

Test Report No. 865727 - CPCH04 TC250 Date: April 3, 2017 Page 1 of 4

Whoosh! Inc 185 Bridgeland Ave Suite #111 Toronto, ON M6A 1Y7 Canada

The following sample(s) was/were submitted and identified by/on behalf of the client as: Two (2) Screen Wipes:

- Whoosh! Screen Shine Wipe (clean)
- Diamond Defense Wipe

One (1) Substrate:

• iPhone Screens

Samples Prepared and Received at Lab: 02/21/2017

Testing Period

03/06/2017 - 03/17/2017

- Test Requested : Evaluation of scratch resistance of one iPhone screen cleaned Whoosh! Screen Shine wipe then treated with the Diamond Defense treatment coating and one iPhone screen without cleaning or treatment (as received) using an abrasion tester with a tungsten carbide tip at a loads of 250g.
- Test Method: : Two iPhone screens, "Untreated" Control and "Treated" (cleaned/treated) were abrasion tested using a tungsten carbide tip material. A single repetition was completed for each screen type at a load of 250 grams. The final number of cycles was recorded when an initial scratch became visually apparent. Please refer to next page(s) for the methodology and results.

Result Summary:

SCREEN	Tooling/ Material	Load	Location	# REPS	# Cycles Before Scratch
UNTREATED	1 mm Tungsten Carbide Tip	250 grams	А	1	15
TREATED	1 mm Tungsten Carbide Tip	250 grams	А	1	225

Tested at an SGS Partner Laboratory.

Reference: 865727-CPCH02.

Recommendation: We recommend performing additional replicate testing for better statistical data.

Signed for and on behalf of SGS North America, Inc.

aren Laure

Karen Rauen, PhD Technical Director, CPCH Prepared By: Meliosa Perez

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Sample Preparation:

<u>iPhone Screen Sample Preparation Procedure</u> (Client provided final instructions by email on 12/5/2016):

One screen was treated with the client-provided products according to client-provided instructions below. Prior to treatment, the protective film was removed from the iPhone screens to be treated with liquid screen protector. Factory applied films were left on the one untreated screen until tested.

"Instructions for Use" for the Liquid Screen Protector:

- 1. Clean device glass with Whoosh! Screen Shine Wipe
- 2. Polish surface completely with included W! Antimicrobial microfiber cloth
- 3. Apply DIAMOND DEFENSE by wiping for about 30 seconds. Be sure to evenly distribute
- 4. Allow to dry completely for approximately 15 minutes
- 5. Buff and shine device glass with W! Antimicrobial microfiber cloth
- 6. Apply the second securing coat evenly, wait about two hours and buff and shine device glass with W! Antimicrobial microfiber cloth

NOTE: SGS had no means to verify the presence/thickness of the film coating and therefore cannot guarantee the film is present. Client was advised of this in advance and accepted this limitation.

Test Methods and Results:

Scratch Testing set-up is detailed below:

Instrument:	Taber Model 5900 Reciprocating Abraser
Accessory:	1mm diameter Scratch tip
Load:	250 gram
Stroke Length:	2 inches
Speed:	30 cycles per minute (cpm)
Cycles:	See Data
Test Conditions:	68° F, 55% RH

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The photos shown above are to demonstrate the set-up with screen and tip positioning only. They do not illustrate use with the tungsten carbide tip.



1mm Tungsten Carbide Scratch Tip (see photograph below)

Part Number: 132347

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Scratch Testing using 1mm Tungsten Carbide Tip

Sample Untreated

- Location A
- The specimen was set-up per the above photos and a 250 gram load.
- The specimen was clamped directly to the T-Slot table with T-Slot clamps, placing a resilient non-skid material under the specimen to keep it from getting marred during testing.
- The 1 mm tungsten carbide tip was mounted onto the instrument before being gently lowered onto the test sample.
- The tool holder was leveled using a Spirit Bubble Level to ensure the scratch tool was perpendicular to the test specimen.
- The tip was cleaned with iso-propanol and a lint free cloth prior to each test.
- The test achieved **15 cycles** before the scratch became visually apparent.

Sample Treated

- Location A was a duplicate of Location A above.
- The test was started and achieved **225 cycles** before the scratch became visually apparent.

**** End of Report ****

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