



TECHNICAL BULLETIN

STRUCTURAL BOARD ASSOCIATION

Representing the OSB Industry

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NEGLECTIBLE OR NON-EXISTENT FORMALDEHYDE EMISSIONS FROM OSB PANELS

Summary

The test program commissioned by the Structural Board Association (SBA), with the Composite Panel Association (CPA) in the United States and Forintek Canada Corporation has provided evidence that **formaldehyde emissions from Oriented Strand Board and waferboard are negligible or non-existent.**

Test Results

The two phase study demonstrated that :

- a) formaldehyde emissions from commercial OSB and waferboard are very low or absent (i.e. at or below the lower limit of sensitivity of test methods); and
- b) similar results were found with the panels of all Association members. The test program confirmed expectations that OSB panels manufactured to meet the requirements of CSA O437, CSA O325 and U.S. PS2 would not have significant formaldehyde emissions.

OSB Resin Binder Systems

OSB and waferboard manufactured by SBA members is bonded with liquid or powder phenol formaldehyde (PF), liquid polymeric diphenyl methane di-isocyanate (MDI) or a combination of both resins to meet the requirements of the Canadian standards CSA-0437.0 and CSA-0325.0 or the U.S. standard PS2. During the OSB and waferboard panel manufacturing process, the phenol formaldehyde or isocyanate resin reacts to become a durable insoluble heat-resistant polymer structure which resists age, moisture and chemical degradation.

Test Program

During the test program, emission levels measured in the range of 0.01 ppm to 0.04 ppm using the Large Chamber Test Method for Determining Formaldehyde Emissions From Wood Products FTM-2-1985. This test method was developed to assess potential dynamic

state formaldehyde emissions under conditions simulating ambient indoor air. The lower limit of accuracy for the method is 0.03 ppm; make-up air was measured at 0.01 to 0.02 ppm.

SBA has contracted large chamber formaldehyde emission tests of its members' OSB panels confirming consistently low emissions.

Other Tests

In 1997, SBA contracted with Forintek for formaldehyde emission level tests on member's OSB panels in accordance with the European Standard EN 120 Perforator Method and the ASTM D5582-94 Desiccator Method. The results showed that emission levels were significantly below the European E-1 and the HUD permitted maximum levels.

Tests sponsored by APA - The Engineered Wood Association have confirmed that OSB manufactured with phenolic resins met the lowest formaldehyde emissions class, F****, for JAS compliant structural panels, as required by the Japanese Building Standards Law.

Conclusion

OSB and waferboard manufactured with phenol formaldehyde or isocyanate resins have nil or insignificant formaldehyde emission levels.

These findings support the blanket exemption given by HUD to manufacturers of phenol formaldehyde and isocyanate bonded structural wood panels from the need to either test for formaldehyde emissions or to attach consumer warning labels to the panels. These requirements form part of the standards published in the U.S. Federal Register by HUD, to establish acceptable levels of formaldehyde emissions from products used in manufactured homes.