

USG

PANEL



STEEL CEMENT PANEL

USG manufactures Steel Cement Panels for general to heavy duty applications. Panels can be supplied either bare or with a factory finish. Factory finish options include High Pressure Laminates and Antistatic and Conductive Vinyl patterns, among others.

USG panels are manufactured by welding together a press-formed bottom sheet and a flat top sheet. The steel panel is then trimmed, phosphate washed, and polyester powder coated to a thickness of 60 microns. The panel is subsequently injected with a cement based mixture and allowed to cure for 72 hours.

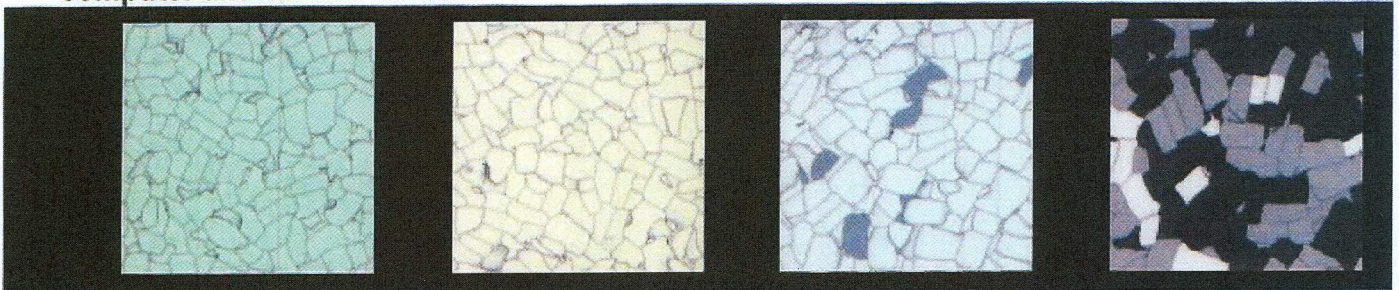
The main characteristics of these panels are structural strength, resistance to fire and humidity, and a solid and quiet underfoot feel. USG offers several grades of the steel cement panels to suit any application. The panels can be installed on understructures with or without stringers. Other panel options: perforated panels, panels fitted with AC grilles, dampers and electrical boxes.



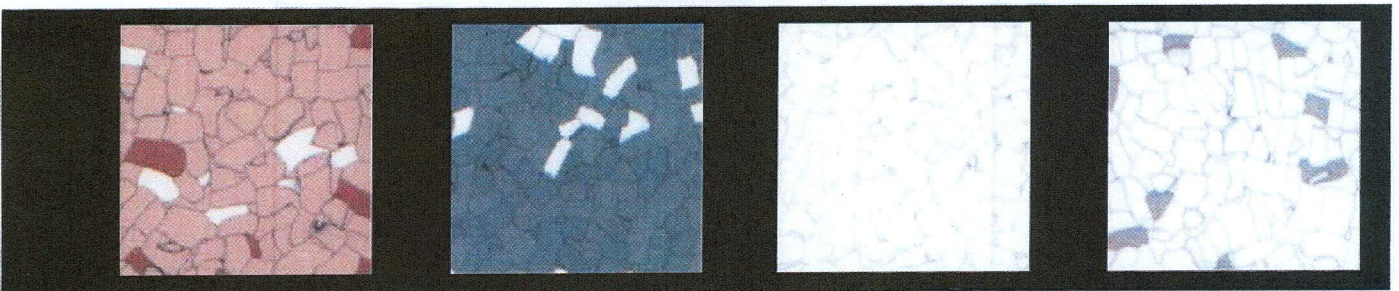


CONDUCTIVE / ANTI-STATIC VINYL COLOR AND GREY SERIES

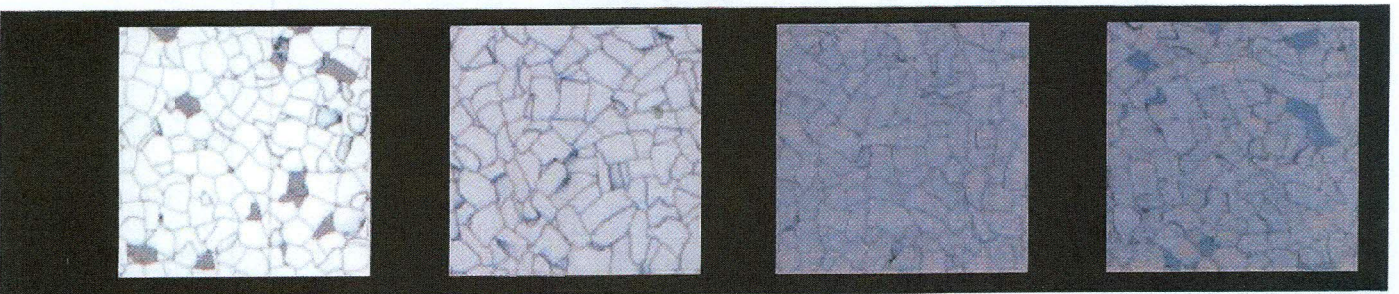
The USG range of antistatic and conductive vinyls caters to all design and electrical specifications. Electrical continuity and conductivity is ensured along with a choice of patterns allowing architects and engineers full design integration. Vinyls are used in areas of low to medium foot traffic where electro-static charges are expected such as computer and control rooms.



RAF-VC01 NEUTRAL MOSS RAF-VC02 CHARGED CREAM RAF-VC03 POLAR AZURE RAF-VC04 ION ARTHRACITE



RAF-VC05 KINETIC CORAL RAF-VC06 ELECTRON TEAL RAF-VG01 CRYSTAL GREY RAF-VG02 SILVER GREY



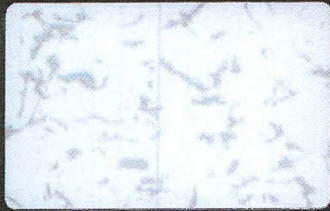
RAF-VG03 COPPER GREY RAF-VG04 MERCURY GREY RAF-VG05 STEEL GREY RAF-VG06 PETROL GREY



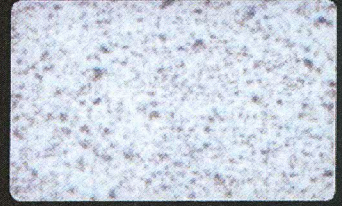
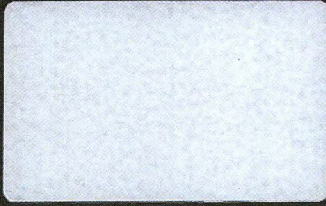


HIGH PRESSURE LAMINATE (HPL)

USG High Pressure Laminate (HPL) finishes offer increased abrasion resistance in areas of higher foot traffic. Less prone to wear and tear and indentation, high pressure laminates offer the user minimal care and maintenance. The range includes patterns suitable for clean-rooms and control rooms, as well as designer wood patterns for use in corporate offices and conference rooms.



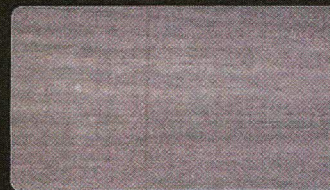
RAF-L01 WHITE MARBLE RAF-L02 CREAM MARBLE RAF-L03 BEIGE MARBLE



RAF-L04 BROWN MARBLE RAF-L05 BEIGE SAND RAF-L06 GREY SAND



RAF-L07 BROWN SAND RAF-L08 NATURAL WOOD RAF-L09 BROWN WOOD



RAF-L10 GREY WOOD



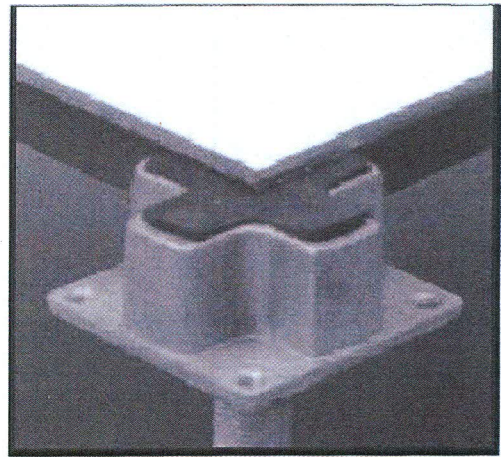
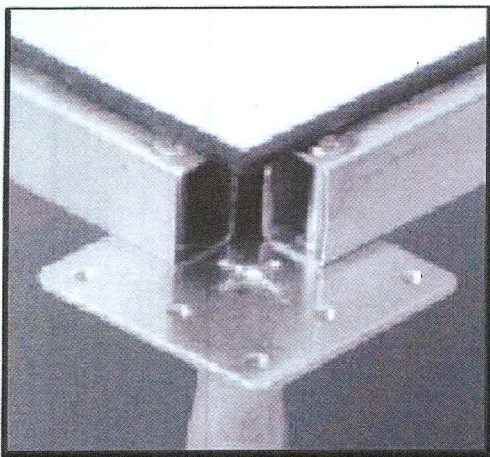


PANEL AND UNDERSTRUCTURE INTERFACE

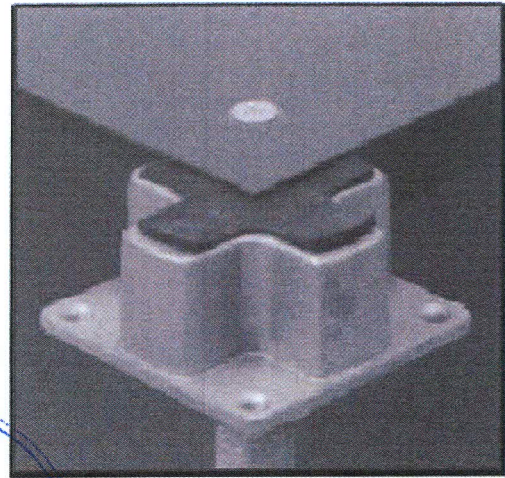
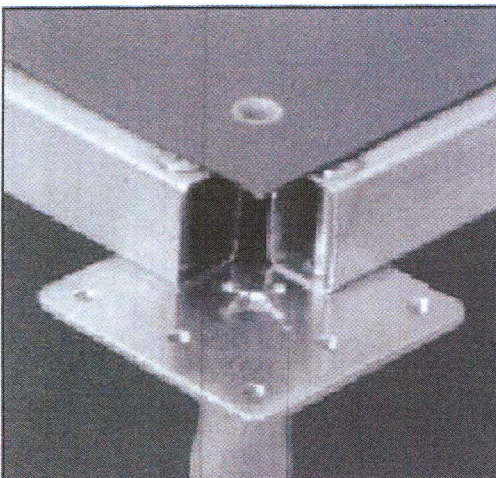
There are several panel and understructure interface options depending on structural and design requirements. Both USG bare and factory finished panels can be used with either the Cross-head or Stringer Grid understructure systems.

Bare panels can be either screwed on or gravity laid onto the Cross-head understructure system, whilst they can only be gravity laid onto the Stringer-Grid understructure system.

Finished panels can only be gravity laid onto either system.



FINISHED PANEL ON STRINGER GRID FINISHED PANEL ON CROSS-HEAD



BARE PANEL ON STRINGER GRID

BARE PANEL ON CROSS-HEAD





TECHNICAL DATA

PANEL SPECS		C800	C1000	C1250
Static Load Performance				
Concentrated	kN/	3.6	4.5	5.6
Uniform	kN/m ²	11.0	13.4	16.7
Ultimate	kN/m ²	30.5	40.4	43.0
Rolling Load Performance				
Deflection at Panel Center	CISCA	0.15	0.13	0.00
Deflection at Edge Center	CISCA	0.06	0.01	0.01
Deflection at Panel Center	CISCA	0.10	0.03	0.02
Physical				
Panel Size	mm	600x600	600x600	600x600
Panel Thickness	mm	35.0	35.0	35.0
Panel	kg	13.0	14.5	15.5
Material				
Top Sheet	mm	0.8	1.0	1.2
Bottom Sheet	mm	0.7	1.0	1.0
Paint PPC	microns	60	50	50
Panel				
Fire	BS176	Class 0	Class 0	Class 0
Humidity	RH	95%	95%	95%

FACTORY FINISH OPTIONS ANTISTATIC HIGH PRESSURE LAMINATES - STANDARD SERIES

Physical Properties Thickness		Smooth 1.0mm	Textured 1.0mm
	EN428		
Abrasion Resistance	ISO4586	4500	3500
Electrical Performance Surface		Smooth	Textured
Resistance - 500v Test (SR) Volume		1x10 ⁵ ~1x10 ⁸	1x10 ⁵ ~1x10 ¹⁰
Resistance - 500v Test (VR)		1x10 ⁵ ~1x10 ⁸	1x10 ⁵ ~1x10 ¹⁰
GB6650-86 GB6650-86			

Resistance to Stains / Reagents

Reagents 1 - 29 (5 Minutes) Cigarette Burns (2 Minutes)

ISO4586 ISO4586

Smooth No Effect No Effect

Textured No Effect No Effect





TECHNICAL DATA

FACTORY FINISH OPTIONS ANTISTATIC / CONDUCTIVE VINYL - GREY AND COLOR SERIES

Physical Properties		Antistatic	Conductive
Thickness	EN428	2.00 mm	2.00 mm
Abrasion Group	EN660	P	P
Fire Rating	DIN4102	B1	B1
Electrical Performance		Antistatic	Conductive
Surface to Ground Resistance (STG)	UL779	$1 \times 10^5 \sim 1 \times 10^9$	$2.5 \times 10^4 \sim 1 \times 10^6$
Surface to Surface Resistance (STS)	UL779	$1 \times 10^5 \sim 1 \times 10^9$	$2.5 \times 10^4 \sim 1 \times 10^6$
Static 5kv Decay Time (SEC)	MIL-B-81705C	<0.25	<0.25
Chemical / Containment Resistance		Antistatic	Conductive
5% Hydrochloric Acid	ASTM-F-925	No Defect	No Defect
5% Ammonia Solution	ASTM-F-925	No Defect	No Defect
Cement Paste	ASTM-F-925	No Defect	No Defect

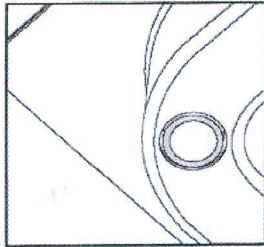
COMPARISON TABLE Steel Cement Woodcore Calcium Steel

Fire	Good	Poor	Good	Average
Humidity	Good	Average	Good	Good
Weight	Average	Good	Poor	Average
Applications	Good	Average	Average	Average
Acoustics	Good	Poor	Average	Average
Underfoot	Good	Poor	Average	Average
Durability	Good	Average	Good	Good
Corrosion	Good	Average	Good	Average
Workability	Good	Good	Poor	Average
Cost	Average	Good	Poor	Average

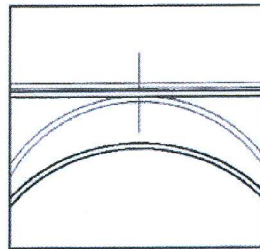




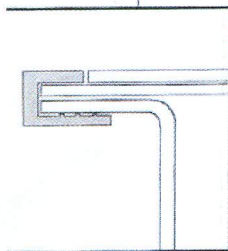
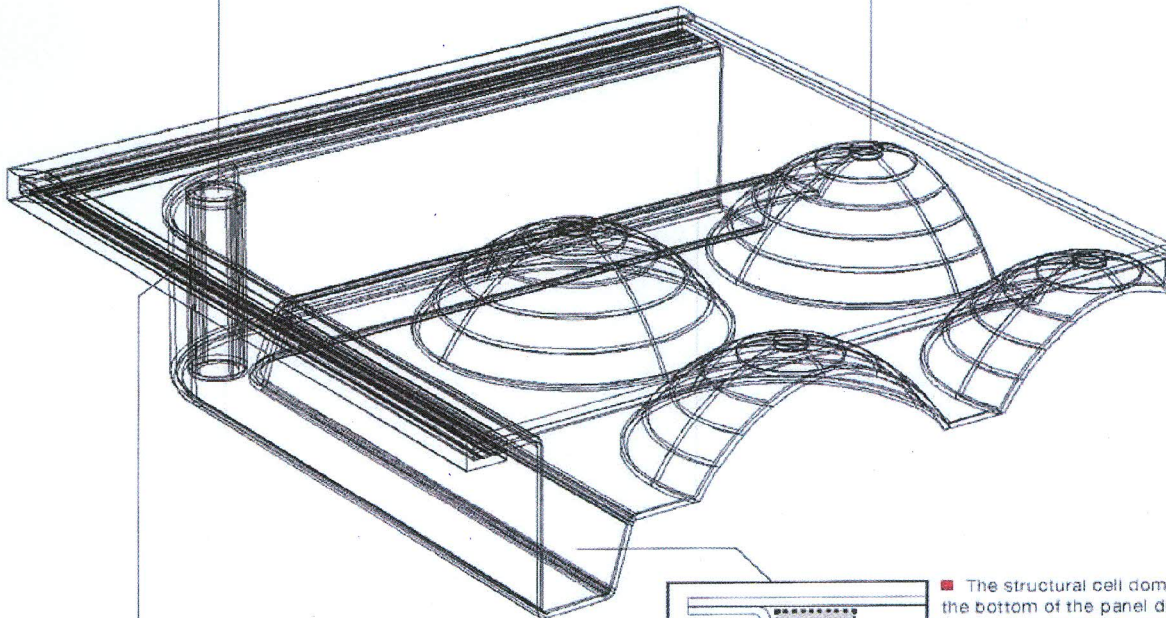
TECHNICAL DATA



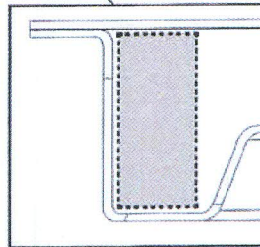
■ A white gasket is inserted into the panel prior to the filling process in order to allow for the mechanical fixing of the panel onto the pedestal head on all four corners when required. Structurally, the panel behaves as a lateral brace between each pedestal and the other thus increasing the load performance and rigidity of the system.



■ The deep draw press-formed structural cell domes contribute greatly to the superior concentrated and uniform load bearing capacity of the panel. They ensure the proper distribution of loads towards the panel edges and corners and therefore towards the understructure pedestal. The top of each dome is welded to the top sheet, ensuring the monolithic structural performance of the panel.



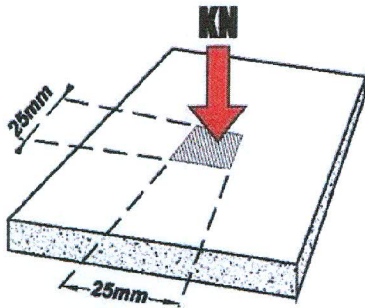
■ A black PVC trim is fitted into the edge of the panel to protect all factory-applied finishes. The trim increases the life expectancy of the factory finish by protecting it from chipping at the edges in normal wear and tear, as well as panel removal and installation during sub-floor service maintenance.



■ The structural cell domes on the bottom of the panel distribute loads towards the perimeter ridge which has the maximum possible thickness of cement fill. It behaves as a structural beam under live and dead load conditions, and well as both a tension member (steel) and a compression member (concrete) when the panel is mechanically fixed onto the pedestal heads.

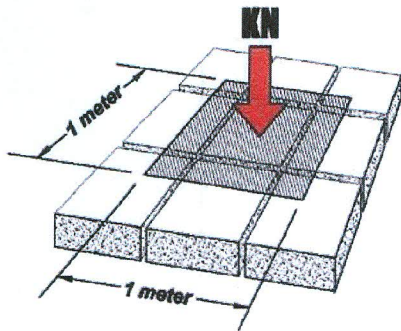


TECHNICAL DATA



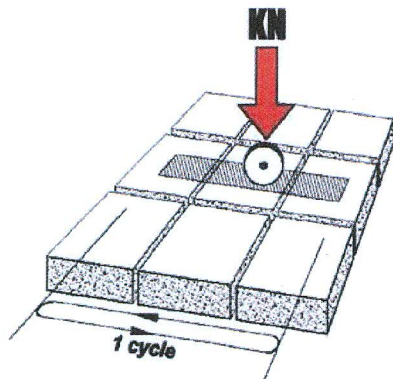
■ Concentrated Load

Concentrated loads are typically loads generated by heavy objects (such as heavy furniture, data storage units, ups units) standing on legs. The load rating is in kN / 25mm x 25mm area. The figure given is the result of the test within the testing parameters (see table) and not the concentrated load at which the panel / system will fail.



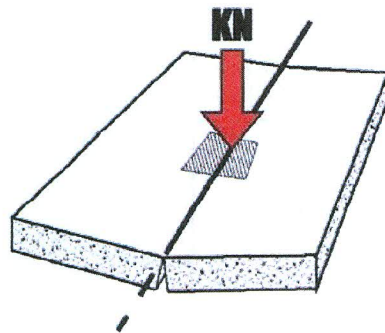
■ Uniform Load

Uniform loads are loads generated by heavy objects (such as containers, cabinets, etc) resting directly on the panel and not on legs. The load rating is in kN/m² of area. The system can sustain a greater uniform load than that given as the uniform load rating since it refers to the result of the test within the testing parameters.



■ Rolling Load

Rolling loads are dynamic loads created by objects moving laterally on the raised access floor system such as heavy cabinets, ups units, or any other heavy object using wheels. Where concentrated and uniform loads are used to determine which panel is to be used, rolling load requirements are used to determine which type of understructure is to be used.



■ Ultimate Load

The ultimate load is the load at which the panel / system will incur severe structural damage causing it to ultimately fail. These load values are very large and rarely encountered. As an example, the CB00 medium duty panel fails at 30 kN/m² which is equivalent to a load of approximately 3 metric tons/m².

