

# CERTIFICATE OF COMPLIANCE



## Knauf Insulation

Knauf Performance+®  
Earthwool® 1000° Pipe Insulation  
with ECOSE® Technology

13166-410

Certificate Number

13 Nov 2009 - 20 Dec 2026

Certificate Period

Certified

Status

UL 2818 - 2022 Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Wall finishes are determined compliant using an Office Environment with an air change of  $0.68 \text{ hr}^{-1}$  and a loading of  $33.40 \text{ m}^2$ .

Products tested in accordance with UL 2821 test method to show compliance to emission limits in UL 2818, Section 7.1.



*UL investigated representative samples of the identified Product(s) to the identified Standard(s) or other requirements in accordance with the agreements and any applicable program service terms in place between UL and the Certificate Holder (collectively "Agreement"). The Certificate Holder is authorized to use the UL Mark for the identified Product(s) manufactured at the production site(s) covered by the UL Test Report, in accordance with the terms of the Agreement. This Certificate is valid for the identified dates unless there is non-compliance with the Agreement.*

## GREENGUARD Certification Criteria for Building Products and Interior Finishes

| Criteria                                       | CAS Number | Maximum Allowable Predicted Concentration | Units             |
|------------------------------------------------|------------|-------------------------------------------|-------------------|
| TVOC <sup>(A)</sup>                            | -          | 0.50                                      | mg/m <sup>3</sup> |
| Formaldehyde                                   | 50-00-0    | 61.3 (50 ppb)                             | µg/m <sup>3</sup> |
| Total Aldehydes <sup>(B)</sup>                 | -          | 0.10                                      | ppm               |
| Particle Matter less than 10 µm <sup>(C)</sup> | -          | 50                                        | µg/m <sup>3</sup> |
| 4-Phenylcyclohexene                            | 4994-16-5  | 6.5                                       | µg/m <sup>3</sup> |
| Individual VOCs <sup>(D)</sup>                 | -          | 1/10th TLV                                | -                 |

- (A) Defined to be the total response of measured VOCs falling within the C<sub>6</sub> – C<sub>16</sub> range, with responses calibrated to a toluene surrogate. Maximum allowable predicted TVOC concentrations for GREENGUARD (0.50 mg/m<sup>3</sup>) fall in the range of 0.5 mg/m<sup>3</sup> or less, as specified in CDPH Standard Method v1.2.
- (B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD/GC/MS analysis and the remaining aldehydes are measured using HPLC/UV analysis.
- (C) Particle emission requirement only applicable to HVAC Duct Products with exposed surface area in air streams (a forced air test with specific test method) and for wood finishing (sanding) systems.
- (D) Allowable levels for chemicals not listed are derived from 1/10th of the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).

