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**SPECIAL REPORT:
WHERE TO LEARN
CONSTRUCTION**

**THE BEST
BASEMENT
YOU'LL EVER BUILD**

**BASEMENT WINDOWS:
A Sweet Selection of Seven**

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By Larry Janesky

The Best Basement You'll Ever Build

Details on demystifying drainage

As a basement-waterproofing contractor, I fix the mistakes of others. Having been a builder myself, I can empathize with the emotional struggle of a "spend more and be safe" decision, versus a "spend less, make a profit; we should be okay" decision. Most all of us could build near perfect structures if it weren't for our budgets. So we have to decide where we will spend money, and where we won't, to get the most benefit.

One thing that is very clear and unanimously confirmed is that when we build a subterranean space, it has to be dry. There is simply no tolerance for wet basements. None. So one of the areas we should be focusing on is protecting the basements from water, even if we have to spend a few bucks to get it done right. To make this argument even stronger, remember that it is so much easier to do it right when you are building it, than to dig (or jackhammer) it up later.

Waterproofing basement walls is very important and something I firmly believe in, but it needs to be done in conjunction with drainage. There is no coating in the world you can put on a basement wall to get a guaranteed dry basement. All you can get is a warranty that the water won't come through the walls. In generic terms there are five surfaces to a basement - four walls and one floor. Preventing water from coming through the walls does not

prevent water from getting under the floor and coming up through it.

There are three areas where you can put drainage for a basement: on walls, on the outside of the footing, and inside the basement.

As an alternative to waterproofing the walls, we see a growing popularity of waterproof drainage matting materials. A dimpled plastic material can be rolled out on the wall, sealed at the top, and left open at the bottom. The material itself is waterproof and vaporproof, so long as the joints are sealed. The dimpled shape creates an airspace between the wall and the soil, so if some water does leak in at the top or through a joint, it will run freely down to the bottom. But what's at the bottom?

This drainage matting must have a functional, freely flowing footing drain in order to work. If the footing drain clogs, or should I say *when* the footing drain clogs, the water can run up between the drainage matting and the wall. The wall behind this matting is bare concrete, which leaves every crack and form tie vulnerable to easy water entry. By contrast, if a footing drain fails along a wall that is waterproofed, then form ties, wall cracks, and footing/wall joints are sealed and protected.

So we really need to think of any drainage matting as a vertical extension of a footing drain system. The space created by the drainage matting will probably last forever, but the wall

treatment is only as good as the footing drain. Footing drains have a reputation of failing for various reasons. Assuming they are pitched correctly to a daylight (ground level) drain or to a sump pump, the incoming water brings tiny pieces of the earth with it, and eventually clogs the drain.

I have developed "Janesky's Law of Drainage" which states that drainage systems should be designed so the greatest chance of failure, or shortest expected life, is upstream. Dimpled drainage matting creates an airspace where water can run "downstream" to a footing drain, then "downstream" to the footing drain outlet. I believe that multistage drainage systems like this should be designed so the downstream sections provide the least probability of failure. If the upstream sections fail first, at least you have relief downstream. But if the downstream sections of a drainage system fail first, you have flow reversal to the upstream sections, and then you're really in trouble.

For example, if we blocked the Mississippi River in Minneapolis, that's nothing. But if we blocked it in Memphis, TN, there is more upstream area to flood.

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