

USG Corporation  
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## Manufacturer's Certificate of Compliance – Low VOC Emissions USG Corporation

USG Corporation certifies the following products have low VOC and formaldehyde emissions per the testing Standard established by the California Department of Health Services:

### **ASTRO Acoustical Ceilings #8243 [Tested]**

Astro® ClimaPlus™ (all item numbers)  
Astro® ClimaPlus™ Illusion (all item numbers)

USG certifies the above listed products are Low-Emitting, defined as below the emissions of the concentrations for each individual volatile organic compound as specified in the *Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers Version 1.1* [CDPH/EHLB/Standard Method V1.1 (February 2010); aka, chamber testing portion of CA Section 01350] and ASTM Guide D5116-06.

The actual test sample as indicated above was manufactured on December 24, 2009 and shipped to Berkeley Analytical as a representative sample the next day. The test results are compliant with VOC emission requirements of the CA Section 01350 Standard as attested in Berkeley Analytical report 059-084-01A-Feb0410. Because USG's manufacturing specifications for ingredients and processes are substantially similar for all the products listed above and for the product actually tested, and because USG has in place a product quality program and a VOC testing program, all listed products will meet the VOC emission requirements as defined in the Standard.

Meeting the strictest indoor environmental quality guidelines for zero and low-VOC emissions, is just one way USG is able to help our customers create sustainable spaces. Please visit our website at [www.usg.com](http://www.usg.com) to learn more about EcoBlueprint, USG's sustainability initiative and how together we can reduce our overall impact on the environment and construct high-performing, healthy interiors.

Dated: April 12, 2010

A handwritten signature in black ink that reads 'Charles D. Byers'.

Charles D. Byers, PhD, CIH  
Manager, Product Safety &  
Industrial Hygiene  
USG Corporation

**ECOBLEUPRINT.**  
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## Certificate of Compliance – VOC Emissions

### ASTRO Acoustical Ceilings #8243 USG Corporation

USG Corporation selected a sample representative of its ASTRO Acoustical Ceilings # 8243 product manufactured in Cloquet, MN and submitted it for testing on December 24, 2009. Berkeley Analytical measured and evaluated the emissions of volatile organic compounds (VOCs) from this sample according to California Department of Health Services (CDHS) *Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers* (CA/DHS/EHLB/R-174, 2004; also known as, chamber testing portion of CA Section 01350) and ASTM Standard Guide D 5116-06. Chemical sampling and analysis were performed following U.S. EPA Compendium Methods TO-1 and TO-17 and ASTM Standard Method D 5197-03.

Calculations were performed with the following standard classroom and office exposure parameters to project the concentrations of VOCs of concern resulting from the use of this product. The results of the test and the calculated concentrations for the classroom and office are presented in Berkeley Analytical laboratory report, 059-084-01A-Feb0410.

#### Exposure Scenarios

Standardized Environment	Room Volume (m <sup>3</sup> )	Area Specific Air Flow Rate (m/h)	Ceiling Area (m <sup>2</sup> )
Classroom	231	2.10	89.2
Office	30.6	1.86	11.1

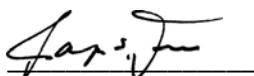
#### Summary of test results according to the CA DHS Standard Practice guidelines:

- Predicted concentrations of all VOCs of concern including formaldehyde were below the guideline concentrations.

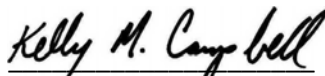
**Based on these results, the tested product sample meets the VOC emission requirements for use in classroom and office environments as defined in the CA DHS *Standard Practice*. Thus, the testing requirements are met to qualify the product as a low-emitting material in the Collaborative for High Performance Schools rating system (CHPS Designed & CHPS Verified).**

Certificate No.: 100204-01

Dated: February 4, 2010



Raja S. Tannous  
Laboratory Director



Kelly M. Campbell  
Quality Manager