

THE METHOD

Formaldehyde Reduction Attenuation Test version 0917-1 with Safecoat Zero VOC paints



Primer was applied with 1.2ml / 0.01 sq.mtr (which is equivalent to 336 sq.ft/gal)



Safecoat Zero VOC paint was applied a day later with same coverage.



Another coat was applied two hours later with same coverage.



One week later, formaldehyde emissions were tested with NTE-3100 and F.R.A.T. method 0917-1. Emissions can be read via either Desiccator (mg/L) or Small Chamber ($\mu\text{g}/\text{m}^2/\text{hr}$) methodology.

THE RESULTS

Pearl

Formaldehyde outgassing reduced
by **100%**
in this experiment

Uncoated MDF surface emitted 1.926 mg/L or 126 $\mu\text{g}/\text{m}^2/\text{hr}$
Safecoat coated MDF surface emitted 0.000 mg/L or 0.00 $\mu\text{g}/\text{m}^2/\text{hr}$

Semi Gloss

Formaldehyde outgassing reduced
by **98.1%**
in this experiment

Uncoated MDF surface emitted 2.412 mg/L or 162 $\mu\text{g}/\text{m}^2/\text{hr}$
Safecoat coated MDF surface emitted 0.047 mg/L or 3.24 $\mu\text{g}/\text{m}^2/\text{hr}$

Eggshell

Formaldehyde outgassing reduced
by **94.6%**
in this experiment

Uncoated MDF surface emitted 1.863 mg/L or 121 $\mu\text{g}/\text{m}^2/\text{hr}$
Safecoat coated MDF surface emitted 0.100 mg/L or 6.83 $\mu\text{g}/\text{m}^2/\text{hr}$

Flat

Formaldehyde outgassing reduced
by **92.2%**
in this experiment

Uncoated MDF surface emitted 3.317 mg/L (or 230 $\mu\text{g}/\text{m}^2/\text{hr}$)
Safecoat coated MDF surface emitted 0.259 mg/L (or 17.6 $\mu\text{g}/\text{m}^2/\text{hr}$)

AFM
safecoat

Building A Healthier World

CONTROLLING FORMALDEHYDE EMISSIONS WITH SAFECOAT CLEAR SEALERS - A COMPARATIVE ANALYSIS

In this analysis, three coats of each sealer was applied to the right side of MDF (medium density fiberboard). The left side was left uncoated. After a seven day curing period, the board was measured for formaldehyde emission with NTE-3100 and F.R.A.T. method 0917-1.



Safecoat Safe Seal



Safecoat Hard Seal



Safecoat Polyureseal BP
(Satin Finish)



Safecoat Acrylacq
(Satin Finish)

Safe Seal

Formaldehyde outgassing reduced
by **100%**
in this experiment

Uncoated side emitted 1.043 mg/L of formaldehyde which is in the E1± grade. The Safecoat Safe Seal side did not emit at all with 0.000 mg/L reading (note the effective range scale)

Safecoat Safe Seal stops the outgassing of formaldehyde by 100% in this experiment. (1 - 0.000/1.043=100%)

Poly BP

Formaldehyde outgassing reduced
by **100%**
in this experiment

Uncoated side emitted 1.477 mg/L of formaldehyde which is in the very high end scale of E1± grade. The Safecoat Polyureseal BP side did not emit at all with 0.000 mg/L (note the effective range scale)

Safecoat Polyureseal BP stops the outgassing of formaldehyde by 100% in this experiment. (10.000/1.477=100%)

Acrylacq

Formaldehyde outgassing reduced
by **97.7%**
in this experiment

Uncoated side emitted 1.371 mg/L of formaldehyde which is on the very high end scale of E1± grade. The Safecoat Acrylacq side emitted only 0.032 mg/L which is in the very low end scale of Super E0± grade.

Safecoat Acrylacq stops the outgassing of formaldehyde by 97.7% in this experiment (1 - 0.032/1.371=97.7%)

Hard Seal

Formaldehyde outgassing reduced
by **96.2%**
in this experiment

Uncoated side emitted 1.414 mg/L of formaldehyde which is on the very high end side of "E1" grade. The Safecoat Hard Seal side emitted only 0.053 mg/L which is in the very low end of "Super E0" grade.

Safecoat Hard Seal stops the outgassing of formaldehyde by 96.2% in this experiment (1 - 0.053/1.414=96.2%)

1. Emission readings were taken with Desiccators Methodology (mg/L) for MDF grade certificates.
2. Standard industrial MDF sample boards were used in this analysis.
3. Sealers were applied on May 28th, 2016. Measurement were made on June 5th, 2016.
4. In this study, a coin-sized passive emission colorimetric sensor (PECS) and a portable reflectance photometry device were developed to measure the formaldehyde emission rates on-site. Major emission sources of formaldehyde in a residential room could be easily identified with a measurement time of only 30 minutes using the sensor.