



SafeDirection
CRASH BARRIER SOLUTIONS

Volkman and Rossbach International Partner

CLAW

We provide Safety...worldwide!



Mobile Hostile Vehicle Barrier

CLAW

VR[®]

VOLKMANN & ROSSBACH GmbH & Co. KG
experience · competence · flexibility · innovation

CLAW Concept



Safe Direction is an international partner of VOLKMANN & ROSSBACH GmbH one of the leading suppliers of security solutions to protect crowded spaces and products for stopping hostile vehicles.

The innovative **CLAW** protection system has been designed to provide protection from hostile vehicles to temporary and permanent events like sports events, outdoor markets, music festivals, shopping centres, industrial sites, public services and critical infrastructures. The **CLAW** protection system has been successfully tested in two different containment categories.

The system is completely surface mounted, modular and allows, in a very short time, to protect a multitude of scenarios.



V&R Head Quarters, Montabaur Germany



Safe Direction, Sydney



Safe Direction, Melbourne



VOLKMANN & ROSSBACH GmbH & Co. KG

For more than 50 years, **VOLKMANN & ROSSBACH GmbH** has been successfully active in the field of traffic safety, road equipment and also in nature and environmental protection. Highly qualified employees and specialists from various departments develop innovative safety barriers, manufacture in modern production facilities and install road restraint systems on site.

Every day, VR makes an active contribution to passive safety all over the world. Skilled experts support the customer in the planning, realisation and control of small and large projects. VR quickly delivers customized solutions tailored to local conditions and construction requirements. Quality is also the VR focus! Every product is strictly designed and controlled during production according to the highest quality Standards.

The service network consists of consulting and development offices, production companies with connected galvanizing plants and own installation teams. VR is recognized as a competent industry consultant in a large number of national and international committees and working groups.

VR will continue to make World safer with new products and services – meeting the slogan:

We provide Safety... worldwide!



Evaluating Product Performance

International Standards on Vehicle Security Barriers



The three most recognised standards on vehicle security barriers (VSB) have all been developed to address the needs of organisations who wish to have assurance that they are provided with the level of impact resistance that they seek.

The norms have been published by independent standardisation bodies at different times, yet all provide similar rules to determine the performance of a VSB by a full-scale crash test: in general, a conforming product is characterised by the mass of the test vehicle, the impact speed and angle, and the penetration depth of the vehicle and debris into the protected area behind the VSB.

The ISO Workshop Agreement IWA 14-1 has specifically been developed to cover and include the provisions of both, the British PAS 68 as well as the American ASTM F2656. Therefore, the test results and performance ratings of the three standards are comparable to some extent.

Comparing product performance classifications

	 IWA 14-1	 ASTM F2656	bsi. PAS 68
Evaluation Type	D (Design Method) V (Full Scale Crash Test)	-- (Crash Test only)	D (Design Method) V (Full Scale Crash Test)
Vehicle Class (Type - Mass)	M1 (Car - 1,500 kg) N1G (Crew-Cab Pick-Up - 2,500 kg) N1 (Flat-Bed - 3,500 kg) N2A (7,5 to Truck - 7,200 kg) N2B (12-to Bonnet Truck - 7,200 kg) N3C (18-to Truck - 7,200 kg) N3D (15-to Truck - 12,000 kg) N3F (30-to 4-axle Truck - 30,000 kg)	SC (Small Car - 1,100 kg) FS (Full-Size Sedan - 2,200 kg) PU (Single-Cab Pick-Up - 2,300 kg) C7 (Cab-Over Class 7 - 7,200 kg) M (12-to Bonnet Truck - 6,800 kg) H (3-axle Dumper - 29,500 kg)	M1 (Car - 1,500 kg) N1G (Crew-Cab Pick-Up - 2,500 kg) N1 (Flat-Bed - 3,500 kg) N2 (7,5 to Truck - 7,500 kg) N3 (18 to 2-axle Truck - 7,500 kg) N3 (30 to 4-axle Truck - 30,000 kg)
Impact Speed	16, 32, 48, 64, 80, 96 ^A , 112 ^B km/h <small>A) only M1, N1G, N1 B) only M1, N1G</small>	30, 40, 50, 60 mph <small>(50, 65, 80, 100 km/h)</small>	16, 32, 48, 64, 80 ^A , 96 ^B , 112 ^C km/h <small>A) not N2 B) only M1, N1G, N1 C) only M1, N1G</small>
Impact Angle	90° (or worst-case angle)	90°	any (0°-90°)
Vehicle Penetration	Result in Meters (from system front)	Classes: P1 <1m P2 <7m P3 <30m P4 >30m (from system rear end)	Result in Meters (from system rear end)
Debris Dispersion	--	--	Result in Meters
Example Performance Rating	V/2,500(N1G)/64/90/2.6	PU40 - P2	V/2,500(N1G)/64/90:1.7/2.0

VR presents a new mobile crash rated barrier with proven stopping capabilities and customizable to meet users' requirements.



Mobile Hostile Vehicle Barrier

Crash test

Pedestrian Friendly Design

The protection system has been designed to be aesthetically pleasing and versatile, in order not to be dangerous for pedestrians and to avoid transmitting a hostile or threatening feeling to people.

Thanks to the modularity of the product, the number of configuration options is almost infinite, allowing **CLAW** to adapt to any scenario. The **CLAW** protection system is designed, tested and certified to the highest International Standards.



Ratings



Test 1. IWA 14-1:2013 V/1,500(M1)/64/90:4.7 and PAS68:2013 V/1500(M1)/64/90/3.9

Crash test 1 frame A



Crash test 1 frame B



Crash test 1 frame C



Crash test 1 frame D



Test 2. IWA 14-1:2013 V/3,500(N1)/64/90:8.2 and PAS68:2013 V/3500(N1)/64/90/7.3

Crash test 2 frame A



Crash test 2 frame B



Crash test 2 frame C



Crash test 2 frame D

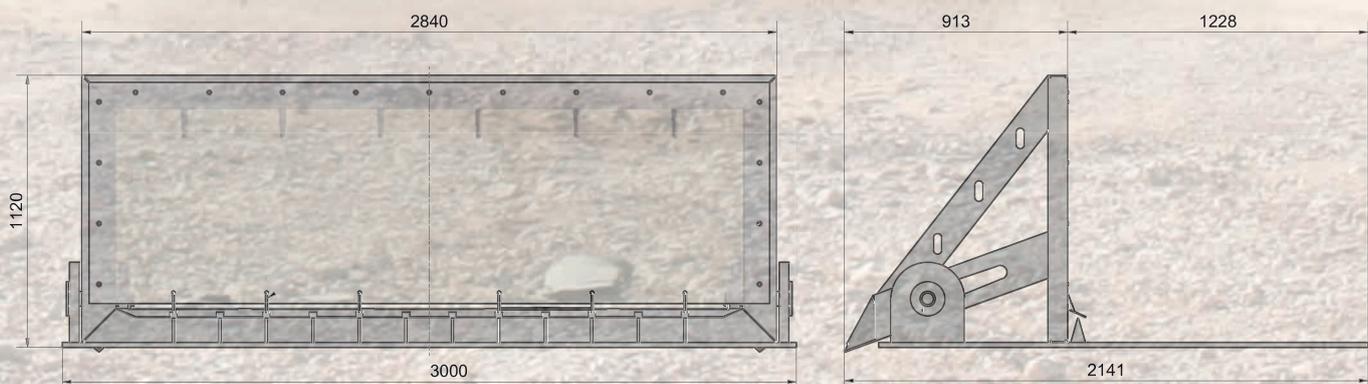




The protection system, individually tested, is also designed to connect two or more elements together in order to configure a defence perimeter.

CLAW is designed to stop the motion of a vehicle before it reaches its goal. The vehicle is quickly neutralized and the debris, consequent to the impact, are considerably reduced thanks to the conformation and the barrier engagement system.

Module dimensions



CLAW Application scenarios



Utilities and
Critical Infrastructures



Sporting
Events



Outdoor Markets and
Music Festivals



Shopping Centers and
Industrial Sites



The **CLAW** can be deployed
in various perimeter security applications all over the world.



Multi-purpose protection

For additional value, the **CLAW** can be further accessorised with **advertising/sponsorship or information panels, bike rack, trash cans, flower pots, LED lighting** further enhancing the benefit of installing these systems in your specific scenario.

The **CLAW** protection system is completely modular, giving the flexibility to adapt its use to any kind of event.

It can be installed over kerbs, curves and against walls, making it the most versatile option in temporary security. Every single element can also be connected with others creating a completely fenced and protected area.





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We provide a full scale of advanced Road Safety Products.
Please visit us at

CLAW

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safedirection.com.au