***Slope of Horizontal Drainage Pipes.***

Plumbing codes generally require that horizontal pipes have a uniform slope sufficient to ensure a flow with a minimum velocity of 2 ft / s. The objective is to maintain a scouring action to prevent fouling of the pipes. Codes therefore often specify a minimum slope of ¼ in / ft for horizontal piping 3 ½in in diameter or less and 1/8 or 1⁄4 in / ft for larger pipes. Because flow velocity increases with slope, greater slopes increase pipe-carrying capacity. In branch pipes, however, high velocities can cause siphonage of trap seals. Therefore, use of larger-size pipes is preferable to steeper slopes for attaining required capacity of branch pipes.

**Piping for Indirect Wastes**

* Certain wastes like those from food-handling, dishwashing (commercial), and sterile- materials machines should be discharged through an indirect waste pipe. This pipe is not directly connected with the building drainage pipes. Instead, it discharges waste liquids into a plumbing fixture or receptacle from where they flow directly to the building sanitary drainage system. Indirect-waste piping is generally required for the discharge from rinse sinks and such appliances as laundry washers, steam tables, refrigerators, egg boilers, iceboxes, coffee urns, dishwashers, stills, and sterilizers. It is also required for units that must be fitted with drainage connections but are not ordinarily regarded as plumbing fixtures. An air gap is generally required between the indirect-waste piping and the regular drainage system. The gap should be at least twice the effective diameter of the drain it services, but not less than 1 in.
* Clear water wastes from roof-mounted air-conditioning equipment can usually be discharged to roof drains or rainwater gutters. Although some require clear water wastes to be discharged to sanitary sewers, others allow or require clear water wastes to be discharged to the storm sewer system.
* Hot water above 140\_F and steam pipes usually must be arranged for indirect connection into the building drainage system or into an approved interceptor. To prevent corrosion of plumbing piping and fittings, any chemicals, acids, or corrosive liquids are generally required to be automatically diluted or neutralized before being discharged into the plumbing piping. Sufficient fresh water for satisfactory dilution, or a neutralizing agent, should be available at all times. A similar requirement is contained in most codes for liquids that might form or give off toxic or noxious fumes.