

Prüfbericht - Nr.: 11010536 003 <i>Test Report No.:</i>		Seite 1 von 2 Page 1 of 2			
Auftraggeber: <i>Client:</i>		TECH WAY ADVANCED MATERIALS CO., LTD. No. 20, Lane 120, Sec.1, Guoji Rd., Taoyuan City, Taoyuan 330, Taiwan			
Gegenstand der Prüfung: <i>Test item:</i>		Safety Glass Window			
Bezeichnung: <i>Identification:</i>	LFE-x1 series x1= 200, 300, 500, 600, 800	Serien-Nr.: <i>Serial No.:</i>	N/A		
Wareneingangs-Nr.: <i>Receipt No.:</i>	N/A	Eingangsdatum: <i>Date of receipt:</i>	N/A		
Prüfart: <i>Testing location:</i>	As client				
Prüfgrundlage: <i>Test specification:</i>	As required by the client TÜV Rheinland Group 11010536				
Prüfresultat: <i>Test Result:</i>	Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test item passed the test specification(s).</i>				
Prüflaboratorium: <i>Testing Laboratory:</i>	TÜV Rheinland Taiwan Ltd. Taichung Lab. 10F, No. 219, Min Chuan Road, Taichung 403, Taiwan, R.O.C.				
geprüft/ tested by:		kontrolliert/ reviewed by:			
 15.06.2017 Andy Wen / PM		 13.06.07 Werner Feucker / M			
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges/ Other Aspects:					
The safety glass windows are tested according to the impact energy required by the client. Please refer to attachment A for test data and test results for details.					
Abkürzungen:			Abbreviations:		
P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet			P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested		
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.					

JUL 04 2007

Attachment A: Test data and results

A.1 Testing equipment:

This comprises of a propulsion device, a projectile, and a support of the guard to be tested.

A.2 Projectile:

- The shape is in accordance with figure B.1 in Annex B of EN12415: 2000.
- Mass: 2.5kg
- Dimension: Diameter 50mm, Front face 30x30mm.

A.3 Speed measurement:

Measurement of the acceleration is carried out by means of placing two sensors at the end of the barrel. The sensors are spaced at 174mm from each other. The time elapsed by the projectile to travel between these two sensors are measured, thereby, the velocity of the projectile is calculated by dividing 174mm over the elapsed time.

A.4 Supporting the guard under test:

The test specimen was fixed rigidly on the metallic test support during the test.

A.5 Test procedure:

Impact shall be square to the surface as possible. The target of the projectile shall be the weakest and most unfavourable spot on the material sample or on the guard.
Theoretical impact energy: $J = mv^2$

A.6: Test results:

Specimen type	Specification of the test object	Projectile		Impact		Test results
		Dimension	Mass (kg)	Speed (m/s)	Energy (Joules)	
LFE-200	3mm glass + 0.6mm laminated film + 2mm PC (polycarbonate) + 0.6mm laminated film + 3mm glass	Diameter 50mm, Front face 30x30mm	2.501	18.89	446.2	Incipient crack (visible only on surface)
LFE-300	3mm glass + 0.6mm laminated film + 3mm PC (polycarbonate) + 0.6mm laminated film + 3mm glass	Diameter 50mm, Front face 30x30mm	2.502	24.98	780.6	Incipient crack (visible only on surface)
LFE-500	3mm glass + 0.6mm laminated film + 4.5mm PC (polycarbonate) + 0.6mm laminated film + 3mm glass	Diameter 50mm, Front face 30x30mm	2.501	33.60	1411.8	Incipient crack (visible only on surface)
LFE-600	3mm glass + 0.6mm laminated film + 6mm PC (polycarbonate) + 0.6mm laminated film + 3mm glass	Diameter 50mm, Front face 30x30mm	2.502	39.74	1975.7	Incipient crack (visible only on surface)
LFE-800	3mm glass + 0.6mm laminated film + 8mm PC (polycarbonate) + 0.6mm laminated film + 3mm glass	Diameter 50mm, Front face 30x30mm	2.500	51.62	3330.8	Incipient crack (visible only on surface)

A.6.1 Material damages may consist of:

- | | |
|---|-------|
| a) Buckling/bulging (permanent deformation without crack); | (No) |
| b) Incipient crack (visible only on surface); | (Yes) |
| c) Through crack (crack visible from one surface to the other); | (No) |
| d) Penetration (projectile penetration of the material); | (No) |
| e) Guard window loosened from its fixing; | (No) |
| a) Guard loosened from guard support; | (No) |