**PCT Chemie UK Ltd**, Suite 8i, Enterprise Centre, Moorgate Point, Moorgate Road, Liverpool, L33 7XW
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8 August 2022

Mr Colin Jones
Commercial Director
William Lea Ltd

Re: Calcium Carbide Moisture Test Results on Retanol Xtreme Screed

Dear Colin

Please see below the results of this morning's Calcium Carbide Moisture (CM) Tests commissioned by Wynne Construction Ltd on the Retanol Xtreme Pro 1 Screed installed by William Lea Ltd at the Bron Y Nant Respite Centre, Dineth Road, Ross-on-Sea, LL28 4YN.

- **Location of Tests:** The Lobby Area and WC Room
- **Date of the screed installation:** Week commencing 4 July 2022
- **Type of screed installation:** A site-mixed, floating Retanol Xtreme Pro 1 Screed installed at a thickness of 45mm on a Radon Gas Membrane and Insulation Board
- **Date of the CM Test:** 8 August 2022
- **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 applied 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.

Tramex and Protimeter 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 expensive 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 35 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 Tests were carried out by PCT Chemie, the manufacturer and supplier of Retanol Screed Products to the UK construction market.

Below are the CM readings at the end of the tests:

**WC Area - Reading at 10 minutes – 2.30% CM**

**Lobby Area - Reading at 10 minutes – 2.06% CM**

## Conclusion

The final CM Test readings were 2.30% CM and 2.06% CM respectively. Therefore, we would now consider the screed tested to be sufficiently dry and ready to receive the chosen final floor finish.

**Please be advised that it is not necessary to apply a DPM to this screed. Indeed, it would not have been necessary to apply a DPM on this screed from 7 July 2022 onwards as it is from this date that the screed would have been dry enough to accept the final floor finish.**

## 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 regarding the test results, please do not hesitate to contact me.

Please pass on my thanks to Wynne Construction for their time and co-operation during my site visit this morning.

Yours sincerely

Michael Lea
Managing Director
PCT Chemie UK Ltd

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