SUBJECT: "EMERGENCY" FLOOR DRAINS

Question:

Table 7-3 of the 2006 UPC has a new item that was not found in previous editions of the Plumbing Code. It is entitled "Floor Drain, Emergency", a basically non-descript fixture option available for public or assembly occupancies. The emergency floor drain is shown in Table 7-3 as imposing no additional fixture unit loading on the plumbing system. What is the difference between a "regular" floor drain and an "emergency" floor drain, and what is the purpose of the emergency drain?

Answer:

The UPC fails to define what is meant by the term emergency as it applies to "Floor Drain, Emergency". Webster's Ninth New Collegiate Dictionary defines emergency as; "an unforeseen combination of circumstances or the resulting state that calls for immediate action". This definition tells us that conventional or Code-required applications of floor drains do not represent "emergency" uses. Regular floor drains serve a defined, ongoing purpose. One apparent objective of the "Floor Drain, Emergency" Code provision is to allow *elective* installations of floor drains for protection of property or to provide an optional safeguard. Another would be to serve relatively rare (but anticipated) emergency functions, such as providing drainage for emergency showers. Either of these examples would allow installation of a rarely-needed special-purpose floor drain without imposing any additional drainage load on the piping system. These 0.0 fixture unit floor drains may be connected to the waste and vent system without imposing additional fixture unit loading that might require an increase in drain pipe size.

In the past, similar special use drains were commonly discharged indirectly into a secondary receptor, or were discharged above ground at a location outside the building. These drains were virtually never connected to the DWV system. By appearing in Table 7-3 optional floor drains are now recognized as a connected element of the DWV piping system, but because they are assigned no fixture unit value they do not add to the piping system's fixture unit loading and have no impact on pipe sizing considerations.

The unlikely discharge of water into an emergency floor drain that is connected to the DWV piping system makes it essential that an effective means be provided to protect the fixture's trap seal. Installation of drains that have little probability of water inflow presents a virtual certainty that the trap seal will evaporate unless an

independent means of maintaining the seal is provided. Trap seal loss will result in venting of methane into the occupied space [through the dry trap], thus creating a potentially dire health and safety consequence. A guaranteed source of water to maintain the emergency drain trap seal must be assured by the designer.

In summary, *required* floor drains are installed because they are mandated by Code language. Occasionally, these may also have little inflow of water and may require special provision of a water source (trap priming) to maintain the required trap seals. Emergency floor drains are installed as an optional feature available to the designer as the perceived need may dictate. A major part of this design requires provision of sufficient water to assure a continuous trap seal (Section 1007.0), unless the emergency fixture installation is *not* physically connected to the DWV piping system, at which time installation of a trap would also be unnecessary.

Jay Mundy, CIPE, CPD