Water Heater Design That Heats and Sends Cold Water Back After Vacuuming

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Purpose: Design a vacuum unit suitable for integration into multiple water heating systems to prevent the waste of cold water that comes first when we want to use hot water in the taps in the houses in the project Procedure: The study is based on the principle of vacuuming the cold water that will be wasted into the combi or external unit by means of a vacuum system to be positioned inside or outside the combi and then re-heating this water 2 and putting it back into the system. In addition, questions such as how long it takes for the water to be pumped back as hot water and whether all the water can be saved have been answered Results: In the calculations made with Hagen Pouselli law, it has been calculated that the water can be completely vacuumed from a 9-meter-long water line to the heater in 7.1 seconds with a vacuuming power of 4 bar. Since a similar time is required for the water to be returned to the line, the user has observed that the water flows from the tap at the desired temperature within an average of 15 seconds. Results: Unfortunately, it has been seen in the studies that the cold water remaining in the installation cannot be completely vacuumed.

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