Indoor Air Quality Evaluation ZIP System® Sheathing

ZIP System® sheathing in 7/16" meets the Indoor Air Quality (IAQ) emission requirements of CA Section 01350, and therefore may contribute LEED EQ credits as a low emitting material.

ZIP System panels are manufactured in accordance with the product standard, PS2, *Performance Standard for Wood-Based Structural-Use Panels.* The adhesives used to produce ZIP System panels are a combination of exterior type phenol formaldehyde (PF) and isocyanate resins. During manufacturing, PF resins are exposed to heat and pressure. This heat and pressure cures the resin into nonreactive and stable material.

Huber Engineered Woods LLC contracted UL Environment to evaluate 7/16" ZIP System® wall sheathing in accordance with California Department of Public Health (CDPH) Standard Method v1.1-2010. The product was monitored for emissions of TVOC, individual VOCs, formaldehyde and other aldehydes. Measurements were made and predicted exposures were calculated according to the CA Section 01350 protocol. As specified in this protocol, the results at 96 hours, after 10 days of conditioning, were compared to ½ (one-half) the current Chronic Reference Exposure Levels (CRELs), as adopted from the California OEHHA list. All identified VOCs were also compared to the California-EPA OEHHA Proposition 65 for emissions list and the California-EPA Air Resource Board list of Toxic Air Contaminants (TACs).

Expected concentrations at 96 hours, following 10 days conditioning for classrooms and offices were calculated using the parameters specified in CA Section 01350 in the table below:

Ventilation Rate	Room Volume	Product Usage	Product Surface Area
CLASSROOM			
0.82 air changes per hour (ACH)	12.2m x 7.32m x 2.59m = 231 m^3 (40ft x 24ft x 8.5ft = 8,160 ft^3)	Wall	94.6 m^2
OFFICE			
0.68 air changes per hour (ACH)	3.66m x 3.05m x 2.74m = 30.6 m^3 (12ft x 10ft x 9ft = 1,080 ft^3)	Wall	33.4 m^2

The range of total VOCs after 14 days (336 hours), measured as specified in the CDPH Standard Method v1.1 was determined to be 0.049mg/m^3 which is less than permissible limit of 0.5mg/m^3 for Indoor Air Quality emissions requirement of CA 01350.

Resources:

1. UL Environmental, Report # 18291-01, January 11, 2016.
2. LEED v4. Reference Guide for Building Design and Construction.