

The mysterious toilet that drains itself

Last Updated: Tuesday, June 4th, 2013, Created: Wednesday, February 4th, 2004

Several years ago when we had my live hot line TV show across Canada, I got a call from a homeowner who had a toilet that functioned perfectly except that every night when he came home from work, the water in the bowl had dropped low enough to let the sewer gas smell into the bathroom. He had no pets that might be drinking out of the bowl. He had removed the toilet twice. There was no leak on the floor, no obstruction inside the toilet, no obstruction in the drain line. Recently I saw that my staff had half a toilet which would allow us to recreate the problem and the solution and get the camera to actually see what was happening. On the live show I took an educated guess and it not only turned out to be right, but several other viewers subsequently wrote in to say that solved their problems too. I asked him if he had any daughters with long hair. He replied Yes. How do they clean their hair brushes? They dump the wad of hair into the toilet and flush it away. (Just a little side note: did you know that hair is one of the most difficult things for the city sewage system to deal with? Put it in the wastebasket.) He said he had already removed the toilet twice, so I dared ask him to remove it one more time, reach up the back side and see if there might be a braid of hair on the inside. He did and called me back the following week to say that he found a beautifully woven strand of hair and removing it solved his problem. The hair was getting caught in the rough surface of the casting that you can't see -- unless you cut a toilet in half as we did. The one in the photos above has a Plexiglas face siliconed over the cut so we can actually see how the water sits inside the toilet. We used a strand of gauze which you can see if you look closely. If that strand of hair manages to get just into the right position, where the part hanging free in the back is lower than the water level, when you flush the toilet everything goes by, the strand of hair doesn't move but it gets wet. The water drips off the tip of the strand, pulling water along the rest of the strand by what we call capillary action. That will actually pull water from the reservoir up and over the weir (the high point in the neck of the drain way). If the strand extends low enough into the water, it can drain the water, one drop at a time, until the water no longer acts as a gas seal against odours. This works just like a siphon action through a hose. The water falling on the free side sucks the water in the hose up and out of the bucket.Â

Keywords:

Drainage, Mystery, Drains, Odours, Toilets, Plumbing