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Episode 9 Installation Errors that Could Have Been Avoided with a Site Survey

Common Residential Installation Problems & Challenges

- **Not enough water to backwash filters.**
 - Examples:
 - Carbon filter backwash rate = 8-10 gallons per square foot.
 - Greensandplus/Pyrolox Advantage backwash rate = 12-15 gallons per square foot.
 - Birm backwash rate = 10-12 gallons per square foot
 - [Backwash Rates](#)
 - How old is the well pump? Should it be replaced?
 - Is the well pump a jet pump? If so, consider replacing. Jet pumps may not be powerful enough.
- **Electrical Issues**
 - Test the circuit with a Voltmeter
 - Be sure you are plugging the system into 120V not a 220V outlet.
 - Does the electrical system look like a spider-web? Is lamp wire coming into the outlet box?
 - Suggest the owner invest in an upgrade before adding equipment.
 - Is the system wired into the light switch? Turn the light on it works, off – it doesn't.
 - Kinetico Systems don't use electric – above does not apply.
- **Inadequate space for the installation**
 - Crawl space installations – Is the system properly designed? Capacity may be compromised because the equipment is smaller than normal.
 - UV light – What is the overall length of the system? Is there enough space for bulb replacement? Bulb replacement requires space double the bulb length.
- **Drain water discharge**
 - Do not discharge to the well pit.
 - Be sure to use an air gap when direct connecting to a septic or drain.
 - An illegal drain is a direct connection with no air gap. Air gap should be 1-1/2 times the diameter of the drainpipe. Check local codes.
- **Drain is too slow – can't accept the volume of water from the backwash.**
 - Don't take their word for it – flush some toilets, run the spigots.
 - Will the water backup in the basement?
 - Will the septic system handle it?
 - Take a walk outside to see if there are ugly gray spots or a bright green swamp over the septic drain field?
- **Do the state/local authorities allow installation of water softeners?**
 - Delaware requires a waiver; check with your local government before installing.
 - Always use a high efficiency demand softener system. No time clock regenerations.



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- **What is the water temperature?**
 - Temperature affects efficiency of Reverse Osmosis.
 - Colder water is denser so there is more lift. More backwash water lift than warm water system.
- **Improper grounding. “City electrician on country water.”**
 - Cable company, telephone company, security company equipment is grounded to the copper pipe sending milliamps in the plumbing resulting in pinholes and leaks.
 - Ground the plumbing to an outdoor ground with a proper pole, hammered into the ground.

Common Commercial/Industrial Installation Problems & Challenges

- **See all of the above.**
- **Will the system fit?**
 - How wide are the mineral and brine tanks? How wide is the doorway, elevator, etc.?
 - Is the ceiling high enough to accommodate the system?
- **Are the drains open and available to use?**
- **Is there enough water and water pressure to operate properly?**
- **If an electrician is required – who will provide?**
- **Is current electrical up to code?**
- **Do you know who are you working with? Is everyone on the customer’s team aware of the scope of work?**
 - Plant manager, boiler operator, purchasing agent, etc.
- **How will the system be transported?**
 - Is it going up a stairway to a mezzanine? How will it be moved, who will move it – customer or vendor (you)?
 - Forklift – for delivery purposes and/or installation/rebed purposes.
 - Is a forklift available for your use?
 - Who is authorized to drive it?
 - Will you have to wait, or will it be ready for use?
 - Do you have to rent a forklift?
- **What are the safety regulations?**
 - Will there be a safety meeting at the start of the job? How long will it be?
 - Clothing – long sleeves, no shorts, steel toed shoes, etc.
 - Facial hair allowed?
 - Safety meeting prior to job start.
 - Lock Out, Tag Out
 - Confined Space
- **Is the facility union or non-union?**
- **Is there adequate parking? Sites may have restricted areas.**



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Extra Information

[Delaware Water Softener Waiver](#)

[Backwash Rates](#)

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