

Should Plastic Pipe & Fittings Be Used to Vent Combustion Gasses?

Use of plastic pipe to vent combustion gasses produced by water and space heating equipment has become common practice among plumbers and builders. Some equipment manufacturers expressly recommend this practice. Occasionally, Charlotte Pipe is asked for its position on the use of plastic pipe and fitting products for this application.

Industry Standards

A variety of organizations produce standards for the construction industry. The best known of these organizations is the American Society for Testing and Materials International (ASTM). ASTM standards are developed by committees of industry experts and approved by the ASTM organization through a rigorous consensus process. These standards specify dimensional, performance and test requirements for various materials, including piping products. Manufacturers like Charlotte Pipe produce products that conform to these published standards.

None of these standards addresses the use of plastic piping to vent combustion gasses.

Equipment Manufacturers

Manufacturers produce a wide variety of gas-fired water and space heating equipment. These manufacturers may specify plastic piping for venting of combustion gasses, citing these ASTM and other standards within their technical literature:

- ASTM D 2241 Specification for PVC Pressure Rated Pipe
- ASTM D 1785 Specification for PVC Plastic Pipe, Schedules 40, 80 and 120.
- ASTM F 891 Specification for Coextruded PVC Plastic Pipe With a Cellular Core.
- ASTM F 441 Specification for CPVC Plastic Pipe, Schedules 40 and 80.
- ASTM D 2661 Specification for ABS Schedule 40 Plastic Drain, Waste and Vent Pipe and Fittings.
- ASTM D 2665 Specification for PVC Plastic Drain, Waste and Vent Pipe and Fittings.
- ASTM F 438 Specification for Socket Type CPVC Plastic Fittings, Schedule 40.
- ASTM D 3311 Specification for Drain, Waste and Vent Fitting Patterns.
- ASTM F 628 Specification for ABS Schedule 40 Plastic Drain, Waste and Vent Pipe with a Cellular Core.

Although these standards specify dimensional, performance and test requirements for plumbing and fluid handling applications, and are often used to refer to or describe a particular type of pipe, they **do not** address venting of combustion gasses. References to these standards by water heater or space heating equipment manufacturers should not be viewed as acceptance or approval by the ASTM for these applications.

Conclusion

At present there is little data available on the safety or durability of plastic pipe products used to vent combustion gasses. The ASTM has not addressed this application, and the available data is insufficient for the plastic pipe and fitting industry to develop consensus specifications or guidelines. Equipment manufacturers are most knowledgeable about their own products and are best equipped to determine how their gas-fired heating equipment should be vented. Accordingly, Charlotte Pipe recommends that inquiries about the suitability of plastic piping systems to vent combustion gasses be directed to the manufacturer of the water or space heating equipment being installed.