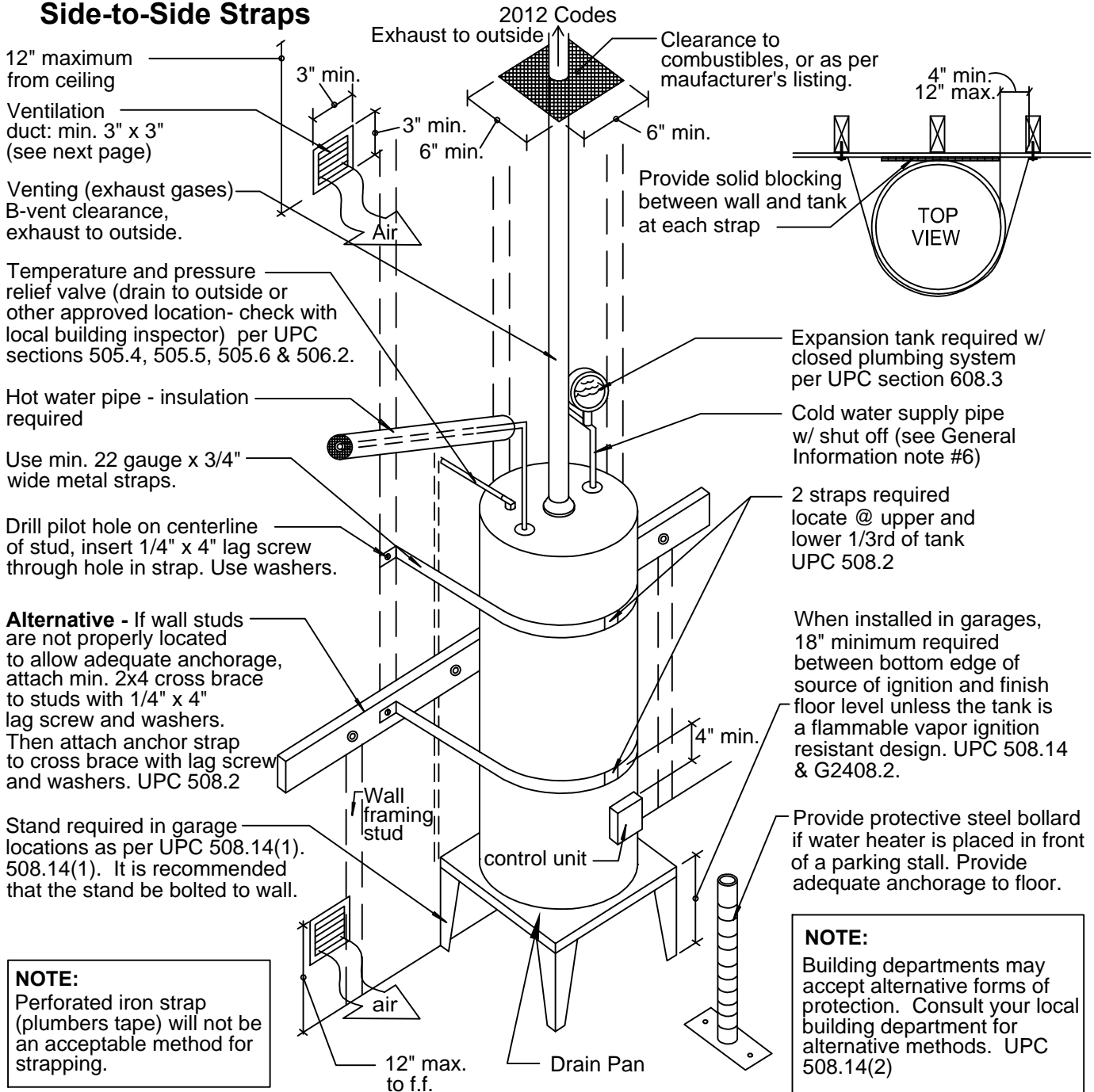


Side-to-Side Straps



GENERAL INFORMATION:

- 2009 UPC requires that all water heaters be strapped to resist motion during an earthquake. UPC 508.2 states that water heaters must be strapped in at least two places, upper and lower 1/3 rd.
- Lag screws not less than 1/4" in diameter with at least 1-1/2" of thread penetration must be used to anchor the restraints to the wall. Washers must be used.
- 2009 UPC requires liquid and past fluxes for soldering applications of copper and copper alloy tube be manufactured to meet the ASTM B 813 standards.
- It is the responsibility of the installer to schedule inspections.
- For combustion air requirements, see page 2.
- Unless built into the appliance from the factory, install a vacuum relief valve in the cold water supply line above the highest point of the tank. No valve shall be placed between the relief valve and the tank.

**Size of Combustion Air Openings or Ducts for Gas
or Liquid-burning Water Heaters**

Buildings of Ordinary Tightness Conditions	Size of Opening or Duct
Appliance in unconfined space	May rely on infiltration alone.
Appliance in confined space: 1. All air from inside building	Provide two openings into enclosure (1) high, (1) low, each having 1 sq. in. per 1,000 btu/h input freely communicating with other unconfined interior spaces. Minimum 100 sq. in. each opening.
2. Part of air from inside building	Provide two openings into enclosure from other freely communicating unconfined space, each having an area of 100 sq. in. plus one duct or plenum opening to outdoors having an area of 1 sq. in. per 5,000 btu/h input rating.
3. All air from outdoors: obtain from outdoors or from space freely communicating from outdoors.	Use any methods listed for confined space in unusually tight construction.

Buildings of Unusually Tight Construction. Appliance in Unconfined Space.	Size of Opening or Duct
Obtain combustion air from outdoors or from space freely communicating with outdoors.	Provide two openings, each having minimum 1 sq. in. per 1,000 btu/h and (1) to outdoors of 1 sq. in. per 5,000 btu/h. Section 705.
Appliance in <u>confined space</u> : obtain combustion air from outdoors or from space freely communicating with outdoors.	Use any methods listed for confined space in unusually tight construction. <ol style="list-style-type: none"> 1. Provide two vertical ducts or plenums: 1 sq. in. per 4,000 btu/h input each. 2. Provide two horizontal ducts or plenums: 1 sq. in. per 2,000 btu/h input each. 3. Provide two openings in an exterior wall of the enclosure: 1 sq. in. per 4,000 btu/h input each. 4. Provide 1 ceiling opening to ventilated attic and 1 vertical duct to attic: 1 sq. in. per 4,000 btu/h input each. 5. Provide 1 opening 1 enclosure ceiling to ventilated attic and 1 opening to ventilated crawl space: 1 sq. in. per 4,000 btu/h input each.