603.2.7 Reduced-Pressure Principle Backflow Prevention Assembly (RP). A reduced-pressure principle backflow prevention assembly consists of two independently acting internally loaded check valves, a differential pressure-relief valve, four properly located test cocks, and two isolation valves.

603.3 General Requirements.

603.3.1 Assemblies shall conform to listed standards and be acceptable to the Authority Having Jurisdiction, with jurisdiction over the selection and installation of backflow prevention assemblies.

603.3.2 Where more than one backflow prevention valve is installed on a single premise and the valves are installed in one location, each separate valve shall be permanently identified by the permittee in a manner satisfactory to the Authority Having Jurisdiction.

603.3.3 The premise owner or responsible person shall have the backflow prevention assembly tested by a certified backflow assembly tester at the time of installation, repair, or relocation and not less than on an annual schedule thereafter, or more often when required by the Authority Having Jurisdiction. The periodic testing shall be performed in accordance with the procedures referenced in Table 14-1 or equivalent International Standard(s) approved by the Authority Having Jurisdiction by a tester qualified in accordance with those standards.

603.3.4 Access and clearance shall be provided for the required testing, maintenance, and repair. Access and clearance shall require not less than 30cm (1 ft.) between the lowest portion of the assembly and grade, floor, or platform. Elevated installations exceeding 1.5m (5 ft.) above the floor or grade shall be provided with a permanent platform capable of supporting a tester or maintenance person.

603.3.5 Direct connections between potable water piping and sewer connected wastes shall not be permitted to exist under any condition with or without backflow protection. Where potable water is discharged to the drainage system, it shall be by means of an approved airgap of two pipe diameters of the supply inlet, but in no case shall the gap be less than 25mm (1 in.). Connections shall be permitted to be made to the inlet side of a trap fixture, provided that an approved vacuum breaker is installed not less than 15cm (6 in.), or the distance according to the device's listing above the flood-level rim of such trapped fixture, so that at no time will any such device be subjected to any back pressure.

603.3.6 Backflow preventers for hot water exceeding 40°C (110°F) shall be a type designed to operate at temperatures exceeding 40°C (110°F) without rendering any portion of the assembly inoperative.

603.3.7 Fixtures, appliances, or appurtenances with integral backflow preventers or integral airgaps manufactured as a unit shall be installed in accordance with their listing requirements and the manufacturer's instructions.

603.3.8 Backflow assemblies and devices shall be protected from mechanical damage, with an outdoor enclosure or by a method acceptable to the Authority Having Jurisdiction.

603.3.9 Drain lines serving backflow devices or assemblies shall be sized in accordance with the discharge rates of the manufacturer's flow charts of such devices or assemblies.

603.3.10 Design and Installation of Plumbing Fixtures. Plumbing fixtures shall be installed such that fixture fittings, complying with the backflow prevention requirements of ASME A112.18.1/CSA B125.1 or equivalent International Standard(s) approved by the Authority Having Jurisdiction, do not have these requirements compromised by the designated fixture fitting mounting surface.

603.4 Specific Requirements.

603.4.1 Water closet and urinal flushometer valves shall be equipped with an atmospheric vacuum breaker. The vacuum breaker shall be installed on the discharge side of the flushometer valve with the critical level not less than 15cm (6 in.), or the distance according to its listing, above the overflow rim of a water closet bowl or the highest part of a urinal.

603.4.2 Water closet and urinal tanks shall be equipped with a fill valve. The fill valve shall be installed with the critical level not less than 25mm (1 in.) above the full opening of the overflow pipe. In cases where the fill valve has no hush tube, the bottom of the water supply inlet shall be installed 25mm (1 in.) above the full opening of the overflow pipe.

603.4.3 Water closet flushometer tanks shall be protected against backflow by an approved backflow prevention assembly, device, or method.

603.4.4 Heat Exchangers.

603.4.4.1 Heat exchangers used for heat transfer, heat recovery, or solar heating shall protect the potable water system from being contaminated by the heat transfer medium. Single-wall heat exchangers used in indirect fired water heaters shall meet the requirements of Section 502.4.2. Double-wall heat