



**Summary of Substantive Changes  
between the updates dated August 23, 2011 and January 13, 2012 of  
UL 1795, “Standard for Hydromassage Bathtubs”  
(4th edition dated August 5, 2009)**

**Presented to the IAPMO Standards Review Committee on February 13, 2012**

**General:** This revision of UL 1795 was issued to add requirements for ozone generators. The technical changes might have an impact on current listings that have ozone generators.

Section 42A, Ozone Generators: The following requirements were added:

Section 42A.1: *An ozone generator provided shall inject ozone into the water circulating system without ozone passing through the pump, heater, or current collectors, and without ozone contacting any safety circuit component or sensing device, or any check valve that is not an integral part of the ozone system.*

Section 42A.2: *A hydromassage bathtub with an integral ozone generator shall not offgas more than 0.1 parts ozone per million parts air (PPM) averaged over 8 hours when tested as specified in the Ozone Offgas Test, Section 56A.*

Section 42A.3: *The maximum transitory ozone concentration shall not exceed 0.3 parts ozone per million parts air (PPM) when averaged over any 13 consecutive readings and shall not exceed 0.8 PPM when averaged over any two consecutive readings.*

Section 56A, Ozone Offgas Test: The following test was added:

Section 56A.1: *The ozone offgas test is to be conducted in a smoke-free, draft-free, non-ventilated, relatively airtight insulated room which is maintained at 50 percent relative humidity while at 20 – 30°C (68 – 86°F) for 30 minutes prior to the start of the test. The test room is to be the smallest recommended width as specified in the Installation Instructions for the bathtub. The length of the room is to be 8 feet (2.4 m). The ceiling height is to be 8 feet (2.4 m). All interior surfaces are to be covered with a material that does not react with ozone. The door to the test room is to be sealed during the test.*

Section 56A.2: *The tub to be tested is to be located at one end of the test room and filled with tap water to the level recommended by the manufacturer. A fresh water sample is to be used for each test.*

Section 56A.3: *Ozone test probes are to be located above any inlet that admits ozone into the tub, 6 inches (152 mm) above the water surface and 6 inches from the side of the tub. One additional test probe is to be located below the ozone generator. When the tub inlets that admit ozone cannot be determined by examination, then the tub and the ozone generator are to be operated to maximize ozone offgas and a sampling of all tub inlets is to be made the day prior to the ozone offgas test.*



Section 56A.4 Ozone offgas is to be measured using an ozone monitor that takes at least 1 measurement every 30 – 45 seconds with a minimum range of 0.03 – 5.0 parts ozone per million parts air (PPM) increments with an accuracy within  $\pm 5$  percent. All test equipment is to be located outside the test room and the exhaust from the monitor (the tested air sample) is to be plumbed back into the test room. All plumbing is to maintain the airtight integrity of the test room. Prior to each test, the ozone monitor is to be purged and calibrated according to the monitor manufacturer's instructions.

Section 56A.5 Ozone measurements are to be taken 5 minutes before the test and then continuously until 5 minutes after the test. During the test, the tub and the ozone generator are to be operated to maximize ozone offgas. Operation is to continue until ozone measurements stabilize at all test probe locations. Stabilization occurs when there is no increase in the average ozone level during 3 successive intervals of not less than 10 percent of the previous elapsed test duration, except that the first interval is to be no less than 120 minutes. Measurements are to continue for 5 minutes after the ozone generator is turned off. An extrapolated 8-hour average of the ozone concentration is to be calculated from the measurements taken with the ozone generator operating. The average ozone level measured during the 5 minutes before the test was started (background) is to be subtracted from the results.