

## ProTec: high containment level with small space requirements



### Technical data ProTec 160

Impact test		System description	
Acceptance test:	TB 11      TB 42	Material:	steel and concrete
Test date:	15.09.2009    14.09.2009	Height:	0.80 m
Containment level:	H1	Element length:	10 m
Test location:	TÜV Süd, München	Foot width:	0.50 m
Test length:	120 m      120 m	Plannig width:	0.16 m
Ground anchoring:	yes (only at the beginning)	Weight per m:	300 kg

### Test conditions

Acceptance test	Test vehicle	Weight	Impact angle	Speed
TB 11 / TB 42	car / truck	0.9t / 10t	20° / 15°	100 km/h / 70 km/h

### Effective range as per DIN EN 1317-2 / Test report No.

Containment level	Structural width	Effective range	ASI value
H1 (car)	0.5 m	0.98 m    W3	1.3 (B)
H1 (truck)	0.5 m	1.15 m    W4	

BASSt Test No. ProTec 160: **BASSt 2010 7E 54**  
 Reflector element test No.: **BASSt V4-08/2002**

### Areas of use / Other special aspects

#### Areas of use pursuant to ZTV-SA

All areas (A to E) between roadworks and on-coming or parallel flow of traffic and between contraflow traffic also in the transition zone.

#### Other special aspects

Extremely narrow, compact crash barrier with high containment levels and low impact force level "B". Reflectors mounted in protected recess so cannot be sheared off. Generous water drainage opening so no accumulation of water at the wall. Rubber-based standing areas, kind to the road surface.

Only 18 cm planning-relevant width!

# ProTec 160

Fulfils containment level  
**H1 / W4**

ProTec 160 convinces with:

- *Small effective ranges*
- *Optimum containment levels*
- *Low ASI value "B"*
- *Narrow planning width*
- *Many possible uses*
- *Large water drainage opening*
- *Protected reflectors*
- *Fast assembly*
- *Low weight*
- *Minimum space requirements*
- *Low transport costs*
- *Highly economical*



ProTec 160: the narrow mobile crash barrier that fulfils containment level H1 with low ASI value "B"!

[www.mobile-Schutzwaende.de](http://www.mobile-Schutzwaende.de)

## ProTec: high containment level, small effective range

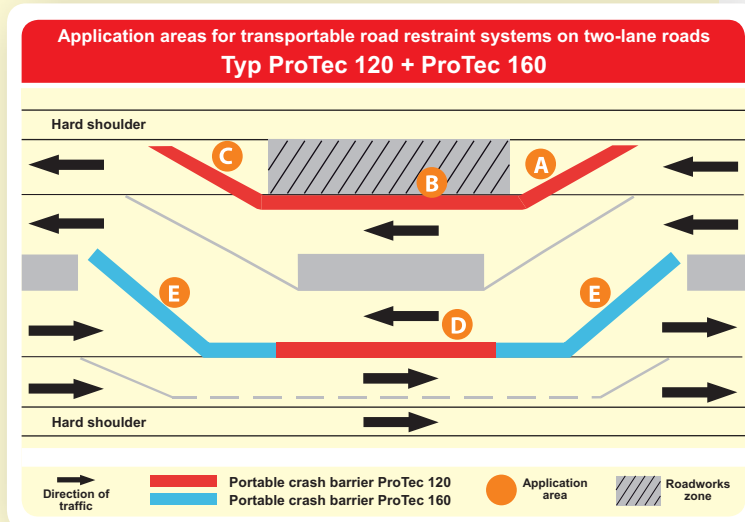
The mobile crash barrier has been successfully tested for **containment level H1** and **effective range W4** at TÜV-Süd in Munich. ProTec 160 naturally also offers all the advantages of its "little brother", the proven ProTec 120 system, which has been in use for our safety at (motorway) roadworks throughout Europe for years.

The special design of the mobile crash barrier in our ProTec family provides optimum protection in the working zone and for road users. To sustain the directional effect of the crash barrier all the time, the **BASt-tested reflectors** are protected in a recess so that they do not come loose from the wall or get sheared off when touched by a vehicle. The rubber-based standing surfaces ensure optimum distribution of the deadweight of the mobile crash barrier on the road surface.

The design with just one standing surface over a total length of ten metres leaves a generous opening of eight metres to **let water and dirt flow through**. This prevents the dangerous accumulation of puddles known at conventional crash barriers which can get splashed onto the windscreen of the vehicle behind.

The new mobile crash barrier ProTec 160 successfully separates off the oncoming traffic without letting an impacting accident vehicle rebound off it dangerously. The vehicle is guided in the right direction so it continues parallel to the crash barrier, as shown in impact tests. The ProTec crash barrier with its **low ASI values** clearly absorbs the recoil energy that otherwise has a violent effect on the passengers in an accident vehicle. The special design of the ProTec family with concrete enclosed in a peripheral sectional steel frame also prevents any parts from breaking out of the barrier on impact.

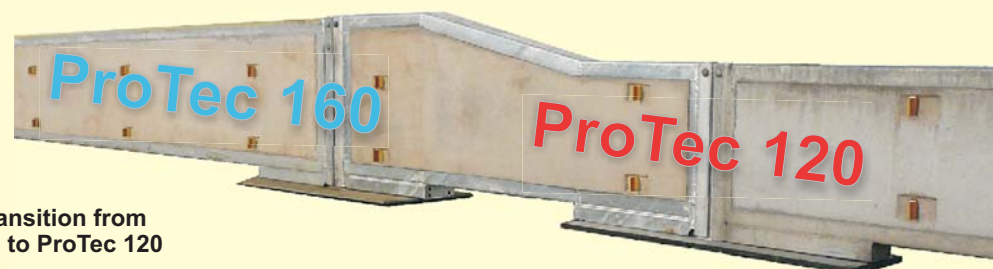
With a **planning width** of **only 16 cm** and narrow structural width, ProTec 160 is ideal for use in application area E as required in the German ZTV-SA regulation (Additional Technical Contract Conditions and Guidelines for the Work Involved in Safeguarding Roadworks).



ProTec can therefore be used for **complete traffic control** at a construction site, both for the transition zone E and for the contraflow zone D, pursuant to ZT-SA97.

Special adapters ensure a precise **force-fit connection** from ProTec 120 to ProTec 160 and vice versa. This means we can cover all **application areas** from A to D and the necessary transitions from E to D and back again with just **one product family**, as shown by the diagram. Whether traffic control is necessary between roadworks and oncoming or parallel traffic, between contraflow traffic or even in transition areas:

**when it comes to safety at roadworks, mobile crash barriers from the ProTec family are always first choice!**



Force-fit transition from ProTec 160 to ProTec 120

## Mobile ProTec crash barriers: safe, compact, economical



Lane switches and transition zones are no problem with ProTec for safe, clearly recognizable traffic control.



The 10 m elements of ProTec 160 are embedded all round in sectional steel for optimum protection.



Tested safety: successful impact tests pursuant to DIN EN 1317 with trucks and cars at TÜV Süd in Munich.



The contact surface of the stands measures 120 x 50 cm with a solid rubber base – extremely kind to the road surface.



The retractable reflectors are fitted into the concrete in such a way that they recede when touched and are preserved even when a vehicle touches the barrier.



ProTec 160 has a planning width of just 16 cm. The width of ProTec 120 is only 12 cm, which is narrower than a marking line.



Generous water drainage opening of 8 m in length is guaranteed for every 10 m element in the ProTec systems.



Up to 80 m of ProTec 160 can be loaded on a truck and installed directly from the vehicle.



Fast installation: one stand is always fitted to every element. All it takes is to screw in two bolts every 10 m.



Starting element for the ProTec systems; transitions to stationary systems are also available.



Ideal connection: force-fit transition between systems ProTec 160 and 120.



Storage of ProTec takes up only 1/3 of the space required for previous crash barrier systems.

## All application areas of ZTV-SA with ProTec 120 + ProTec 160

## More road safety with ProTec