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Emission measurements according to SS-EN 717-1

Test object

One sample of parquet, sent by the client

Sample type: Karelia 14 mm.
Production date: October 8, 2015
Packaging and marking: Five boards, approx. 0.2 x 2 m, cut in halves. Each board was packed together in plastic foil. The cut boards were marked individually with 2a-1, 2a-2... until 2e-1, 2e-2.
Arrival date: October 12, 2015.

Commission and methods

Determination of formaldehyde emission according to SS-EN 717-1:2004 "Wood-based panels Determination of formaldehyde release – Part 1: Formaldehyde emission by the chamber method".

Total exposed area was 1.0 m². All edges were sealed with aluminium tape according to SS-EN 14342:2013 Wood flooring – Characteristics, evaluation of conformity and marking.

Test conditions:

Chamber size: 1.0 m³
Temperature: 23 ± 0.5 °C
Relative humidity: 45 ± 3 % RH
Air exchange rate: 1 time/hour
Loading factor: 1.0 m²/m³
Test started: 2015-10-14
Test finished: 2015-10-23

The sampling of formaldehyde was carried out with DNPH samplers. The formaldehyde content was determined according to ISO 16000-3 (accredited SP method 2302), which means analysis on a liquid chromatograph with absorbance detector. The measurement uncertainty is estimated to 30 % (rel), including a coverage factor of 2. Quantification limit is estimated to 0.001 mg/m³.

Results

To determine the steady-state emission value the minimum duration of the chamber test is 10 days. Sampling of the formaldehyde concentration is carried out on at least seven days. The steady-state emission value is reached when the decline of concentration is equal to or lower than 5 % over a testing time of 4 days.

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If steady-state is not reached during the test period, the value calculated by the complete power function for the 28th day of the test is defined as the steady-state emission value.

The duration of this test was 10 days. Measurements of the formaldehyde concentrations have been carried out in 7 of the 10 days. The emission value after 10 days was 0.03 mg/m³. Steady-state was not reached during the test period so the value is calculated for 28 days (672 h) and presented together with the measured value at 10 days (240 h). All emission data is presented in figure 1 below.

Emission value
0.03 mg/m ³ (240h, measured)
0.02 mg/m ³ (672h, calculated)

The formaldehyde concentration in the empty chamber (background-level) was < 0.001 mg/m³ and is subtracted.

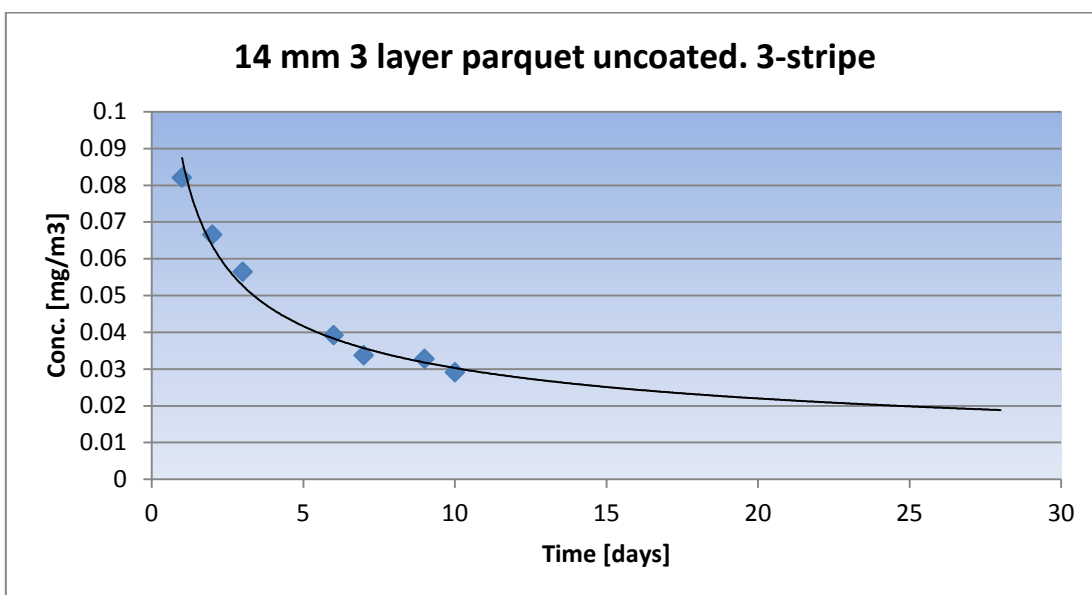


Fig 1: Formaldehyde emission

Comment

The tested sample fulfils the requirements of Class E1 (≤ 0.124 mg/m³) for formaldehyde release.

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