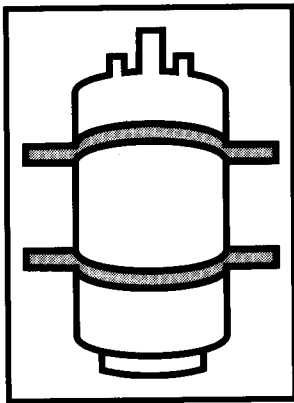


ESP FOCUS



BRACE WATER HEATER



WHY

An unbraced water heater can cause a fire!

Past earthquakes have demonstrated the importance of bracing water heaters. Such action can prevent your water heater from toppling over during an earthquake, rupturing the gas line and possibly causing a fire. Bracing your water heater can also preserve a valuable source of emergency drinking water.

Residential water heaters hold 30 to 40 gallons, a supply that can be lost if your water heater falls. Be sure to have a tool to siphon water from the water heater in an emergency. Fitting the water heater and other gas appliances with flexible supply lines can also reduce the threat of an explosion and a fire due to gas leaks. Contact a licensed plumber to install flexible lines if your appliances are not equipped with them.



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N O V E M B E R

HOW

The following method for bracing residential water heaters located in corners using conduit is recommended by the Division of the State Architect (DSA). Instructions for other methods are available through DSA.

1. Mark the water heater 9" down from the top and approximately 4" up from the top of the controls. Transfer these marks to the wall. Locate wood studs in the wall on both sides of the water heater (see illustration).

2. Using a stud finder or another appropriate method, locate the wall studs that meet the minimum and maximum criteria shown on the illustration.

3. Transfer marks on the water heater horizontally to the adjacent wall where the stud identified in step 2 was located.

4. Drill a 3/16" diameter, 3" deep pilot hole at the locations for the 1/4" diameter by 3 1/2" lag screws.

5. Measure around the water tank and add 2" to the measurement. Cut two pieces of 3/4" x 24 gauge perforated steel plumbers tape to this length. Place a bolt with washer through the end hole of one end and bent out 90 degrees as close to the edge of the washer as possible. Most plumbers tape comes with 1/4" diameter holes 1" apart with 1/8" diameter holes in between. The tape can be easily broken at the smaller holes by grabbing the tape with pliers and bending several times.

6. Place tape around the tank and place bolt with washer through the nearest hole in the end of the tape, place a washer and nut on the bolt and tighten. The tape should be tight. If the tape is not tight, remove the bolt, place it through the next adjacent 1/4" diameter hole and tighten.

7. Using a straight stick, place the end at the hole in wall with the side of the stick against the side of the tape around the tank. Measure the distance from where the stick touches the water heater to the hole in the wall. Add 1" to these measurements and cut 1/2" diameter conduit to this length. Repeat this for each piece of conduit. At the conduit toward the back, you will not be able to use the stick as this will probably place the connection too far to the back to be workable.

8. Using a hammer or vice, flatten 1" at each end of the 4 pieces. Be sure to flatten both ends of the conduit in the same plane.

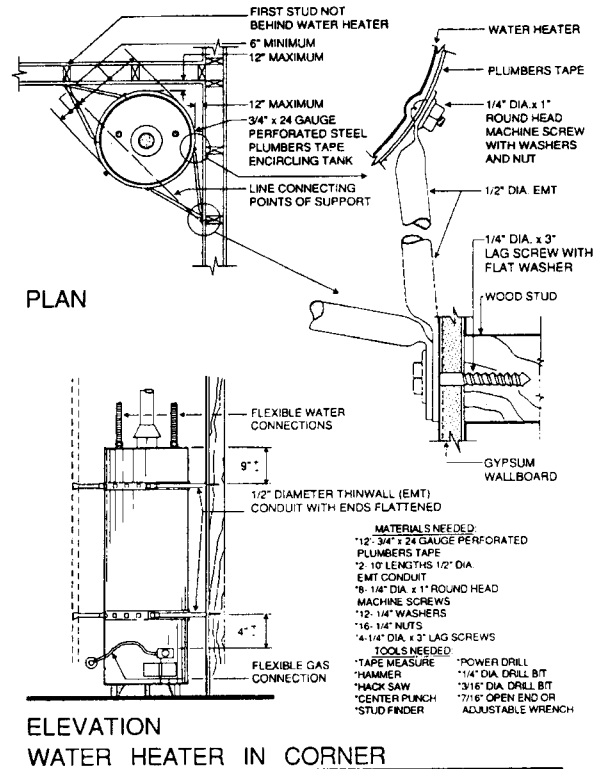
9. Drill a hole in one end of each conduit approximately 1/2" from each end. Measure 1" in from each end and bend up at approximately 45 degrees. This angle will have to be corrected slightly as the work progresses. Hold conduit on the wall with the hole in the conduit over hole in the wall and mark the outer end at one of the holes in the plumbers tape. Mark holes in the tape and on the tank and conduit. Take down conduit and drill a hole at the mark for the bolt through the flattened end of the conduit. Repeat for all other pieces of conduit.

10. Loosen the strap around the tank and place a bolt with a washer from the inside through the hole in the strap at all four locations. Tighten the tape around the tank so that the

bolts are at the marks on the tank. Positioning of the tape can be difficult, and it may be easier to do one side of the tank at a time. Place conduit on bolt protruding from the strap and place a washer and nut on the bolt and tighten. (A 4d finish nail inserted in the slot in the bolt will prevent the bolt from turning.) Position the opposite end at the hole in the wall and insert lag screw with washer and tighten. Do not drive lag screw with hammer.

11. Repeat the above procedure for the rest of the conduits. (See illustration.)

NOTE: The 1/4" x 1" bolts referred to above are called 1/4" x 1" round head machine screws with nut.



This action sheet is produced as part of the Earthquake Survival Program (ESP). ESP is an awareness campaign designed to increase earthquake preparedness at home and work. ESP was developed by the County of Los Angeles. The Governor's Office of Emergency Services (OES) and representatives of Imperial, Inyo, Kern, Los Angeles, Mono, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara and Ventura counties assist in development of campaign materials and in coordination of the campaign.

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