

TÜV NORD Danmark
Staktoften 20
2950 Vedbæk
Denmark



Test Rapport 51400006 of 20.01.2014

Customer: PanzerGlass ApS
Delta 6
DK-8382 Hinnerup
Denmark

Responsible contact person: Mr. Jimmy Olsen
www.PanzerGlass.eu

Order number: TDK 5140006

Test object: "PANZER GLASS™"
For: iPhone 4 / 4S
Screen Protection glass for mobile phones / tablets.

Manufacturers: PanzerGlass ApS
Delta 6
DK-8382 Hinnerup
Denmark

Test Laboratory: TÜV NORD Danmark
Staktoften 20
2950 Vedbæk
Denmark

Test location: Tested at "Test Laboratory"

Test date: Test period:
20. January 2014

Compiled by: **Date: 20. January 2014**


Jakob Nittegaard
Managing Director

This report consist of 3 pages

This technical report contains the result of the examination of the submitted test sample. A generally valid statement on the quality of the products of the current manufacture cannot be derived therefrom. The reproduction of this technical report in abstracts and the utilization for publication purposes requires the written consent of the test laboratory.

1. Order Description:

The purpose of this assessment has been to evaluate to what degree the protective glass surface of "PanzerGlass" can handle different kinds of impact tests and by this protects the display/screen of the mobile phone on which it is mounted.

This report is based on a practical test sequence.

2. Specification of the test object:

Description:

Panzer Glass™
size about: 55 x 112 mm
weight about 8 g

Type key:

iPhone 4 / 4S



3. Picture of test object:



Sample mounted with
protective foil on each side



Sample without protective foil.

4. Details to the evaluation principles:

- Eight identical samples have been used for testing.
- The protective foil has been removed from both sides of the glass.
- The test samples has been mounted on a tough melamine surface.
- An impact test apparatus designed in accordance with EN 60079-0: 2012 Annex C has been used for the impact test. Basically this apparatus consist of a steel mass of 1 kg falling down from different highs at a hardened steel head with a diameter of 25 mm. The drop height of the 1 kg steel mass determines the energy. I.e.: 10 cm ~ 1 Joule, 30 cm. ~ 3 Joule and so on.
- Each sample has been impact tested with an increasing impact energy starting from 1 J and up to 5 Joule.

5. Test setup:

1 kg steel mass directed by rod down on steel head with a diameter of 25 mm. Falling height

determines the impact energy. Ambient temperature during test: 22 °C



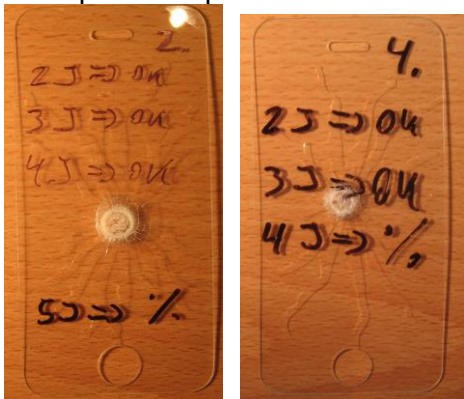
6. Test result:

Impact tests performed on test samples no # 1 to # 8. Test results listed in table below:

Sample no Impact energy [Joule]	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8
1J	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
2J	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
3 J	Pass	Pass	Fail	Pass	Pass		Fail	Fail
4 J	Faul	Pass		Fail	Fail	Fail		
5 J		Fail						

7. Photo dokumentation:

Examples of impact test results sample no 2 and 4:



8. Conclusions

This practical impact tests has been performed on 8 identical test samples. Testing has continued until glass rupture.

All 8 test samples have passed an impact test of 2 Joule simulated by a mass of 1 kg falling down on a steel bullet with a diameter of 25 mm.

It must be judged that the protective glass cover gives a major prevention against the consequences of impacts on the glass surface of a mobile phone.