



Certificate of Compliance

Certification Details:

Certificate No: 903

Status: Certified

Period: 01/2010 - 11/2012

Restrictions: NONE

Air Duct Board with ECOSE® Technology

Knauf Insulation

This product has been certified according to the GREENGUARD Children & Schools Certification Program for Low Emitting Products

Reference Standard: GGPS.002 GREENGUARD Children & SchoolsSM Standard

Product Type: All Products

Criteria	Allowable Limits
Individual VOCs ^{1,2}	$\leq 1/100$ TLV and $\leq 1/2$ CA chronic REL (Office Seating $\leq 1/100$ TLV and $\leq 1/4$ CA CREL)
Formaldehyde	≤ 0.0135 ppm / 13.5 ppb (Office Seating ≤ 0.00675 ppm / 6.75 ppb)
TVOC ³	≤ 0.22 mg/m ³
Total Aldehydes ⁴	≤ 0.043 ppm / 43 ppb
Total Phthalates ⁵	≤ 0.01 mg/m ³
Total Particles ⁶	≤ 0.02 mg/m ³

See referenced standard for a complete technical explanation.

¹Any VOC not listed must produce an air concentration level no greater than 1/100 the Threshold Limit Value (TLV) industrial work place criterion (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, Cincinnati, Ohio 45211-4438) and no greater than 1/2 the CA Chronic Reference Exposure Level (CREL) http://www.oehha.ca.gov/air/chronic_rels/AllChrels.html - (CRELs) Adopted by the State of California Office of Environmental Health Hazard Assessment (OEHHHA), December 2008).

²1-Methyl-2-Pyrrolidinone must be ≤ 0.16 mg/m³ for Office Furniture or ≤ 0.080 mg/m³ for Office Seating.

³Defined to be the total response of measured VOCs falling within the C₆-C₁₆ range, with responses calibrated to a toluene surrogate.

⁴Defined to be the total response of a target list of aldehydes (2-butanal; acetaldehyde; benzaldehyde; 2, 5-dimethylbenzaldehyde, 2-methylbenzaldehyde; 3-and/or 4-methylbenzaldehyde; butanal; 3-methylbutanal; formaldehyde; hexanal; pentanal; propanal), with each individually calibrated to a compound specific standard.

⁵Total phthalates include dibutyl (DBP), diethylhexyl (DEHD), diethyl (DEP), butylbenzyl (BBP), di-octyl (DOP), and dimethyl (DMP) phthalates.

⁶Particles are only applicable to fibrous, particle-releasing products with exposed surface area in air streams.

Seating, Workstations and Casework Systems complies with ANSI/BIFMA e3-2010 Credit 7.6.2.

Complies with California Department of Health Services' "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" Version 1.1 (CA section 01350)

GREENGUARD Certification affirms that products meet the criteria of the referenced standard and the requirements of the specific certification program. Certification testing is conducted according to a consistent, defined protocol. The testing does not evaluate emissions under usage conditions other than those defined in the protocol and does not address potential environmental impact other than chemical and particle emissions.

The GREENGUARD Environmental Institute (GEI) is an industry independent, third-party certification organization that qualifies products for low chemical emissions. GREENGUARD Certification programs use defined product standards, test methodologies, product sample collection and handling procedures, program application processes and on-going verification procedures. GREENGUARD standards, methods, and procedures are available at www.GREENGUARD.org.