

Point-of-Use Reverse Osmosis Installations

CROSS CONNECTION CONTROL

Any connection between a drinking water supply and a potential source of contamination is called a cross-connection. Preventing contamination from entering the drinking water supply is cross-connection control. Point-of-use (POU) reverse osmosis (RO) systems must include an air gap or air gap device for cross-connection control. The drawings starting on the next page show examples of correct and incorrect installations of under-sink RO systems using air gaps and air gap devices.

You must include an air gap or air gap device when installing an RO system.

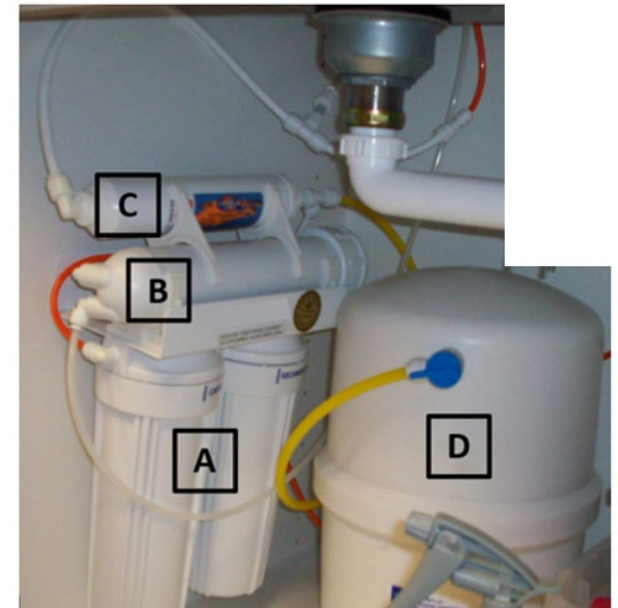
RO systems have waste lines, also called concentrate lines, containing the contaminants removed from the water. **The waste line from a reverse osmosis unit must enter the sewer plumbing through an approved air gap or air gap device. The air gap is a method of cross-connection control and prevents contamination of the drinking water supply.**

If the RO waste line is connected to the trap under a sink, the air gap (or air gap device) must be above the flood level rim of the sink. Another option is to discharge the waste line with an air gap into a receptor such as a floor drain, stand pipe, or laundry tub. Be aware that the installation manual for the RO system may not describe a proper installation meeting the Minnesota Plumbing Code (Minnesota Rules, Chapter 4714).

What does a POU RO system look like?

Pictured on the right, a POU RO system will typically contain the following components, along with some method of sending wastewater into the sewer.

- [A] Carbon and/or sediment pre-filters
- [B] Membrane filter
- [C] Post-filter (optional)
- [D] Pneumatic bladder/storage tank (typically downstream of membrane)



POU RO osmosis installation under a sink with air gap faucet on countertop

POINT-OF-USE REVERSE OSMOSIS INSTALLATIONS

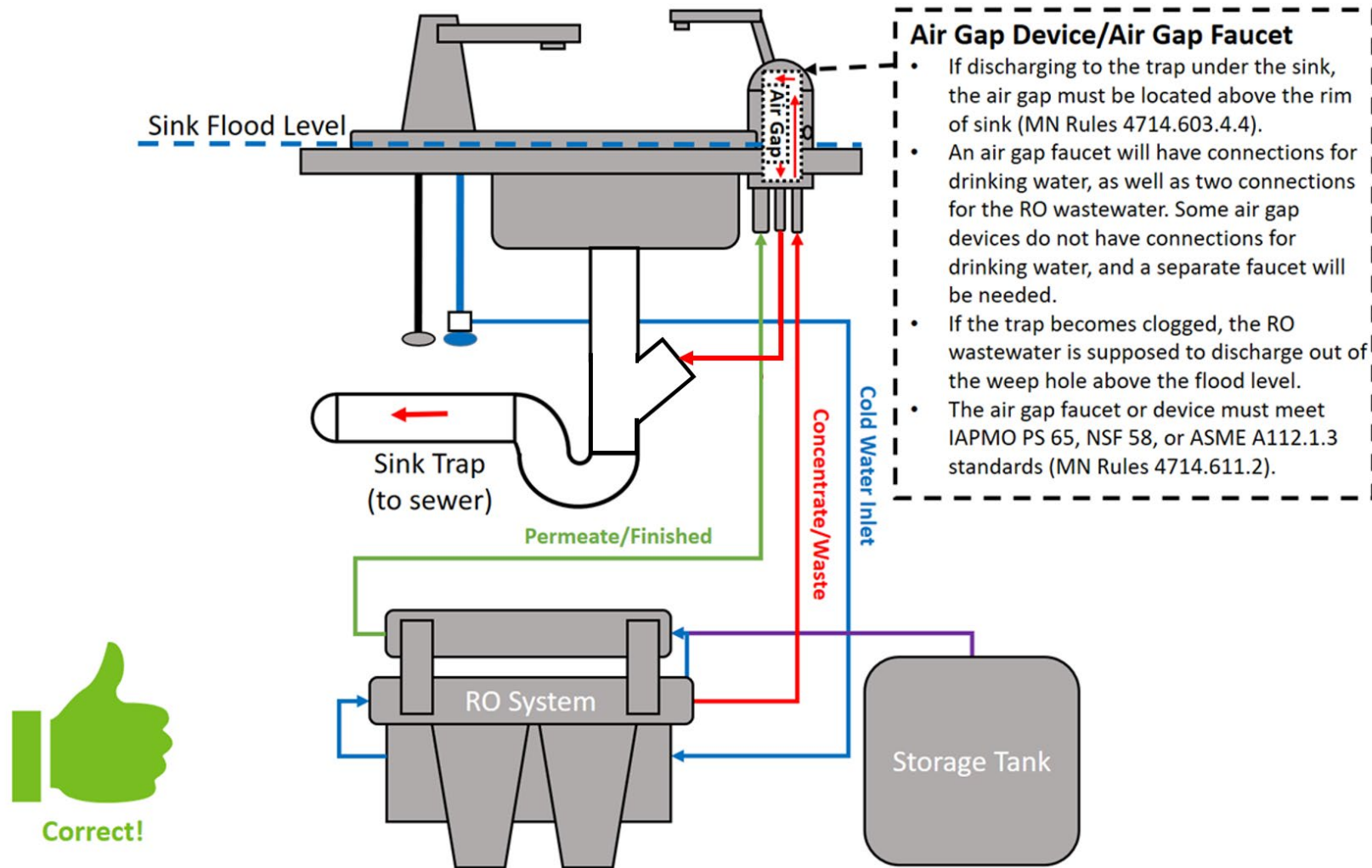


Figure 1: Air Gap Device Installation Example for Waste Connection to Sink Trap

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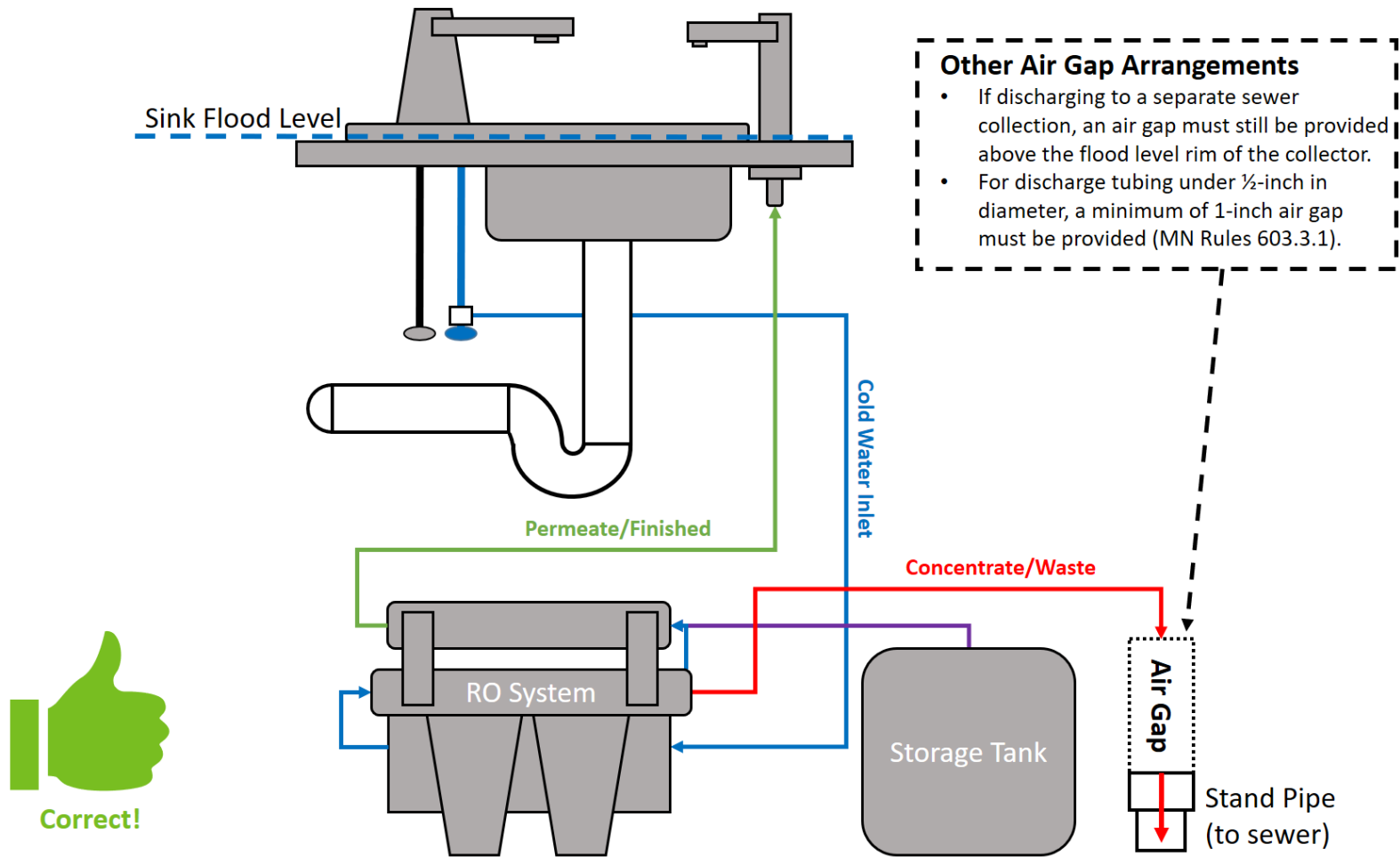


Figure 2: Air Gap Installation Example for Separate Waste Connection

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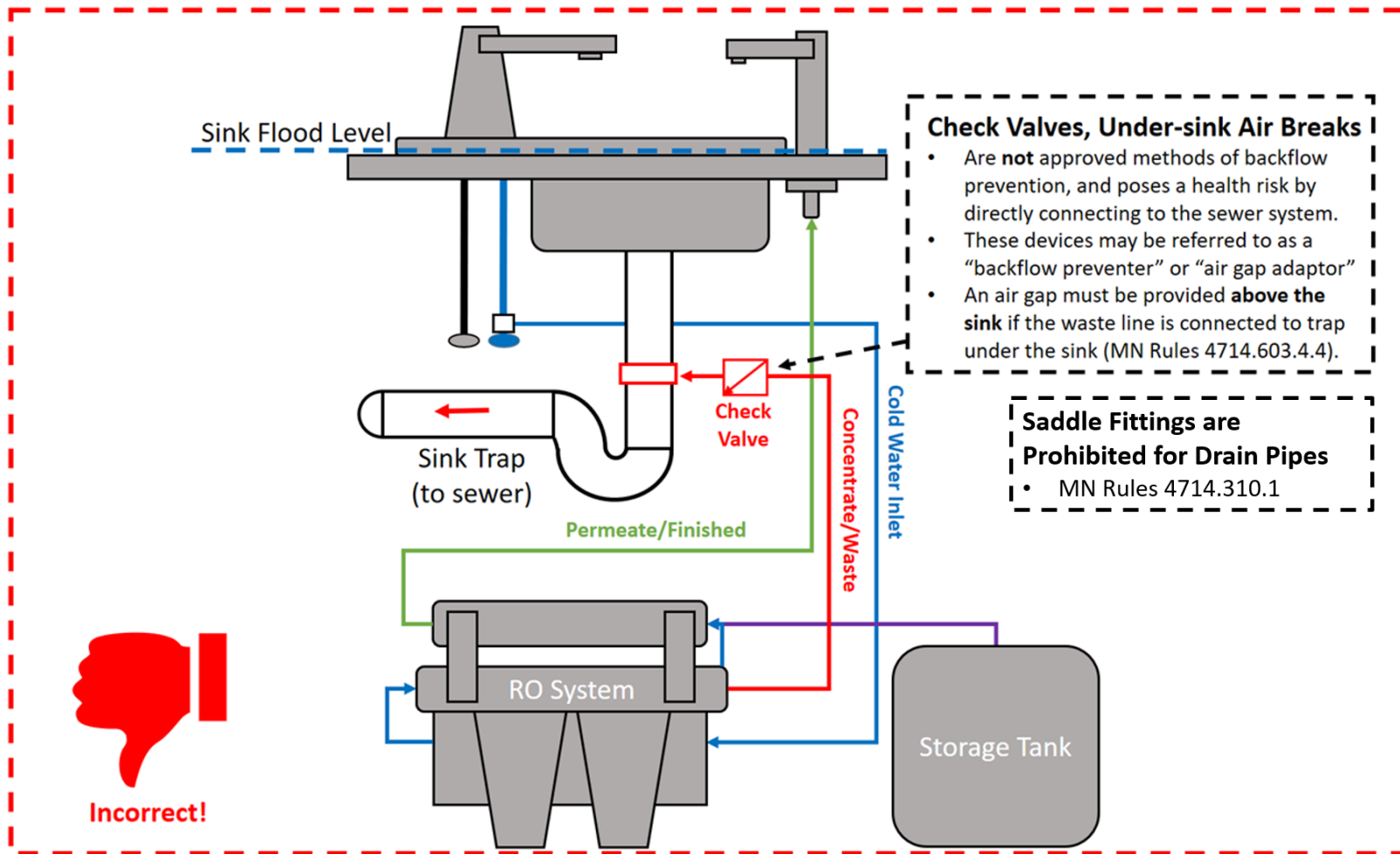


Figure 3: Incorrect Installation with Direct Connection to Sewer