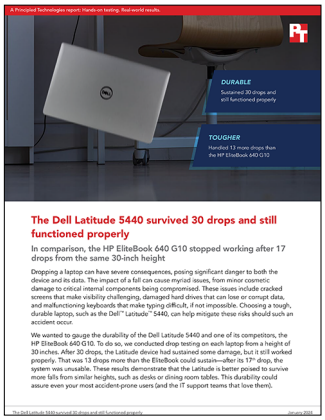


The science behind the report:

The Dell Latitude 5440 survived 30 drops and still functioned properly

This document describes what we tested, how we tested, and what we found. To learn how these facts translate into real-world benefits, read the report The Dell Latitude 5440 survived 30 drops and still functioned properly.

We concluded our hands-on testing on December 7, 2023. During testing, we determined the appropriate hardware and software configurations and applied updates as they became available. The results in this report reflect configurations that we finalized on November 21, 2023 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

Our results

To learn more about how we have calculated the wins in this report, go to http://facts.pt/calculating-and-highlighting-wins. Unless we state otherwise, we have followed the rules and principles we outline in that document.

Table 1: Results of our durability testing. We include notable photos of the effects of some drops.

	Dell™ Latitude™ 5440	HP EliteBook 640 G10
Position during drop from table height (30 inches)	Damage	
Drop 1 - Bottom drop	No visible damage. System fully functional. 	No visible damage. System fully functional. 

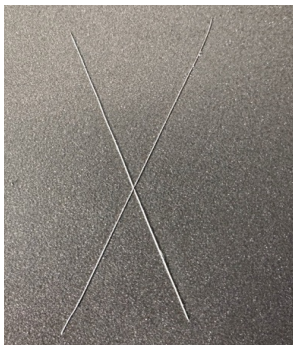
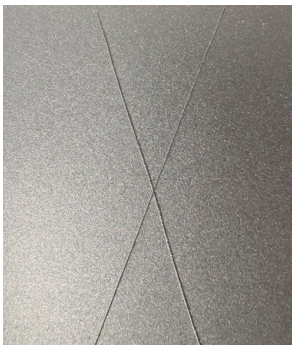
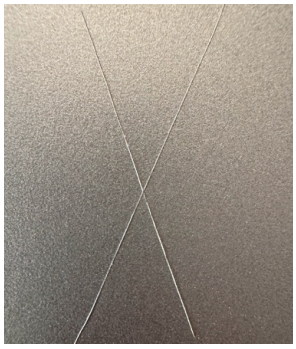
	Dell™ Latitude™ 5440	HP EliteBook 640 G10
Drop 2 - Top drop	No visible damage. System fully functional. 	No visible damage. System fully functional. 
Drop 3 - Front drop	Right upper side of the display bezel came undone from the system housing. A couple scratches appeared on the top surface. System fully functional. 	Separation occurred on the left and right front bottom corners of the system. The edges of the aluminum keyboard cover were bent and scuffed. System fully functional. 
Drop 4 - Right side drop	Additional separation of the top of the display bezel. System fully functional. 	Additional separation on the right front bottom corner. System fully functional. 
Drop 5 - Rear drop	Small scratch on the bottom surface of the system. System fully functional. 	Scuffs near the hinges. Some separation near the left and right rear bottom corner. System fully functional. 
Drop 6 - Left side drop	No changes. System fully functional.	No changes. System fully functional.

	Dell™ Latitude™ 5440	HP EliteBook 640 G10
Drop 7 - Front right corner drop	Additional separation of the top of the display bezel. System fully functional. 	Significant bending and separation occurred along the front right corner of the system chassis. System fully functional. 
Drop 8 - Rear right corner drop	A piece of the bottom cover broke off on the rear right corner. Some separation near the bottom rear right corner hinge. System fully functional. 	Bending and small crack on the rear right corner of the chassis. Opening the device fully caused the top screen chassis to rub against the bottom of the system. System fully functional. 
Drop 9 - Rear left corner drop	No additional changes. System fully functional.	Slight crack on rear left corner of chassis. System fully functional. 
Drop 10 - Front left corner drop	Small crack near the bottom front left corner screw. System fully functional. 	The front left corner of the system chassis was bent. System fully functional. 
Drop 11 - Bottom drop	No additional changes. System fully functional.	No additional changes. System fully functional.

	Dell™ Latitude™ 5440	HP EliteBook 640 G10
Drop 12 - Top drop	No additional changes. System fully functional.	No additional changes. System fully functional.
Drop 13 - Front drop	Some scratches on the top right corner of the top of the system. System fully functional. 	No additional changes. System fully functional.
Drop 14 - Right side drop	No additional damage. System fully functional.	No additional damage. System fully functional.
Drop 15 - Rear drop	Some separation of the bottom cover on the rear right corner. System fully functional. 	No additional damage. System fully functional.
Drop 16 - Left side drop	No additional damage. System fully functional.	No additional damage. System fully functional.
Drop 17 - Front right corner drop	No additional damage. System fully functional.	Additional bending on the front right corner of the system chassis. The screen was cracked, mostly black, and unusable. System broken and unusable. 
Drop 18 - Rear right corner drop	Some rattling from inside the system. System fully functional.	N/A
Drop 19 - Rear left corner drop	No additional damage. System fully functional.	N/A
Drop 20 - Front left corner drop	No additional damage. System fully functional.	N/A
Drop 21 - Bottom drop	No additional damage. System fully functional.	N/A

	Dell™ Latitude™ 5440	HP EliteBook 640 G10
Drop 22 - Top drop	No additional damage. System fully functional.	N/A
Drop 23 - Front drop	No additional damage. System fully functional.	N/A
Drop 24 - Right side drop	No additional damage. System fully functional.	N/A
Drop 25 - Rear drop	A small plastic piece broke on the right side of the system under the HDMI port. System fully functional. 	N/A
Drop 26 - Left side drop	No additional damage. System fully functional.	N/A
Drop 27 - Front right corner Drop	No additional damage. System fully functional.	N/A
Drop 28 - Rear right corner drop	The top right corner of the keyboard deck cracked. System fully functional. 	N/A
Drop 29 - Rear left corner drop	Scratch on rear left corner of system. System fully functional. 	N/A
Drop 30 - Front left corner drop	No additional damage. System fully functional.	N/A

Table 2: Results of our paint quality testing.

	Dell Latitude 5440	HP EliteBook 640 G10	Notes
Paint quality results			
Paint before tape removal			Coating thicknesses: Dell = ~1,800 micrometers HP = ~15 micrometers
Paint after tape removal			No changes after tape removal

System configuration information

Table 3: Detailed information on the systems we tested.

System configuration information	Dell Latitude 5440	HP EliteBook 640 G10
Processor		
Vendor	Intel®	Intel
Model number	Core™ i5-1335U	Core i5-1335U
Core frequency (GHz)	1.3 – 4.6	1.3 – 4.6
Number of cores	10	10
Memory		
Amount (GB)	16	16
Type	DDR4	DDR4
Storage		
Amount (GB)	256	256
Type	PCIe® NVMe®	PCIe NVMe
Connectivity/expansion		
Wireless internet	Intel Wi-Fi 6E AX211	Intel Wi-Fi 6E AX211
USB	2x USB 3.2 Type-A Gen 1 1x HDMI® 2.0 2x Thunderbolt™ 4	2x USB 3.2 Type-A Gen 1 1x HDMI 2.1 1x Thunderbolt 4 1x USB Type-C
Battery		
Type	Integrated lithium-polymer	Integrated lithium-polymer
Rated capacity (Whr)	54	51
Display		
Size	14" FHD Non-Touch	14" LED UWVA Anti-Glare FHD
Resolution	1920 x 1080	1920 x 1080
Dimensions		
Height (in.)	0.75	0.78
Width (in.)	12.65	12.67
Depth (in.)	8.35	8.42
Weight (lbs.)	3.06	3.13

How we tested

Durability testing

For both systems under test, we executed 30 drops from a 30-inch height with 10 different orientations or angles. We planned drops in sets of 10 with each drop at a different orientation. We tested each device in the same drop order. We repeated this drop order three times or until a system was deemed unusable.

Our orientations were in this order: bottom; top; front; right side; rear; left side; front right corner; rear right corner; rear left corner; and front left corner.

1. Set the height of the platen on the Lansmont Precision Drop Tester to 30 inches above the drop surface.
2. Place the device on the platen of the drop tester in the first orientation.
3. Drop the device onto the drop surface.
4. Wait until the device is completely still.
5. Observe the device for any visible damage or functionality issues.
6. Note any damage or functionality issues.
7. Continue dropping the device in each of the 10 orientations in order, noting any damage or functionality issues along the way.
8. Drop the devices in each of the 10 orientations two more times.
9. If a device experiences a critical failure before the 30th drop, record the data, and stop testing said device.

Paint quality testing

Before conducting the paint quality testing, we measured and noted the thickness of each system's paint coating using a coating thickness gauge.

1. Using a sharp knife blade, cut an X on the top surface of each system under test.
2. Each leg of the X should be approximately 1.5 inches in length.
3. The intersection angle of the X should be between 30 and 45 degrees.
4. Using pressure-sensitive tape, cover the entire area of the X-cut on the system under test.
5. Rub the area that has been taped with an eraser to ensure good contact between the tape and the surface of the test area.
6. Allow the tape to sit for approximately 90 seconds.
7. After 90 seconds, rapidly remove the tape at as close to an angle of 180 degrees as possible.
8. Observe the X-cut area under magnification for any peeling of the paint coating.

Read the report at https://facts.pt/p382pMe

This project was commissioned by Dell Technologies.

Principled Technologies®

Facts matter.®