Norman Tool RCA Abrader® versus a Fake, Imitation, or Counterfeit Abrader

Introduction:

This document serves as additional information regarding the high quality standards of the Authentic Norman Tool RCA Abrader®, and the cautions of relying on the many Fake testers that are available. See the video on our website for more information.

Who We Are, What is the RCA Abrader®?:

Norman Tool has provided the worldwide coatings test industry with a solid, high quality, repeatable, and reliable Abrasion Wear Tester since the 1970's. The RCA Abrader® Testers made by Norman Tool today provide the same reliable and comparable results as they did in the beginning.

The Norman Tool RCA Abrader® is the Official, Trademarked Abrasion Wear Tester. Any manufacturer that uses the RCA name is not only infringing on our trademark, but is infringing on, and confusing, the standard test results that the worldwide industry has relied on for decades.

Quality Production in the United States:

Each tester provided by Norman Tool is manufactured in the United States. There are no Authentic RCA Abrader® Wear Testers manufactured outside the United States. Each Authentic Tester is quality tested using a special high quality, coated Specimen Plate, and the Certified Norman Tool Abrasion Wear Paper. The same tested specimen plate is then used on our Master Tester which only exists at the Norman Tool headquarters in Evansville Indiana. These results are compared so that every purchaser knows that each New Tester is performing within the certified results range.

Consistency From One Norman Tool Tester to the Next:

With this real-time, side-by-side comparison of results for each tester we manufacture compared to our Official Master Tester, it ensures that all our Norman Tool Testers in the world will test comparatively to each other. This creates a consistent worldwide standard. The Verification Certificate of this testing, and all related documentation, is supplied with each New Tester and the data is kept on file, by serial number, at Norman Tool. Each Norman Tool Tester manufactured has a unique serial number designation.

Long Term Machine Performance:

The specimen plate provided with each New Tester can be tested again months or years later to ensure the results are still within a proper tolerance. This gives the user confidence in the data obtained from the results. Norman Tool also offers calibration services at our facility.

"Counterfeit" or "Fake" Tester Quality and Results:

There are many Fake testers manufactured outside of the United States by companies that are not authorized by Norman Tool to do so. Many of these Fake testers come from China and Taiwan. These testers look similar, but they are not made with the same components or standards, and they will not compare properly. In addition to their poor quality in parts and assembly, they also generate inaccurate

and improper testing results. Improper testing results can be in the form of high cycle counts, which indicate that coatings are better than they really are, and/or high variation in cycle counts which makes decision making difficult or impossible. Some testing results can vary from the mean with a high degree of variation and inaccuracy, which can lead to an indeterminate conclusion to what the real level of abrasion wear is. Based on our research, testers made by these companies will not compare consistently with other testers of the same type and manufactured by the same company. The test results from these Fake testers are useless and meaningless without the assurance of getting comparable results from other testers, nor being able to maintain those results consistently and with repeatability.

Actual Test Comparison Between an Authentic Norman Tool RCA Abrader and a "Fake" Tester.:

Norman Tool obtained a Fake, counterfeit, tester and performed comparative testing with a Newly Manufactured Norman Tool Tester and our Master Tester at our manufacturing facility. The same paper and consumables were used on the same specimen plate in a controlled environment.

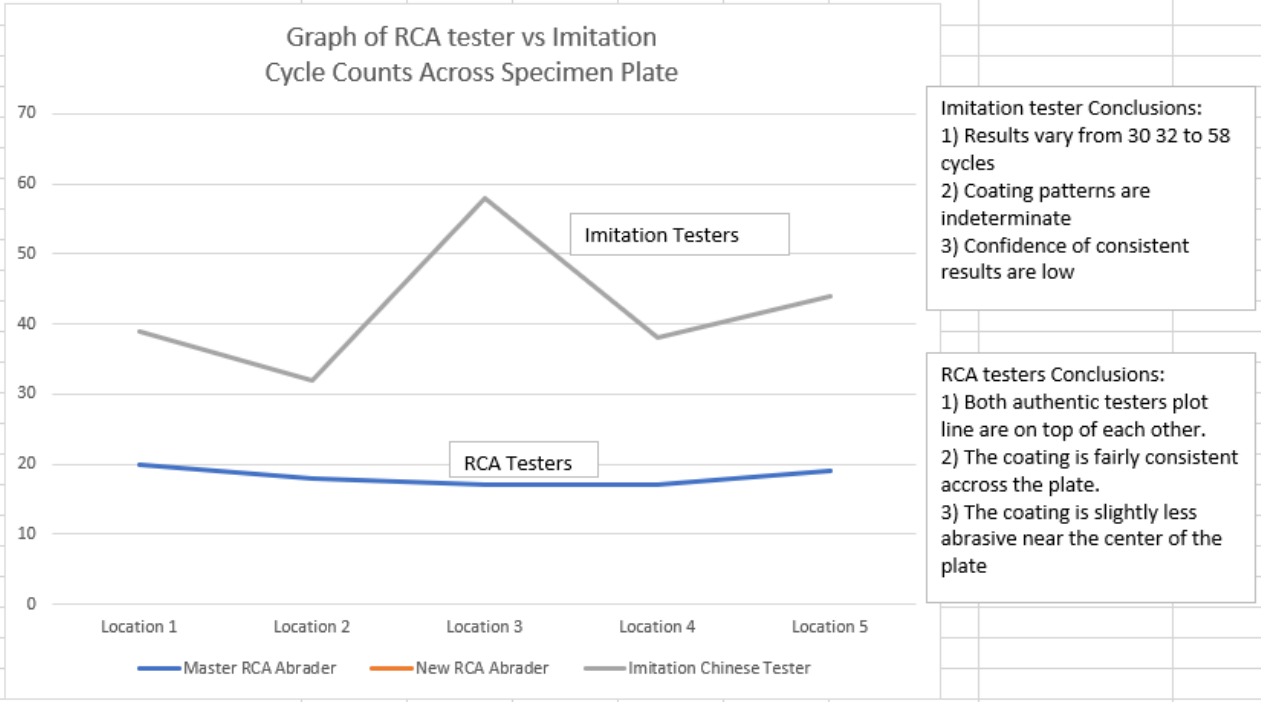
The testers were side by side. There was one Fake tester, one Newly Manufactured RCA Tester, and our RCA Master Tester which all RCA Testers are compared to. These 3 testers were used to perform tests across a uniform specimen plate from the left end of the plate to the right end. The data chart below shows the cycle counts until a final wear through was detected on the coating to the point that the substrate became visible. There were 5 locations marked for testing. The data is listed in the chart in order from left to right in the same order as the plate was tested from left to right.

The graph below the chart indicates the same values from left to right. For the RCA Master Tester (blue line), you can see the value at the left was 20 cycles. In the middle, it reduced to 17 cycles, indicating that the coating might be thinner at that area. At the right side, it increased back up to 19 cycles.

The New RCA Tester was also tested near those left, middle and right locations. All cycle counts were the same, except for the right side which was 18 instead of 19. This test also indicated a slightly thinner, or less robust coating in the middle portion of the plate. This line is an orange line but can not be seen on the graph since the master tester line is right on top of it. This indicates that the tests were nearly identical and are very accurate results with high confidence. The percent variation for these testers was 7% and 8%

The Fake tester was then tested, as indicated by the gray line below. The cycle counts averaged over 30% higher. The variance was also much more. It actually indicated a thicker, or more robust, coating in the middle of the plate (the opposite of what both Norman Tool Testers showed). Based on the repeatable results from the Master Tester and the New tester, this signifies a very low confidence in the results from this Fake tester. The percent variation for the tester was 23%.

Tester Name	Cycle Counts					Average Value	Standard Deviation	% STDEV
	Location 1	Location 2	Location 3	Location 4	Location 5			
Master RCA Abrader	20	18	17	17	19	18.2	1.3	7%
New RCA Abrader	20		17		18	18.3	1.5	8%
Imitation Chinese Tester	39	32	58	38	44	42.2	9.8	23%



Test Conclusion:

The Master RCA Tester and the New RCA Tester proved to be repeatable and reliable. They were able to detect a small variation in the abrasion resistance across the surface of the specimen plate. We can feel confident with both of these Testers and likely all Testers produced by the Original and Authentic Norman Tool manufacturer.

The Fake / Counterfeit tester had a large variation of 23% compared to the Authentic Tester's variation, which was only 7% to 8%. The average cycle counts for the Fake tester was also too high at 30% higher than the actual value. Due to the high variance, we could not detect that the coating in the middle of the specimen plate was thinner, or less wear resistant, like we were able to determine with the Authentic Norman Tool RCA Abraders®.

In conclusion, our testing indicated that this Fake tester was significantly inaccurate and unreliable, in addition to being constructed with inferior parts and quality.