CONFERENCE ON “WINTERISATION”
Luxemburg 20-21 May 2015

Introduction Test Methodology
Why test?

The aim in any shelter operation is to provide adequate sheltering solutions.
Experience in the field often shows unsatisfactory performance of shelters on different criteria like durability, stability and safety and user-satisfaction (comfort and usability).
→ Need for proper methods to evaluate whether a shelter is adequate.
→ Need for context specific criteria and prioritization.
What to test?

- The protocols described in the EIC for quality control are meant to assure material qualities like tear resistance, tensile strength, water penetration resistance and fire-retardancy and other important material qualities.

→ To evaluate the overall performance of a shelter and particularly the quality of living conditions provided we need to include new quality criteria and specify per context which criteria take priority.
General performance & Quality Criteria

What are the important criteria to determine whether a tent or other shelter model is suitable for use in humanitarian operations and provides adequate living conditions?

- **LOGISTICS**: cost implications (unit price and shipping) determine how many people can be supported

- **TECHNICAL PERFORMANCE**: Any shelter should provide a minimum of safety and protection from the climate

- **USER-SATISFACTION**: usually people have to set up their shelter themselves. Then they need to live in the shelter, not only survive!
Logistics criteria

- **Unit price** is critical
- **weight** is critical not only for reduction of shipping cost but also in terms of handling and transport.
- **dimensions**

→ For cold climates higher weight and larger packages and consequently higher price dimensions need to be foreseen.
Technical performance criteria

- **Stability:** needs to resist windloads (75km/h) and snow load (300N/m² under ISO 8937, for camping tents)
  ➔ For a winterized shelters the structural performance needs to be higher because of additional load from the cladding & snow

- **Durability:** shelf life (min 5 years) and lifespan (min 1 year preferably longer) when set-up in no matter what condition. How to really assure this?

- **Quality of materials and details** also clearly defined in the specs
  ➔ Take into account material reaction in cold climate!
Technical performance criteria

Additional performance & quality criteria:

➞ **Thermal performance:** thermal comfort is directly related to the beneficiaries’ health. **In cold climate adequate thermal performance is life-saving!** It is also about saving fuel cost. In hot climate thermal comfort reduces health risks as well as consumption of water.
Technical performance criteria

Additional performance or quality criteria:

➤ **Air-quality: critical to assure beneficiaries’ health!** Too high CO2 levels and air-pollution can have serious effects on health. Adequate ventilation/air exchange rates help reduce transmission of diseases.

➤ **Adequate lighting and sound-insulation:** Although not life-saving beneficiary surveys show that these are important criteria to provide a minimum level of comfort.
Additional performance or quality criteria:

→ **Ease of set-up and set-up time:** The users need to be able to set up the shelter with max 4 people and without previous training and within a short time period. **In cold climate the set-up time becomes critical** as well as the fact that it needs to be possible to work with gloves.
User satisfaction & usability criteria

Additional criteria for user-satisfaction:

**Usability:** how can living be organized in the shelter? Are there partitions, hangers, pockets etc. can the windows be opened? Where is the stove positioned? How easy is it to open and close the door and enter the shelter? Can it be locked? Etc.
The existing specs and lab-test protocols serve to define material qualities and need to be complemented with criteria and evaluation methods that capture the quality of the living condition provided.

For the additional performance criteria SRU is working to establish parameters of reference:
- Thermal performance
- Air quality
- Usability and beneficiary satisfaction

These criteria need to be evaluated within the real life context.

The prioritization of the criteria and the method of verification might differ with the context!