



Putting Wristband Durability to the Test

Z-BAND® DIRECT AND ULTRASOFT WRISTBANDS EMERGE AS CLEAR WINNERS

Automated patient identification is essential to protecting the well-being of patients and the integrity of the healthcare system. Wristbands are a vital part of this process. They must be durable enough to withstand the rigors of the busy hospital environment as well as repeated exposure to hand sanitizers that can degrade readability. Unfortunately, not all wristbands are of equal quality.

At Zebra, patient identification wristbands undergo severe stress testing where resistance to a wide range of substances, including isopropyl and rubbing alcohol, water and hand sanitizers are measured. In addition, our wristbands are tested by an independent laboratory to measure quality and resistance to hand sanitizers against competitive offerings.

This document details the results of an independent laboratory durability testing completed on Zebra's Z-Band Direct and Z-Band UltraSoft wristbands and a leading competitor's wristband. The tests reveal that Zebra® Z-Band Direct and Z-Band UltraSoft wristbands are more durable and consistently outperform the leading competitor under repeated exposure to a wide range of hand sanitizers.

6x

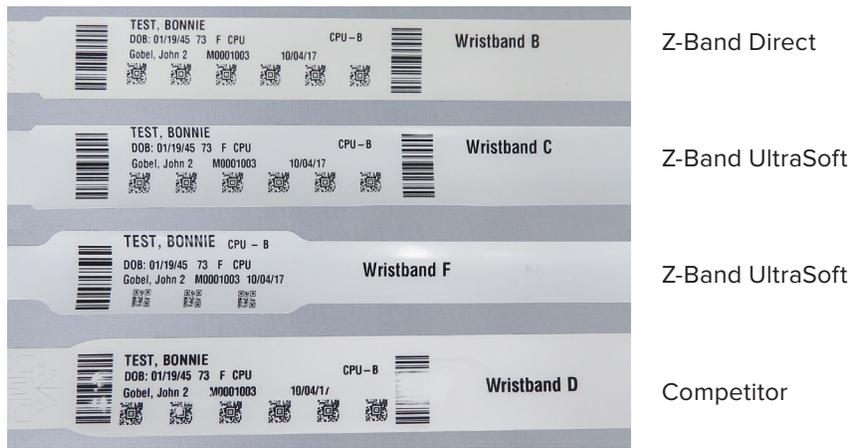
Z-Band Direct wristbands are 6 times more durable against Purell Waterless Hand Sanitizer than the leading competitor.

Cycles to Failure

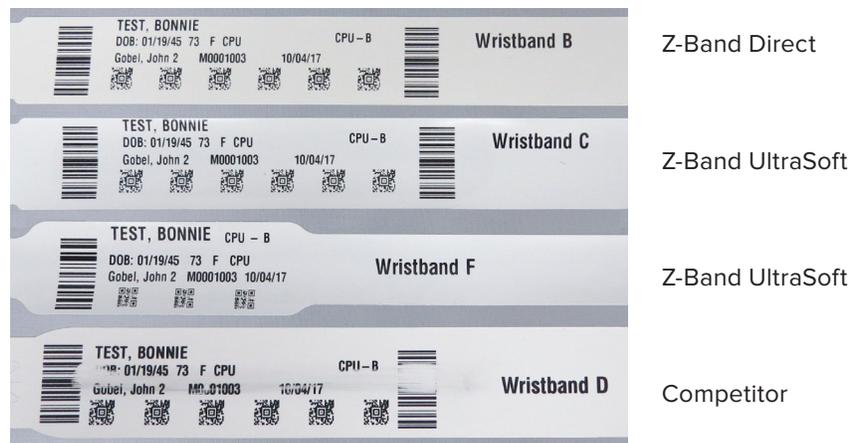
	Z-Band Direct	Z-Band UltraSoft	Leading Competitor
3M Avagard	70 Cycles	60 Cycles	20 Cycles
Ecolab SkinMan	270 Cycles	80 Cycles	40 Cycles
Purell Waterless	120 Cycles	80 Cycles	20 Cycles

100%
 ARDL tests prove that when it comes to interaction with hand sanitizers, Z-Band wristbands are more than 100% more durable than the leading competitor's wristbands.

3M Avagard (after 20 cycles)



Purell Waterless (after 20 cycles)



Z-BAND DIRECT WRISTBANDS

Zebra's latex-free and MR-safe Z-Band Direct thermal polypropylene wristbands are scannable even with the excessive application of hand sanitizer. Independent testing demonstrated that Z-Band Direct wristbands are significantly more durable when compared to a leading competitor:

- **3.5 times** more durable against 3M Avagard
- **6 times** more durable against Purell Waterless hand sanitizers

Z-BAND ULTRASOFT WRISTBANDS

Zebra's UltraSoft direct thermal polypropylene wristbands are MR-Safe and latex-free. Independent testing demonstrated that Z-Band UltraSoft wristbands are significantly more durable when compared to a leading competitor:

- **3 times** more durable against 3M Avagard
- **4 times** more durable against Purell Waterless hand sanitizers



About the Tests

Zebra Technologies commissioned Akron Rubber Development Laboratory (ARDL) to conduct durability testing for the Z-Band Direct, Z-Band UltraSoft and a leading competitor's wristbands. ARDL is an A2LA ISO 17025 accredited, ISO 9001:2008 registered FDA compliant independent testing laboratory. ARDL conducted blind testing of four sets of four wristbands, identified as A, B, C and D, against contact with the following hand sanitizers: Purell Waterless, 3M Avagard and Ecolab SkinMan. The tests were designed to measure the number of rubs the wristbands could endure before failing to scan.

Equipment

Printers. The Zebra wristbands were printed using the Zebra HC100 printer at a print speed of 2 inches per second (IPS) and level 22-darkness setting. The competitor's wristbands were printed on the Zebra 110Xi4 at 2 IPS with a 22-darkness setting.

Crockmeter. A mechanically driven SDL Atlas Electronic CM-5 AATCC Crockmeter with a 16mm diameter acrylic finger was employed to measure the colorfastness of the wristband.

Scanner. The Zebra DS6707-HC handheld digital imager scanner was used to scan each of the wristbands during testing.

Procedure

A cloth was soaked for a period of five minutes in hand sanitizer and then placed on the crockmeter with the wristband for testing. At the end of every 10 cycles, the ARDL technician stopped the crockmeter, scanned the barcode on the wristband and recorded the number of cycles until the barcode on the wristband could no longer be scanned.

Results

ARDL conclusively found that both the Z-Band Direct and Z-Band UltraSoft wristbands were more durable than the leading competitor's wristbands. Testing results revealed that when subjected to Purell Waterless Hand Sanitizer, the Z-Band Direct can endure 120 cycles before becoming unreadable, while Z-Band UltraSoft can withstand 80 cycles. This was in contrast to the competitor's wristbands, which could only handle 20 cycles before becoming unscannable.



Quality Matters

Zebra is committed to providing hospitals with wristbands that meet our high standards for image durability, scannability, and comfort. The Z-Band Direct and Z-Band UltraSoft wristbands are available in adult, pediatric, and infant sizes.

Zebra Technologies is a world leader in barcode, RFID, and ID card printing technologies, including systems installed at healthcare facilities for unit-of-use labeling, prescription label printing, patient wristband printing, materials management, security, and employee identification. Together with its partners, Zebra has the experience, industry knowledge, and specialized products needed for successful hospital implementations. Zebra is also a leader in standards development and actively participates in the work of life sciences industry associations to meet the emerging needs of its customers.

To learn more about Zebra wristbands, visit www.zebra.com/wristbands



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