

**PCT Chemie UK Ltd**, Suite 8i, Enterprise Centre, Moorgate Point, Moorgate Road, Liverpool, L33 7XW  
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14 January 2020

To: Mr Neil Jesson  
Project Manager  
B&K Systems Ltd

Cc: Adam Langstaff and Andy Cumberland (B&K Systems)  
Les Kotrys, Laing O'Rourke Group Technical Services

Re: Calcium Carbide Moisture Test on Retanol Xtreme Screed

Dear Mr Jesson

Please see below the results of the Calcium Carbide Moisture (CM) Test commissioned by B&K Systems Ltd on the Retanol Xtreme Screed installed at the Biochemistry Completion Project, Oxford University, South Parks Road, Oxford, OX1 3DD.

- **Date of the CM Test:** 14 January 2020
- **Date the screed was installed:** 3 December 2019
- **Equipment used:** Radtke Messtechnik Calcium 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.

The CM Test offers the most accurate way of assessing the moisture content in floor screeds as it measures the moisture throughout the whole screed, not just at the very top surface. Please note that readings taken from other testing equipment such as Tramex Meters should be used for guidance purposes only as they are less precise and can result in DPM work being carried out unnecessarily.

The screed analysed is an unbonded Retanol Xtreme Screed approximately 95mm thick.

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



The 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 after 2, 5 and 10 minutes, which is the end of the test.

**For the installation of the vinyl final floor finish on this Retanol Xtreme Screed, the final CM reading taken at 10 minutes must not exceed 2.60%. 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 following CM readings were taken during the course of the test:

**Reading at 2 minutes – 1.68% CM**

**Reading at 5 minutes – 2.00% CM**



### Reading at 10 minutes – 2.30% CM



### Conclusion

At the end of the CM Test, the gauge reading was 2.30% CM.

Therefore we would now consider the area in which this screed has been installed to be sufficiently dry and ready to receive the chosen final floor finish. Our assertion is based on our understanding that the rest of this particular area has not been exposed to moisture nor experienced any ingress of water following the installation of the 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 above test results, please do not hesitate to contact me.

I would like to thank you for your time and co-operation during my visit today.

Yours sincerely



Michael Lea  
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PCT Chemie UK Ltd

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