New Protocols Improve Consistency in Materials Testing for Portable Electronics

W. L. Gore & Associates has developed new testing protocols that improve reliability of acoustic vents used for water and particulate protection in portable electronic devices. These new protocols more effectively match the environmental conditions to which the venting materials are exposed, which results in consistent testing results.

The current testing outlined in the International Standard IEC60529 only evaluates the performance of acoustic vents after the device is completely designed and assembled. While developing audio devices, engineers often want to evaluate the performance of different materials and housing designs to determine what combination is best for their specific applications. Two of Gore's new protocols address this issue — the first evaluates a material's ability to capture particles of different sizes at different airflow rates, and the second categorizes spray-resistant materials consistently.

In addition, some of the specifications in the IEC60529 standard's IPx4 protocol for splash protection can be broadly interpreted, which results in inconsistent test results. Gore's third protocol defines specific parameters within the standard's showerhead protocol to ensure consistent results, parameters including the showerhead's position and movement, the distance between the test sample and showerhead, and the criteria for passing the test.

Finally, Gore developed a protocol for shallow immersion because the IEC60529's IPx7 specifications did not address situations common to portable devices, such as being dropped into a shallow puddle or basin briefly. Gore's protocol requires that the device be dropped a distance of 25 inches into three inches of water and removed after five seconds.

Cherish Wilford, Gore's application engineer for portable electronics, emphasized that the IEC60529 standard was originally developed for large, permanently installed enclosures with electronic voltage not exceeding 72.5 kilovolts. "Now that electronics are portable, the changes in surrounding environmental conditions can directly affect the vent's performance," she explained. "We developed these testing protocols to align with our core value of fitness for use, which means ensuring that our products are engineered to meet or exceed the needs of our customers' applications. These protocols allow us to collaborate with our customers during their design process to ensure that our venting materials provide the appropriate protection without compromising sound quality."

These testing protocols will be discussed at the International CTIA Wireless 2012 conference during the QuickHits1 session. For detailed information about the testing

methods, download the white paper, Improved Consistency in Testing for Water and Particulate Protection, at www.gore.com/watertest [1]. For more information about Gore's full line of venting products, visit www.gore.com/portableelectronics [2] or stop by Gore's booth #4470 at CTIA.

Posted by Janine E. Mooney, Editor

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Links:
[1] http://www.gore.com/watertest
[2] http://www.gore.com/portableelectronics