TREMCO
Construction Products Group

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Technical Service Bulletin No. P 1 -19

# Out - Gassing of Concrete Substrates

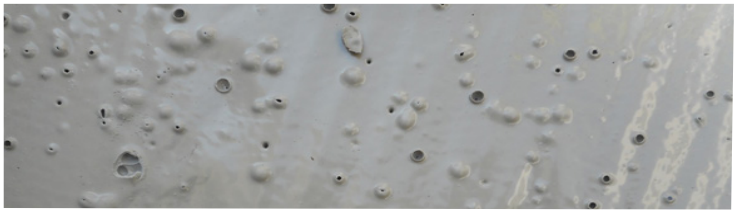
## The Reason for the Bulletin:

### General

Whenever liquid applied coatings are used over cementitious or other porous substrates, the possibility of blisters and/or pinholes exists.

This phenomenon is caused by the expansion of moisture vapour and air that is trapped in the substrate (out-gassing) or (off-gassing).

Pictured below out-gassing of Vulkem 350NF R.



Blisters and or pinholes are most likely to be generated on hot, sunny days when the initial temperature of the substrate is relatively low, but increases rapidly due to heat generated from direct sunlight on the membrane.

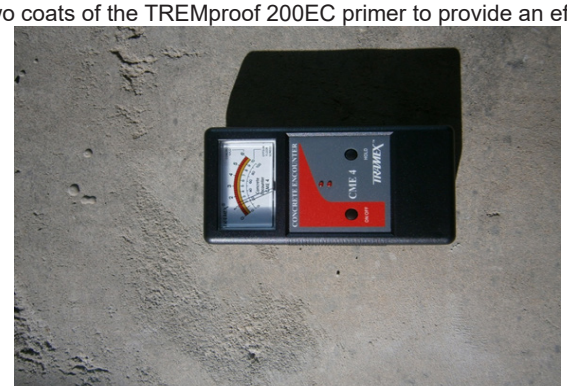
The rapid increase in temperature converts the moisture in the substrate to the vapour phase and creates a vapour drive towards the source of the heat.

Any air trapped in the substrate will also expand as it heats up.

There are many factors that influence the amount of moisture transmission and air expansion including temperature during coating application, change in temperature following application, humidity, moisture content of the concrete, concrete formulation, concrete age and surface porosity.

Prior to the installation of any Vulkem liquid applied membrane system, a moisture reading of the substrate should be obtained.

A moisture reading of less than 4.5% as determined by a Tramex CME4 as pictured below is required before products are applied to the substrate. When floors have higher moisture content (more than 4.5% when measured using a TRAMEX CME-4 moisture meter), Tremco recommends two coats of the TREMproof 200EC primer to provide an effective vapour retarder. Consult Tremco Technical Services where this is the case.




**Pictured moisture reading of a Concrete Screed**

### Hot Weather Application

During the hotter months it may be worth considering applying the Vulkem membrane systems in the late afternoon as the slab starts to cool. Some applications may even need to be applied in the late evening once the sun has gone down.



TREMCO CPG AUSTRALIAPTY LTD
ABN 25 000 024 064
12/4 Southridge Street, Eastern Creek, NSW, 2766 P: (02) 9638 2755 F: (02) 9638 2955
tremco@tremco.com.au www.tremcocpg.com.au