February 23, 2021

Harald Schwab and Bettina Meyer
Fraunhofer Institute for Wood Research
Wilhelm-Klauditz-Institut WKI
Bienroder Weg 54E
38108 Braunschweig
Germany

Dear Harald Schwab and Bettina Meyer:

Thank you for your letter dated February 3, 2021, informing us that one of the alternative small-scale quality control test methods previously approved by the California Air Resources Board (CARB) has been updated by the International Organization for Standardization (ISO). The updated method is ISO 12460-3:2020, the Gas Analysis Method. In your letter, you requested that we approve the use of this updated quality control test method.

CARB's Airborne Toxic Control Measure (ATCM) to Reduce Formaldehyde Emissions from Composite Wood Products gives us the authority to approve of alternative small-scale quality control test methods for use by manufacturers of composite wood products when conducting routine quality control testing of formaldehyde emissions. To be approved, such alternative quality control test methods must be shown to correlate to the ATCM's primary or secondary test methods.

On March 26, 2009, we approved EN 717-2, the Gas Analysis Method for the determination of formaldehyde emissions from wood-based panels. At that time, you provided three sets of test results which demonstrated that the Gas Analysis Method correlated well to test results from the primary and secondary test methods. In 2015, ISO adopted the Gas Analysis Method as ISO 12460.3:2015, with minor changes to improve the sensitivity of the method at testing formaldehyde emissions from low-emitting composite wood panels. On May 5, 2016, we approved ISO 12460-3:2015.

We understand that ISO 12460-3:2020 has superseded the prior version of this method. The following is a summary of the method:

> Small pieces of test material are placed in a closed chamber at a specified temperature, humidity, and airflow. Air is drawn through the chamber and into a bottle containing water, which absorbs any formaldehyde in the air. At the end of the test, the formaldehyde concentration in the water is determined using a photometric or fluorimetric sensor. The formaldehyde emission rate is calculated in milligrams per

square meter hour (mg/m^2hr) based on the concentration in water, and the sampling time and size of the test pieces.

We reviewed the updated method, which makes additional slight revisions to improve sensitivity. We see nothing in the revisions that has the potential to affect the method's ability to be correlated to the ATCM's primary or secondary test methods; therefore, your request is approved.

We will update our Composite Wood Products webpage listing of approved alternative quality control test methods to indicate that ISO 12460-3:2020 is approved for use by manufacturers of hardwood plywood, particleboard, and medium density fiberboard.

If you need further assistance, please contact Lynn Baker at lynn.baker@arb.ca.gov.

Sincerely,

Robert Krieger, Chief
Risk Reduction Branch
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cc: Lynn Baker
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