



Australian Green Star  
Office Interiors v1.1  
And USG Powerscape

# GREENER gypsum board

As an industry leader with a proud heritage spanning more than 100 years, USG understands the need to safeguard the world around us and protect the vital natural resources we all share. Long before conservation became a mainstream concern, USG was finding innovative ways to reduce waste, operate efficiently and transform manufacturing byproducts into valuable new resources.

With a firm belief that health, safety and environmental well-being are compatible with economic prosperity, USG maintains a longstanding commitment with our employees, customers and communities to reduce environmental impact, use recycled materials whenever feasible and eliminate manufacturing waste. We have a solid history of environmental leadership and responsibility, and we are constantly seeking environmentally friendly product and manufacturing solutions.

Consumers have become increasingly aware of the need to conserve energy, manage the use of raw materials, reduce waste and safeguard against pollutants. In response, many developers and owners now demand buildings with materials and technologies that will help save energy, preserve the integrity of the surrounding land and assure a clean, healthy indoor environment.

USG emphasises innovation in our products, from the ingredients we choose to the processes we employ. Take a closer look at the advantages that let you choose USG products with confidence.



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Sydney Brisbane Melbourne

1800 226 215



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[www.powerscape.com.au](http://www.powerscape.com.au)  
[www.greenusg.com.au](http://www.greenusg.com.au)

**Powerscape Gypsum Fiberock® Panels**

Ref No.	Title	Aim of Credit	Credit Criteria Summary	USG Solution
Man-6	Waste Management During Tenancy Fitout	To encourage and recognise initiatives that avoid construction and deconstruction waste going to landfill.	Up to three points are awarded where it is demonstrated that the contractor has implemented a Waste Management Plan and achieved the following targets: <ul style="list-style-type: none"> <li>• 1 point where 40% of waste by weight was re-used or recycled;</li> <li>• 2 points where 60% of waste by weight was re-used or recycled;</li> <li>• 3 points where 80% of waste by weight was re-used or recycled.</li> </ul> Records must be kept by the contractor to demonstrate all waste generated and waste re-used or recycled by weight.	<b>USG Powerscape Health®</b> wall linings will assist with waste reduction as most sheet off-cuts can have rebates formed on them on site and then be used, rather than going to the dump.  For more information refer page 16 USG Powerscape Health® booklet <a href="https://www.usg.com/au/USGH-FS-AU-0707-1-31208">USGH-FS-AU-0707-1-31208</a>
IEQ-10	Internal Noise Levels	To encourage and recognise tenancy fitouts that control internal noise levels to ensure occupant comfort.	One point is awarded where it is demonstrated that ambient internal noise levels are 40-45 dBLAeq in general offices and 35-40 dBLAeq in private offices, with the tenancy ready for occupancy but unoccupied as per AS/NZS 2107:2000; AND Where a reverberation time (RT60) of 0.4-0.6 seconds for general offices and a RT60 of 0.6 - 0.8 seconds for private offices is achieved.	<b>USG Powerscape Health®</b> wall linings and wall system designs have documented sound transmission reduction ratings, compliant with the BCA (Building Code Australia). In most cases these are superior to the same thickness plasterboard due to the stiffness and mass of the Health® Linings.  For more information on the wall systems design and acoustical performance refer page 27 USG Powerscape Health® booklet <a href="https://www.usg.com/au/USGH-FS-AU-0707-1-31208">USGH-FS-AU-0707-1-31208</a>
IEQ-11	Volatile Organic Compounds	To encourage and recognise tenancy fitouts that reduce the detrimental impact on occupant health from products that emit pollutants.	Up to eight points are awarded where it is demonstrated that benchmarks for low Volatile Organic Compound (VOC) content are met, as follows: <ul style="list-style-type: none"> <li>• 2 points where 95% of all painted surfaces are low-VOC paints (AELA 23-2005) or no paint is used;</li> <li>• 2 points where all carpets are low-VOC (US Carpet and Rug Institute Green Label) or no carpet is installed;</li> <li>• 2 points where all adhesives and sealants are low-VOC (South Coast Air Quality Management District (California, U.S.) Rule 1168) or no adhesives/sealants are used;</li> <li>• 2 points where all tenancy fitout items (workstations, walls/partitions, chairs, tables and storage units) are low-VOC (US EPA's Environmental Technology Verification test method). Refer to the Technical Manual for emissions standards).</li> </ul>	<b>USG Powerscape Health®</b> products have no VOC emissions. The products are pre-coated in the factory with an acrylic sealer creating a surface suited for use with most low and non VOC paints and adhesives.  Specifying USG Powerscape Health® will help deliver a holistic approach to the reduction of VOCs in the indoor environment.  One point is possible where no carpet is installed and Powerscape 10mm or 6mm is used as an underlayment for low-VOC flooring.  For more information on the specific VOC levels of USG products refer to the sustainable table in this document.

Ref No.	Title	Aim of Credit	Credit Criteria Summary	USG Solution
IEQ-14	Formaldehyde Minimisation	To encourage and recognise projects that reduce the use of formaldehyde composite wood products in order to promote a healthy indoor environment.	Up to two points are awarded where it is demonstrated that all composite wood products meet the following benchmarks: <ul style="list-style-type: none"> <li>• 1 point where low formaldehyde emission (E1 limit under EN 13986:2004 OR no greater than 0.05ppm after 28 days under EN 717-1:2004) composite wood products are used;</li> <li>• 2 points where low formaldehyde emission (F4Star under JIS A 5905:2003) OR no composite wood products are used.</li> </ul>	<p>Although Green Star Rating does not address formaldehyde emissions for internal linings, they should be considered when internal walls are part of the base building, or are included in an integrated fitout.</p> <p><b>USG Powerscape Health®</b> products do not emit formaldehyde as they use an inorganic, rather than organic, binder, and normally use mechanical fixings rather than adhesives.</p> <p>Specifying USG Powerscape Health® will help contribute to the goal of a healthy indoor environment.</p> <p>For more information refer page 5 USG Powerscape Health® booklet <a href="https://www.usg.com.au/USGH-FS-AU-0707-1-31208">USGH-FS-AU-0707-1-31208</a></p>
Ene-2	Energy Improvement	To encourage and recognise projects that contain design features that help to minimise operational energy consumption and greenhouse gas emissions of the base building as calculated by the Energy Calculator.	Up to twelve points are awarded where there is an improvement in energy efficiency and greenhouse gas emissions above the conditional Four Star ABGR (refer to Ene-1). Points are awarded as follows: <ul style="list-style-type: none"> <li>• 3 points = 4.5 Star ABGR</li> <li>• 6 points = 5 Star ABGR</li> <li>• 9 points = 5 Star ABGR + 20% CO<sub>2</sub> reduction on 5 Star</li> <li>• 12 points = 5 Star ABGR + 40% CO<sub>2</sub> reduction on 5 Star</li> </ul>	<p>(i) The use of timber framed structures with particleboard or plywood floors to replace high embodied energy concrete construction is sometimes made possible if USG Powerscape Health® 10mm used to stiffen the floor, improve acoustics and reduce fire burn down risk. (ii) Thermal mass is improved by using USG Powerscape Health® linings instead of plasterboard. The thermal mass of USG Powerscape Health® linings is approximately 1.1 kJ/kg. (iii) The USG Powerscape Health® linings has lower embodied energy than most concrete and fibre cement wall systems, and can also be better than plasterboard (particulary if product demounting and reuse is included).</p> <p>For more information refer page 5 USG Powerscape Health® booklet <a href="https://www.usg.com.au/USGH-FS-AU-0707-1-31208">USGH-FS-AU-0707-1-31208</a></p>

Ref No.	Title	Aim of Credit	Credit Criteria Summary	USG Solution
Mat-3	Walls and Partitions	To encourage and recognise the selection of walls and partitions that have a reduced environmental impact relative to available alternatives.	Up to three points are awarded where it is demonstrated that the walls and partitions used in the tenancy fitout have a reduced environmental impact as determined by the Mat-3 Walls and Partitions Calculator. Maximum points can only be obtained if information about all the walls and partitions in the tenancy fitout is provided.	<p><b>USG Powerscape Health®</b> products are produced with a proprietary new manufacturing technology to achieve improved eco and health outcomes, versus regular plasterboard and fibre cement. The manufacturing process has many patents.</p> <p>Generally the GECA certified USG Powerscape Health® will make up over 90% or more (by mass) of the components in a steel framed internal wall.</p> <p>So in most cases, USG Powerscape Health® can achieve the maximum Product Score of 100% in the Walls and Partitions Calculator for Mat-3.</p> <p>Please refer to page 5 of this brochure for the required information to complete the Walls and Partitions Calculator required for Mat-3.</p>
Inn-3	Environmental Design Initiatives	To encourage and recognise design initiatives that have a significant measurable environmental benefit and that are not awarded points by Green Star – Office Interiors.	<p>Up to five Innovation points are awarded at the discretion of the Green Building Council of Australia (GBCA) where it is demonstrated that a design feature provides a significant environmental benefit but is not awarded points under the Green Star – Office Interiors rating tool criteria. The application will be assessed by the GBCA against the following criteria:</p> <ul style="list-style-type: none"> <li>* What is the measurable environmental benefit of the innovation?</li> <li>* Which significant environmental benefits of the innovation have been addressed by Green Star – Office Interiors credits?</li> </ul> <p>More than one innovation can be submitted but the maximum points available for any one building assessment under Inn-1, Inn-2 and Inn-3 is five (total).</p>	<p><b>USG Powerscape Health®</b> products are produced with a proprietary new manufacturing technology to achieve improved eco and health outcomes, versus regular plasterboard and fibre cement. The manufacturing process has many patents.</p> <p>Utilising the unique benefits of USG Powerscape Health® in an original and innovative design can help achieve innovation points.</p>

**Note:** use of the particular products/solutions listed in this table contribute toward the efforts to achieve Green Star points in these specific categories, however, use of these products/solutions alone does not guarantee achievement of point criteria or Green Star certification of a building.

# USG & Green Star - Office Interiors v1.1 Mat-3 Walls and Partitions Calculator

Total Area of Walls, Ceilings  m<sup>2</sup>
 Total Percentage Score: 0
 Points Awarded for this 0

	Product Classification	Name of Ceilings, Walls and Partitions Products and Suppliers	Brief Description of Ceilings, Walls and Partitions	Area of Ceilings, Walls and Partitions (m <sup>2</sup> )	Resource Utilisation		Management						Reusability		Product Score (%)	
					Eco Preferred Content	Durability	EMS	EMS ISO 14001 Certified	EMS Includes				Product Stewardship	Modular		Designed for Disassembly
									Waste Minimisation	Energy	Emissions	Materials Minimisation				
1	Environmentally Innovative	USG Powerscape Gypsum Fiberock Linings	GECA certified Gypsum Fibre board containing 95% recycled content suitable for impact, wet area, fire and acoustical walls and flush ceilings													100

USG Notes:  
Items 1

Product Classification	Reason	USG Products GECA Certified
USG Powerscape: Environmentally Innovative	Generally the Powerscape will make up over 90% or more (by mass) of the components in a steel framed internal wall.	USG have the following products GECA certified: Powerscape Health 6.5mm, 10mm, 13mm and 16mm



# Australian Sustainability Table

Relationship between Green Star Credits and USG Powerscape Fiberock

Can Contribute Green Star AU Credits	Management		Indoor Environmental Quality (IEQ)					Material (MAT)			Energy (EN)	Meets the aim of the Credit Criteria	Indoor Environmental Quality (IEQ)	Material
	Waste Management	Internal Noise levels	Thermal Comfort	Volatile Organic Compounds (including Formaldehyde)			Recycled Content & Re-used Products and Materials	Ceilings Wall & Partitions Material Calculators	Greenhouse Gas Emissions	Mould Prevention				
Office Design & As Built v3	Man-7	IEQ-12	IEQ-9	IEQ-13 <sup>1</sup>			Mat-3	N/A	Ene-1		IEQ-15	N/A		
Office Interiors v1.1	Man-6	IEQ-10	N/A	IEQ-11			N/A <sup>2</sup>	Mat-3	Ene-2		N/A	N/A <sup>2</sup>		
Education v1	Man-7	IEQ-7	IEQ-5	IEQ-8			N/A <sup>2</sup>	N/A	Ene-1		N/A	N/A <sup>2</sup>		
Healthcare v1	Man-7	IEQ-7	IEQ-5	IEQ-8 <sup>1</sup>			N/A <sup>2</sup>	Mat-14	Ene-1		IEQ-10	N/A <sup>2</sup>		
Multi-unit Residential v1	Man-7	IEQ-7	IEQ-5	IEQ-8 <sup>1</sup>			N/A <sup>2</sup>	Mat-14	Ene-1		N/A	N/A <sup>2</sup>		
Retail Centre v1	Man-7	IEQ-7	IEQ-5	IEQ-8 <sup>1</sup>			Mat-3	N/A	Ene-1		IEQ-10	Mat-3		
Substrate	Product Family: Powerscape Gypsum Panels	Off-cuts reusable	Rw	Thermal Mass	VOC			Recycled Content	Eco Preferred Content (GECA cert)	Thermal Mass	◆ ASTM D3273 rating	Can be re-used		
					Emission Levels	ppb	mg/m <sup>3</sup>	Post Ind.						
Fiberock Gypsum Panel	POWERSCAPE HEALTH®	✓	*45 - 71	1.1 kJ/kg	Free	1.6ppb	0.002	95%		1.1 kJ/kg	10	✓		
	POWERSCAPE HEALTH® Ultra-Mesh	✓	*45 - 71	1.1 kJ/kg	Free	1.6ppb	0.002	95%	-	1.1 kJ/kg	10	✓		
	POWERSCAPE HEALTH® Go-Between	✓	*45 - 71	1.1 kJ/kg	Free	1.6ppb	0.002	95%		1.1 kJ/kg	10	✓		

**Notes**

1: Applicable when 6.5mm or 10mm Powerscape Health is used as a tile underlay  
 2: No credits for this criteria as Powerscape is specially addressed in the materials calculator

**POWERSCAPE HEALTH® Panels**

Made of gypsum and post-consumer recycled cellulose fibres, these high-performance panels are in multiple applications including interior walls and floor underlayments. Engineered for strength and resistance to water and mould, these panels offer an excellent sustainable alternative to wood-based products, most notably lauan, which is harvested from endangered, old-growth forests. POWERSCAPE HEALTH Panels contain no VOCs.

**POWERSCAPE HEALTH® Panels Recycled Content**

95% of the raw materials for USG POWERSCAPE HEALTH® linings come from external waste systems.

- 85% is post industrial gypsum, a waste product obtained from an electricity generator. No open cast or underground mining of gypsum is needed for the manufacture of USG HEALTH® linings.
- 10% is post industrial cellulose, meaning no trees are harvested for the manufacture of USG HEALTH® linings.

**POWERSCAPE HEALTH® Panels and Internal Noise levels**

\* Dependent on wall systems specified. An Rw of 48 can be achieved with a single layer of 13mm Powerscape Health on both sides of a 92mm steel stud partition (partition to include thermal insulation).

Re the USG Powerscape Health® booklet USGH-FS-AU-0707-1-31208 for more information.



**ASTM D3273-00(2005) Standard Test Method for Resistance to Growth of Mould on the Surface of Interior Coatings in an Environmental Chamber**

A "0" rating on D3273 means excessive disfigurement due to mould growth on gypsum wall or ceiling panel surfaces, while a "10" rating indicates that no mould grew on the panel. This grade is determined by inspecting the panel with a microscope and comparing the findings with standardized photographs of allowable growth for each score level. With this stringent method, a panel may not receive the top "10" rating even if mould growth is invisible to the naked eye.



# Working with the Environment

USG Australasia's philosophy is to be the regional leader in providing, through USG's various global manufacturing operations, interior building product options that minimise the impact on the environment.

In addition to being members of both the Australian and New Zealand Green Building Councils, USG Corporation was a founding member of the United States Green Building Council in 1993.

 <p>green building council australia MEMBER</p>	 <p>MEMBER NZGBC NEW ZEALAND GREEN BUILDING COUNCIL</p>	 <p>U.S. GREEN BUILDING COUNCIL MEMBER</p>
 <p>ENVIRONMENTAL CHOICE AUSTRALIA</p> <p>Lic: USG-2008 geca.org.au</p>	 <p>ecospecifier products.knowledge.solutions</p>	



**USG Australasia**

New South Wales      Queensland  
Phone: 1800 226 215  
Fax: 1800 786 946

Victoria

Auckland Head Office  
Phone: (09) 636 3680  
Fax: (09) 636 3679

ESD/6-09

email: [info-anz@usg.co.nz](mailto:info-anz@usg.co.nz)

[www.greenusg.com.au](http://www.greenusg.com.au)

[www.usg.com.au](http://www.usg.com.au)