

SURFORMA® Compact Electromagnetic Shielding

Decorative Electromagnetic Compacts
Standard and Fire Retardant for EMI protection

DRAFT

DESCRIPTION

SURFORMA® Compact Electromagnetic Shielding brings additional value and a new field of application to the HPL industry. The use of thin layers of functional materials, strategically incorporated on the Compact core, reach the levels of electromagnetic (EM) protection required to reduce or even eliminate the impact of EM waves interference.

SURFORMA® decorative Compacts, according to EN 438, are a robust material for indoor surfaces, either horizontal or vertical. Its double-sided decorative panels meet the most demanding specifications being capable to endure high content of moisture and impact. The products meet the stringent requirements for hygiene, fire resistance, humidity resistance and mechanical properties.

The laminate surface is ANTIBACTERIAL, tested according to ISO 22196 and validated accordingly to Japanese regulation JIS Z 2801.

HPL are cured and therefore chemically inert. Laminates surfaces are physiologically safe and approved for use in direct contact with foodstuff.

SURFORMA® Compact materials are available in a variety of colours, patterns and surface textures, providing extensive options for architects and designers.

Please check offer & service brochure for information on sizes and thicknesses available.

APPLICATIONS

Every electronic device emits electromagnetic interference (EMI) during operation, propagating waves through the air without physical transport.

For this reason, sensitive devices—such as those handling Classified Information (CI), Data Centers (DC), medical and laboratory equipment, and military systems used in defense applications—require effective EMI shielding to maintain secure and reliable operation.

This decorative, lightweight, versatile and efficient Compact redefines secure interior construction for spaces requiring advanced EMI shielding solutions.

PROPERTIES



LOW
EMISSIONS



ANTI-STATIC



ABRASION
RESISTANT



SCRATCH
RESISTANT



STAIN
RESISTANT



LIGHT
RESISTANT



EASY TO CLEAN



DIMENSIONAL
STABILITY



EASY TO MILL



DEEP
ROUTING



FIRE
RETARDANT



EMI
PROTECTION

RECOMMENDATIONS

The advice and recommendations are of advisory nature only

Handling & Storage

Compacts should be stored so they are protected from moisture, humidity and direct sunlight. The compacts should preferably be store flat in horizontal racks.

Maintenance & Cleaning

SURFORMA® Compacts require no special maintenance because of their durable, hygienic and waterproof surface. Their surface can be cleaned with warm water followed by wiping with a paper towel or soft cloth. Persistent contamination can usually be eliminated with non-abrasive household cleaners. They are resistant to most solvents and chemicals used daily at home.

Transportation, Recovery and Disposal

In terms of transport regulations, HPL is not classified as a hazardous material; therefore, labelling is not necessary. Laminates are an article and not a chemical substance and therefore the REACH regulation does not apply. Due to their high calorific value (18-20 MJ/kg)1 HPL are suitable for thermal recycling.

Laminates can be brought to controlled waste disposal sites according to current national and/or regional regulations.

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GENERAL FEATURES

PROPERTIES	TEST METHOD	UNIT (MAX OR MIN)		CGS-EMS	CGF-EMS	
Dimensional tolerance requirements (EN 438-2:2016, Clause No.)						
Thickness	EN 438-2:5	mm (max. variation)	$3.0 \leq t < 5.0$	± 0.30		
			$5.0 \leq t < 8.0$	± 0.40		
			$8.0 \leq t < 12.0$	± 0.50		
			$12.0 \leq t < 16.0$	± 0.60		
			$16.0 \leq t < 20.0$	± 0.70		
Length and width	EN 438-2:6	mm	+ 10/- 0			
Edges straightness	EN 438-2:7	mm/m (max. deviation)	1.5			
Edges squareness	EN 438-2:8	mm/m (max. deviation)	1.5			
Flatness	EN 438-2:9	mm/m (max. deviation)	$2.0 \leq t < 6.0$	8.0 mm /m		
			$6.0 \leq t < 10.0$	5.0 mm /m		
			$10.0 \leq t$	3.0 mm /m		
General Requirements						
Resistance to surface wear	EN 438-2:10	Revolutions (min.)	Initial Point	150		
Resistance to immersion in boiling water	EN 438-2:12	Appearance, rating (min.)	All finishes	4		
			Mass increase % (max)	$2.0 \leq t < 5.0$	5.0	7.0
				$t \geq 5.0$	2.0	3.0
			Thickness increase % (max)	$2.0 \leq t < 5.0$	6.0	9.0
				$t \geq 5.0$	2.0	6.0
Edge, rating (min)		Edge, rating (min)	All thickness	3	3	
Resistance to water vapour	EN 438-2:14	Appearance, rating (min.)	All finishes	4		
Resistance to dry heat (160 °C)	EN 438-2:16	Appearance, rating (min.)	All finishes	4		
Dimensional stability at elevated temperature	EN 438-2:17	Cumulative dimensional change % (max.)	$2.0 \leq t < 5.0$ Longitudinal	0.40		
			$2.0 \leq t < 5.0$ Transversal	0.80		
			$t \geq 5.0$ Longitudinal	0.30		
			$t \geq 5.0$ Transversa	0.60		
Resistance to wet heat (100 °C)	EN 438-2:18	Appearance, rating (min.)	All finishes I	4		

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PROPERTIES	TEST METHOD	UNIT (MAX OR MIN)		CGS-EMS	CGF-EMS
Resistance to impact by small diameter ball	EN 438-2:21	Drop height, mm (min.)	$2.0 \leq t < 6.0$		1400
			$t \geq 6.0$		1800
Resistance to crazing	EN 438-2:24	Appearance (min.)	Grade		4
Resistance to scratching	EN 438-2:25	Force, rating (min.)	Smooth / textured finishes		2 / 3
Resistance to staining	EN 438-2:26	Appearance, rating (min.)	Groups 1 & 2 / Group 3		5 / 4
Light fastness (xenon arc)	EN 438-2:27	Contrast	Grey scale rating		4 to 5
Flexural Modulus	EN ISO 178	Stress, MPa (min.)	Longitudinal & Transversal		9000
Flexural Strength	EN ISO 178	Stress, MPa (min.)	Longitudinal & Transversal		80
Density	EN ISO 1183-1	Density, g/cm ³ (min.)			1.35

Typical EN 13501-1 classifications of Compacts in the field of building construction

In Europe, laminate panels intended for construction applications are tested in accordance with EN 13823 [1] (SBI test) and EN ISO 11925-2 [2] (Small-burner test), and the resulting reaction-to-fire performance is expressed in accordance with EN 13501-1

CGF \geq 6mm	under evaluation
CGF < 6mm	under evaluation
CGS	under evaluation

Shielding effectiveness and direct measurement of sheet resistance

Compact are tested in accordance with ASTM D 4935-99 standard for the evaluation of the **shielding effectiveness** of materials used in the construction of electronic and electrical equipment. The test method applies to the measurement of shielding effectiveness of planar materials under normal incidence, far-field, plane-wave conditions.

Compact is also tested in accordance with ASTM F1529 standard test method that covers **the direct measurement of the sheet resistance** and its variation for all but the periphery (amounting to three probe separations) for circular conducting layers pertinent to silicon semiconductor technology.

EMI shielding effectiveness (frequency range of 400 to 3.000 MHz)	dB (decibels)	ca 30
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SURFORMA® Laminates are classified in accordance with EN 438 – Sheets based on thermosetting resins (Usually called Laminates) – Part 4: Classification and specifications for compact laminates of thickness 2 mm and greater.

Our due diligence system for tracing the origin of wood - FSC® & PEFC standards:

The well-known certification systems for sustainable forest management FSC and PEFC are equally evaluated by us to ensure traceability of timber throughout the supply chain, from harvest through to the finished product as a proof that the wood originally comes from certified and sustainably managed forests and other controlled sources.

In addition to providing assurance, FSC and PEFC certified materials can also support customers' LEED and BREEAM certification strategies.

CERTIFICATIONS

