



Wiltshire Ballistic Services Ltd



Wiltshire RFD 228

6<sup>th</sup> July 2004

### BALLISTIC TEST REPORT

This test was carried out to evaluate the ballistic resistance of a metal frame and armour glass system employing the BS EN 1063, and 1523 protocol and method.

Report/Trial No .....	2420
Test Date .....	6 <sup>th</sup> July 2004
Report Prepared by .....	C B Warwick
Trial Commissioned by .....	Windell Limited
Manufacturer of Sample.....	Windell Limited
Sample Designation.....	Unmarked single example of product, construction undisclosed.
Sample Size .....	600 x 600 x 130mm

#### The Test

Calibre of Test Rounds .....	7.62 x 39mm
Bullet make .....	Norinco
Bullet weight & type .....	121gn steel core.
Bullet code.....	71/84.
Test Weapon.....	Universal Breech 1
Barrel Length.....	
Muzzle to target distance .....	10m
Configuration of Test Range.....	Detector 1, 7m; Detector 2, 8m; sample at 10m
Bullet/Projectile strike Pattern.....	As required
Range Temperature.....	21.2 °C
Humidity .....	66.6%

<b>Shot Group</b>	<b>Location</b>	<b>Velocity m/s</b>	<b>Sample or Penetrated</b>	<b>Comments / Assessment</b>
1	Outer frame	704	Held	Spall
	Outer frame	687	Held	Low velocity
	Outer frame	703	Held	Spall
	Outer frame	699	Held	
2	Gap between frame and opening window	702	Held	
	Gap between frame and opening window	710	Held	
	Gap between frame and opening window	701	Held	
	Gap between frame and opening window	701	Held	
	Gap between frame and opening window	709	Held	
	Gap between frame and opening window	701	Held	
6	Glazing frame	707	Held	
	Glazing frame	710	Held	
	Glazing frame	706	Held	

The results contained in this report are only valid for the samples tested and detailed above. The publication of these results in any abridged form is **not** allowed without approval in writing by Wiltshire Ballistic Services Ltd.

## RANGE EQUIPMENT & CONFIGURATION

### THE GUN

All samples were shot from a track mounted laser-sighted universal receiver fitted with the appropriate barrel to give both projectile stability and the required velocity. Muzzle to target distance being adjusted to that given in the performance tables.

### VELOCITY MEASUREMENT

The projectile velocity is measured using optical "sky screens" with 1.0m separation. Positioned on a track-mounted housing fitted with D.C. light sources to detect the passage of the Projectile. The optical sky screens are connected to an electronic timing unit and velocity calculating computer, each unit being calibrated and certified in accordance with the manufacturer's requirements.

**NOTE:** Unless otherwise stated, projectile velocity is measured at a point 2.5m from the attack face of the sample under test.

### SAMPLE HOLDER

The track mounted sample holder trolley is of heavy steel construction to form a rigid mounting into which various specialised sample holders can be fitted to meet a multitude of different testing standards. Provision is also made to allow for turning samples to predetermined angles for angled attacks.

### WITNESS SYSTEM

Aluminium foil was fastened securely to the front of a 600mm x 600mm x 300mm stainless steel spill catcher box positioned to the rear of the sample under test.

### SHOT PLACEMENT

All firing is carried out using a laser-sighted universal receiver, accuracy tends to be far better than would usually be the case when hand-held weapons are used. Therefore, unless otherwise stated, all shots for the series have hit the sample in the required pattern and with the required spacings.

Signed:



Date: 7<sup>th</sup> July 2004

**REPORT ENDS**