



Charles Nielsen Enterprises

Design & Manufacturer of
Advanced Inflatable Technologies

Technical Specifications of CNE Life-Bed

Materials

CNE products are manufactured from Polyethylene, PE and Polypropylene, PP. The materials used are dependent on client requirements and the climatic conditions Life-Bed will be used in.

PE

Formula (C₂H₄)_n
Mass 930,00 kg/m³
Melting point 115 °C
Ignition point 340 °C
Emissions are CO₂ and H₂O.

PP

Formula (C₃H₆)_n
Mass: ~946,00 kg/m³
Melting point: ~130 °C
Ignition point: 345 °C
Emissions are CO₂ and H₂O

The Medical Life-Bed, L-B 001, is a dual layer PE product. Finished in high gloss white colour, other colours are available, it is ideal for use in emergency hospital/field medical situations, where clean surfaces to treat patients are limited. The mattress can be used direct on the ground or on a gurney. The gloss finish allows for easy sanitation and re-use when bacteria contamination is a risk.

The All-Weather Life-Bed, L-B 002, is a four layer PE product, coated with a thin layer of PP. The PP layer creates a soft fabric flock, which provides additional warmth and comfort. The fabric layer is 100% waterproof and will not absorb bacteria. This is a non-woven material and will not separate as a fabric might and is non-irritant against skin.

CNE's mattress was initially designed as a solution to the issue of hypothermia caused from sleeping or resting directly in contact with the ground in disaster and crisis situations. Lightweight and robust, CNE mattresses are suitable for use in a variety of situations, both out and indoor.

Insulation Properties

Insulation is measured in R ratings up to 10. Traditionally, an air filled mattress has a standard rating of 4/5. The mattress raises the body from the ground by 5cm. Heat from the body is instantly transferred to the air inside the mattress to provide a warm insulating layer from the ground.

Mattress Dimensions

Adult size, 180cm x 60cm x 5 cm (inflated)

Child size, 90 cm x 60cm x 5cm (inflated)

The mattress is a multi-chamber, multi-pocket design. Adult 6 chambers, child 3 chambers, of 21 pockets, each 10sq cm.

Weight is approximately: 270 grams for each version

Carton packing is 80 adult units and 160 child units (weight per carton 20kg)

Pallet loading is 1,120 units (14 cases of 80 units)

Container loading is 27,400 units when not palletised

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Inflation

All CNE products are inflated orally, (hand pumps can be used), via a patented one way, self-closing valve system. There are no plugs to seal the chambers, just blow and that's it. The mattress can be fully inflated in just a few minutes. Standard mattresses with plug valve systems suffer from seepage and require continual re-inflation, as air pressure within the mattress pushes the plug outwards.

CNE's internal valve simply closes by back pressure pushing against it as it is inflated. Over time seepage will occur but the chambers can be easily topped up.

Air Pressure and puncture

The valve is resistant in excess of 300Kg of displaced weight per chamber.

Any inflatable device is susceptible to puncture. CNE products are ductile and can be used over small objects, for example stones and pebbles. In disaster and crisis situations, it is advised to clear the ground area prior to use.

CNE can supply on request a set of 6 self-adhesive puncture repair patches with each mattress. This is best described as a sticking plaster/Band-Aid solution.

Sustainability

Shelf life is guaranteed to a minimum of 4 years but up to 8 years, the product should be stored away from direct sunlight.

Normal usage is estimated between 3 to 6 months. Even when the mattress can no longer be used as intended, it is reusable as a waterproof material and can be used as a shelter aid, ground sheet etc.

Flammability

PE and PP are not fire resistant materials. However, they do not combust into a ball of flames. They will burn if ignited, but very slowly and are easily extinguishable. Emissions are minimal and produce CO₂ and H₂O. There will be a minimal amount of smoke caused by burning the ink/dye in the PP layer.

Disposal

CNE products are recyclable. They are not biodegradable, however can be incinerated for disposal as opposed to landfill.

Printing/Colours

We are able to print almost any design and with any pantone colour.

Minimum order quantity required on no standard colours and printing.

For any additional information please see FAQ's on website or refer to CNE UK.

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