



December 27, 2004

VIA ELECTRONIC MAIL

Ms. Dorothy Shimer
Research Division
California Air Resources Board
P.O. Box 2815
Sacramento, California 95812
Ab1173@listserv.arb.ca.gov

**Re: RFCI Comments on Draft For Peer Review (November 2004) Report on
Indoor Air Pollution in California**

Dear Ms. Shimer:

The Resilient Floor Covering Institute (RFCI) submits these comments on the revised draft Report to the California Legislature on Indoor Air Pollution in California (November 2004). RFCI is a trade association of North American manufacturers of resilient floor covering materials. Members include Amtico International, Armstrong World Industries, Congoleum, Losetas Asfálticas, Mannington Mills, and Tarkett.

The draft Report recognizes that in evaluating emissions under Section 01350 the California Department of Health Services (DHS) uses a concentration threshold for formaldehyde other than one-half of the California Office of Environmental Health Hazard Assessment (OEHHA) chronic Reference Exposure Level (REL). See § 2.3.1.2, at p. 60; § 4.3.3.2, at p. 127. Importantly, in October 2004, the DHS also determined that a concentration limit other than one-half of the OEHHA chronic REL should be used in evaluating acetaldehyde emissions.¹ Specifically, in the Addendum to its Standard Practice for Testing VOCs, DHS recommends use of 9.0 ug/m³ for acetaldehyde (instead of one-half the chronic REL, 4.5 ug/m³) pending the establishment of an indoor REL.

To be accurate and current, the draft Report should be updated to include DHS' determination regarding acetaldehyde, in the same manner that the draft Report recognizes the interim concentration threshold for formaldehyde. Recognition of the interim threshold for acetaldehyde is important because the Report may serve as the basis for future legislative

¹ Standard Practice for the Testing of Volatile Organic Compounds Emissions from Various Sources using Small-Scale Environmental Chambers (CA/DHS/EHLB/R-174) Addendum 2004-01, Justification for Using Concentration Limits Other Than Those Listed in OEHHA's Chronic REL List: Formaldehyde & Acetaldehyde (Oct. 19, 2004), available at http://www.dhs.ca.gov/ehlb/IAQ/VOCs/Section_01350_Addendum_2004-01.htm (copy attached).

and/or regulatory action in California. Moreover, express reference to the interim threshold for acetaldehyde is important because under the building materials emission study discussed in the draft Report (p. 67, discussing Alevantis, 2003), the one standard resilient flooring product that exceeded the acetaldehyde level at the time of the study (i.e., 4.5 ug/m³) would not exceed the concentration level now recognized by DHS (i.e., 9.0 ug/m³).²

RFCI specifically requests and recommends that the following revisions be made to address DHS' determination regarding acetaldehyde:

1. § 2.3.2.2, Sources and Emissions of VOCs -- The following text should be added immediately after the third bullet in the first paragraph (p. 67) under the subheading "VOCs from Building Materials":

Subsequent to that study (Alevantis 2003), the upper bound allowed for acetaldehyde contribution from a single product under the Section 01350 guidelines was increased from 4.5 ug/m³ to 9 ug/m³ (DHS 2004b). The one standard resilient flooring product that exceeded the applicable level for acetaldehyde at the time of the study does not exceed the revised acetaldehyde allowable level.

2. § 4.3.3.2, Sustainable Buildings and Section 01350 -- The penultimate sentence of the second paragraph (p. 127) should be revised as follows:

Formaldehyde and acetaldehyde are ~~is an~~ exceptions; emissions from a single product cannot exceed one half the interim 8-hour REL for formaldehyde or the REL for acetaldehyde, as discussed elsewhere in this document.

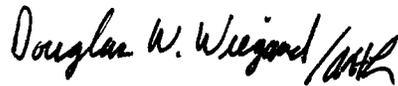
3. § 9, References -- The following reference should be added (p. 174) as "DHS 2004b": Standard Practice for the Testing of Volatile Organic Compounds Emissions from Various Sources using Small-Scale Environmental Chambers (CA/DHS/EHLB/R-174) Addendum 2004-01, Justification for Using Concentration Limits Other Than Those Listed in OEHHA's Chronic REL List: Formaldehyde & Acetaldehyde (Oct. 19, 2004), http://www.dhs.ca.gov/ehlb/IAQ/VOCS/Section_01350_Addendum_2004-01.htm.

² Alevantis 2003, Table 22b, at 106 (the one standard resilient flooring product that exceeded the then applicable Section 01350 concentration limit value for acetaldehyde of 4.5 ug/m³ was measured at 7.3 ug/m³).

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Thank you for considering our comments. If you have any questions regarding these comments, please contact Bill Freeman, RFCI's Technical Consultant, or me.

Sincerely,

A handwritten signature in black ink that reads "Douglas W. Wiegand" followed by a stylized flourish.

Douglas W. Wiegand
Managing Director

RFCI Technical Consultant

William Freeman
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Enclosure

**Standard Practice for the Testing of Volatile Organic Emissions from Various Sources
using Small-Scale Environmental Chambers
(CA/DHS/EHLB/R-174)**

ADDENDUM 2004-01

*Justification for Using Concentration Limits
Other Than Those Listed in OEHHA's Chronic REL List:
Formaldehyde & Acetaldehyde*

October 19, 2004

The screening limits for emissions evaluated under Section 01350 are generally based on OEHHA's chronic RELs. Chronic RELs are concentrations or doses at or below which adverse health effects are not likely to occur from a chronic exposure to hazardous airborne substances [1]. They are intended to protect individuals from chemical injury, including sensitive sub-populations. OEHHA is in the process of developing indoor RELs specific to indoor exposures.

For screening of building materials, based on their laboratory-derived emission factors and calculated indoor concentrations for specified indoor applications, Section 01350 uses limits set at ½ of chronic RELs. This is a conservative approach.

For certain pollutants, such as formaldehyde, ½ of the chronic REL (1.5 µg/m³) is a low level only a few times above the detection limit. This low level is commonly encountered in outdoor air [2]. As a result, OEHHA developed an 8-hr indoor REL, based on the acute REL for this chemical.

Acetaldehyde is another chemical with a very low chronic REL -- 9 µg/m³. Acetaldehyde at 4.5 µg/m³ (½ of the chronic REL), is commonly found in ambient outdoor air in California [3]. OEHHA is currently evaluating the toxicological data for this chemical to assess whether there is sufficient data to establish an indoor REL that is appropriate for indoor exposures. This chemical does not have an acute REL. Similar to formaldehyde, ½ of the chronic REL for this chemical is only few times above its detection limit. An indoor REL for this chemical is likely to be several times higher than the current chronic REL. In the interim, before the establishment of the indoor REL for acetaldehyde by OEHHA, DHS using risk management analysis for the sole purpose of evaluating emissions of building materials based on Section 01350 recommends using the full chronic REL, i.e., 9 µg/m³ as the screening limit for selecting building materials. Thus, the recommended pass/fail level for acetaldehyde for Section 01350 is 9.0 µg/m³.

[1] http://www.oehha.ca.gov/air/chronic_rels/jan2001chrel.html

[2] http://www.oehha.ca.gov/air/chronic_rels/pdf/50000.pdf

[3] http://www.oehha.ca.gov/air/toxic_contaminants/html/Acetaldehyde.htm