Vehicle barriers by Automatic Systems

**REGULAR**
- Electromechanics

**DISSUASIVE**
- Hydraulics or Electromechanics

**SECURITY**
- Impact resistance rated
- Minimum 200,000 joules
- Hydraulics or Electromechanics

**HIGH-SECURITY**
- Crash tested or rated
- Minimum 700,000 joules
- Hydraulic pumps
Our security and our high-security products

Ongoing current global terrorist activity threats continue to drive demand for anti-terror measures. HIGH-SECURITY products (also known as HVM products) protect the infrastructure against vehicle-borne threats, creating blast stand-off distance.

Since September 11th 2001, several international accreditation standards have defined essential impact performance requirements for a vehicle security barrier (VSB) and a test method for rating its performance.

There are essentially 2 standard families:
- US standards with the precursor DOS K-rating which has been replaced and extended by the ASTM F2656-07 standard;
- UK created PAS68 standard which has been replaced and extended by international standard IWA14-1 (ISO).

Impact resistance equivalences between these standards do not officially exist but all those rating are using the same calculation method, that of the kinetic energy:

$$E = \frac{1}{2} (m \cdot U^2)$$

Resulting in conclusion:

- M50 <> K12 <> PAS 68 V/7500/80 <> IWA14 V/7200/80 <> 2,000,000 joules
- M40 <> K8 <> PAS 68 V/7500/64 <> IWA14 V/7200/64 <> 1,200,000 joules
- M30 <> K4 <> PAS 68 V/7500/48 <> IWA14 V/7200/48 <> 750,000 joules

Impact resistance will be certified by a crash-test, a computer simulation or an engineer calculation.

SECURITY products are also defined by US, UK and ISO standards. Then, for those very products, the impact resistance are between 200,000 joules and 700,000 joules.

HIGH-SECURITY and SECURITY products differentiate also themselves by several features such as: passage width, obstacle height, foundation depth, rising/ lowering speed and also the Emergency Fast Operation (E.F.O) which is mandatory for high-security installations.

<table>
<thead>
<tr>
<th>Products</th>
<th>Impact resistance</th>
<th>Beam Barriers</th>
<th>Road Blockers</th>
<th>Fixed/Removable Bollards</th>
<th>Automatic Bollards</th>
<th>Tyre Killers</th>
</tr>
</thead>
<tbody>
<tr>
<td>C50 series</td>
<td>1.5 T at 64 Km/h 3.5 T at 32 Km/h 250,000 joules</td>
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<tr>
<td>C60 series</td>
<td>1.5 T at 80 Km/h 3.5 T at 48 Km/h 400,000 joules</td>
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<tr>
<td>M30 series</td>
<td>3.5 T at 80 Km/h 7.5 T at 48 Km/h 750,000 joules</td>
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<tr>
<td>M40 series</td>
<td>3.5 T at 96 Km/h 7.5 T at 64 Km/h 1,200,000 joules</td>
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<tr>
<td>M50 series</td>
<td>3.5 T at 112 Km/h 7.5 T at 80 Km/h 2,000,000 joules</td>
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</tbody>
</table>
Beam barriers

**BL43 C50M1**
- Rising barrier
- Impact resistance: 250,000 joules
- Height: 770 mm
- Length: 3 m
- Shallow mounted
- Electromechanical actuator
- 2 directions of obstacle
- For type M1 vehicle (car)

**BL43 C50N1**
- Rising barrier
- Impact resistance: 250,000 joules
- Height: 1030 mm
- Length: 3 m
- Shallow mounted
- Electromechanical actuator
- 2 directions of obstacle
- For type N1 vehicle (flat bed)

**HIGH SECURITY**

**BL M50**
- Lift Barrier
- Impact resistance: 2,000,000 joules
- Height: 1100 mm
- Length: from 3 to 10 m
- Shallow mounted
- 2 hydraulic pumps
- 2 directions of obstacle
Tyre killers

TK AUTO
Immobilization of a vehicle by puncturing its tires
Height: 500 mm
Length: from 2 to 6 m
Spikes 20 mm
Automatic lift with remote hydraulic pump

TK MAN
Immobilization of a vehicle by puncturing its tires
Height: 60 mm
Length: from 2 to 6 m
Spikes: 10 mm
Mechanical lift by counterweight
Free exit

Road blockers

RSB C60SM
Impact resistance: 400.000 joules
Height: 500 mm
Length: 3,5 m / 4,5 m / 5,5 m
Surface or shallow mounted depending of the nature of the soil
Local hydraulic pump

RSB M30 (ex RSB77)
Impact resistance: 750.000 joules
Height: 500 mm
Length: from 2 to 6 m
Shallow mounted
Remote hydraulic pump

RSB M50 (ex RSB79)
Impact resistance: 2.000.000 joules
Height: 1000 mm
Length: from 2 to 6 m
Shallow mounted
Remote hydraulic pump
Crash-test:
PAS68:2013 V/7500(N3)/80/90:0.2/10
Automatic security bollards
with built-in hydraulic pump

**RB C50**

**RB C50** _800 (ex RB80)_
Impact resistance: 250,000 joules
Height: 800 mm
Diameter/Thickness: Ø ± 275/6 mm
Also available in 127 mm diameter (150,000 joules)

**RB C50** _600 (ex RB60)_
Impact resistance: 250,000 joules
Height: 600 mm
Diameter/Thickness: Ø ± 275/6 mm
Also available in 127 mm diameter (150,000 joules)

**RB C60**

**RB C60** _800_
Impact resistance: 400,000 joules
Height: 800 mm
Diameter/Thickness: Ø ± 275/10 mm

**RB C60** _600_
Impact resistance: 400,000 joules
Height: 600 mm
Diameter/Thickness: Ø ± 275/10 mm
Automatic high-security bollards
with built-in hydraulic pump

HIGH SECURITY

RB M30/M40

RB M30_700 (ex RB70S)
Impact resistance: 750,000 joules
Height: 700 mm
Diameter/Thickness: Ø ±275/10 mm

RB M30_900 (ex RB90S)
Impact resistance: 750,000 joules
Height: 900 mm
Diameter/Thickness: Ø ±275/10 mm
Crash-test:
IWA 14-1: 2013 V/7200(N3)/48/90:1.0
PAS68:2013 V/7500(N3)/48/90:1.0/2.5
Also available as RB M40

RB M40_1200
Impact resistance: 1,200,000 joules
Height: 1200 mm
Diameter/Thickness: Ø ±275/15 mm
Crash-test:
ASTM: M30/P1

RB M50

RB M50_900 (ex RB90HS)
Impact resistance: 2,000,000 joules
Height: 900 mm
Diameter/Thickness: Ø ±275/25 mm
Crash-test:
DOS: K12/L1

RB M50_1200 (ex RB120HS)
Impact resistance: 2,000,000 joules
Height: 1200 mm
Diameter/Thickness: Ø ±275/25 mm
Crash-test:
PAS68:2013 V/7500(N3)/80/90:1.4/8.0
ASTM: M50/P3
Fixed security bollards
fixed into the ground or unscrewable

FB C50/C60
FIXED INTO THE GROUND

FB C50_800
Impact resistance: 250,000 joules
Height: 800 mm
Shallow mounted
Diameter/Thickness: Ø ±275/6 mm
Fixed into the ground
Also available in 127 mm diameter (150,000 joules)

FB C60_800
Impact resistance: 400,000 joules
Height: 800 mm
Shallow mounted
Diameter/Thickness: Ø ±275/10 mm
Fixed into the ground

FB C50_600
Impact resistance: 250,000 joules
Height: 600 mm
Shallow mounted
Diameter/Thickness: Ø ±275/6 mm
Fixed into the ground
Also available in 127 mm diameter (150,000 joules)

FB C60_600
Impact resistance: 400,000 joules
Height: 600 mm
Shallow mounted
Diameter/Thickness: Ø ±275/10 mm
Fixed into the ground

FB C50_500
Impact resistance: 250,000 joules
Height: 500 mm
Shallow mounted
Diameter/Thickness: Ø ±275/6 mm
Fixed into the ground
Also available in 127 mm diameter (150,000 joules)

FB C60_500
Impact resistance: 400,000 joules
Height: 500 mm
Shallow mounted
Diameter/Thickness: Ø ±275/10 mm
Fixed into the ground

FB C50UN
UNSCREWABLE

FB C50UN_800 [ex FB80]
Impact resistance: 250,000 joules
Height: 800 mm
Shallow mounted
Diameter/Thickness: Ø ±275/6 mm
Unscrewable with counterframe
Also available in 127 mm diameter (150,000 joules)

FB C50UN_600 [ex FB60]
Impact resistance: 250,000 joules
Height: 600 mm
Shallow mounted
Diameter/Thickness: Ø ±275/6 mm
Unscrewable with counterframe
Also available in 127 mm diameter (150,000 joules)

FB C50UN_500 [ex FB50]
Impact resistance: 250,000 joules
Height: 500 mm
Shallow mounted
Diameter/Thickness: Ø ±275/6 mm
Unscrewable with counterframe
Also available in 127 mm diameter (150,000 joules)
**Fixed high-security bollards**

**HIGH SECURITY**

**FB M30/M40**

**FB M30UN_700 (ex FB70S)**
Impact resistance: 750,000 joules
Height: 700 mm
Diameter/Thickness: Ø ± 275/10 mm
Unscrewable with counterframe

**FB M30_700**
Impact resistance: 750,000 joules
Height: 700 mm
Shallow mounted
Diameter/Thickness: Ø ± 275/10 mm
Fixed into the ground

**FB M30_900 (ex FB90S)**
Impact resistance: 750,000 joules
Height: 900 mm
Shallow mounted
Diameter/Thickness: Ø ± 275/10 mm
Fixed into the ground

**FB M40_1200**
Impact resistance: 1,200,000 joules
Height: 1200 mm
Shallow mounted
Diameter/Thickness: Ø ± 275/15 mm
Fixed into the ground

**Also available as FB M40**

**FB M50**

**FB M50_900 (ex FB90HS)**
Impact resistance: 2,000,000 joules
Height: 900 mm
Shallow mounted
Diameter/Thickness: Ø ± 275/25 mm
Fixed into the ground

**FB M50_1200 (ex FB120HS)**
Impact resistance: 2,000,000 joules
Height: 1200 mm
Shallow mounted
Diameter/Thickness: Ø ± 275/25 mm
Fixed into the ground
Other bollards
automatic, semi-automatic or removable

**RB EM_600**
Automatic Rising/ Lowering
Electromechanical activator
Height: 600 mm
Diameter/Thickness: Ø ± 275/4 mm

**MB_500 (ex MB 50)**
Semi-automatic bollard
Gas-embedded activator
Height: 500 mm
Diameter/Thickness: Ø ± 275/6 mm
Also available in 600/800 mm height

**FR_600**
Fixed removable bollard
Height: 600 mm
Diameter/Thickness: Ø ± 275/5 mm

**FR M30_700 & FR M30_900**
Fixed removable bollards
Impact resistance 750,000 joules
Heights: 700 mm & 900 mm
Diameter/Thickness: Ø ± 275/10 mm

**FR M50_900**
Fixed removable bollards
Impact resistance 2,000,000 joules
Height: 900 mm
Diameter/Thickness: Ø ± 275/25 mm
Accessories

Fixed column
For integration of traffic light, intercom or command
Height: 1500 or 1800 mm
Diameter: 170 or 275 mm

Retractable or modular column
For integration of RB control unit
For integration of traffic light, intercom or command
Sliding cover to the top
Height: 1500 or 1800 mm
Diameter: 170 mm

Fix cabinet B0R 235
For integration of traffic light, intercom or command
Car height or truck height

Retractable cabinet
For integration of RB control unit
Retractable structure integration into the pavement
HEADQUARTERS - INTERNATIONAL SALES
AUTOMATIC SYSTEMS SA

Avenue Mercator 5 – 1300 Wavre
BELGIUM
T. : +32 (0)10 230 211
F. : +32 (0)10 230 202
sales.asgroup@automatic-systems.com

LOCAL OFFICES IN THE WORLD

FRANCE
T. : +33 (0)1 30 28 95 50 (Vehicle – Persan office)
T. : +33 (0)1 41 11 40 20 (Pedestrian – Suresnes office)
Email : sales.fr@automatic-systems.com

SPAIN
T. : +34 (0)93 478 77 55 (Barcelona office)
T. : +34 (0)91 659 07 66 (Madrid office)
Email : sales.es@automatic-systems.com

UNITED KINGDOM
T. : +44 (0)1604 65 42 10
Email : sales.uk@automatic-systems.com

UNITED STATES
T. : +1 518 944 94 98
Email : sales.us@automatic-systems.com

CANADA
T. : +1 450 659 07 37
Email : sales.ca@automatic-systems.com

GERMANY
T. : +49 2303 553 4040
Email : sales.de@automatic-systems.com

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www.automatic-systems.com