



# CITY OF MILPITAS

## BUILDING AND SAFETY DEPARTMENT

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### Earthquake Preparedness Tips Water Heater Strapping

In an earthquake, the shaking of a home or apartment can cause damage to gas piping and appliances. This damage can result in releases of natural gas that can lead to fires or even explosions. Structural weaknesses, the absence of appliance anchors, seismic activity, and a lack of flexible pipe connectors can all contribute to a greater possibility of natural gas leaks. This problem is so prevalent that natural gas contributes to one of every four fires after an earthquake.

#### **Reduce the Possibility of Gas Leaks**

An effective way of **REDUCING** many natural gas leaks in the first place is to make sure that your water heater and all other appliances using natural gas are properly anchored, have flexible pipe connections, and automatic gas shut-off devices. This handout addresses strapping of your water heater. See the City's separate handout on Automatic Gas Shut-off Devices.

The easiest way to brace your water heater is to purchase and install a pre-approved bracing system available at most hardware and home improvement stores. Make sure you install the system per the manufacturer's instructions and the instructions on page two of this handout.



Water heaters can also be braced using plumber's tape and EMT electrical conduit. Attached are installation instructions for these bracing methods published by the Division of the State Architect.

EXPANSION TANK IF WATER SYSTEM IS CLOSED

HOT & COLD WATER PIPING: INSTALL FLEXIBLE CONNECTORS TO CONNECT TO HEATER. INSULATE EXPOSED PIPING (KEEP 6" AWAY FROM VENT COLLAR). BOND WITH #6 COPPER.

COLD WATER SHUT-OFF GATE OR BALL VALVE

UNION OR THREADED CONNECTION ON HOT AND COLD PIPES WITHIN 12" OF HEATER

SOLID BLOCKING

EXCESS FLOW GAS SHUT-OFF DEVICE AFTER SHUT-OFF VALVE

18" min TO FLAME IN GARAGE, 3" ELSEWHERE

6" min  
24" max

SEDIMENT TRAP

FLEXIBLE CONNECTOR

LISTED & APPROVED VENT CAP

8' min

FLASHING

12" min\*

\*ADDITIONAL HEIGHT REQ'D IF OVER 6:12 PITCH

TYPE "B" VENT. CLEARANCE TO COMBUSTIBLES PER LISTING

5' min

VENT CONNECTOR 6" MIN. TO COMBUSTIBLES

12" min

COMBUSTION AIR VENT

SEISMIC STRAPS PLACED IN UPPER AND LOWER 1/3. LOWER STRAP MIN. 4" ABOVE CONTROLS

T&P DRAIN, TERMINATE IN GARAGE OR BUILDING EXTERIOR

COMBUSTION AIR VENT

HEATER IN GARAGE WILL REQUIRE PROTECTIVE BOLLARDS IF IT MIGHT BE DAMAGED BY VEHICLE. WATERTIGHT PAN UNDERNEATH WITH MIN. 3/4" DRAIN TO APPROVED LOCATION REQUIRED IF INSTALLED ON WOOD FLOOR, IN CEILING OR IN ATTIC.

## STANDARD WATER HEATER INSTALLATION