

Crash Rating Standards

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Fencing and Access Solutions

Crash fencing and Gate standards

There are three test standards that are commonly used and stated for the UK, PAS 68, the US the department of State certification standard, often referred to as K12 and the ASTM standard. The different ratings are detailed below:

PAS 68

The PAS 68 standard is probably the most detailed standard and identifies the type of attack, details of the vehicle, the force of the attack, speed and weight, the angle of attack and the penetration along with the dispersal of major debris from the attack.

The classification for a Fixed bollard is V/1500/48/90:1.7/5.2

The method of testing V= vehicle, the weight of the vehicle 1500kg, the impact speed 48km/h, the angle of attack 90 degrees, the penetration 1.7m and the distance that major debris landed 5.2m.

Vehicles type and speeds of tests

Vehicle	Weight	Speed
Car	1500kg	16,32,48,64,80,96,112 k/mph
4 x4 Pick up	2500kg	16,32,48,64,80,96,112 k/mph
Light van	3500kg	16,32,48,64,80,96 k/mph
Lorry	7500kg	16,32,48,64,80 k/mph
Heavy lorry	30000kg	16,32,48,64,80 k/mph

It should be noted that if a product has passed a PAS standard it should have passed all of the levels below that rating. This is different to the US standards below and has some safeguards for the users

Department of State (DoS)

Impact speed	Weight of vehicle	Designation	Penetration
50km/h (30mph)	6800kg	K4	1m
65km/h (40mph)	6800kg	K8	1m
80km/h (50mph)	6800kg	K12	1m

Penetration is defined as the maximum distance that the loading edge of the vehicle enters the site not where the vehicle comes to rest. So on a car that would be the A pillar and on a lorry or van the headboard.



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American Society for Testing and Materials (ASTM)

Designation	Weight of vehicle	Impact speed
C40	1100kg	65kmph (40mph)
C50	1100kg	80kmph (50mph)
C60	1100kg	100kmph (60mph)
PU40	2300kg	65kmph (40mph)
PU50	2300kg	80kmph (50mph)
PU60	2300kg	100kmph (60mph)
M30	6800kg	50kmph (30mph)
M40	6800kg	65kmph (40mph)
M50	6800kg	80kmph (50mph)
H30	29500kg	50kmph (30mph)
H40	29500kg	65kmph (40mph)
H50	29500kg	80kmph (50mph)

The prefix to the designation refers to the vehicle type C car, PU pickup, M medium duty truck, H heavy goods.

The penetration distance for the ASTM standard is used in addition to the above and is classified as follows:

Designation	Penetration
P1	<=1m
P2	1.01m to 7m
P3	7.01m to 30m
P4	30m or greater

Classifying the penetration distance allows for the fence or barrier to be matched to meet the threat and the site conditions for example a Government building could need to have a 1m penetration whereas an airport could have 30m at certain points.

