

## **Vehicle Security Barrier Test Programme**

**Test B4161 on 30 September 2009**

**Generic 273mmØ Bollard [16mm wall thickness]**

**TRL Report CPR518**



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Test procedure:

**PAS 68:2007 TEST TYPE 7500-80**

**GENERIC 273MMØ BOLLARD [16MM WALL THICKNESS]**

| Contact     | Company/Organisation | Address                        |
|-------------|----------------------|--------------------------------|
| Paul Forman | CPNI                 | PO Box 60628, London, SW1P 9HA |

Customers:  
Test Date:  
**30 September 2009**

Test Number:  
**B4161**

Author:  
**Tim Pearce**

Report Issue Date:  
**28 October 2009**

For questions relating to this test please contact the Author at TRL

#### Approvals

Author



Tim Pearce

Technical reviewer



Gavin Williams

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## Summary of Results

### Test Agency

TRL Ltd, Crowthorne House, Nine Mile Ride, Wokingham, Berkshire, RG40 3GA

### Product

Designation: Generic 273mmØ Bollard [16mm wall thickness]  
 Drawings supplied: N/A  
 Installation Foundation: 16 June 2009  
 Product: 1 July 2009

### Test Vehicle

Make/Type Ford Iveco CRG 75E15 Curtainside  
 VIN SBCA75A1002336916  
 Kerb weight 4225 kg  
 GVW 7500 kg

### Impact Specification

|        | Target                | Achieved  |
|--------|-----------------------|-----------|
| Mass   | 7500 [ $\pm 225$ ] kg | 7500kg    |
| Speed  | 80 [ $\pm 5$ ] km/h   | 79.6 km/h |
| Angle  | 90 deg                | 90 deg    |
| Energy | 1852kJ                | 1833 kJ   |

### Product result

The product restrained the vehicle

### Vehicle penetration

**Dynamic** 1 m  
**Static** 1 m

### Dispersion of debris

21 m

### Vehicle result

The vehicle was immobilised

### Manufacturer [Details]

N/A

| PAS 68:2007 Performance classification — vehicle impact test                |   |
|---|---|
| <b>Performance classification [note: not given for penetration &gt;25m]</b> | <b>Fixed Bollard V/7 500/80/90:1.0/21.2</b> |
| Product type  | Fixed Bollard                               |
| Test weight [kg]  | 7500  |
| Test speed [km/h]   | 79.6  |
| Vehicle penetration [m] - 25 if >25m  | 1.0   |
| Dispersion of major debris [m] - 25 if >25m                                 | 21.2  |
| Engine running after impact   | No  |
| Vehicle driveable after impact  | No  |
| Follow-on vehicle could pass barrier  | No  |