Wet Venting

Roger Griffith
VP Legislation, ASPE
East Tennessee Chapter

Many times as designers we are guilty of designing plumbing systems based on "the way we were taught how to do it" rather than on specific code requirements. Wet venting is a case in point. How many times have you heard someone say, "I am going to use the lavatory on the floor above to vent this water closet"?

Wet Venting is a special venting method where the vent pipe also receives the discharge from fixtures. Section 909 of the 1997 Standard Plumbing Code contains the requirements for properly wet venting fixtures. The wet venting concept is based on using oversized piping to allow for the flow of air above the waste flow. The devil is in the details. Let's review a few of the specific details.

Only fixtures that are within two bathroom groups can be vented with a wet vent. Notice that only the fixtures within bathroom groups can be wet vented. The term "bathroom group" has a very specific code meaning. The IPC Code Commentary is very instructive on this issue. It states, "*a bathroom group has historically referred to a single water closet, a lavatory and a bathtub or shower, which are all located within a single room. Such an arrangement would normally allow only one occupant in the room; therefore, the likelihood of simultaneous fixture discharge is very remote. In order for the fixture usage theory of the bathroom group to be valid, the fixtures in the group must be located within the same bathroom*." The theory for wet venting is that the flow in the wet vent portion of the piping will be low because with only one occupant in the room, there is a low probability of simultaneous discharge of fixtures. Therefore, using the wet venting method for fixtures located outside of two discrete bathrooms violates the code. How many of us are guilty of using wet venting for fixtures in large public restrooms or in other areas?

Also, if you check the definition of a 'bathroom group' in Section 202 of the Standard Plumbing Code, it specifies the fixtures – a bidet, water closet, lavatory, and bathtub or shower. Kitchen sinks, service sinks, and drinking fountains are not in a bathroom group and are not permitted to be wet vented. Notice also that a floor drain is not included as a part of a bathroom group. Anyone guilty of wet venting a floor drain? Not to worry, in the 2000 edition of the International Plumbing Code the definition of a bathroom group has been revised to include an emergency floor drain.

Another wet venting requirement is that the fixtures must be within two bathroom groups on the same floor level. The reason for this is that fixtures discharging from the same floor level will have low velocities. Low velocity in the waste pipe will results in low relief pressure and low turbulence, thus allowing the air flow to be above the waste flow in the same oversized pipe. Often designers, contractors and inspectors will want to wet vent a fixture on one floor level with a fixture on the floor level above.

We must be knowledgeable of sound engineering principles and be able to articulate the design theory behind the code requirements. Then we can confidently explain the reasons why we designed the system the way we did, and when requests our made to alter the design to accommodate field conditions, our judgment and decisions will have technical merit and not seem as arbitrary. If we accept field changes merely because someone says, "I know it will work that way" or the "the inspector will accept this" then we have gone from being design professionals to being scribes for others.