



Plastazote® Foams Overview



Plastazote LD24

Low Density Foam



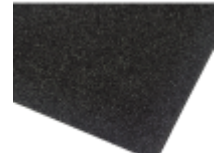
Plastazote LD33

Low Density Foam



**Plastazote LD45
(Color: Blue)**

Medium Density Foam



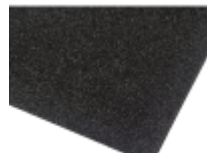
**Plastazote HD115
(Black)**

High Density Foam



**Plastazote HD115
(White)**

High Density Foam



**Plastazote LD45
(Color: Black)**

Medium Density Foam



**Plastazote LD45
(Color: White)**

Medium Density Foam



**Plastazote LD45
(Color: Pink)**

Medium Density Foam

Plastazote® is acknowledged as the most cited thermoplastic foam material in medical literature. The material is used extensively in a wide variety of medical and health care applications, many of which involve direct skin contact. These outstanding properties stem from the unique manufacturing process technology, which produces a pure, chemically inert foam without blowing agent residues and with a uniform cell structure with regular cell walls.

Latex-free, non-toxic and hypoallergenic, the use of Plastazote foams helps reduce skin irritation. Plastazote foams are typified by their highly consistent cell structure. Because they are expanded in a free environment (without the use of a mold) they also have little in-built stress and little tendency to distort during conversion; both features that make them easy to process and fabricate.

Plastazote foams can be routed cleanly to produce the most complex of shapes. Being cross-linked they are equally suitable for thermoforming, either by compression or vacuum moulding. They can be split, sawn, water jet cut, die-cut, butt-welded and heat laminated together to form thicker blocks.



Outstanding Properties

- Pure, low odour
- Lightweight & durable
- Buoyant
- Closed cell, water repellent
- Excellent chemical resistance
- Good thermal insulation
- Regular, consistent
- Wide range of densities and stiffness from soft, flexible & compliant to firm, hard & rigid
- Non-toxic & safe
- Highly resistant to ointments & lotions
- Easy to work & shape
- MRI, CT & X-Ray lucent
- CFC & HCFC free

Podiatrics

For disorders of the foot such as Pes Planus (flat feet), Plantar Fasciitis (fallen arches), Pes Cavus (high arches) and Hallux Valgus (bunion) the selective use of a range of Plastazote foam densities is used in the manufacture of orthoses to provide support. Grades can be readily heat laminated to provide differing property combinations such as soft touch and firm support.

Much orthopaedic footwear also depends on the lightweight pliant, shock absorbing nature of Plastazote foam. Such items as 'common design' inlays (insoles) and elevations are mass produced but the 'direct to body' molding system is commonly used for custom orthoses. An accurate impression of the plantar surface of the foot can be obtained by placing the foot on a piece of preheated Plastazote and applying the full body weight.



Prosthesis utilizing LD24 Plastazote foam

Prosthetics

The ease with which Plastazote foams can be cut to shape or molded, their low weight, durability and non-irritant properties makes them a natural prosthetic material. Plastazote is well established as a lightweight cosmetic cover for upper and lower limb prostheses.

Orthotics

Plastazote is the natural choice for soft-touch skin contact material used in a wide variety of braces, splints, collars, immobilisers & other supports. Bespoke designs are produced using the technique of 'molding to body', but many 'standard' orthoses, such as cervical collars and immobilizers, spinal supports and splints may all benefit from the use of Plastazote. High density grades of Plastazote allow splints to be made that combine light weight with high degrees of rigidity. All Plastazote foams are also X-ray, CT and MRI lucent.

Accessories

Miscellaneous: utensils, buoyancy aids, pads, seats, cushions. From protection helmets to hydrotherapy equipment, exercise mats to lightweight implement and cutlery handles, comfort linings to wheelchair ramps, seat cushions to lumbar support pads; the healthcare uses for Plastazote foams are extensive and varied. Being X-ray, CT and MRI lucent, Plastazote foams can be used in such applications as MRI vests with confidence that it will not hinder diagnosis.

How to use Plastazote Foams

Plastazote foams can be easily cut and shaped manually with a sharp blade or scissors and many simple yet useful items can be made this way. On an industrial level, Plastazote foams can be sawn, thickness cut, drilled, sanded, machine routed, die-cut, water-jet cut, butt joined and laminated to give thicker blocks. Being cross-linked, Plastazote foams can be thermoformed using a combination of heat and pressure, to produce more complex three-dimensional shapes. They can be vacuum formed or pressure molded using economical, and quick to produce, wooden tooling but the ability to use manual thermoforming techniques make them particularly valued in many healthcare applications.



An accurate impression of the plantar surface of the foot can be obtained by placing the foot on a piece of preheated Plastazote and applying the full body weight.

'Direct to body' Molding

Plastazote LD grades can be manually molded to patients' body contours quite easily. The use of this 'direct to body' method enables simple and effective orthoses to be made that provide relief, comfort and warmth. The high purity of Plastazote foams makes them totally suitable for direct body contact, even onto open wounds and lesions. The foam is heated in a fan oven regulated at 140°C for a prescribed time (see heating guide for suitable temperature cycle) before being molded.

Because of its low thermal conductivity and the low amount of thermal energy stored within the foam it can be applied to the body with little discomfort and will quickly and permanently take the shape of the body-part in question. An accurate impression of the plantar surface of the foot can be obtained by placing the foot on a piece of preheated Plastazote and applying the full body weight. Using this simple technique, inlays can be made and where necessary preshaped pads e.g for long arch support or metatarsal relief can be incorporate and molded together. Alternatively a preshaped inlay can be cut from the selected grade and, together with any supportive pad, is placed after heating in a suitable sandal.

The patient, wearing both sandals to ensure balance and the correct walking action, completes the molding. This enables extension of the foot to be accommodated. In this manner, relief or support can be achieved in neurological disorders, metatarsalgia, calcaneus deformities and the insensitive or hypersensitive foot.

Product Range Heating Guide

POLYMER	DENSITY	GRADE EXAMPLE	APPROX. HEATING TIME	TEMPERATURE	COMMENTS
Plastazote foam LDPE	45 kg/m ³ (2.8 lbs/ft ³)	LD45 Pink	10seconds	140°C (285°F)	Can be handled
	70 kg/m ³ (4.4 lbs/ft ³)	LD70 White	14 seconds	140°C (285°F)	Use gloves
Evazote foam EVA copolymer	50 kg/m ³ (3.1 lbs/ft ³)	EV50 White	10seconds	140°C (285°F)	Can be handled
Plastazote foamHDPE	60 kg/m ³ (3.7 lbs/ft ³)	HD60 White	20seconds	150°C (300°F)	Use gloves
	100 kg/m ³ (6.2 lbs/ft ³)	HD115 White	30 seconds	150°C (300°F)	Use gloves

Product Characteristics

	MOULDABILITY	REMOULDABLE	WORKING TIME	LIGHTWEIGHT	EASE OF APPLICATION	RIGIDITY	DURABILITY	COMFORT	CUTTING
LD45	VERY GOOD	ACCEPTABLE	45 SECONDS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
LD70	VERY GOOD	ACCEPTABLE	45 SECONDS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
EV50	VERY GOOD	ACCEPTABLE	45 SECONDS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
HD60	VERY GOOD	ACCEPTABLE	45 SECONDS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
HD115	VERY GOOD	ACCEPTABLE	45 SECONDS	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

INAPPROPRIATE
 ACCEPTABLE
 VERY GOOD

Guide 'working times' are based on 6mm thick material for HDPE grades and 12mm thick material for other grades.

The product range is constantly being updated; new colours, new densities or more specialist foam grades. Full information on request.

Product Characteristics - Application Areas

Grades

	LD24	LD33	LD45	LD60	HD115
Wrist orthosis		•	•	•	•
Cervical collar		•	•	•	•
Spinal supports					•
Knee immobilising splint				•	•
Cervical brace	•	•	•	•	•
Resting hand splint	•	•	•	•	•
Hip abduction splints		•	•		•
Night rest splints					•
Loose inlays (insoles)		•	•	•	•
Foot supports					•
Compensating raises inside and outside					•
Compensations for foot amputation	•	•	•		
Compensating for limb shortening					•
Post operative sandals			•	•	
Protective helmets			•	•	•
Body protection		•	•	•	
Exercise mats	•	•	•		
Wrist exerciser			•		
Comfort lining for appliances		•			
Padded toilet seat cover		•	•	•	
Wheelchair ramps					
Specialist children's seating			•	•	•
Lightweight implement handles			•	•	
Hydrotherapy/swimming equipment	•	•	•	•	•
Spinal board					•
X-ray blocks	•	•	•		
Protective packaging of equipment	•	•	•		

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