

BIOMETRIC CAPABILITY TEST

# Reach 2S Versus Amazon's "Awesafe"

VARA

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# Introduction

## Who we are:

Vara Safety is a biometric gun safe company dedicated to creating the fastest and secure biometric safes on the market.

## Why this test:

We created this report to test and measure Reach 2S's biometric fingerprint sensor. An important customer concern is about fingerprint technology and its ability to overcome common types of debris that could interfere with the unlocking process.

## Why it matters to you:

As a customer you should be sure that your safe will work when needed, regardless of the condition of your fingerprint due to occupation, age, or other factors.. This report brings in data to help determine reliability of our fingerprint sensor.



## Objective

The objective of this test was to determine both strengths and weaknesses of Reach 2S's capacitive fingerprint sensor and compare it to a standard fingerprint lock box safe.

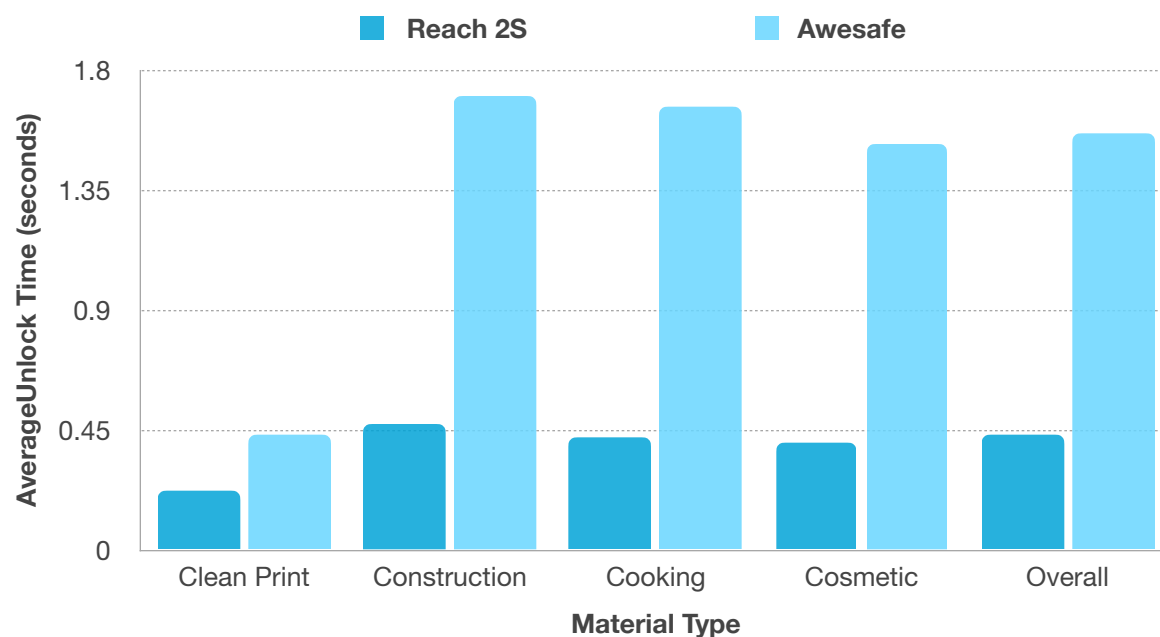
## Procedure

To put Reach 2S and the Awesafe (most popular biometric gun safe on Amazon) to the test, a variety of common materials (see table below) were used to obstruct the fingerprint sensor's ability to read prints. Five trials were conducted for each material on each safe. Before each new trial, the print and sensor are cleaned thoroughly with isopropyl alcohol to avoid cross contamination. Then a liberal amount of obstructive material is applied to the fingerprint and wiped down to a thin later that might represent residual amounts built up from everyday use. Then each sequential trial is conducted without cleaning of the sensor or reapplication of the material to simulate repeated attempts. If the safe fails to unlock within 20 seconds the trial is marked as a failure.

Material Types		
Construction/ Auto	Cooking/ Food	Cosmetic
White Acrylic Latex Paint	Flour	Sunscreen SPF 30
Waterproofing Silicone, Caulk	Barbecue Sauce	Body Lotion
Black Polyurethane Stainer	Olive Oil	
10W-30 Engine Oil	Cheeto Dust	
Super Glue, Wood Glue		
Sharpie		
Sandpaper Abrasion		
Razor Microcuts		

## Results

Reach 2S performed almost 4 times faster than the Awesafe, with an average unlock time of 0.43 seconds compared to Awesafe's 1.56 seconds. As seen in the comparison chart below, the performance of Reach's fingerprint sensor remained consistent throughout testing while the competitor Awesafe's sensor was highly affected.



## Discussion

Reach performed exceptionally well in the categories of Cooking and Cosmetic obstructions and only saw failure in the Construction category. The materials that prevented a fingerprint read were latex paint, caulk, wood glue and super glue.

The competitor Awesafe had failures in all three categories. The materials that prevented a fingerprint read were latex paint, caulk, wood glue, sandpaper, bbq sauce, and body lotion.

Overall, this test resulted in great data on how different materials/substances affect the fingerprint sensors on the Reach and Awesafe gun safes. Please see below for the full chart.



# Comprehensive Table of Data

Material Type		Reach 2S					
Construction Materials	Unlock Success?	Trial 1 (s)	Trial 2 (s)	Trial 3 (s)	Trial 4 (s)	Trial 5 (s)	Avg Unlock Time
White Acrylic Latex Paint	Partial	FAIL	FAIL	FAIL	0.98	0.71	0.545
Silicone	Yes	0.61	0.73	1.65	0.8	0.68	0.594
Caulk	Partial	FAIL	0.61	1.78	1.03	0.91	0.7825
Polyurethane stainer	Yes	0.69	0.68	0.79	0.61	0.83	0.42
10W-30 Engine Oil	Yes	0.58	0.51	0.63	0.75	0.69	0.332
Super Glue	Partial	FAIL	0.56	0.46	0.61	1.45	0.47
Wood Glue	Partial	FAIL	0.63	0.61	0.93	0.55	0.38
Sharpie	Yes	0.53	0.51	0.55	0.78	0.54	0.282
Sandpaper abraded print	Yes	0.58	0.63	1.75	0.53	0.51	0.5
Razor micro cut print	Yes	0.55	0.49	0.66	0.83	0.76	0.358
Construction Materials Avg							0.47
Cooking/ Food							
Flour	Yes	1.63	0.78	0.75	0.96	0.79	0.682
BBQ Sauce	Yes	0.65	0.71	0.78	0.66	0.68	0.396
Olive Oil	Yes	0.58	0.78	0.81	0.55	0.53	0.35
Cheeto Dust	Yes	0.78	0.6	0.76	0.63	0.53	0.36
Cooking Materials Avg							0.42
Cosmetics							
Sunscreen SPF 30	Yes	0.68	0.56	0.53	0.66	0.48	0.282
Aveeno Body Lotion	Yes	0.43	0.53	0.51	0.5	0.46	0.186
Cosmetic Materials Avg							0.4
Control							
Normal clean print	Yes	0.51	0.58	0.58	0.41	0.55	0.226
Overall Averages		0.68	0.62	0.85	0.72	0.69	0.43
Total Fails		6					

Material Type		Awesafe					
Construction Materials	Unlock Success?	Trial 1 (s)	Trial 2 (s)	Trial 3 (s)	Trial 4 (s)	Trial 5 (s)	Avg Unlock Time
White Acrylic Latex Paint	Partial	FAIL	FAIL	0.98	1.08	1.05	0.7366666667
Silicone	Yes	5.83	1.01	0.87	0.68	0.71	1.52
Caulk	Partial	FAIL	FAIL	FAIL	7.1	1.08	3.79
Polyurethane stainer	Yes	0.9	0.98	0.7	0.76	0.73	0.514
10W-30 Engine Oil	Yes	0.81	0.7	0.61	0.75	7.61	1.796
Super Glue	Yes	3.56	2.35	0.78	3.01	0.91	1.822
Wood Glue	Partial	FAIL	2.58	2.45	3.43	2.13	2.3475
Sharpie	Yes	0.86	0.93	0.93	0.88	0.91	0.602
Sandpaper abraded print	Yes	10.65	0.88	0.78	FAIL	1.81	3.23
Razor micro cut print	Yes	0.67	1.08	0.75	0.98	1.1	0.616
Construction Materials Avg							1.7
Cooking/ Food							
Flour	Yes	2.05	0.63	0.63	0.8	0.8	0.682
BBQ Sauce	Partial	FAIL	9.18	0.98	0.8	0.7	2.615
Olive Oil	Yes	0.98	0.75	0.68	0.71	0.58	0.44
Cheeto Dust	Yes	6.33	4.43	0.85	2.48	0.81	2.68
Cooking Materials Avg							1.66
Cosmetics							
Sunscreen SPF 30	Yes	0.75	3.88	0.88	0.71	0.85	1.114
Aveeno Body Lotion	Partial	FAIL	0.74	3.83	0.96	0.6	1.2325
Cosmetic Materials Avg							1.52
Control							
Normal clean print	Yes	0.73	0.7	0.68	0.81	0.75	0.434
Overall Averages		2.85	2.06	1.09	1.63	1.37	1.56
Total Fails		9					