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Company Registration Number: 10263216 VAT Registration Number: 245 5324 14

17 December 2020

**Mr Colin Jones**  
**Commercial Director**  
**William Lea Ltd**

Re: Calcium Carbide Moisture Test on Retanol Xtreme Screed

Dear Colin

Please see below the results of the Calcium Carbide Moisture (CM) Test commissioned by MPH Construction Ltd on the Retanol Xtreme screed installed by William Lea Ltd at the Airbus UK East Factory in Broughton.

- **Location:** The Under-bar Servery, Airbus UK East Factory, Chester, CH4 0DR
- **Date of the screed installation:** 17 November 2020
- **Date of the CM Test:** 17 December 2020
- **Equipment used:** Radtke Messtechnik Carbide Moisture Test Kit



### Objective/Methodology of the Test

For any kind of flooring, the final floor finish should not be installed until the screed upon which it is to be laid has dried optimally.

A CM Test offers the most accurate way of assessing the moisture content in a Retanol Xtreme floor screed as it measures the moisture throughout the whole screed, not just at the very top surface which is merely what Tramex Boxes and Protimeters do.

This type of testing equipment should never be used when moisture- testing a Retanol Xtreme screed. Readings from such equipment are far less precise and can be very inaccurate, and this can result in DPM work being carried out unnecessarily. A hygrometer is even more misleading and produces irrelevant readings as it only tests the relative humidity between the air and the screed; this has no relevance whatsoever to the moisture content of a Retanol Xtreme screed.

In short, a floating Retanol screed which has dried optimally will never require a damp proof membrane (DPM), and the same applies to a bonded Retanol screed too, provided the concrete slab has been treated with a DPM if it is a freshly poured slab, or been exposed to moisture/water.

The CM Test requires a small representative sample (50g) to be taken from the full depth of the screed and crushed into powder form.



This screed sample is then mixed with a calcium carbide reagent, and subjected to orbital rotation in a vacuum flask.

Upon reacting, the mixture releases acetylene gas, the amount of which indicates the level of moisture in the sample. The percentage of concrete moisture within the sample (% CM) is then recorded at 2, 5, and 10 minutes from the commencement of the test.

Prior to the installation of the chosen final floor finish which we were advised would be either ceramic tiles or vinyl in this instance, the CM reading at 10 minutes for a Retanol Xtreme screed of this age (circa 30 days old) should be no more than 2.6% CM. This is indicated by the green coloured dial on the moisture content gauge.

## Findings of the CM Test

The CM Test was carried out by Michael Lea of PCT Chemie UK Ltd. The screed analysed was approximately 70mm in depth and had been laid as a floating screed on insulation.

The following CM readings were taken during the course of the test:

**Reading at 2 minutes - 1.37% CM**



**Reading at 5 minutes - 1.92% CM**



**Reading at 10 minutes - 2.41% CM**



## Conclusion

At the end of the CM Test, the gauge reading was 2.41% CM. Therefore we would now consider the screed that has been tested to be sufficiently dry and ready to receive the chosen final floor finish.

It is not necessary to apply a DPM to this screed.

## **Important Considerations**

### **Potential water spillage and relative humidity**

If there are any areas in the building which have yet to be plastered, please be aware that this could lead to the screed being exposed to further moisture, both through water spillages when mixing the plaster and through an increased relative humidity (RH) in the building. We are highlighting this for your consideration as any water spillages or significant increases in RH can lead to moisture related problems when applying the final floor finish.

If you have any questions, or require any further elaboration with regard to the test results, please do not hesitate to contact me.

Please pass on my sincere thanks to Adam Ford for his time and co-operation during my site visit today.

Yours sincerely



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