



# Securing Your Water Heater

## Protected source of water – or a puddle

Fresh water after a disaster may be as close as your water heater – provided, of course, that it remains standing upright. A typical water heater holds 30 to 50 gallons of water.

However, this supply of water is extremely vulnerable to the ground undulation (swells and rolls) and ground acceleration of earthquakes, causing them to tip over.

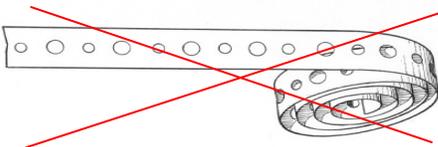
You can protect this valuable resource by securing your water heater to the wall studs.

## Changes to strapping recommendations

Experts have modified the recommended procedure for strapping water heaters because many tanks burst through their strapping in both the 1989 Loma Prieta (San Francisco) and the 1994 Northridge (Los Angeles) earthquakes. Experts recommend these two important changes:

1. Secure both the top and the bottom, rather than just the top or just the middle, of the hot water tank.
2. Use heavy-gauge metal strapping rather than plumber's tape. Many water heaters in both the 1989 and the 1994 earthquakes burst through the plumber's tape that was intended to keep them secure. Plumber's tape has been found to be too brittle to be effective.

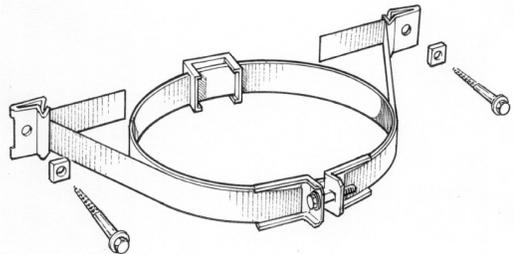
**Do NOT use this. This is plumber's tape.**



**Use heavy-gauge strapping instead**

## When securing your hot water tank

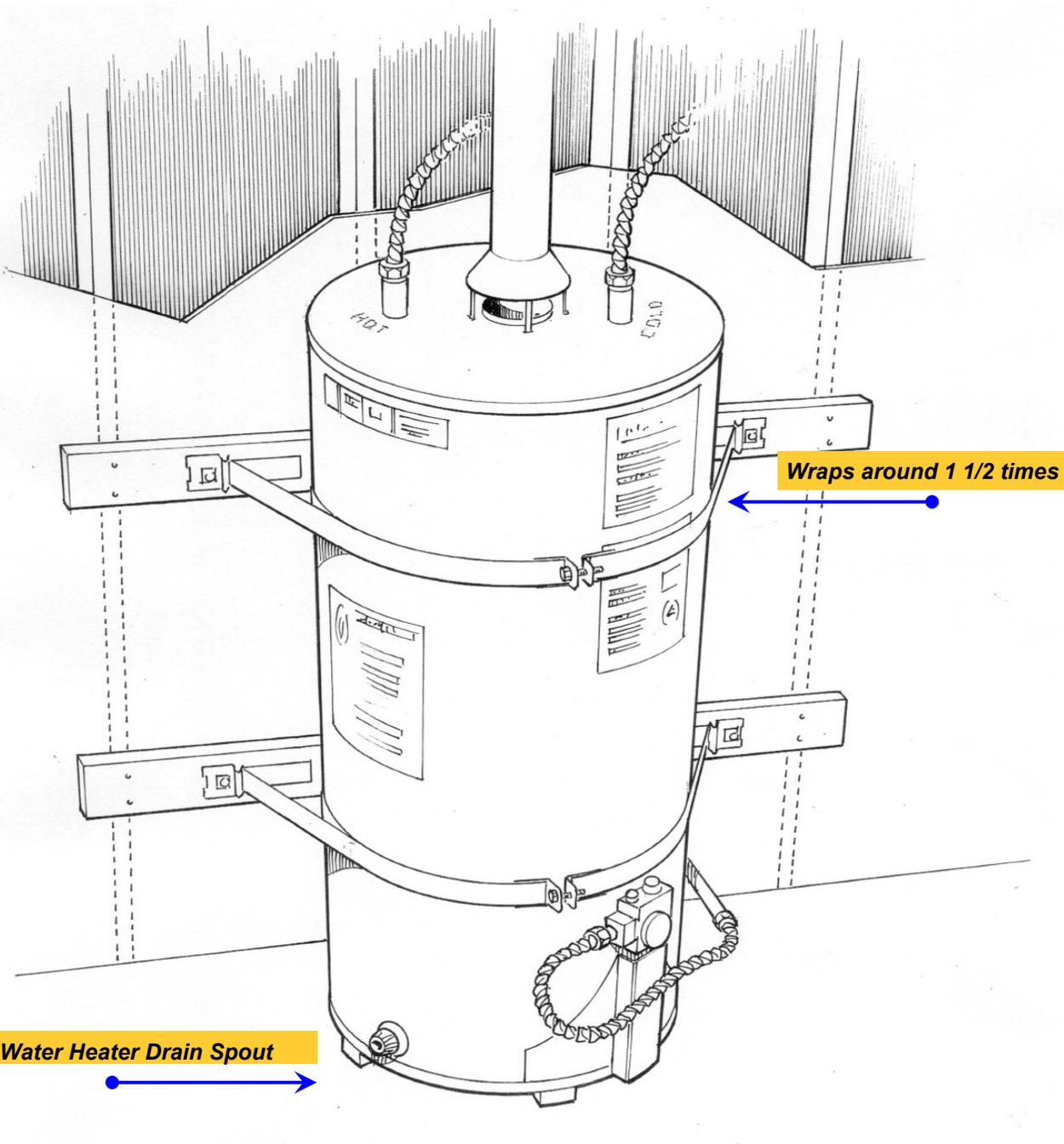
- There should be very little space between the water heater and the wall. If there is more than 1 or 2 inches, attach a wooden block to the wall studs with long lag screws. The purpose is to prevent the heater from tipping backwards.
- Wrap the heavy-gauge metal strapping 1 1/2 times around the tank. Start by placing the strapping at the back of the tank. Bring it to the front and then take it back to the wall
- Secure this strapping to the wall studs or the wood block using several 1/4" x 3" or longer lag screws *with oversized washers*. If you are securing it directly into concrete, use 1/4" expansion bolts in place of the screws.
- Replace all copper and metal piping with flexible natural gas and water line connectors.



**Commercially available kits like this one come complete with the strapping, lag screws, washers, spacers, and tension bolts. These kits can be purchased at many local hardware stores.**



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Water heaters are an excellent supply of emergency water. Make sure the electricity or natural gas is shut off before opening the drain. The water can be accessed from the drain spout at the bottom of the tank. This is made easier by connecting a garden hose to the drain spout. Open a faucet somewhere in the house to allow the water to drain easier.

