

Standard Information

Standard Number: UL 1453

Standard Name: Electric Booster and Commercial Storage Tank Water Heaters

Standard Edition and Issue Date: 6th Edition Dated March 29, 2016

Date of Revision: March 9, 2017

Date of Previous Revision of Standard: 6th Edition Dated March 29, 2016

Effective Date of New/Revised Requirements

Effective Date: April 6, 2018

Impact, Overview, and Action Required

Impact Statement: A review of all Listing Reports is necessary to determine which products comply with new/revised requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.

Overview of Changes: This revision of UL 1453 is being issued to revise polymeric material and thermal insulation requirements and to add requirements for outdoor-use equipment. Specific details of new/revised requirements are found in table below.

If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).

Client Action Required:

Information – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revised paragraphs noted in the attached or explain why these new/revised requirements do not apply to your product (s).

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.

Description of New/Revised Technical Requirements

Clause	Verdict	Comment
6.1.6		<p>New clause added;</p> <p>An outer jacket of polymeric material that also encloses insulated or uninsulated current-carrying parts shall comply with the enclosure requirements in Tables 6.3 and 6.4.</p> <p><i>Exception: An outer jacket is required to comply only with the requirements in Table 6.5, when the outer jacket:</i></p> <p><i>a) Does not enclose any current-carrying parts; or</i></p> <p><i>b) Encloses parts that are completely covered with minimum 1/32 inch (0.8 mm) thick electrical insulation.</i></p>
Tables 6.1 & 6.2	Info	Note "d" was added stating, "Sheet steel for an enclosure intended for outdoor use shall comply with the requirements for outdoor use equipment."
Tables 6.3, 6.4 & 6.5	Info	New tables added for polymeric enclosures.
20.2		<p>Additions to existing requirements are <u>underlined</u> and deletions are shown lined out below.</p> <p>Synthetic Polymeric foam</p>
20.2.1		<p>If synthetic <u>polymeric</u> foam is used as thermal insulation:</p> <p>a) The foam shall be completely enclosed by metal having a thickness as indicated in Tables 6.1 and 6.2 <u>an outer jacket in accordance with 6.1.5 or 6.1.6, as applicable. If the foam has a flame spread classification greater than 25 as shown by the Standard Test for Surface Burning Characteristics of Building Materials, UL 723, it shall be completely enclosed by metal in accordance with 6.1.5;</u></p> <p>b) All enclosure fastening means shall be mechanically secured;</p> <p>c) The foam shall not be in contact with the internal wiring of the water heater; and</p> <p>d) The foam shall be located no less than 2 inches (50.8 mm) from any electrical component, such as a thermostat or heating element.; <u>and</u></p> <p>e) The foam shall be rated for the temperatures involved as specified in the Standard for <u>Polymeric Materials - Long Term Property Evaluations, UL 746B.</u></p>

Clause	Verdict	Comment
		<p><i>Exception No. 1: With respect to (a), foam that has a flame spread classification of 25 or less as shown by the Standard Test for Surface Burning Characteristics of Building Materials, UL 723, is not required to be enclosed in metal. <u>As an alternative to (a), polyvinyl chloride, polyethylene, or the equivalent shall be used in place of enclosure metal at a plumbing connection when the opening at the connection does not exceed three times the diameter of the pipe.</u></i></p> <p><i>Exception No. 2: With respect to (c), the foam may be in contact with internal wiring if <u>shall not be in contact with internal wiring unless the entrance and exit wiring holes are sealed with PVC grommets or sealing compound.</u></i></p> <p><i>Exception No. 3: If the entrance and exit wiring holes are not sealed as specified in Exception No. 2, the foam may be in contact with internal wiring and the electrical components may be located less than 2 inches from the foam if no fire occurs as a result of the electrical disturbance test described in Section 53, Electrical Disturbance Evaluation of Foam Thermal Insulation. <u>With regard to (c) and (d), the foam shall not be in contact with internal wiring and the electrical components shall not be located less than 2 inches from the foam unless:</u></i></p> <p style="padding-left: 40px;"><i><u>a) The foam has a flame class rating of HF-1 or HF-2 in accordance with the Appendix A included with the Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, UL 94; or</u></i></p> <p style="padding-left: 40px;"><i><u>b) No fire occurs as a result of the electrical disturbance test described in Section 53, Electrical Disturbance Evaluation of Foam Thermal Insulation.</u></i></p> <p><i>Exception No. 4: With regard to (e), a foam is not required to be temperature rated as specified in UL 746B if it is not subjected to temperatures exceeding the temperature requirements documented by the foam manufacturer.</i></p>
60-64		<p>New section added;</p> <p>OUTDOOR-USE EQUIPMENT</p> <p>This new section includes new construction and test requirements for all outdoor-use equipment (see standard for section details).</p>
		<p>CUSTOMERS PLEASE NOTE: This Table and column "Verdict" can be used in determining how your current or future production is or will be in compliance with new/revised requirements.</p>