



Guidance Notes

Issues of “Free Lime” in Cavity Drain Membrane Systems

The use of cavity drain systems as a method of waterproofing is ever increasing particularly in new build basements and retrofit basements. In accordance with the code of practice BS 8102, they need to be maintained. This has been helped significantly with the introduction of perimeter drainage channels and inspection ports, so as to make the drainage aspects maintainable and help to prevent blockages caused by the existence of free lime for example.

In most new construction and retrofit basements (and also in refurbishment projects where the floor has been replaced), there is a high risk of free lime and / or mineral salts leaching from the concrete walls and floors. In retrofit this is particularly prevalent where “dry pack” is used at the top of the underpinning.

As free lime leaches from the new construction by groundwater ingress it deposits itself within the drainage cavity, (behind and underneath membranes) and particularly within the sump chamber and around the sump pumps. Thus potentially causing pump failure and therefore failure of the cavity drain system.

Maintenance of the cavity drain system and its discharge points is vitally important to the long term success of the system, with the recommended maintenance interval being 6 months. (refer to Triton’s typical pump maintenance schedule).

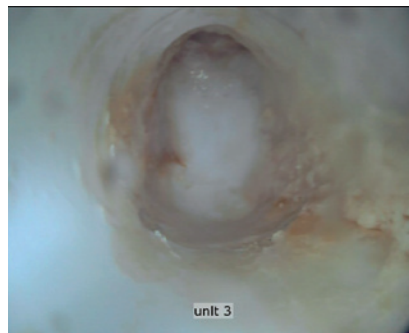
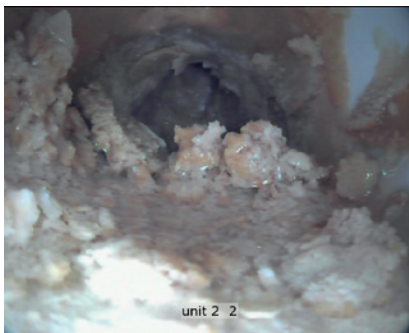
The impact of free lime within the cavity drain system would greatly increase the frequency of maintenance over the first 3 – 5 years, reducing the interval to weeks in some instances, thus increasing both the costs of maintaining the system and also putting the system under undue risk.

In order to minimise the risk of free lime impacting on the cavity drain system, an “anti lime” coating should be applied to the concrete, such as TT Vapour membrane or TT Super. As shown in diagram TT009.1 (attached). For retrofit basements or where underpinning is being used please refer to drawing no. IP034.1 (attached).

This will not only reduce the amount of free lime leaching into the cavity drain system but also will improve the water resistance of the basement structure, which in turn reduces the risk to the cavity drain system.

For further information on Triton’s anti lime products or for assistance with designing these into a cavity drain system, please contact Triton’s technical department on 01322 318830.

Long term benefits include significantly reducing the risks to the cavity drain system and saving maintenance costs, see examples overleaf.



Typical problems caused by lime deposits

EXAMPLES:

- Existing basement with internal cavity drain system incorporating two sumps each with double pump system, maintained every six months:

Average cost of maintenance – approx £200 / sump / visit = £800 / annum

Total maintenance cost over 10 years: £8,000 (minimum).

- New build basement (concrete) with similar internal cavity drain system as above.

Maintained every 3 months in first 3 years, every 4 months in years 4 & 5, thereafter every six months:

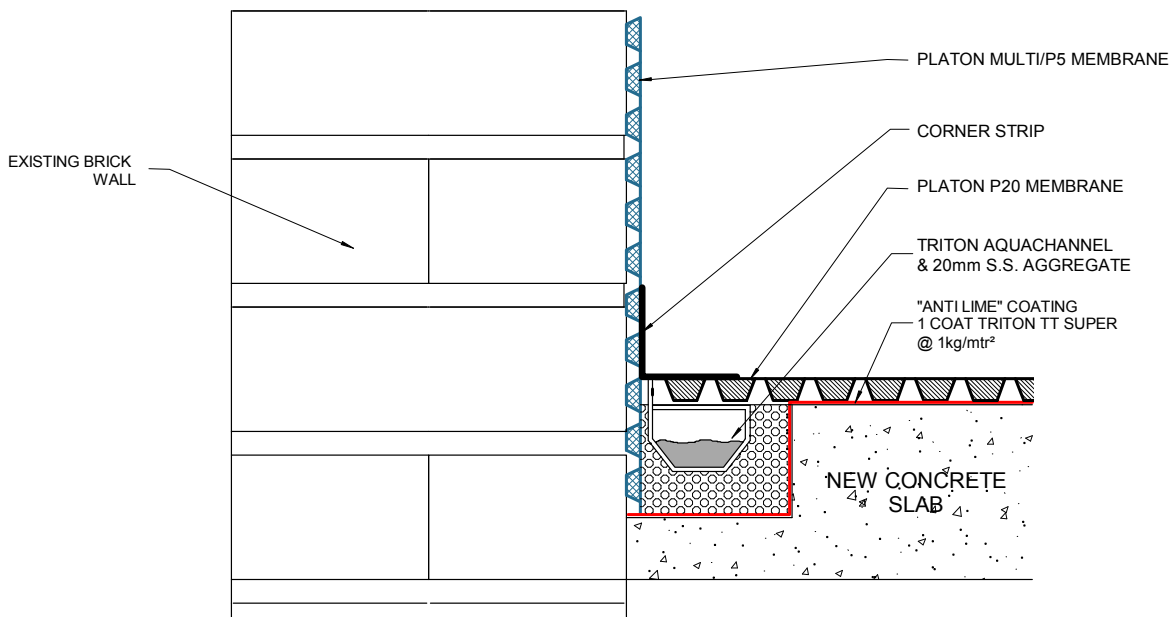
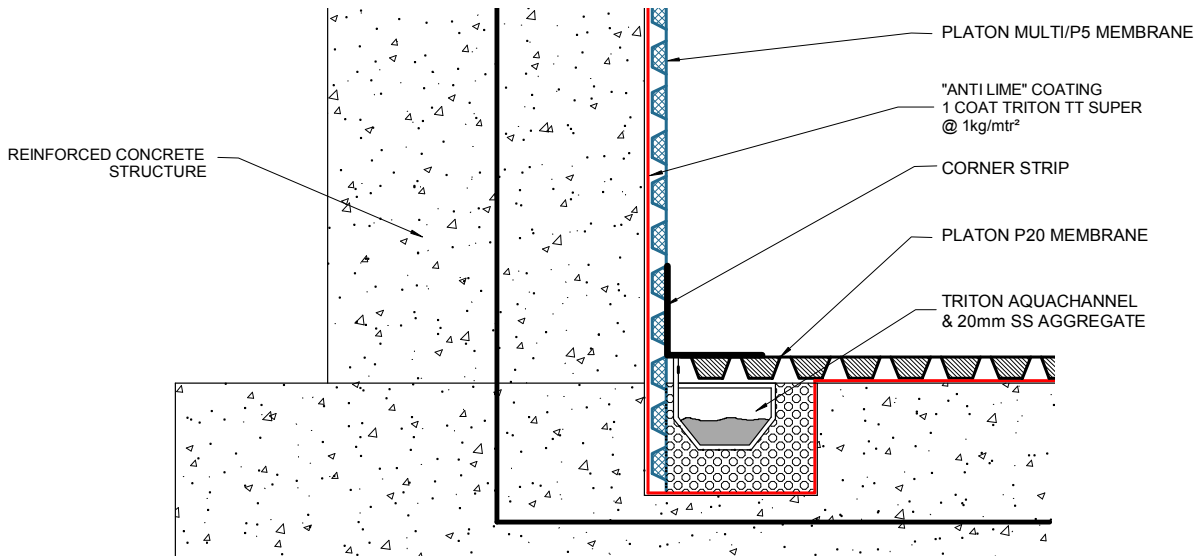
Average cost of maintenance – £200 / sump / visit

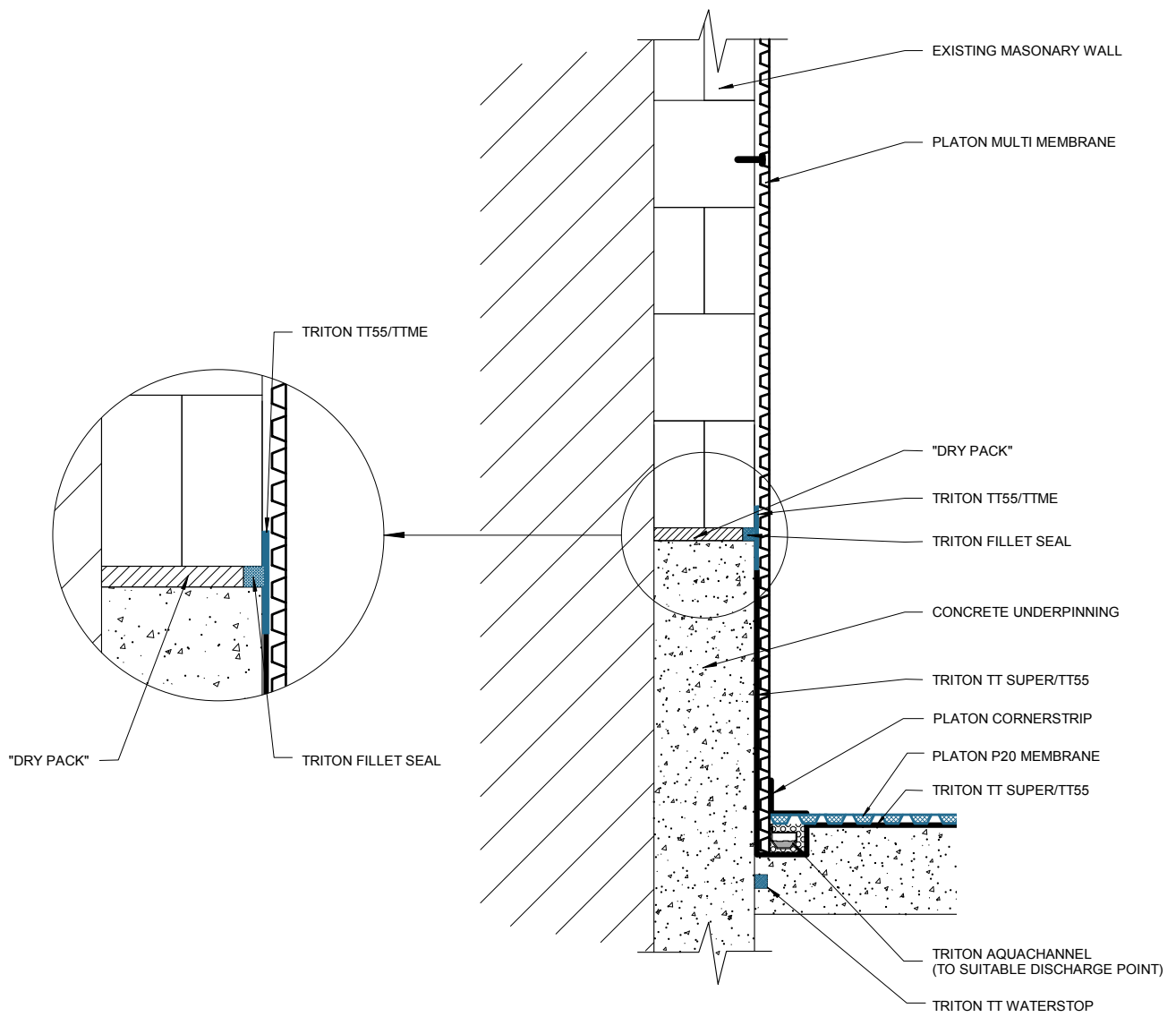
Years 1, 2 & 3 = £1600 / year

Years 4 & 5 = £1200 / year

Years 6 – 10 = £800 / year

Total maintenance cost over 10 years: £11,200 (minimum).





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