# Berghaus-News

## Traffic Technology · Mobile Crash Barriers

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P.B. BERGHAUS

Fachbetrieb und Mitglied im Verein für Verkehrstechnik und Verkehrssicherung e.V.


## At a glance

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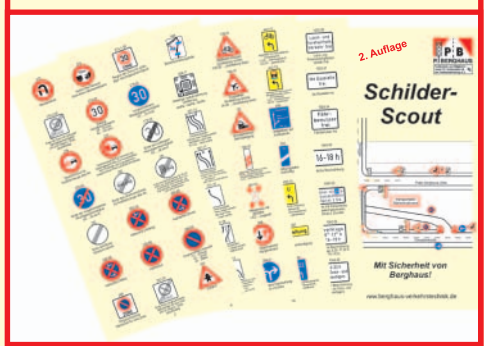
## New: sign scout




**Current second edition of the sign scout**

Our sign scout is now available again with immediate effect and fresh off the press!

This new second edition of the popular sign scout contains all German danger, legal, directional and additional signs of the Road Traffic Regulations traffic sign catalogue, presented on 48 pages. In a clearly designed layout, all traffic signs are briefly described with around 400 coloured illustrations and all marked with the corresponding sub-numbers.


### Imprint

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# Always green lights for emergency services

Blue flashing lights and sirens should make all other road users clear the way for the emergency vehicles. Everyone knows that every second counts for the emergency services and fire brigade when it comes to saving lives or protecting valuable assets.
Unfortunately, time and again roadwork on main roads or close to fire stations and emergency service bases mean that the emergency vehicles cannot pass immediately through these areas controlled by temporary traffic lights. And queues of traffic waiting at these bottlenecks can cause even greater problems during the rush hour when emergency services need to move quickly.

**No room for the fire engines**In addition to the already existing systems which in the past meant that all emergency vehicles had to be equipped with small radio-controlled hand-held transmitters, Berghaus has now developed a completely new system. While the use of radio-controlled hand-held transmitters in emergency vehicles has been satisfactory in the past, their main drawback is that they only work over a very short distance. The first fire engine to arrive at the roadworks can request a green light as soon as it gets to the traffic light, but still has to wait for the traffic passing through the roadworks to be cleared. In most cases, alternating one-way traffic systems are used, because the roadworks are so confined that it is not possible for vehicles to travel in both directions at once, certainly not for the large vehicles used by the fire brigade. The result: dangerous and also time-consuming traffic congestion for the emergency vehicles at these bottlenecks – time which in the worst case can cost lives, because the urgently needed help arrives too late.

**Always green lights for emergency services**
But it is now possible for the mobile traffic light systems by Peter Berghaus GmbH to be set to green in advance by the fire service and emergency control centre as soon as an alarm is given and before the emergency vehicles actually get to the roadworks. This early green request from the control centre also means that individual traffic which would otherwise hinder the emergency vehicles now also has an opportunity to clear the bottleneck in good time. The road is clear for the approaching emergency vehicles so that they can pass through the roadworks without any unnecessary delays.

**Every second counts: the control centre has switched the Berghaus roadworks traffic light system to green in advance to clear the road for the ambulance**

**Uncomplicated procedure**
To this end, the mobile traffic light system by Peter Berghaus GmbH is simply integrated in the existing widespread radio system (4 m or 2 m) used by the fire service and emergency control centres. The mobile Berghaus traffic light system can then be controlled selectively throughout the area even over large distances. The great advantage is that even the operator of the BOS radio network does not need any additional hardware or software. The mobile traffic light system can be erected and made ready for use in next-to-no time.
The emergency vehicles with priority right of way are guided through the roadworks quickly and easy simply by pressing a button in the control centre.

Help that always arrives promptly – with ***safety systems by Berghaus.***

# Pilot project: Caution, hazard ahead!


**Advance warning of approaching roadworks at a height of 5 m, thus clearly visible even when trucks go by**

Inattentiveness is sure to be one of the main causes of traffic accidents. In many cases, road users fail to keep to the carriageway limits. You can frequently see cars and trucks driving up to half a meter onto the hard shoulder. Which can be fatal when this is taken up by one-day roadworks and corresponding workers..

**Hazard detected – hazard prevented**
A very early, striking and clear warning as first reference to the hazard, positioned even before the actual advance warning sign or small flashing arrow, could surely help to reduce accidents caused by road users showing inadequate attention at (one-day) roadworks.
Similarly, an additional, clearly visible warning sign could make road users more alert and focus their attention on the approaching roadworks. This could reduce the elevated risk in roadwork areas particularly for the road maintenance staff working there and workers using mobile warning trailers.

**Mobile pre-warning on trial**
In cooperation with the state road maintenance authority for North Rhine-Westphalia, we are currently testing the use of a new pre-warner at one-day roadworks on the A3 motorway in the greater Cologne area.
A halogen or LED illuminated cross (or arrow) is fitted at a height of 3 metres on a mobile lower structure which is simply hinged for easy transport. Immediately over the cross or arrow, additional interchangeable traffic signs refer specifically to the approaching hazard with additional information about the cause for the advance warning. At a height of 5 m, the flashing 340 mm pre-warning light draws additional attention. In contrast to advance roadworks warnings with signs fitted at a height of 2 metres, the mobile pre-warner with an overall height of 5 metres cannot be concealed by passing trucks and is easy to see.
The initial echo to our idea indicates that we are on the right path!

## Register now: traffic light training 2008

Good training always pays off, everyone knows that!
Which is why in recent years we have offered initial and advanced training to more than 1,200 "traffic light experts" from road maintenance depots, authorities, construction companies and those responsible for traffic safety, in our practical courses.

In the 1st quarter 2008 we will once again be holding our traffic light training courses, providing course participants with necessary basic know-how about traffic light systems, making reference to the statutory regulations e.g. in the RiLSA, the ZTV-SA and the TL-LSA 97. The course looks at practical examples for drawing up signal timetables and how to implement these phase plans in the traffic light controllers.

**Course I** is ideal for beginners or users of mobile traffic light systems for alternating one-way, T-junction or crossroads traffic situations.

For those with more advanced knowledge, **course II** works on the basis of the know-how from course I and consists of a user seminar for crossroads system controllers. Learn the simple graphic procedure for drawing up signal timetables with our new "Ample Plan" program (version 2.1) and how to implement the resulting phase plans in the controllers.
Both seminars devote special attention to analytical fault-finding on site with efficient troubleshooting for all traffic light systems.

It is our pleasure to invite you to attend our training courses for 2008 in Kürten in North Rhine-Westphalia or Mellingen in Thuringia.
Take this chance and have your service staff trained. You need well qualified staff who have received specific initial and advanced training to keep pace with the high standard of signal technology and rapid on-going developments. Register with us today to make sure of one of the coveted course places!

**....please cut out, fill in the details and send to us....**

### Binding registration for the traffic light training 2008

☐ **Training course I** (290 € *)

☐ **Kürten** 21 + 22 Januar 2008 ☐ **Mellingen** 18 + 19 Februar 2008

Company: _____

Address: _____

Phone: _____ Fax: _____

First name: _____

Surname: _____

☐ **Training course II** (290 € *)

☐ **Kürten** 23 + 24 Januar 2008 ☐ **Mellingen** 20 + 21 Februar 2008

Company: _____

Adress: _____

Phone: _____ Fax: _____

First name: _____

Surname: _____

Signature Date

**After attending the course, you will receive a certificate with the quality description "Tested specialist for transportable construction site traffic light systems"**

*All prices include a snack and drink for each person but without accommodation. VAT must be added to all prices. Hotel recommendations can be found in our invitation letter, which you can download together with the training flyer on the internet at **www.berghaus-verkehrstechnik.de** Places on the courses are allocated according to the order in which registrations are received. Closing date is 11 January 2008 for 51515 Kürten and 8 February for 99441 Mellingen.

**Training course I** lasts 2 days and deals with the following topics:

**Day 1:**
- Brief explanation of TL-LSA ZTV-SA and RiLSA
- Calculating signal time-tables for one way alternating traffic systems
- Implementing time-tables in signal systems MPB 3200 and MPB 4400
- Analytical troubleshooting and fault rectification

**Day 2:**
- Calculating signal time-tables for signal systems at junctions and cross-roads with the traffic light time-table program Version 2.1
- Implementing the time-tables in signal system MPB 4400
- Familiarisation with the SMS remote monitoring system

**Training course II** lasts 2 days and deals with the following topics:

**Day 1:**
- Explanation of RiLSA, TL-LSA
- Drawing up signal time-tables with the traffic light time-table program Version 2.1
- Implementing the signal time-table in the control units EPB 6000 S, EPB 2400 and in the new control unit EPB 48 multi-processor
- Familiarisation with the SMS remote monitoring system

**Day 2:**
- Programming with the new traffic light Win program, version 3.0
- Practical uses for the control units EPB 6000 S, EPB 2400 and EPB 48 multi-processor
- Analytical troubleshooting and fault rectification
- Video detector with presence detection

*Unfortunately, all training courses will be held in German only.*

## 40 years in the service of traffic safety

**Manfred Schmitz (on the left) and Andreas Heeg have each clocked up 20 years of service with Peter Berghaus GmbH**

Temporary traffic control light systems, double warning lights, advance warning lights and flashing lights together with alternating one-way traffic signal systems all pass through his hands. For 20 years now, energy system electronic technician Manfred Schmitz (48) has ensured that bright lights warn customers of Peter Berghaus GmbH about approaching hazards and guide them safely through roadworks. He is also involved in the production of some of the traffic light series. Starting off 20 years ago with QPB 1/1, this was followed by MPB 1/1H and MPB 2000 and eventually today by MPB 1400, produced in our electric workshops with a major contribution from Manfred Schmitz. "Manni" is popular with colleagues not only because he keeps track of whose birthday's when and "coordinates" the traditional birthday breakfasts. His technical know-how particularly when it comes to warning lights and electronic flashlights and quartz-controlled signal systems is also in great demand.

Andreas Heeg learnt traffic light technology from scratch. As a 17-year old apprentice energy system electronic technician, Andreas Heeg, or "Heegi" to his colleagues, joined Peter Berghaus GmbH in September 1987. Over the last 20 years with the company, he has produced many pedestrian and MPB 4000 traffic signal systems including accessories, such as ready-made cable sets, signal heads and buttons. His main tasks also include producing our mobile crossroads controllers. Andreas Heeg is extremely flexible and popular with colleagues for his versatility – he is gladly seen as a helping hand at peak periods and also as holiday stand-in working in all areas of production.
The staff at Peter Berghaus GmbH congratulate Manfred Schmitz and Andreas Heeg!

## NRW: Warning humps for more protection

North Rhine-Westphalia is the first federal state to start using mobile warning humps on the carriageway to protect road users, road maintenance staff and workers from accidents at one-day roadworks. North Rhine-Westphalia's transport minister Oliver Wittke presented the humps made of yellow plastic on the A1 motorway near Euskirchen mid October. Here for the first time, the state road maintenance authority for North Rhine-Westphalia, (Straßen.NRW) placed three warning humps on the right-hand lane ahead of roadworks to alert drivers at the last minute if they should have missed the advance warnings.

**Warning humps – the "last warning" before the mobile warning trailer**
(picture: Straßen.NRW)

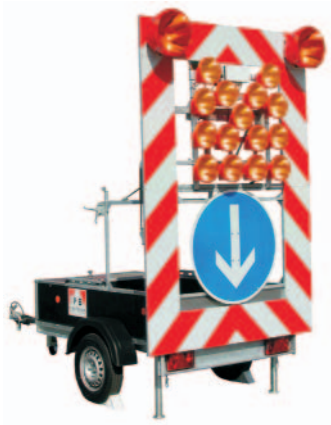
"With this new method, we show just what priority we give to the safety of road users and also to those working at roadworks on the motorway", said Wittke. "North Rhine-Westphalia is the first federal state to give permission to use the warning humps on the carriage way, as part of a traffic test already before they are included in the Road Traffic Regulations". Straßen.NRW Managing Director Ralf Pagenkopf added: "On average, at least one road maintenance worker is killed and 25 injured through third-party fault every year as a result of accidents at one-day roadworks. In 2006 our warning trailers were damaged in accidents nearly every week. I hope that the new protection method will help to clearly reduce these figures."

Since 2005, Straßen.NRW has already been using the warning humps on motorway hard shoulders. Positive results from this use and findings from the Netherlands where warning humps are already used on the carriageways, have led to the humps now being used as part of a state traffic test.

Three warning humps are placed offset across the carriage-way at a distance of 150 metres before the roadworks. At this point, the road users have already driven past several warning signs. The warning humps are three centimetres high, 23 centimetres wide, two metres long and equipped with reflectors. Driving over these humps will not cause damage to any kind of vehicle.

By the way, this product is featured on page 15 of our 2007 price list!

## Our strength: One-stop supplier for traffic technology



**Mobile warning trailer SM 40 (Vz616 small) for traffic safety apart from motorways. Equipped with illuminated arrow L 15, Vz 222 and double warning light system. Mounted on a trainer licensed up to 80 km/h.**

**Warning humps before mobile warning trailer AM 2 TL (Vz616) for professional traffic safety on motorways; mounted on a trailer licensed up to 80 km/h. Complies with the requirements for TL warning trailers 97, covered with retro-reflecting foil type II, equipped with 24 halogen lamps and 2 flashlights. The lower section accommodates a traffic sign 222-10/222-20 (blue arrow). The arrow can be adjusted with an electric motor. The various signal patterns can be selected using the supplied cable remote control from the driver's cab of the towing vehicle.**

**Small flashing arrow with 8 halogen or LED lights 200 mm Ø, yellow, control with night-time reduction. Fitted to a rotating support structure adjustable in height, mounted on a locking aluminium battery protective casing.**


**Mobile pre-warner MV 5 (left), fastened quickly and easily to the rear tailgate board of a truck or fitted quickly to the crash barrier.**

**Mobile pre-warner SM 5 (right) on licensed trailer with loading area.**

**Both pre-warners are equipped with a double warning light system and with replaceable plastic arrows (one set of plastic arrows to show the road narrowing, another set to show changing lanes and indicating use of the hard shoulder) together with an alternating traffic sign with 80 and 100 km/h on both sides (VZ 274-58/60).**


## Simple truth from the Dakota Indians

A simple truth from the Dakota Indians says:

"If you discover you're riding a dead horse, it's time to dismount."

But in our working lives, we often try out other strategies for dealing with this situation:

We get hold of a stronger whip.

We change riders.

We say: "But we've always ridden this way."

We set up a working part to analyse the horse.

We visit other sites to see how they ride dead horses there.

We increase the quality standards for riding dead horses.

We set up a task force to revive the dead horse.

We attend yet another training course to learn to ride better.

We compare different dead horses.

We change the criteria that say when a horse is dead.

We get new experts in to ride the dead horse.

We harness several dead horses up together to make them faster.

We say "No horse can be so dead that you can't beat it."

We get hold of additional funds to enhance the horse's performance.

We do a study to see whether there are cheaper consultants.

We buy something to make dead horses run faster.

We say that our horse is dead "better, quicker and cheaper".

We form a quality circle to find a use for dead horses.

We revise the performance conditions for dead horses.

We set up an independent cost centre for dead horses.

We mount our old, weak donkey and disguise it as the dead horse.

We start working at the weekends and carry the dead horse ourselves.

We restructure the stable.

We double the feed rations.

We declare that a dead horse had been our goal right from the start.

We promote the rider.

We deny ever having owned a horse.

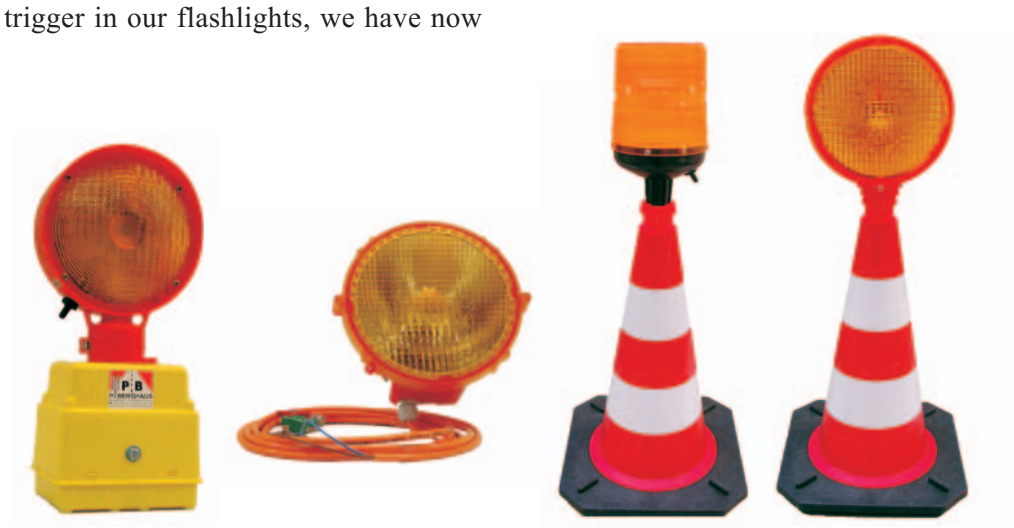
We stay seated until the horse gets up again …

## New electronic module for Berghaus flashlights

Flashlights are used in road traffic to protect people. This is why the police, customs and emergency services often use flashlamps on TL traffic cones or individual battery-operated flashlights. For special applications that need a clearly visible guiding light, our flashlights can also be combined as cordless running flashlight systems. The special effect of a running light guides road users safely past a hazard.

Thanks to a redesign of the electronic trigger in our flashlights, we have now managed to reduce their power consumption even further, with clearly noticeable results particularly in the battery-operated flashlights running on commercially available 6 volt block batteries (4R25).

The flashlights now operate 1.5 to 2 times longer than before with one and the same set of batteries – that's very kind to the environment!



**Self-synchronizing running flashlight, pre-warning flashlights, beacon flashlight on TL traffic cone, flashlights on TL traffic cone (light outlet on one or two sides) (from left to right).**

## Temporary decommissioning of traffic signs

Traffic signs warn of hazards, stipulate the permitted speed limit and direction, regulate the right of way, provide information about local conditions and indicate whether stopping or parking is permitted. Contradictory signs can have fatal consequences.

Unfortunately, such contradictions occasionally occur at roadworks and diversion signs, between permanent and only temporary traffic signs. Often this happens because the permanent signs, or roadwork warnings that have been erected but do not apply yet, have been inadequately decommissioned.

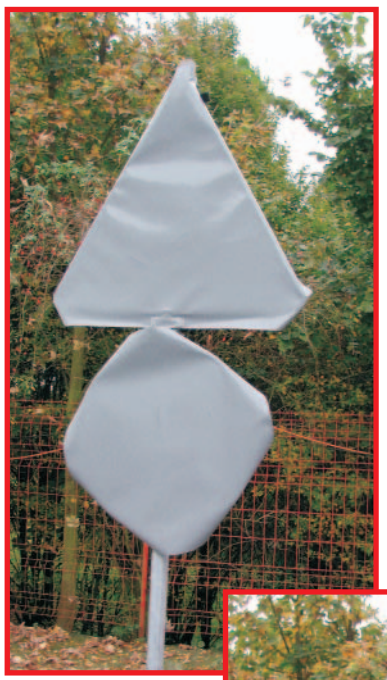
The possibilities for temporarily decommissioning roadsigns include sticking something over them, crossing them out or covering them up.

Traffic signs are usually equipped with a retro-reflecting foil to guarantee that the sign will be fully visible even in the dark. Sometimes this foil has been damaged when using a special self-adhesive foil to stick over it or cross it out, thus impairing the high retro-reflecting properties. Crossing out is generally not the ideal solution because this only covers part of the sign and could be overlooked.

The best possibility for temporarily decommissioning a traffic sign is still to cover it completely.

We have therefore created a universal sign cover which is fitted around flat or profile signs and flexibly fastened with Velcro strips.

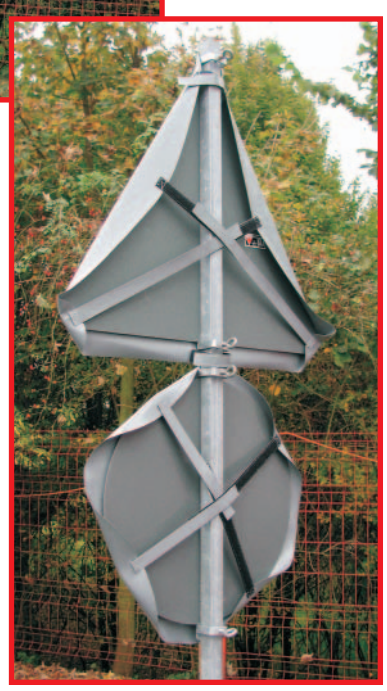
The cover is coloured in traffic grey, like the back of the signs. Robust Velcro tapes fasten the covers to masts of differing diameters, holding them firmly even during autumn storms.



**Completely covered and clearly decommissioned traffic signs make it easier to understand roadworks and diversion signs.**

**Traffic-grey covers clearly show that the sign is currently not in use.**

**Robust Velcro strips fit any sign and mast.**



# Information about portable safety devices

## Development department working at full speed

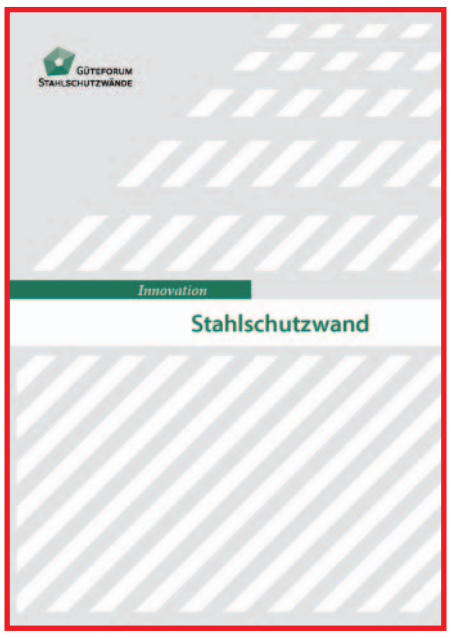
The development department of our Berghaus Group is currently working at full speed in dealing with a task clearly formulated for the development engineers.
Crash barriers are to be developed with a high containment level (z. B. T3 and H1) and low effective range (z. B. T3 ≤ W3 and H1 ≤ W6). In addition, these specifications should be fulfilled with an absolutely minimum structural width. Furthermore, the walls should be quick and easy to erect and dismantle, while being suitable for space-saving storage and economical transport. Moreover, their erection base should protect the carriageway and offer sufficient scope for draining rainwater to prevent any pools of water from accumulating at the crash barrier. To sustain the guiding effect of the new crash barrier in the long term, the reflectors should not come away when the barrier is touched but be automatically lowered into the barrier. But the prime and without doubt most difficult task was that the crash barrier should withstand the tests described above without being anchored into the ground at all.
All in all, these individual requirements for the many positive properties to be featured in the new crash barrier system proved to be a really complex, challenging task, but one which our engineers and designers gladly faced up to. And so a completely new crash barrier system was developed, in a relatively short period of time.
The first successful impact tests were already carried out on the company's own test facility in Mellingen. They were then successfully repeated at TÜV Süd in Munich with confirmation of the results everyone had hoped for.
According to the TL transportable road restraint systems 97, portable crash barriers have to be appraised by the Federal Highway Research Institute (BASt) in Bergisch Gladbach, so that our test reports have currently been submitted to the BASt for certification.

The next step for our new development has also already been taken, with tests currently in progress to test fulfilment of the planned containment levels H1 ≤ W4 and H2.

We expect that we will be bringing our project "New crash barrier system" to a successful conclusion already at the start of 2008.

## NEW: innovation steel crash barriers

*"In recent years, steel crash barriers have significantly increased traffic safety in roadworks throughout all of Europe. Their guiding effect protects road users from drifting across into oncoming traffic"*, says the preface in the new brochure "Innovation steel crash barriers" issued by the Quality Forum Steel Crash Barriers.
More than 80 informative pages provide detailed explanations of the standards, regulations and additional provisions introduced in Germany with regard to the use of steel crash barriers to safeguard roadworks.
In addition, the brochure acts as a guide for both clients and contractors in the technical design of a traffic control system with mobile crash barriers at roadworks, illustrated with practical examples of use and providing suggestions for planning roadwork projects. The brochure is published by the Quality Forum Steel Crash Barriers, a consortium of companies and individuals involved in the production, assembly and maintenance of permanent and temporary steel crash barriers.



Title picture "Innovation steel crash barrier"

The brochure is available free of charge from the Quality Forum Steel Crash barriers, Ottoplatz 6, 50679 Cologne.
In its own words, it attempts to provide the first ever comprehensive explanation of the whole topic regarding temporary road restraint systems.

More information is available on the website
**www.gueteforum-stahlschutzwaende.org**

## COLUMN

### Simple sum: high containment level + low effective range = maximum protection

In Chapter 6.11, the "Additional Technical Contract Conditions and Guidelines for the Work Involved in Safeguarding Road Works (ZTV-SA 97)" allocate transportable road restraint systems with different containment levels and effective ranges to the corresponding applications A to E. Table 5 of ZTV-SA 97 provides a corresponding overview.

In view of ever increasing traffic volumes and the significant increase in roadworks with separation from oncoming traffic on our motorways, positive experience and declining accident statistics mean that in roadwork application area "D", tender specifications increasingly demand crash barriers with containment level T3 and the lowest possible effective range W3 or even less.

Similarly, crash barriers in application "B", i.e. between the roadworks and parallel flowing traffic, with a high containment level and lowest possible effective range can be vital to the survival of workers involved in the roadworks. The smaller the deflection permitted by a crash barrier in the case of a possible impact, the greater the safety in the area where work is actually going on.

The industry is ready: crash barriers with high containment levels, extremely narrow structural widths and ever lower effective ranges are meanwhile state of the art, and development and research is going even further.

In the interests of optimum safety for all road users and those working in the roadworks, protection must be provided in the form of a crash barrier with the highest possible containment level and low effective range: the industry has been working to these standards for some time now, as clearly illustrated by the systems available on the market.

Says your

Dieter Berghaus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