



*ALPINTER*

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ENVIRONMENTAL  
IMPACT  
INITIATIVE



# INTRODUCTION

# 01

## INTRODUCTION

Alpinter exists to create shelter and core relief solutions that serve our clients and beneficiaries in emergency situations around the world.

We recognise that our activities will have an environmental impact.

We organise our everyday business according to 4 basic environmental principles, which guide our efforts to minimise the impact of our activities on the environment:



### CONSCIOUS MATERIAL CHOICES

We carefully select and choose the materials we work with, taking into account client specifications, real-world performance, durability and eco-friendliness.



### LOGISTICS OPTIMISATION

We optimise our products, their packing and our logistics solutions to ship and transport the products as efficiently and eco-consciously as possible.



### WASTE ELIMINATION AND SECOND LIFE

In all aspects of production, we integrate processes that allow us to optimise our production and eliminate as much waste material as possible. We consciously design our products and packaging wherever possible to encourage their re-use (i.e. give a second life) once they have served their initial purpose.



### CONSCIOUS USE OF NATURAL RESOURCES

In all activities, we consciously manage the use of natural resources. From innovative industrial production processes all the way to policies for switching off lights and heating at HQ when not required.



Alpinter aims to continuously apply these 4 basic environmental principles to the product life cycle. We have already made significant inroads into minimising the environmental impact of our activities at all stages. However, our goal is to take an even more leading role in this field in the years to come.

## THE PRODUCT LIFE CYCLE





OUR  
CURRENT  
IMPACT

## 02

## OUR CURRENT IMPACT

The current Alpinter product portfolio consists of tents and other non-food core relief items, developed by Alpinter in collaboration with our clients or produced according to the strict specifications of the procuring organisations.



RECYCLABLE



REUSABLE



WASTE MINIMISATION



LONG LIFESPAN

### 2.1 MATERIALS & DESIGN


**TARPS**

Tarpaulins are made of PE or FR-Treated PE. Non FR-treated PE is a recyclable material, where proper recycling facilities exist. PE is a highly adaptable material suited to a multitude of 'second life' uses or redeployments.


**JERRYCANS**

Jerrycans are made of LDPE, which is a recyclable material, where proper recycling facilities exist. It is also a highly adaptable material suited to a multitude of 'second life' uses or redeployments.


**XPERT HIGH PERFORMANCE TENT | HUB MULTIPURPOSE TENT  
SELF-STANDING FAMILY TENT**

All three tents are made of FR-treated PE with steel or aluminium frames. Aluminium is a recyclable material. PE can be easily cut into sections and repurposed for a wide variety of uses. The Xpert High Performance Tent has been created as the new generation of Multipurpose Tents, combining additional functionality and a longer lifespan.

  | **BLUE GEODESIC FAMILY TENT**

The BLUE (Geodesic) Family Tent is made from PE material with an aluminium frame. Both the aluminum frame and PE tent material are recyclable. The entire tent design, homologated in 2019, focused on **improving the lifespan and performance** of the family tent compared to the previous polycotton model, avoiding the use of bromide-based chemical treatment through the use of naturally slow flame spread PE.

 | **RED FAMILY TENT**

The RED family tent is made of PE with a hybrid metal and fibreglass frame. Both the metal frame and PE tent material are recyclable, while the fibreglass elements are extremely resistant to corrosion.

  | **GENERAL: CURRENT GENERATION OF FAMILY TENTS AND MULTIPURPOSE TENTS**

Previous generations of Family and Multipurpose Tents were made from polycotton (PC), a mixture of synthetic and natural fibres which is difficult to recycle. Most international organisations have made the transition to shelters made from 100% polyethylene (PE), an entirely synthetic fabric which is **longer lasting**, easier to recycle, and **naturally slow flame spread** without toxic chemical treatments. The HUB Multipurpose Tents and XPERT High Performance Multipurpose Tents are made of FR-treated PE.



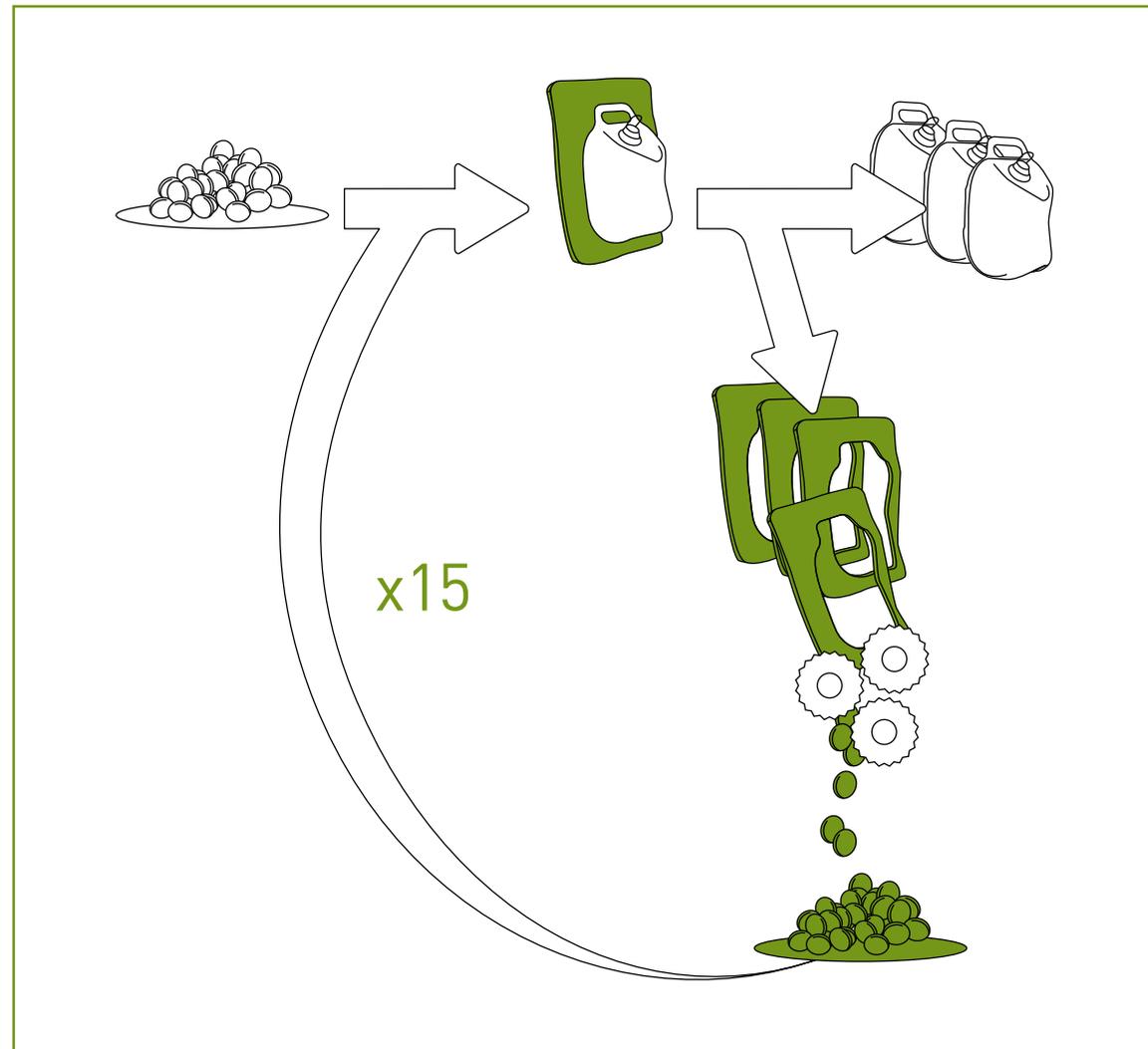
## 2.2 PRODUCTION

### REUSE WASTE MATERIAL OF PLASTIC SHEETING | BLUE GEODESIC FAMILY TENT RED FAMILY TENT

Production offcuts of PE material are repurposed to fabricate the bales in which the tents are packaged, avoiding the need to manufacture separate packaging, and minimising the waste material generated during the production process.

### ZERO WASTE PRODUCTION OF JERRYCANS

Alpinter has its own jerrycan production facility in the UAE. Our production facility has innovated and calibrated the production process to vastly minimise raw material waste in our production process. Since production began in 2018, we have achieved a raw material wastage figure of only 3,8%. That remaining 3,8% waste material is on-sold to a company producing dashboards for cars, thus our jerrycan facility is practically a 0 waste production unit.



## 2.3 PACKAGING

Packaging can be considered at three distinct levels. On each level, we have already made significant inroads into waste minimisation and limit the single-use-plastics.

### PRIMARY PACKAGING

Primary packaging are the packing components in direct contact with the product at the smallest unit of distribution, for example a single PE bag containing a Shelter Tool Kit.

### SECONDARY PACKAGING

Secondary packaging contains multiple primary packed products together, for example a crate containing 6 bags of grain. When possible, we already largely skip this packaging level at Alpinter.

### TERTIARY PACKAGING

Tertiary packaging is the freight and logistics packaging used to facilitate shipping and storage, for example a stretch-wrapped pallet of goods.



### JERRYCANS

We have completely eliminated single use plastic from our jerrycan packaging. Previously, the jerrycans were packed 25 units in a LDPE bag before being packed into cardboard boxes. We ran internal tests at our manufacturing facility in the UAE to see if **removing the LDPE bags** had an impact on the ingress of dust or other contaminants into the boxes, and found that good quality cardboard boxes provided more than sufficient protection by themselves.



### KITCHEN SETS

We have **removed all single use plastics inside** our Kitchen Sets. Kitchen Set components used to be packed in individual PE bags, however after extensive testing and customer feedback we found that good quality carton boxes sufficiently protect the kitchen set components from dust, even after protracted storage.



However, these ventures do not always result in the complete removal of single use plastics. We performed the same testing as we did for the Kitchen Sets with Shelter Tools Kits, and found that the LDPE packaging was important to protect the enclosed tools from rust, especially in humid environments. In situations such as this, where the simple removal of single use plastics is not possible, we are required to dig deeper into the possibilities for use of alternative materials or designs.

## 2.4 LOGISTICS (TERTIARY PACKAGING)

### PALLETISATION

Alpinter developed the CRI Pallet, an adapted Europallet designed to optimise container loading rates. Utilising pallets with 175 x 117cm dimensions (rather than the traditional 180 x 120), the loading rates inside 20" and 40" shipping containers can be increased by up to 25%. For example, 2496 Kitchen Sets (Type B) can be loaded per 40" container on regular pallets, while CRI pallets improve the loading rate to 3120. Already homologated by the major international humanitarian organisations, CRI pallets increase shipping efficiency, and minimise the carbon footprint of shipping relief items by sea freight.

Alpinter developed the Metal Stackable Pallet for heavy or bulky items such as Family Tents, Winterization Kits and Shelter Tool Kits. These pallets offer the dual advantages of having container-optimised footprints, and facilitating easy handling and stacking.

### ACCESSORIES FOR FAMILY TENTS MULTIPURPOSE TENTS

Tent accessories (pegs, hammer, repair kit) are packaged in bags made from tent fabric off cuts, to minimise wastage during the manufacturing process.



## 2.5 END OF LIFE

### WOODEN TENT BOXES

While many organisations worldwide are gradually transitioning to the new **High Performance Multipurpose Tent**, the previous HUB Tent remains commonly deployed, and will remain so for some time to come. A particularly useful innovation with the new High Performance Tent was a redesign to the wooden boxes, with improved hinges for easily opening and closing the box, and therefore broadening the possibilities for reutilising the packaging.

We are exploring the possibility to implement the same hinges on the HUB Series Tent, to **improve the second life possibilities** for this widely used product. In the field, we have seen the boxes reused as benches, shelves and cots, and we expect that improving the opening/closing mechanism will only add to their utility.

### PLASTIC SHEETING

By its very nature, humanitarian-specification plastic sheeting is suited to diverse applications and redeployment: for example, they are frequently deployed as emergency shelters, fences, latrines, floor covers, fumigation sheets. Manufactured as a hard-wearing, high quality item, UNHCR/ICRC tarpaulins such as those manufactured by Alpinter can be used and reused for several years.





PROJECTS  
2020  
2022

## 02

### PROJECTS 2020-2022

Alpinter remains at the forefront of pioneering solutions for minimising our environmental impact across the entire product life cycle. Implementing changes to products and logistics is always a challenge, requiring the acceptance of partner organisations at Global and Local levels and always needing to operate within the cost and production realities of a competitive world. Within this framework, we are currently forging ahead with a handful of initiatives.

#### | | **PP / PE AS ALTERNATIVE TO PVC FABRIC**

Both in terms of performance and environmental impact, PolyPropylene or PolyEthylene (PP or PE) are valuable alternatives for PVC fabrics.

Weight: The material is durable and lighter than PVC, leading to saving on product and logistics cost.

Resistance to chemicals : The materials are not sensitive to most solvents and chemicals.

Safety: There is no toxic hydrogen chloride smoke or aggressive fumes released during the welding process.

Recyclable: PP / PE are recyclable materials.

#### **SOLAR LIGHTING SYSTEMS**

In conjunction with the major standard-setting organisations, Alpinter continues to develop solar powered lighting systems as a complimentary addition to our shelter products. We are presently working to improve the efficiency and lifespan of our solar lighting options, by incorporating the latest technical innovations into our designs.

#### | | **BLANKETS (HIGH THERMAL POLYFILL, MEDIUM AND LOW THERMAL, UNHCR/ICRC/IFRC)**

Presently, 4 or 5 blankets are packed inside the bales in a single use LDPE bag. We are investigating the possibility to **remove single use plastic** inside the bales. As the blankets are already protected by watertight plastic film and a jute woven bag, we see that the additional single use plastic bag may be superfluous.

We are also investigating the potential for Alpinter Blankets to have a second life, potentially as insulation within wall cavities. We are presently exploring techniques for shredding & sealing blankets for this purpose.



**HYGIENE KITS**

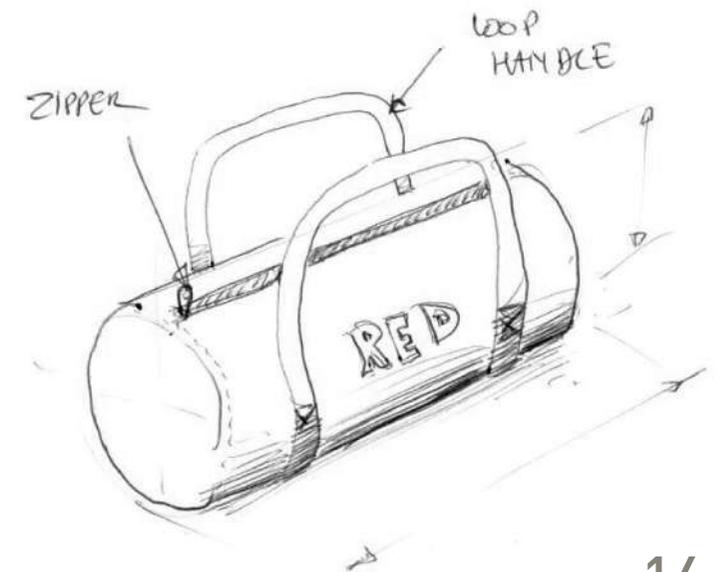
Hygiene kits are inherently tied to the dignity and cultural norms of the beneficiaries, which at times limits the implementation of eco-friendly alternatives. For example, we have supplied reusable menstrual pads with kits destined for southern and central Africa, however these are not yet well accepted in other areas of the world, where disposable products are preferred.

Nonetheless, we are looking at several initiatives:

-  Shipping Hygiene Kits in a bucket, rather than a cardboard box, **eliminating the need for external packaging**. We are discussing this option with stakeholders, as this also has an impact on the overall cost of acquisition, as well as the potential loading rate for hygiene kits and therefore the carbon emissions generated during their transport.
-  We are continuing research into **alternative packaging** for hygiene kit components, for example paper packaging for soap bars instead of plastic, and biodegradable plastic for bottles.
-  We are investigating innovative new ways of packing and presenting hygiene items, for example providing shampoo in a long lasting solid bar. This innovation would eliminate the requirement for plastic packaging and minimises the physical dimensions of the kit (and therefore the carbon footprint generated during transport).


**BLUE GEODESIC FAMILY TENT | RED FAMILY TENTS**

While the composition of Family Tents is largely defined by the contracting organisations (UNHCR, IOM, ICRC), we are still looking for innovations to minimise the environmental impact of these products. For example, we are investigating the potential to add zips or another fastening mechanism to our PE tent bales (BLUE / RED), to facilitate their second life as a bag or rucksack.



## XPERT HIGH PERFORMANCE TENT | HUB MULTIPURPOSE TENT

During the development of the XPERT High Performance Tent we paid special attention to the external packaging design, to minimise the shipping dimensions while facilitating easy repacking and redeployment of the shelters - encouraging a longer lifespan and second use.

These optimisations were so successful that Alpinter is now investigating the possibility to implement the same type of box hinges and design principles to the packaging of the HUB Multipurpose Tent, which continues to be deployed in large volumes around the world.





THE  
FUTURE

## 04

### THE FUTURE

The humanitarian world tends to follow the product specifications set by the major international organisations: UNHCR, UNICEF, ICRC etc. If substantial changes to product designs or materials are to be implemented, it will require the collaboration of these organisations together with designers and manufacturers such as Alpinter, to implement material and design changes that further minimise the environment impact of production and use, while respecting the practicalities of industrial manufacturing processes, a competitive procurement environment, and distribution into remote areas.

We envisage future collaborations with the abovementioned organisations to explore and implement more initiatives including bioplastics, recycled materials and other eco-friendly alternatives, designs with enhanced second life potential, future innovations in products and packaging for more efficient logistics, etc.

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