



Water Contact Indicator Tape 5557 Condensing Steam Test

Technical Bulletin

May, 2003

Objective

To determine if 3M™ Water Contact Indicator Tape 5557 (WCIT) will indicate exposure to condensing steam.

Procedure

1. Aluminum (Al), ABS, epoxy glass and polycarbonate (PC) substrates, each measuring 2" x 5", were cleaned with pure IPA solvent and left to dry before use.
2. Die-cut WCIT 5557 of various shapes and sizes were laminated onto each substrate.

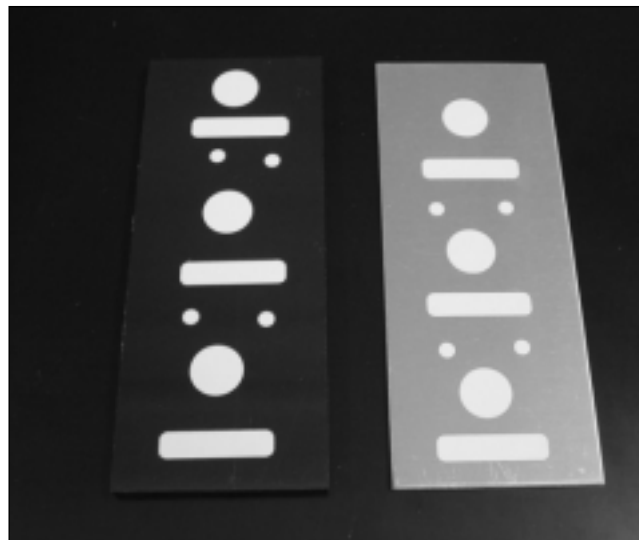


Fig 1. Die-cut WCIT 5557 on ABS and Al before exposure to steam.

3. Apparatus was set up such that the substrate surface, laminated with WCIT 5557, was about 9 cm away from the surface of boiling water. Each substrate was held in place by the clamps on two retort stands. The substrates temperature were 77°F (25°C) taken when beginning the test.

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Procedure (*continued*)

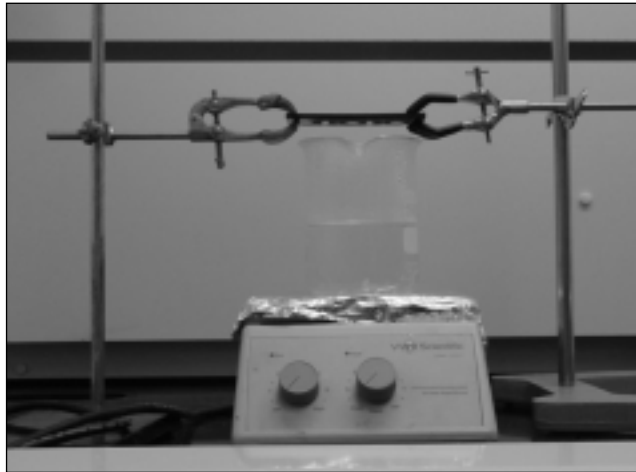


Fig 2. Apparatus set-up for steam test.

4. Once the substrate was held in place above boiling water, the timer was started in order to record the time taken for 3M™ Water Contact Indicator Tape 5557 to turn red. Pictures of WCIT 5557 on the substrate were taken after 1, 3 and 5 minutes of exposure to condensing steam.
5. After 5 minutes of exposure to condensing steam, the substrate was removed from the clamps and observed for any differences in color change of WCIT 5557 on the various substrates.

**Observations
& Discussion**

(A) Pictures taken after **1 minute** exposure to condensing steam.

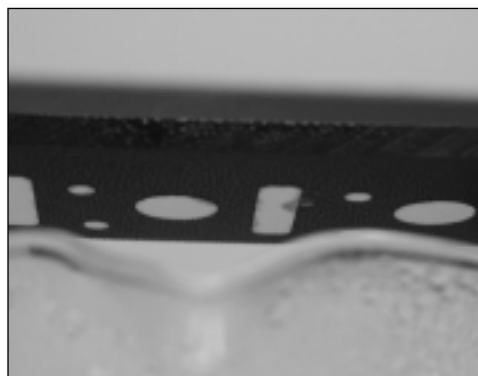


Fig 3. WCIT 5557 on ABS.

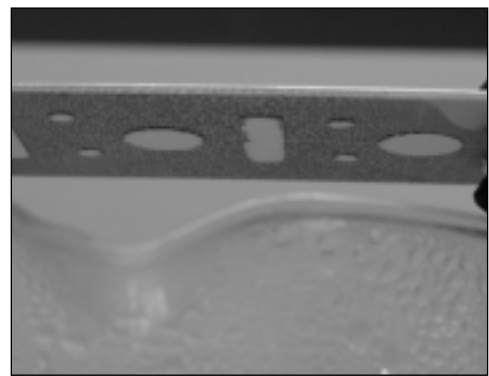


Fig 4. WCIT 5557 on Al.

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Observations & Discussion (continued)



Fig 5. WCIT 5557 on epoxy glass.

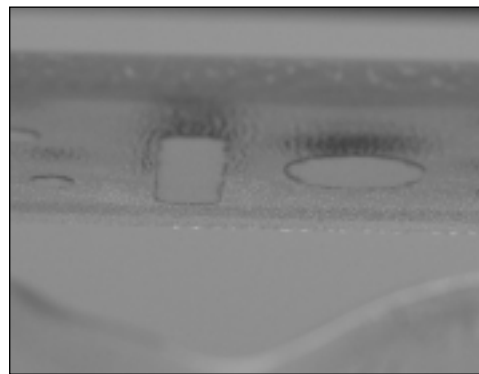


Fig 6. WCIT 5557 on PC.

(B) Pictures taken after **3 minutes** exposure to condensing steam.



Fig 7. WCIT 5557 on ABS.

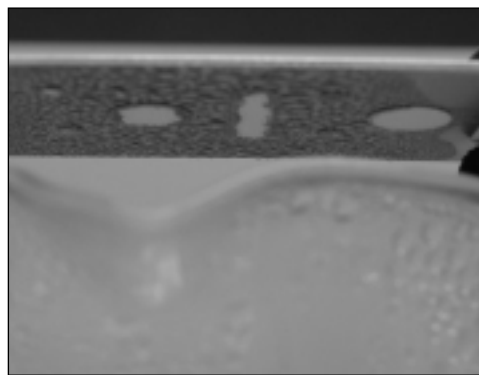


Fig 8. WCIT 5557 on Al.

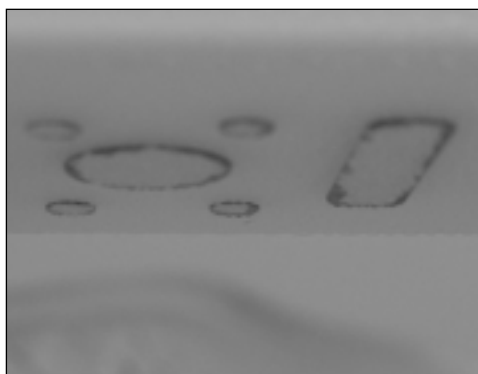


Fig 9. WCIT 5557 on epoxy glass.

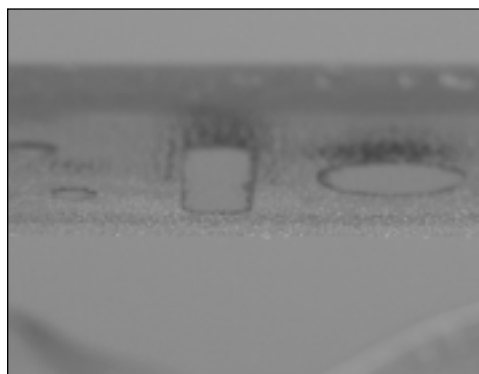


Fig 10. WCIT 5557 on PC.

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Observations & Discussion (continued)

(C) Pictures taken after **5 minutes** exposure to condensing steam.

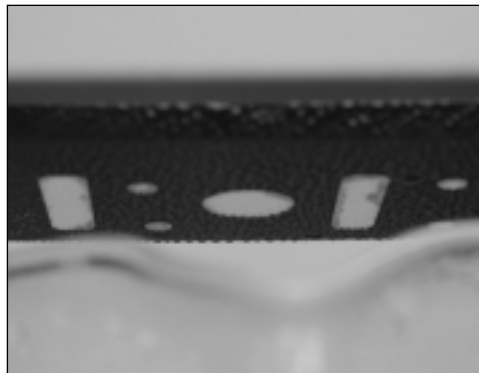


Fig 11. WCIT 5557 on ABS.

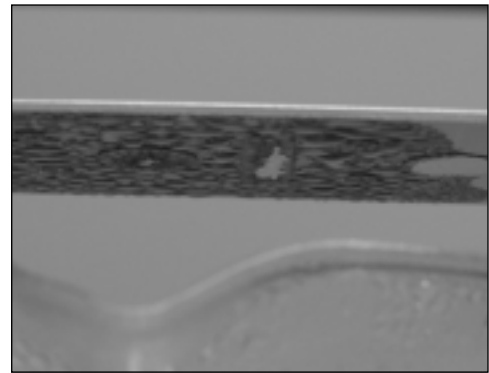


Fig 12. WCIT 5557 on Al.

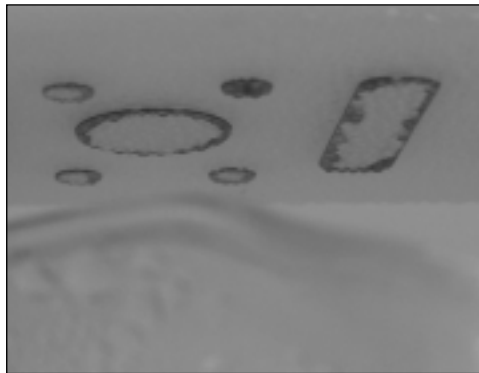


Fig 13. WCIT 5557 on epoxy glass.

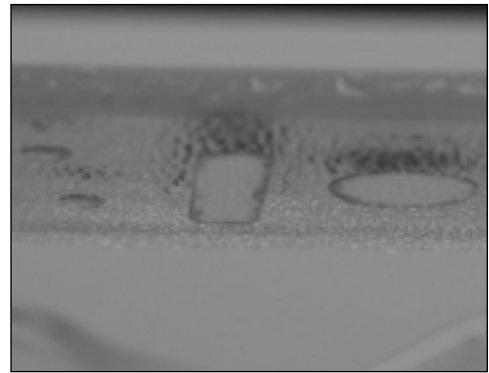


Fig 14. WCIT 5557 on PC.

(D) Comments

In general, 3M™ Water Contact Indicator Tape 5557 on ABS, Al, epoxy glass and PC substrates started to turn red around the edges between 45 seconds to 1 minute upon exposure to condensing steam.

The smaller die-cut pieces of WCIT 5557 (4 mm diameter) turned almost completely red after being exposed to condensing steam for 5 minutes.

Conclusion

WCIT 5557 is an effective indicator of exposure to condensing steam if exposure is at least 5 minutes.

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For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550. Address correspondence to: 3M Electronics Markets Materials Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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