

## UL GREENGUARD Certification Program

The UL GREENGUARD Certification Program is a standardized method for evaluating the Volatile Organic Compound (VOC) emissions of a product, including building materials. By selecting low-emitting products with GREENGUARD Certification, you are aiding in the creation of healthier indoor environments for your home, office or institution.

There are two tiers of certification in the UL GREENGUARD Certification Program, both of which include stringent limits on emissions of more than 360 VOCs:

- GREENGUARD Certification,
- GREENGUARD Gold Certification.

GREENGUARD Gold is aligned with health based emissions requirements as defined by the U.S. Environmental Protection Agency (EPA) and the State of California Department of Public Health's (CDPH) Section 01350. Certified GREENGUARD Gold products are recognized, referenced and preferred by more than 450 federal purchasers, retailers, green building rating tools and building codes, including compliance with LEED v4/4.1 credit EQ: Low-emitting materials.

Currently, all North American ROCKWOOL stone wool insulation products, designed for the use within interior environments are certified under the UL GREENGUARD Certification Program and are audited regularly by UL Environment in order to maintain their certification status.

### ROCKWOOL Products with GREENGUARD and GREENGUARD Gold Certification

	<b>GREENGUARD</b> <i>Classroom, Office Scenario</i>	<b>GREENGUARD Gold</b> <i>Classroom Scenario</i>	<b>GREENGUARD Gold</b> <i>Office Scenario</i>	<b>Link</b>
<b>ROCKWOOL AFB® evo</b>	✓	✓	✓	<a href="#">🔗</a>
<b>ROCKWOOL AFB®</b>	✓	✓	-	<a href="#">🔗</a>
<b>ROCKWOOL Safe'n'Sound®</b>	✓	✓	-	<a href="#">🔗</a>
<b>ROCKWOOL Comfortbatt®</b>	✓	✓	-	<a href="#">🔗</a>
<b>ROCKWOOL Curtainrock®</b>	✓	✓	-	<a href="#">🔗</a>
<b>ROCKWOOL Curtainrock® 40</b>	✓	✓	-	<a href="#">🔗</a>
<b>ROCKWOOL Curtainrock® 80</b>	✓	✓	-	<a href="#">🔗</a>
<b>ROCKWOOL ROXUL Safe®</b>	✓	✓	-	<a href="#">🔗</a>

### Summary of Testing Method

Emission testing and evaluation are conducted in accordance with UL 2818 - 2013 *Standard for Chemical Emissions for Building Materials, Finishes and Furnishings*. This testing method is in alignment with CDPH *Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers*, version 1.2 (2017).

VOCs emissions are measured via a small-scale environmental chamber of a specific volume with constant interior conditions as specified by the testing standard (temperature, relative humidity, and ventilation rate).

The measured VOC concentrations in the chamber are then used to calculate the *emission factor*, which considers the measured flow rate of air into the chamber and the surface area of the exposed material.

Predicted building VOC concentrations are estimated based on the measured VOC emission factors, the amount (m<sup>2</sup>) of material to be installed in the building (as per the specific scenario, classroom or office) and the outside air exchange rate (hr<sup>-1</sup>). Assumptions in the prediction include steady state conditions with respect to emission rates and building ventilation, zero outdoor VOC concentrations, perfect mixing within the building and no net losses of VOC from air due to other effects such as irreversible or net sorption on surfaces (i.e., net sink effects) and chemical reactions.

The exposure and air exchange rates assumed for the specific scenarios (for walls) are as follows:

- *Classroom Scenario* for walls include a wall surface area of 94.60 m<sup>2</sup> and an air exchange rate of 0.82 hr<sup>-1</sup>.
- *Office Scenario* for walls include a wall surface area of 33.40 m<sup>2</sup> and an air exchange rate of 0.68 hr<sup>-1</sup>.

For more information about this testing or the UL GREENGUARD Certification Program as a whole, please visit: [www.ul.com/resources/ul-greenguard-certification-program](http://www.ul.com/resources/ul-greenguard-certification-program)

### Certification Criteria for Building Products and Interior Finishes

Criteria	Maximum Allowable Predicted Concentration	
	Certified	Gold
TVOC	500 µg/m <sup>3</sup>	220 µg/m <sup>3</sup>
Formaldehyde	61.3 µg/m <sup>3</sup> (ppb)	9 µg/m <sup>3</sup> (7.3 ppb)
Total Aldehydes	100 ppb	43 ppb

A full summary of the allowable emission limits for GREENGUARD Certification and GREENGUARD Gold Certification is available through UL at the following link: [www.ul.com/sites/g/files/qbfpbp306/files/2019-05/GG\\_VOC\\_tables.pdf](http://www.ul.com/sites/g/files/qbfpbp306/files/2019-05/GG_VOC_tables.pdf)

For more information, please contact ROCKWOOL Technical Services at the phone number or email address below.

#### ROCKWOOL Technical Services

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