

The Floor Drain: A.K.A. Hole in the Ground

By Joseph P. Guzzo



Whenever I go into a house or building I find myself inspecting the plumbing. Not so unusual for a Plumbing Inspector, but this happens even when I am not working. I think about plumbing and plumbing fixtures all the time. I've been told more than once to get a life. When a normal person thinks about plumbing if ever at all, it's probably when it breaks. When working properly, plumbing is simply taken for granted. Most have no regard for what goes down the drain or where it goes as long as it goes. None more disregard than for the lowly floor drain, for which many consider just a hole in the ground. It is for this very reason that floor drains are now governed by strict Federal and State Laws, as well as our plumbing code.

As all plumbers know, a floor drain is a plumbing fixture that requires a trap, vent, and proper connection to the sanitary drainage system. The problem is when and where are floor drains required. Let's start with the hard part. 248 C.M.R. Section 2.09 requires the installation of floor drains in *(all commercial storage or repair garages, gasoline stations with grease racks, grease pits, or wash racks or areas, motor vehicle laundries (including car washes), and in all facilities where oily and/or hazardous liquid waste are produced.)* The wording is a bit confusing, for example what is a motor vehicle laundry? And what if you had a commercial storage garage and stored cardboard boxes filled with revised editions of 248 C.M.R.? Not so likely. This is D.E.P.'s version. *(businesses of concern include dry cleaners, auto repair garages, auto body shops, machine shops, furniture strippers, metal plating facilities, and other facilities managing solvents, oils, gasoline, or other potential pollutants.)* A little more descriptive but still wide open. Try telling the guy building a new machine shop they have to install floor drains, been there done that, lots of fun. So what is the intent. The intent is to control pollution by containment. The Federal Government established the Underground Injection Control Program (U.I.C.) in 1974 as part of the Safe Water Drinking Act. Because of all those holes in the ground, floor drains that were never piped properly or not piped at all. That's right, they dig a hole throw in some crushed stone and put a grate over it. Then they pour anything and everything down the hole for 50 years. Get it.

Once the Plumbing Inspector has determined that floor drains are required, now they must be properly piped. Section 2.09, 1, c floor drains in these type of facilities that are on a municipal sewer system must be piped into either a separator, (we call it a gas/sand trap), or a D.E.P. approved tight tank. If there is no municipal sewer available and the facility is on a septic system or other alternative sewer system, the drains must be piped into a D.E.P. approved tight tank. In either case this is a separate dedicated plumbing system, and the ten foot rule under our definition of plumbing does not apply. The code states *(the entire installation within the property line shall comply with 248 C.M.R.)*. This means that even if the separator or tank is 100 ft. away from the building, all work must be performed by licensed plumbers, and comply with all provisions of 248 C.M.R. including allowable materials. The gas/sand trap must be installed according to the sketch provided in 248 C.M.R. You will notice the quality of the copy is poor. If anyone would like a clear copy give me a call, I will gladly send you one. And don't forget the two 4"

vents must be brought back into the building and through the roof. The installation of a tight tank must conform to D.E.P. specifications.

A variance to operate any of these type of new facilities without floor drains is an option. As stated in D.E.P. guidelines (*if the new facility is not in a water supply protection area, the owner may be able to obtain a variance from this plumbing code requirement and operate without a floor drain. In order to effectively apply for a variance, a facility will need a signed letter from D.E.P.'s U.I.C. Program stating that the facility is not in a water supply protection area*). In addition, the owner must submit a variance application to the Plumbing Board, with a letter from the local Board of Health as usual.

What about existing facilities. Section 2.09,1,c,3 states that facilities built, existing, and operating prior to January 9, 1992 have three (3) choices to comply. #1 Properly connect the floor drains to a municipal sewer through a separator. #2. Properly connect the floor drains to a D.E.P. approved tight tank. #3. Seal the floor drains. If the operator chooses to seal the drains, two (2) permits are required. One from the D.E.P. called a W.S.I. form. The other a plumbing permit from the local plumbing inspector. The drains must be sealed by a licensed plumber with permanent caps or plugs using lead and oakum joints.

What about residential garages? Section 2.09, 1,c,2, floor drains must be installed in residential garages over six (6) car capacity, if there are living units above or below and vehicles share a common area. And must be piped the same as commercial garages, with a separator or tight tank. Here's where it gets interesting. What if you wanted to install floor drains but did not have to? For instance, if you had a four car garage within the same guidelines. Better yet, what if you wanted to install a floor drain in your own private two (2) car garage. Must you pipe them into a separator or tight tank? First, if the building is on a septic system you can absolutely not connect any floor drain in a garage to it. If the building is on a municipal sewer system the connection of floor drains in garages comes under the authority of the municipality or the sewer district, and most will not let any floor drain in a garage connect to the system unless it goes through a separator. Otherwise we would be going backwards simply because it is difficult if not impossible to control what people will put down a drain, especially a floor drain.

Now for the easy part. A floor drain is required in public toilet rooms (look up the definition of public in the plumbing code) when there are two or more water closets, or a water closet and urinal or any combination. When a urinal is installed, the floor drain shall be in the vicinity of the urinal. Trap primers are required under the discretion of the Plumbing Inspector. Floor drains are not required just because there is a flushometer. Floor drains are not required under or near a washing machine, nor is a safe pan. A floor drain or safe pan system is required under a water tank over a six (6) gallon capacity when there is occupancy below. Floor drains are not required in mechanical rooms. Floor drains are not required in boiler rooms. Floor drains are not required in commercial kitchens.

Comments are always welcomed. Remember, as an Inspector if you are trying to make a decision and are stuck on the interpretation of the code, get someone else's opinion. Call a fellow inspector, chances are good that they may have dealt with the same issue. Try to determine the intent of the code relative to health and safety. And above all common sense shall prevail. Then make your decision and stick to it.