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DISPLAY PROTECTION

Small protection with a big effect: **Using protective films prevents bothersome scratches on smartphones and tablets.** PCtipp tested 12 protective films for quality, protection and application.



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Translated by Bull Translation, Munich

It happens quickly: you only have to put your keys and your smartphone together in your pocket and the expensive device's display gets scratched. Tablets that are often transported in a briefcase or a purse are similarly susceptible. Covers made out of plastic or leather offer protection but are rather impractical: a mobile phone is less readily at hand, it requires more space and the original device design isn't as visible. In addition, the covers are often expensive.

Protective films are an alternative. They are cheaper, can be adhered directly to the display and therefore don't impair the usage of the smartphone and tablet. If the protective film is scratched it's easy to replace. Even better: Some protective films even hide display scratches. Sometimes reflections from sunlight are also eliminated. Another practical advantage: Protective films don't completely protect the device when dropped, however can absorb some of the impact.

Tip: If you'd like efficient protection when you drop your device, a "bumper" is recommended. **Image 1.** This is an excellent combination with a protective film. The Swiss manufacturer Ifishskin launched a product for Apple and Samsung devices that should reduce impact if the device is dropped and gives the mobile phone a cool look. Read the box to the right "Mobile adhesive covers."

Matte finished or clear

There are so many different types of protective films. For practical purposes, however, there are two that are predominantly relevant: the clear and the matte finished protective films.

The clear protective films are characterized by being barely noticeable. Cut exactly, they're therefore nearly invisible. Also when it comes to luminance and sharpness, clear protective films don't disappoint, so that even ultra sharp displays such

as the retina display from Apple are not hindered by the protective film. Clear protective films are also excellent in the case that you want unnoticeable protection without limiting the image quality.

Matte finished protective films have a definitive advantage: They scatter reflective light and thereby reduce reflections. With this the display contents can be read even with strong exposure to light, **Image 2.** The disadvantages of matte finished protective films: the image sharpness suffers, because bothersome color



1
The rubber coat
(called a "bumper")
protects the
delicate glass of
the display if the
device is dropped.



Matte finished protective covers (left)
reduce the bothersome light reflection
on displays

noise is often visible on sharp displays. Only one matte finished product was satisfactory in this regard during our test: Belkin's Iris Anti-Glare Films, the PCtipp Top Rated Product from the matte finished protective films.

Incidentally, fingerprints are less noticeable on matte finished protective films than when they're directly on the display. If any are noticeable, they're a little harder to wipe away. Because of their matte finished surface these protective films are also more visible than the clear protective films. Whether or not this is bothersome is really just a question of personal taste.

In addition to these two types of protective films, some manufacturers are also selling 'privacy protective films.' The purpose of these is as follows: only the person looking directly at the display from the front can clearly see the contents of the display. At a certain angle the display then turns black, **Image 3**. With this you can for example protect yourself from nosy passengers in the seat next to you on the train. The letdown: even at a perpendicular viewing angle these protective films darken the display considerably.

Other protective films are notable for features such as strong impact resistance, for offering special protection against fingerprints or are advertised as having nanotechnology that independently fills in scratches. In comparison, products such as protective films with glossy or glittery effects tend to be a hoax.

Testing the protective films

PCtipp tested seven clear and five matte finished protective films for quality, protection and application. Only the protective films for iPhone models were tested as every manufacturer sells these. Most offer these same protective films for countless other smartphones and tablets. All details and test results for these protective films are in the two tables on pg. 56 and pg. 57.

QUALITY

To test quality, PCtipp examined how well the protective films were manufactured. In this regard there were clear differences discovered during testing. A good protective film tends to have exact cutouts. That means that the sensors, the buttons and the loudspeaker must be as close to perfectly cut as possible, **Image 4**. This doesn't just make the protective film less noticeable; it also reduces the risk that it will detach early. The products from Xqisit, Zagg and Oxo display slight weaknesses with large cutouts.



3 Privacy protective films protect your smartphone or tablet from nosy people



4 The cutouts are not the same with all protective films; left Oxo Platinum, right Belkin

Furthermore, the products from Crocfol were uncleanly cut out: with two text examples we had to laboriously remove the plastic in the cutouts by hand ourselves. In contrast, the products from Belkin, Dispex, Hama and Power Support were particularly impressive.

Likewise an important criterion is the image quality. While there were no complaints with the clear protective films, with the matte finished competitors, there were problems with sharp displays. Despite the fact that manufacturers claim that all



5 Belkin (left) compared to SwitchEasy: the protective film from SwitchEasy shows a lot of visible color noise on Apple's retina display

products were designed for Apple's high-resolution retina displays, depending on the protective film clear color noise is visible, **Image 5**. This noise is noticeable on all image content and especially on white backgrounds. SwitchEasy's products had a lot of color noise.

Only one matte finished product didn't have the noise: Belkin's Iris Anti-Glare Films. The protective film has a special, slightly less matte surface that isn't as easily affected by reflecting light. Thus the single color pixels aren't visible. The Belkin protective film thereby was the only matte finished protective film to receive a quality rating of 100 percent by PCtipp.

PROTECTION

The most important thing is that the protective film should protect the display from scratches. For this reason it is annoying when the protective film is quickly damaged and has to be replaced continually. The good news: most of the tested products are very resistant to scratches and are very difficult to damage with a key, although the protective films from Hama and Belkin perform the worst.

Two products stood out positively during testing. Zagg's InvisibleShield Original is for example capable of making small scratches

Overview of Test Results

Clear finished protective films for tablets & smartphones

Manufacturer Product PCtipp-Evaluation	Test results ¹	Evaluation	Available for ²	What's included	> retail price (CHF) ³ > Manufacturer > Seen at
Crocfol No 02 Premium 	Quality: 80% Protection: 80% Application: 80% 	+ simple adhesion, washable - not completely cut out	Apple iPhone 4/5, iPad 2/3, Samsung Galaxy S2/S3	2 front protective films, cleaning cloths, instructions	> CHF 18.– > www.crocfol.de > www.internetdiscount.ch
Displex Display Protection (Clear) TEST WINNER 	Quality: 100% Protection: 90% Application: 100% 	+ simple adhesion, washable	Apple iPhone 4/5, Samsung Galaxy S2/S3	2 front protective films, cleaning cloth, instructions	> CHF 19.90 > www.displex.com > www.powerch.com
Hama Display-Schutzfolie 	Quality: 100% Protection: 60% Application: 100% 	+ simple adhesion, 3 protective films - sensitive to scratching	Apple iPhone 4/5, Samsung Galaxy S2/S3	3 front protective films, cleaning cloth, instructions	> CHF 14.90 > www.hama.de > www.mediamarkt.ch
Oxo Platinum Screen Protector 	Quality: 80% Protection: 100% Application: 60% 	+ very robust and thick - no instructions, large cut outs	Apple iPhone 4, Samsung Galaxy S3	1 front protective film, cleaning cloth, scraper	> CHF 24.90 > www.avenir-telecom.com > www.orange.ch
Power Support Crystal Film Set 	Quality: 100% Protection: 90% Application: 80% 	+ scratch resistant - instructions only in English	Apple iPhone 4/5, iPad 2/3	2 front protective films, pre-installation film, instructions (english)	> CHF 25.– > www.powersupportusa.com/de > www.nextway.ch
Xqisit Display Protector 	Quality: 60% Protection: 90% Application: 60% 	+ 3 protective films - no instructions, susceptible to bubbles, badly cut	Apple iPhone 4/5, Samsung Galaxy S2/S3	3 front protective films, cleaning cloth, scraper	> CHF 19.90 > www.xqisit.com > www.swisscom.ch
Zagg InvisibleShield Original TEST WINNER 	Quality: 90% Protection: 100% Application: 100% 	+ adhere with spray, scratch resistant - large cut outs	Apple iPhone 4/5, Samsung Galaxy S2/S3	1 front protective film, cleaning cloth, spray, instructions	> CHF 17.90 > www.zagg.com > www.k55.ch

Number of stars for rating: 1 = poor, 2 = unsatisfactory, 3 = satisfactory, 4 = good, 5 = very good, 6 = excellent.

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¹ We tested the protective films with Apple's iPhone because every manufacturer supports these.

² Selection of important smartphones and tablets; many manufacturers sell protective films for additional devices.

³ For a better comparison we entered the protective film price for the iPhone 4



Bubbles can be pushed out with a scraper or a cloth

disappear. After wiping the affected area with a microfiber cloth the small damages disappeared again. Also, Oxo Platinum's Screen Protector is good. The protective film is very thick and robust: it couldn't even be pierced with scissors.

APPLICATION

Nothing is more irritating than bubbles that form under the protective film when trying to adhere the film. When mounting a protective film, pay close attention to the instructions. Normally, the display has to be cleaned with a microfiber cloth that comes with the film. Do this thoroughly in a location that is dust free. Little bubbles under the protective film can be removed with a cloth or with an included scraper, **Image 7**. Should some bubbles persist, our tip in the box "How to remove bubbles" below on the left will further help you.

During the test, the installation is not problematic with most protective films except that it was almost impossible to remove the bubbles with

Xqisit's products. In addition, there were no instructions included with our test sample.

It's very easy to apply the protective film from the manufacturer Power Support: instead of removing dust with a microfiber cloth, it's removed with a special sticky film. However, it's a drawback that the instructions are only in English.

Zagg breaks new ground as well. The protective film is moistened with a spray and installed wet on the device. The advantage: the protective film can be subsequently adjusted. The liquid is then pushed out with a scraper. After waiting for a little bit, any resulting bubbles disappear automatically. This functioned perfectly in our test.

EVALUATION – THE CLEAR LEADERS

During testing two products were especially notable: the clear protective films Displex Display Protection (Clear) and Zagg's InvisibleShield Original. The quality, protection and application for these were the best.

Therefore these two swept the top rated product title. A savings tip: the protective films from Displex are slightly cheaper because at almost the same price as Zagg, you get two instead of one. Incidentally, had instructions in German been provided with the Crystal Film Set from Power Support, it would have also received the Top Rated Product Award.

The matte finished protective films tend to rank lower, however Belkin's Iris Anti-Glare Films achieved Top Rated Product. The product is the only matte finished protective film that doesn't have any bothersome color noise, however is somewhat susceptible to scratches. Xqisit was not impressive at all with their product Anti Glare Film due to a lot of color noise on Apple's retina display and in addition the remnants of unattractive bubbles during installation.