

Wall and ceiling panels for “Laser Castle” passive laser safety enclosures

The panels are used in the construction of Lasermet’s laser safety enclosures to provide passive protection from lasers to BS/EN/IEC 60825-4 (Safety of Laser Products Part 4: Laser Guards)

Specification

Dimensions		Dimensional tolerances	
Panel width	1230mm	Length	+/- 3mm
Core thickness	100mm	Width	+/- 1mm
Weight	12.6kg/m ²	Thickness	+/- 2mm
Panel length	Typically 2.5m to 6m	Squareness at panel end	+/- 2mm
Material	Steel face panels	Flatness (per metre)	+/- 2mm
Finish:	Powder coat or laminate finish suitable for internal use	Profile	Flat
Standard colour	White, Goosewing Grey	Thermal insulation	Thermal transmittance values
Laminate finish	120 micron chemically inert polymer bonded to steel	Core thickness = 100mm	U value (W/m ² K) 0.20
Core insulation	LPCB certificated material	Heat transmission	
Environmental	Green Guide (2008) A+ rating Reference element number 806600001	Thermal conductivity	0.020W/mK

Biological

The panels are fibre-free and immune from attack from mould, fungi, mildew and vermin. They therefore form no health and safety risk to building occupants. No urea formaldehyde is used in the construction and the panels are not considered to have harmful effects.

Fire and security certification

The panels meet ASTM E84-16 and EN 13823 Level C

Permissible Exposure Limits (100mm thick) (PEL ratings)

Irradiated Area	PEL (T3) 10s	PEL (T2) 100s
4mm ²	310 MW / m ²	170 MW / m ²
2000mm ²	3.1 MW / m ²	1.7 MW / m ²

Insulation Core

The panels have a rigid closed cell insulation core.

Panel Joint Seals

Panel side joints can have up to four vapour seals. The core, tongue and groove joint interfit achieves excellent thermal performance.

Airtightness

The panels can achieve airtightness below 0.5m³/hr/m² @ 50 Pa when installed to recommendations.

Quality & Durability

The insulated panels are manufactured in accordance with the quality requirements under ISO 9001: 2008, to ensure long term reliability and long service life.

Guarantees & Warranties

Coating and product warranties and guarantees are provided on an individual project basis.

Acoustic specifications

The predicted single figure weighted sound reduction is $R_w = 24\text{dB}$

Predicted sound reduction index (SRI)									
Freq	(Hz)	63	125	250	500	1kHz	2 kHz	4kHz	8kHz
SRI	(db)	20	15	17	23	18	25	40	46

Safety

Hazard identification

Dust or swarf from cutting or sanding the product may be irritant to the respiratory system, skin and eyes. The material in the intact state is inert and non-hazardous.

First aid measures

Inhalation	Remove person to fresh air
Skin contact	Rinse skin with running water and then wash with soap and water
Eye contact	Wash eye with clean water and seek medical advice

Fire suppression

Extinguishers	Water, foam CO2 or dry chemical
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Gases produced from combustion

Carbon dioxide, carbon monoxide, oxides of nitrogen and small amounts of hydrogen cyanide may be formed dependant on fire conditions

Protection for fire fighters

Self-contained breathing apparatus must be used

Accidental release measures

Control and suppress dust/swarf formation, sweep up into bags

Handling and storage

Control dust and swarf when cutting
Avoid prolonged contact with skin or eyes
Wear protective gloves when handling products

Exposure Controls

No occupational exposure levels are set for the foam dust

Personnel Protection

Respiratory	Control dust formation and ventilate working area Wear a half facemask to FFP1
Skin	To avoid skin contact wear protective glove, overalls and footwear. To reduce the effects of skin contact wear barrier cream
Eye	If dust or swarf is produced wear safety goggles to BS2092

Disposal Transport

Dispose at an authorised landfill site as controlled waste
Not hazardous for transport

Regulatory information

Not classified under CLP 2009 - Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (the CLP Regulation or "CLP").