discourage plundering
- easy to ship (lots more beneficiaries served than by tents)
- get lots, cheaply

[MSF use a lot to build institutional buildings like hospitals, they don't distribute it]

[On its own it's unlikely to make a shelter, put stuff with it]

[If it is first and only response, is it good enough?]

- has to be available (storage, shelf life)
- has to be temporary when you don't own your space
- when you need quick response, but it should be part of phased response
- when you need versatile response

The MSF / sheltercentre Shadenet booklet was distributed to attendees

<http://www.sheltercentre.org/shelterlibrary/publications/517.htm>

B4 using plastic sheeting: supply train

Transport and weight were flagged as critical issues for inclusion. Varying sizes of sheets in the specifications (4m5m or 4mx6m) (see C10 below) were also raised as an issue.

- Inclusion of production line, and sourcing materials in developing countries?
- Key production is in Korea and China. Thailand, Indonesia, Kenya have capacity to produce plastic sheeting. No reason they cannot reach the right standards if we interact with them and encourage them.

Many NGOs are following the same standards. What are our combined purchasing powers?

“international organisations have (block purchasing powers) if we set the same standards, but we don’t want to use the same suppliers and create a bottle neck.”

B5. using plastic sheeting: design details / kits.

- Kits were discussed and encouraged for inclusion. The issue of whether fixing materials should be included in standard distributions / emergency shipments was discussed. In the first phase of an emergency, planes are often loaded and sent before any assessment has been made on the ground. Is there a basic fixings kit that can be included.
- A full charter contains 8000 sheets of plastic. Adding nails etc could reduce the most critically needed materials. Materials for inclusion would need to be carefully selected.
- (comments post meeting: USAID ship reinforced tape with plastic sheeting to help fixing. Although difficulties have been had with the adhesive properties in dusty environments, the tape itself, made from plastic sheeting reinforcement bands works like a low volume rope.)
- The booklet should include discussion of the adaptations / multiple uses made in the field or by beneficiaries of sheeting (trousers etc.) and how this can be encouraged.

B.6 using plastic sheeting: Fixings

Gordon Browne and Liam Florey (Southampton Solent University.) outlined research that they are conducting using a tensometer to compare various fixings on plastic sheeting. They are comparing basic fixings on a standard width of plastic sheeting, comparing woven and braided 200gsm standard plastic sheeting. Due to time constraints will not be able to test the effects of flapping. The outputs of the Southampton University research project (including a comparison table) will be published at www.plastic-sheeting.org and will be summarised in the guidelines as a series of “do and don’t” drawings, to disseminate best practice

Formally published tests (ISO, BS standards as well as the MSF catalogue) all focus on tests for fabric strengths rather than the fixings.

The 1996 MSF/ UNHCR project on Plastic Sheetting looked in detail at testing regimes when procuring sheeting but also looked at fixings. Copies do exist of a document from the project written by Patrick Oger, which to the knowledge of the participants is the only available documented series of tests on fixings.

Fixings to include in the guidelines are; propriety fixings, rock and string, shock cord, nails, battening. Marine fixings / research should also be followed up.

B7 climate (including winterisation)

This section was added during the peer review.

B8 using plastic sheeting: ITPS – Insecticide Treated Plastic Sheetting

During the meeting a presentation was given by Richard Allen from the Mentor Initiative and MSF guidance notes on the use of ITPS were circulated. ITPS will not be going through WHOPES (WHO Pesticide Evaluation Scheme) validation but guidance is likely to be agreed by WHO early 2007. The WHO position will inform the plastic sheeting guidelines. Data from phase 3 trials on ITPS is currently being analysed.

ITPS is not a generic replacement for plastic sheeting in all circumstances. The objective of ITPS is to kill mosquitoes compared to nets which stop you getting bitten. Its intended mode of action is to break the cycle of biting. It is simpler to use than IRS (Indoor Residual Spraying).

- lifetime up to 18 months.
- coverage of a settlement must be on the walls of at least 80% of the shelters.
- It is best used in large camp settings. It is not effective in small or dispersed settlements.

- It is most effective if used on walls (where mosquitoes rest after biting.) it is little use in malaria control when used in roofing.
- It should not be used as flooring for supplementary feeding centres.
- Potential to reduce flies when used in latrines – although this is not in the same phase of trials as for malaria prevention.
- Safety:
 - Rash resulting from touching ITPS – usually goes away with a few hours. WHO always tell people to have soap handy, and to use gloves if they have them to handle.
 - Key concern is if it is used with food – high levels of contamination occur on uncooked foods that have been kept on ITPS.
 - Balance must be made on public health side – the potential to reducing malaria mortality / morbidity against the potential side effects of pesticide (deltamethrin) that occur from mis-use and the quality of plastic
- Cost - there are currently only two suppliers but the cost is currently fixed.
- As with other pest control programmes, ITPS must be used with guidance to beneficiaries on its use. Mentor have produced guidelines on the handling of ITPS
- Quality: ITPS cannot have a black core woven fabric as this interacts with pesticide. (black is used in normal plastic sheeting used to increase privacy) 180gsm specification of ITPS is shared in technical comparison of plastic sheeting specifications document.

B9. Using plastic sheeting: Disposal of Plastic sheeting

Working from some notes from Charles Kelly, the key issues for disposal were agreed to be

1. reuse/recycle (if there is biological contamination, then disinfection).
2. incinerate (min 1200 degrees)
3. as a binder in reinforced concrete (the will be investigated by a student at Southampton university)
4. In general, burial is not recommended

C10 Specification: specifications of plastic sheeting

A comparative table of plastic sheeting specifications was circulated. This will be available from www.plastic-sheeting.org

The group agreed that the following standards for plastic sheeting as a minimum for these guidelines.

- 1) **Translucent/cold climate** – this is used for emergency repairs / windows for temporary repairs.
 - 2) **200gsm** - The standard specifications for 200gsm plastic sheeting are of HDPE (black) core and LDPE lamination on both sides (MSF/IFRC/ICRC/OXFAM etc or UNHCR / UNICEF).
 - 3) **Shade Net** – walling / potentially double layers may suffice for latrine walls.
 - 4) **Flooring** – no published / agreed standards exist, but 200gsm standard sheeting may not be adequate for this purpose
 - 5) **ITPS?** This is dependent on WHO approval and is primarily for use in mosquito control. Ideally it should conform to standard 200gsm specifications although the black core may not be possible for technical reasons.
- Cost: if you can get 2 sheets for the cost of one (- e.g for latrine pits) is it worth cutting on quality? On balance the answer to this question was no.
 - Do we lower standards or change standards to meet material availability?
 - Advantage of standardisation: Suppliers need to know what we want. Procurement becomes simpler. e.g. blankets come in 30%, 50%, and 80% wool/
 - Snow loading might lead to different bursting strengths.
 - Black colour (MSF etc. / UNHCR standards demand black) Weight doesn't affect translucency

Next peer review

- During the peer review, strong interest was raised by the group to meet again prior to publication of the guidelines.
- “To be useful the second peer review should be looking at a draft. [The peer review has] Got to be useful and have something that participants can actually look at”
- “Frustrations from other PR processes are that you do a lot of work and then the next one progresses and it all starts again with different people... needs to be chronological”.
- There was strong interest for a second review directly reviewing a draft of the guidelines with a similar group of peer review attendees (for continuity).