

# Polystyrene

## Polystyrene cut boards



1. EEI production of expanded Polystyrene boards and injection moulded boards are conforming to the British Standard specification BS 3837 : 1977 for expanded Polystyrene boards, DIN and ASTM (American Society for testing and materials)

Federal specification HH - 1 - 524 C Oct 1, 1980,

### Type N (Normal)

Consist of 100% closed cell polystyrene expandable beads.

### Type A (FIRE RETARDANT)

Is similar to type N but meets the additional requirements for the extent of burn when tested with the method given BS 4735. This requirement is met by incorporation of flame retardant additives and other appropriate modification.

### STANDARD SIZE OF BLOCK

Length 4120mm  
Width 1270mm

### THICKNESS & TOLERANCES

Thickness can be cut as required range from 10 mm up to maximum 1120mm. On specified thickness, length and widths, tolerance will be  $\pm 2$  mm.

### CUT BOARDS:

Boards cut from a block moulded from expanded beads which could be fine, very fine, or coarse grain, Raw materials used could be general purpose (type N material) or fire retardant category (type A material)

### MOULDED BOARDS:

Boards injection moulded from expanded beads, that has surface skin on all sides and moulded edges - See Roofmaster boards of EEI using very fine grain, fire retardant category beads (Type A material)



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## Physical and mechanical properties of expanded polystyrene insulation

Property	Test method	Unit	15	20	25	30	35	40
Moulded Density	DIN 53420	kgm <sup>-3</sup>	15	20	25	30	35	40
Maximum permissible compressive Stress at <2% compression	DIN 53421	kpa	12-25	20-35	28-50	36-62	44-74	52-87
Compressive stress at 10% compression	DIN 53421	kpa	65-110	100-160	140-210	180-255	225-305	265-350
Flexural Strength <sup>(1)</sup>	DIN 53423	kpa	160-210	240-300	325-400	410-490	490-590	580-680
Tensile Strength <sup>(1)</sup>	DIN 18164	kpa	150-230	225-325	260-415	375-510	450-600	530-700
Shear Strength <sup>(1)</sup>	DIN 53423	kpa	90-120	120-150	150-190	190-220	220-250	250-290
Average coefficient of linear expansion between 20 and 80° C	DIN 53752	K <sup>-1</sup>	0.6 x 10 <sup>-4</sup>	0.6 x 10 <sup>-4</sup>	0.6 x 10 <sup>-4</sup>	0.6 x 10 <sup>-4</sup>	0.6 x 10 <sup>-4</sup>	0.6 x 10 <sup>-4</sup>
Dimensional stability under heat, Short term	based on °C DIN 53424		95	95	95	95	95	95
Dimensional stability <sup>(2)</sup> under heat, long term	based on DIN 18164							
under 6 kPa load	°C		85	85	85	85	85	85
under 20 kPa load	°C		75-80	80-85	80-85	80-85	80-85	80-85
Continuous service <sup>(2)</sup> temperature in air	°C		-180→+85	-180→+85	-180→+85	-180→+85	-180→+85	-180→+85
Thermal conductivity with average specimen temperature of 10°C	DIN 52612	Wm <sup>-1</sup> k <sup>-1</sup>	0.032-0.036	0.031-0.035	0.030-0.034	0.029-0.033	0.029-0.033	0.029-0.033
Approximate water vapour Permeability	DIN 53429	gd <sup>-1</sup> m <sup>2</sup> **	40	35	26	20	16	12
Water vapour diffusion resistance factor <sup>(4)</sup>	DIN 4108		20-50	30-70	30-70	40-100	40-100	40-100
Typical water absorption after immersion in water for 7 days	DIN 53428							
for 1 year	Vol%		3	2.3	2.2	2	1.9	1.8
	Vol%		5	4	3.8	3.5	3.2	3

(1) tested at 23°C

(2) under mechanical load for 48 hours

(3) Without significant mechanical load

(4) target values

\*\* d=day i.e. 24 hours



Blocks Maturing before cutting for better dimensional stability

### APPLICATIONS

- Insulation of roofs, walls and floors - Prefab houses and partitions.
- Expansion joints
- Hourdis & Void formers
- Insulation of deep - freeze rooms, cold stores, cooled display cabinets & refrigerates vehicles.
- Pipe insulation
- Packaging.
- Buoys - buoyancy for boats - floats for fishing nets
- E.P.S., Gypsum Panels
- Fish & Vegetable boxes.



صنعت بواسطة

شركة الصناعات الإلكترونية و الهندسية (ذ.م.ج.)

الإمارات العربية المتحدة

أبوظبي

هاتف : ٠٢-٥٥٠٠٣٥٠

فاكس : ٠٢-٥٥٠٠٣٥٣

دبي

هاتف : ٠٤-٣٢٠١٧٤٤

فاكس : ٠٤-٣٢٠١٧٥٥

ص.ب : ٩٢٥٧٢

الشارقة

هاتف : ٠٦-٥٣٣٢١١٤

فاكس : ٠٦-٥٣٣٢٠١١

ص.ب : ٥٠٨٨

