

## Potential Plumbing Violations in Food Service Establishments

Michigan Department of Agriculture, Food and Dairy Division

### Protecting the Water Supply Line

PROBLEM AREA	VIOLATION (Hazard level)	FC Section	CORRECTION(s)	ASSE#'s most common	VALVE DOWNSTREAM
Toilet Tanks	Submerged inlet (high)	5-203.14	Anti-siphon ball cock assembly—1" above overflow	ASSE 1002	
Hose Bib connection	Possible back siphon from hose (high)	5-203.14	Hose bib vacuum breaker	ASSE 1011 or 1052	Not allowed- no back pressure of system pressure
Water inlet Garbage Disposal	Submerged inlet (high)	5-203.14	AVB 6" above flood rim	ASSE 1001	NO valves-manual or solenoid- no back pressure of system pressure
Overhead Spray rinse with valve	When sprayer head below flood rim (high)	5-202.13	Maintain sprayer head >1" above flood rim, or PVB 6"	ASSE 1020 ASSE 1056 unit	OK-Sprayer head is the valve
Sink Faucets Dipper well water inlet	Possible submerged inlet	5-202.13	Air-gap between faucet & flood rim at 2X inlet diameter	Minimum distance 1"	NA
Pressure toilet/urinal	Submerged inlet (high)	5-203.14	AVB downstream of valve	ASSE 1001 ASSE 1037 pressurized flushing devices	Not allowed- no back pressure of system pressure
Trough Urinal	Cross-connection (high)	5-203.14	AVB downstream of valve	ASSE 1001 ASSE 1037 pressurized flushing devices	No- no back pressure of system pressure
Automatic dishwasher/potwasher	Submerged inlet (high)	5-203.14	Provide AVB 6" above highest elevation of detergent spray	ASSE 1001	None downstream of AVB (AVB must be upstream of chemical additives)
Automatic detergent feeders-dishmachine	Submerged inlet (high)	5-203.14	Chemicals feed into the system at a point downstream of the dishmachine AVB	ASSE 1001	Not Allowed- no back pressure of system pressure
Janitor sink	Possible Cross-connection at hose bib (high)	5-203.14	Hose bib vacuum breaker on faucet (or can maintain air-gap at faucet)	ASSE 1052 or 1011	No valves on hose termination
Detergent feeder on faucet-Aspirator device serving 3-comp sinks	Possible back siphon (high)	5-203.14	Approved air-gapped, AVB, hose bib VB upstream of unapproved aspirator device (or use approved dema feeder)	ASSE 1052 ASSE 1011 ASSE 1001 ASSE 1055 unit	Not allowed-no back pressure of system pressure

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Wall mounted chemical feeders with water supplied directly to feeder	Possible back siphon (high)	5-203.14	Air-gap or AVB downstream of valves  (or PVB if valves are downstream)	ASSE 1001 ASSE 1011 ASSE 1052 ASSE 1055 ASSE 1020	Not allowed- no back pressure of system pressure  OK with PVB
Chinese range (wok) Water cooled	Submerged inlet (high)	5-203.14	PVB 6" above range top & upstream of final control valve or RPZ at any level	ASSE 1020 ASSE 1056 ASSE 1013	Allowed-system back pressure Any back pressure
Water inlet to Baine-Marie or Ice machine	Submerged inlet (high)	5-202.13 or 5-202.14	Air-gap between faucet & flood rim PVB (6") or RPZ	ASSE 1020 ASSE 1056 ASSE 1013	Allowed- system back pressure Any back pressure
Water inlet hose with pressure nozzle (wall or ceiling mounted)	Possible back siphon (high)	5-203.14	PVB 6" above highest point of use (7' 6" or > above floor) or RPZ at any level	ASSE 1020 ASSE 1056 ASSE 1013	Allowed-system back pressure Any back pressure
Garbage can washer	Submerged inlet (high)	5-203.14	AVB 30" above base of can cleaner (6" above top of tallest can)	ASSE 1001	Not Allowed- no back pressure of system pressure
Water-cooled refrig. Condenser or air conditioning equip.	Possible back siphon (high)	5-202.13	Provide air-gap at water cooling coil discharge line		
Lawn sprinkler/irrigation	Submerged inlet (high)	5-203.14	PVB For valve controlled sprinkler heads-6" above highest irrigation terminal valve outlet Or AVB 6" above highest irrigation outlet <u>when downstream pressure is relieved by unvalved sprinkler head</u>	ASSE 1020 ASSE 1056  ASSE 1001	Not allowed- no back pressure of system pressure
Boiler treated with chemical additives	Direct connect of water distribution to broiler (high)	5-203.14 & MPC 608.16.2	RPZ on water inlet to boiler or air-gap	ASSE 1013	OK
Untreated boiler such as Espresso machine	Unprotected water connect (Low)	5-203.14 & MPC 608.16.2	Back flow preventer with Intermediate atmospheric vent (Double check with a vent)	ASSE 1012 or 1022	
Beverage Carbonator	Unprotected water supply-possible copper poisoning (Low)	5-203.14 or 5-203.15 & MPC 608.16.1	Double check with atmospheric vent- <u>(no copper or copper alloy internal material)</u> - installed between carbonator & any copper water supply line	ASSE 1022  Pre-1998 ASSE 1012 acceptable with two single checks on carbonator	

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### Protecting Food and Equipment from Waste Drain Line

Problem Area	Violation	FC Section	Correction
Culinary sink, Ice cream dipper well, hot food table, steamer kettle, Baine-Marie	Direct connection to sewer	5-402.11 <sup>©</sup> & MPC 802.1.1	Provide air-gap* between sink drain a sewer line-2X diameter of sink drain line (min 1")
Chinese range	Direct connection to sewer	5-402.11 <sup>©</sup> & MPC 802.1.1	Provide air-gap* between sink drain a sewer line-2X diameter of sink drain line (min 1") [unless built in strainer basket can overflow to floor]
Dishwasher machine after 4/69	Direct connect to sewer	5-402.11	Air break between machine drain line & sewer connection or floor drain within 3' of machine
Ice machine or bins, Water softener discharge	Direct connect to sewer	5-402.11 & MPC 802.1.1 FL 289.6125	Air-gap* between ice machine/bin drain line & sewer (Ice machine drain line may not connect direct with drain line of any other equipment)
Walk-in refrig condenser drain	Direct connect to sewer	5-402.11 & MPC 802.1.1	Air-gap* between condensate discharge line & sewer
Floor drain in walk-in cooler	Direct connect to sewer	5-402.11 & MPC 802.1.2	Provide air-break & back water valve between drain and sewer OR air-gap* between walk-in cooler drain & sewer

\*To satisfy public health concerns, an AIR-GAP is: "The unobstructed vertical distance through the free atmosphere between the outlet of the waste pipe and the flood level rim of the receptacle into which the waste pipe is discharging", as defined in IPC 2003, section 202.

#### Abbreviations:

ASSE American Society of Sanitary Engineers  
 AVB Atmospheric Vacuum Breaker  
 FC Food Code  
 IPC International Plumbing Code  
 PVB Pressure Vacuum Breaker