



**Directive
initial safety measures
at traffic incident locations**

Preface

2004 saw the birth of the first multidisciplinary directive 'Initial Safety Measures for Incidents on Motorways'. This was the first step in a continuous process to optimise the emergency workers' safety. That directive was unique: never before had all emergency services participated in setting up safety procedures for the handling of road incidents.

From then on the emergency workers' safety was the first priority. And the collective action was indicative for the way the handling of road incidents could be optimised: through co-ordinated co-operation on the road. Since 2004 this is put to practice on a large scale. And it has become apparent that not only is it possible to make the emergency rescue operations safer, but well-coordinated multidisciplinary co-operation also makes incident handling more effective.

One might say: 'that sounds great; mission completed', but with safety issues that it is not how it works. Although on the one hand we succeeded in documenting collective safety measures and applying them in practice, on the other hand there is a growing danger that the emergency workers start to feel reassured that everything is under control. This might create a new threat to their safety: the danger of handling incidents so routinely that personal alertness disappears. To prevent this new danger, safety issues will have to continuously be brought to the attention of the workers.

That is why I am very pleased that now, in the wake of the integration of the directive's two separate parts (one for motorways and one for all other roads), the emergency services have again thoroughly worked through all their safety measures. Over time, almost all the 2004 safety measures have proven solid and remain unchanged in this integrated new edition of the directive. Where necessary, additions were made to the existing safety measures and in just one case they were thoroughly rewritten, i.e. the safety measures that apply when emergency work is done in the emergency lane.

It must be stressed that in essence the existing safety measures remain unchanged and that the emergency workers can continue to put the familiar measures into practice. Some measures are now more fully described and explained even more clearly. Having said this, it must be clear that it will never be possible to include every situation that may spring from an actual incident. And even if that were possible, it would of course result in a very large and impractical document.

Fortunately, the multidisciplinary task force that worked on the directive have succeeded again in creating a compact and accessible document that will be very helpful in the emergency workers' daily practice. And in situations that are not literally described in the directive, I think that we can safely leave it to the emergency workers' professionalism to apply safety measures that are 'in line with this directive', that is to say that make the situation as safe as possible given the circumstances.

It must be noted that the safety measures described in this directive aim to initially make the incident location as safe as possible. It can and will never be 100% safe! Therefore, emergency workers must at all times stay alert and ensure that additional measures are taken as quickly as possible.

I expect this integral version of the 'Directive initial safety measures at traffic incident locations' will again contribute to safer emergency help on the road. And what is more, that this directive will re-motivate and support the emergency workers to execute their incredibly important daily jobs in the safest possible way.

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Directive initial safety measures at traffic incident locations

This directive was compiled in association with:

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Regiopolitie Noord- en Oost-Gelderland (The North- en East-Gelderland Regional Police)
Brandweer Brabant-Noord (The North-Brabant Fire Department)
Ambulancezorg GGD Den Haag (Ambulance Services The Hague)
Rijkswaterstaat (Department of Public Works and Water Management)
Provincie Limburg (the Province of Limburg)
Van Amerongen berging (Van Amerongen Recovery Specialists)
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A complementary App, in English, German, French, and Dutch is available on the Apple iOS and Android App-stores.

More information: www.incidentmanagement.nl and www.eigenveiligheideerst.nl

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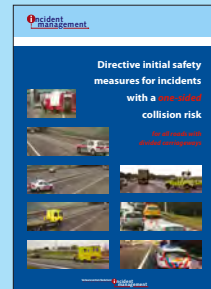
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Frame 1 One- and two-sided collision risk in one directive

This *Directive initial safety measures at traffic incident locations* combines the earlier:

- Directive initial safety measures for incidents with a one-side collision risk* (2010) and
- Directive initial safety measures for incidents with a two-sided collision risk* (2010).



The safety measures from these directives have in principle not been changed. They have been adapted to the latest insights and the latest developments have been included. A new universal approach has been developed called **FIRA**, which is applicable to all types of traffic incidents (see chapter 3, page 23).

NB **FIRA** is the English equivalent of the Dutch 'vier V's'.

Integrated
Directive



Concise history of the directive

- 2004 The *Directive initial safety measures for incidents on motorways* is published. (English version: 2005)
- 2010 The 2004 directive is renamed *Directive initial safety measures for incidents with a one-sided collision risk*. And what is more, a new directive is added: the *Directive initial safety measures for incidents with a two-sided collision risk*. (English versions: 2011) Together both directives cover the entire Dutch road system.
- 2012 The two directives are rolled into one, the *Directive initial safety measures at traffic incident locations*. This directive covers the entire Dutch road system. (This English version: 2013)
- 2015 The use of the traffic cones on roads with two-sided collision risk as part of the initial safety measures is slightly altered.
- 2016 A new paragraph is added: '4.4 Complete closure of a divided roadway'. Furthermore, the procedures for handling breakdowns of motorcars in the emergency lane is somewhat adjusted and the relevant parts of the hitherto separate directive 'The use of amber warning lights' are now included in this directive as an appendix.



Introduction

1.1 Incident Management

Officially, the term Incident Management (IM) describes the entire package of measures to clear a motorway as soon as possible after an incident has taken place. In practice, safe and efficient management of an incident calls for teamwork between the police, fire and ambulance services, road operators, recovery firms, the Royal Netherlands Marechaussee and the ANWB motoring organization. The priorities are (in this order): the personal safety of the emergency worker, traffic safety, adequate assistance to the victims, evidence-gathering, restoring the flow of traffic, and damage control.

Clear agreements between the parties concerned and a more coordinated approach have helped to speed up incident management. This kind of progress benefits not only the victims but also the emergency workers and the road users: the victims get help faster, the emergency workers' exposure to risks is reduced and the road users can resume their journey more quickly. More efficient incident management also reduces secondary accidents, including accidents at the end of traffic queues and accidents in the opposite direction due to rubbernecking.

The Netherlands Traffic Management Centre (VCNL) intends to further optimise IM, not least by investing in the safety of emergency workers and road users. They will do this by, amongst other things, coordinating national agreements between the relevant parties and communicating the results to all concerned, this directive being a point in case.

1.2 The directive

The greatest risk factor affecting the safety of emergency workers is traffic. The IM emergency service arriving at the incident scene first must take steps to make the situation as safe as possible. But no two situations are the same. Even so, it is possible to manage an incident in a structured and coordinated manner.

As part of the collaborative initiative to improve the quality and safety of incident management, a multidisciplinary work group was set up to formulate guidelines for initial safety measures at traffic incidents.

Effective collaboration begins with joint agreements on uniform measures. And uniform measures enhance the safety of both the IM emergency workers and the road users at the incident scene. Multidisciplinary agreements will ensure that the IM emergency worker who arrives first on the scene knows which initial safety measures to put in place. And the teams who arrive later know which initial safety measures they can expect to find.

Effective collaboration also implies thorough knowledge of what has been agreed on. This directive sets out the multidisciplinary agreements on initial safety measures. No matter which IM emergency service arrives first on the scene, the initial safety measures must always be taken. Although this will make the situation safer, these initial measures will not optimally secure the place. Depending on the situation, additional measures will have to be taken.

When compiling this directive the work group set the following priorities:

- 1 The personal safety of the emergency worker;
- 2 Traffic safety;
- 3 Assistance to the victims;
- 4 Evidence collection;
- 5 Restoring traffic flow;
- 6 Recovery of the cargo/vehicle.

No two incidents are similar. Therefore the measures laid out in this directive should be taken as points of departure and sensibly applied.

Your emergency vehicle and traffic cones are essential for the initial protection. However, an IM emergency worker must always remain conscious of the fact that working under traffic is never 100% safe. The risks involved can never be brought down to zero. Therefore, working on the incident scene, you

will always have to be on your guard. You should always take good care that whatever the situation you're in you reduce the risks involved as much as possible. So when you are at the incident scene, never forget to timely request additional traffic measures from the police or the road authorities, either in person or through their control centres.

1.2.1 Target groups

Target groups of this directive are the police, fire and ambulance services, road operators, recovery firms, the ANWB motoring organization and the Royal Netherlands Marechaussee.

1.2.2 Aim and application area

This directive's aim is to optimise safety at traffic incident scenes, not only for the IM emergency workers, but also for those involved in the incident, and the rest of the traffic.

Uniform measures are in themselves a contribution to safety. Therefore, the safety measures in this directive must be adhered to on all roads in every situation. However, situations can be quite divers, so although the emergency worker must adhere to the safety measures as much as possible, he may sometimes have to adapt them. This is called 'acting along the lines of the directive', and is accepted as long as the emergency workers' own safety remains the first priority.

Acting along the lines of the directive entails that in situations in which the safety measures cannot fully be taken, the emergency worker will always strive to take them as far as they can possibly be taken. An example of this is found on page 33 of this directive, where the safety measures are adapted to provide protection on a roundabout. The directive must also be adhered to on roads with 50 km/h or 30 km/h speed limits, where limited space will often lead to adaptation of the safety measure. In most cases this still leads to acceptable risk levels, because the speed of the traffic is limited.

1.2.3 Obligatory for all IM emergency services

All IM emergency services have cooperated in the realisation of this directive and have come to an agreement over its content. In doing so they have accepted the obligation to have their workers operate along the rules stated in this directive. Moreover, the Dutch Minister of Transport and Water Management has officially published this directive in the Dutch Staatscourant and thereby the directive is declared obligatory for all IM emergency workers in the Netherlands.

1.3 Layout

In this introduction, chapter 1, the aim of this directive is given, as well as the target groups, the general layout and the terms and abbreviations used. Chapter 2 states the general points of departure for the directive's safety measures. Chapter 3 provides an overview of the handling of a traffic incident. In chapter 4 you find the safety measures at traffic incident locations with a one-sided collision risk. A distinction is made between incidents on the roadway and incidents in the emergency lane. Chapter 5 gives the safety measures at traffic incident locations with a two-sided collision risk.

1.4 Terms and abbreviations

Accelerated recovery	Road authorities may decide to apply accelerated recovery if additional damage on the vehicle and/or cargo of quick recovery operations is outweighed by the public damage of the traffic queue.
Additional measures	These measures are often necessary to complement the initial safety measures described in this directive. Typically, the road authorities take these measures (see 2.8).
Alternating lighting	This refers to the upper and lower pairs of amber lights that flash alternately on the rear of an emergency vehicle.
Before, beyond	This directive distinguishes between 'before' and 'beyond' an incident. If you stop 'before' an incident this means that you have not yet passed it.
COPI	COPI is a multidisciplinary coordination team at the incident scene.
Fend-off	This refers to emergency vehicles placed in a 'fend-off' position: the vehicle is placed diagonally and as widely as possible across the traffic lane to shield the incident scene. The direction in which the diagonally parked vehicle faces dictates the direction of the traffic. As this vehicle acts as a shield, it must be vacated at all times.
High-energy collision	This is an accident with a strong kinetic impact on an object. Fire and ambulance services are always deployed for a high-energy collision.
IM emergency services	These are all services involved in IM: police, fire and ambulance services, road operator, recovery firms, the Royal Netherlands Marechaussee and the ANWB.
METHANE card	The METHANE card has been specially compiled for the first IM emergency worker at the scene of a traffic incident. It enables him to pass on structured information to the control centre (see 2.6, page 19).
One-sided collision risk	There is a one-sided collision risk on roads with physically separated roadways.
OVD-RWS	The OVD-RWS is a trained and experienced official from the Department of Public Works and Water Management. In the event of larger traffic incidents, the OVD-RWS consults with the officials of the other emergency services.
Postponed recovery	Recovery is postponed when the flow of traffic is so heavy that it is better to wait until a quieter moment. The vehicle(s) must be placed or pushed into a position alongside the roadway where they do not obstruct or endanger traffic.
Protective vehicle	This is an emergency vehicle that is placed in such a way that it protects the incident from the risk of being run into by traffic. It is the only vehicle at the incident scene that leaves rotating lights on, preferably amber.
Road authorities	They are responsible for managing a road system or a stretch of road. There are four major road authorities in the Netherlands: - The department of Public Works and Water Management (Rijkswaterstaat), responsible for the highways; - The provincial councils, responsible for most roads in their areas; - The municipal councils, responsible for most roads in their areas; - The water boards, responsible for most roads in their areas.
RVC	This is a Regional Traffic Centre of the Department of Public Works and Water Management.
Safety zone	This is the empty space between the protective vehicle and the incident.
Situational report	It is a factual description of the situation at the incident scene in the briefest possible terms (see METHANE list).
Trapped	Physically trapped ~: the victim cannot get out of the vehicle without external assistance (e.g. the fire service). Medically trapped ~: the victim is not physically trapped but must remain in the vehicle for medical reasons.
Truck with a TMA	This refers to a truck with a Truck-Mounted Attenuator (TMA) that absorbs the energy of a collision. It can be called to the incident scene as an additional measure to provide better protection.
Two-sided collision risk	This is a collision risk from traffic coming from at least two sides on a straight road, from three sides at a T-junction, and four or more sides at crossroads and roundabouts. For readability all these are collectively referred to as 'two-sided', as opposed to the 'one-sided' risk on roads with physically separated roadways.
VCNL	This is the Netherlands Traffic Management Centre (a specialised unit of the Department of Public Works and Water Management).

Frame 4 Hazardous substances

If there is a risk of hazardous substances at the scene of an incident, the following four safety precautions must be applied:

- Keep your distance** Keep a distance of at least 100 metres and stay alert to the direction of the wind: keep the wind in the back or increase the distance;
- Cordon off the area** Cordon off the area by a distance of at least 100 metres in a tailwind and 500 metres in a headwind;
- Wait** Wait, with the wind behind you, until the experts arrive. The fire service has the necessary personal safety equipment and measuring devices to assess the situation;
- Do not touch** For your own safety, do not touch anything if you suspect the presence of hazardous substances.

Use binoculars to try to read labels or orange signs and pass on the information to your own control centre.

The **orange sign**, the hazard identification sign
The number at the top is the Hazard Identification Number (HIN or GEVI number);
The number at the bottom is the Substance Identification Number, (UN number).



The **HIN number** indicates the risk of the substance:

- The **first figure** indicates the immediate risk and the classification of the substance:
 - 2 gas
 - 3 flammable liquid
 - 4 flammable solid
 - 5 oxidizing substance
 - 6 toxic or contagious substance
 - 7 radioactive substance
 - 8 corrosive substance
 - 9 hazardous substance
- The **second and third figures** indicate additional hazards:
 - 2 risk of escaping gas through pressure or a chemical reaction
 - 3 risk of combustion
 - 5 risk of oxidization (promotes combustion)
 - 6 risk of toxicity
 - 8 risk of caustic or corrosive reaction
 - 9 risk of spontaneous violent reaction
 - 0 no additional risk

When the figure is doubled the risk is higher.
For example, the number 556 indicates a toxic substance with an extra strong oxidization risk.

The **UN number**:
Every hazardous substance has an international number called the Substance Identification or UN number. This number only provides information on the type of substance. Hazardous substances can be looked up on a substance table. A UN number can refer to one substance or a group of substances. For example, UN1017 is Chlorine and UN 1987 is Alcohol.

WARNING: REMEMBER IN EVERY TRAFFIC INCIDENT THAT A VEHICLE MAY BE CARRYING HAZARDOUS SUBSTANCES

Lorries carrying bulk cargo such as paint thinner are not required to display hazard identification signs but they can still present a huge risk during traffic incidents. Passenger cars may also be carrying hazardous substances that are not safely packed.



General principles for the protection of traffic incidents

This directive states the general principles of the initial protection of a traffic incident against collision risk.

The general principles for initial protection are:

- Creation of a safety zone;
- Use of the emergency vehicle as a protective vehicle;
- Requesting traffic measures on the overhead traffic lights;
- Wearing safety clothing;
- Placing traffic cones.

These initial safety measures are taken by the emergency worker first arriving at the incident scene (paragraphs 2.1 to 2.5).

Subsequently, this emergency worker does a recon – a quick scan of the incident – and reports his findings to the control room. Paragraph 2.6 explains how multidisciplinary surveying and reporting is done by way of the METHANE card.

It is true that this directive mainly concerns the actions and decisions of the first-arriving emergency worker at the scene of a traffic incident. However, it is in the interest of providing optimal emergency assistance and maintaining manoeuvrability on the incident scene to also explain where the other emergency services arriving at the scene should park their vehicles (2.7). The key thing is to maintain free access and exit routes to and from the incident scene.

In this chapter’s final paragraph (2.8) a summary is given of the additional measures that can be requested from the road authorities. These are almost always necessary to provide extra protection against the dangers of traffic.

2.1 Create a safety zone

The first IM emergency worker on the scene creates a safety zone by placing his vehicle at [max. speed limit = min. metres] ahead of the incident. The Netherlands Forensic Institute ran a number of computerized simulations of collisions and found that a 100-metre safety zone on a roadway with a speed limit of 100 km/h provides adequate protection for most incidents. The formula [max. speed limit = min. metres], e.g. 70 km/h > 70 metres, is based on these findings.

Maximum speed limit	Length of the safety zone
50 km/h	a minimum of 50 metres
60 km/h	a minimum of 60 metres
70 km/h	a minimum of 70 metres
80 km/h	a minimum of 80 metres
100 km/h	a minimum of 100 metres
120 km/h	a minimum of 120 metres
130 km/h	a minimum of 130 metres

NB
Next to concrete barriers or walls and in tunnels, a larger safety zone should be maintained, because in such cases a protective vehicle will be projected further towards the incident after collision.

Next to concrete barriers or walls and in tunnels a larger safety zone should be maintained, because in such cases a protective vehicle will be projected further towards the incident after collision. Because of its lower weight, the same goes for a motor vehicle being used as a protective vehicle.

N.B. If there is a possibility that hazardous substances are present, a minimum safety zone should always be maintained of 100 metres in tailwinds and 500 metres in headwinds (see frame 2, page 12).

Frame 3 Use of an emergency motorcycle as a protective vehicle

The use of motorcycles as first response vehicles is on the increase. A motorcycle has the advantage of being faster and better manoeuvrable than a motorcar. But motorcycles have one disadvantage: they are not ideal as a protective vehicle at the incident scene. Nevertheless, a protective motorcycle can prevent road users from unwittingly driving into the incident scene, thus reducing the risk for IM emergency workers assisting at the incident scene. Therefore, the rules for using an emergency motorcycle as a protective vehicle are identical to those for motorcars, the only difference being that the safety zone may be increased.

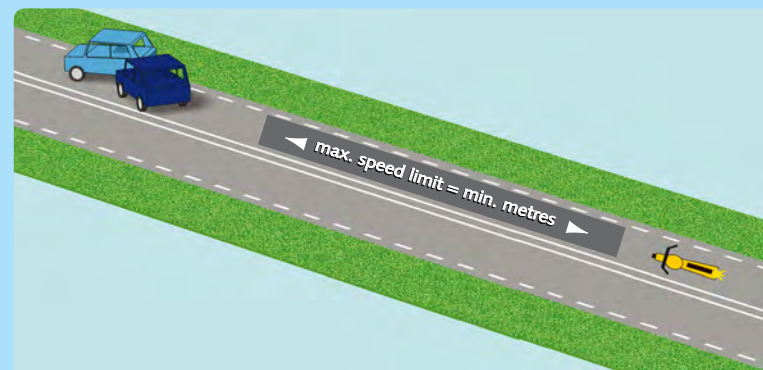
The degree to which a protective motorcycle is displaced after collision depends on a number of factors, such as its weight, the roughness of the road surface and the weather conditions. Crash tests with motorcycles used as protective vehicles have shown that at the moment of impact the cycles are momentarily lifted from the tarmac and subsequently start gliding over the road surface. In dry conditions and with collision speeds of up to 100 km/h the motorcycles stay within the safety zone prescribed for motorcars: the maximum speed limit is the minimum length in metres [max. speed limit = min. metres].

The results of the crash tests indicate that displacement after collision stays within the margins. However, extrapolation of the results shows that theoretically there is a change that at higher speeds and on a wet surface the motorcycle may reach the actual incident. Therefore, at higher speed limits the safety zone is increased. If the speed limit exceeds 80 km/h, the safety zone is increased by 20%.

The emergency worker on the motorcycle decides whether the circumstances allow for the motorcycle to be used as a protective vehicle. In bad weather conditions or with poor visibility, but especially if the speed of the traffic is too high, the motorcyclist can decide that it is not possible to place his cycle on the roadway. If that is the case, the alternative is to place the vehicle beyond and in line with the incident, inform the control centre of the dangerous situation and walk back against the flow of the traffic and start alerting the traffic.

On the roadway of a road with divided roadways the motorcycle is placed in fend-off position, the front-wheel pointing in the directing that the traffic is allowed to drive along the incident (see illustration->).

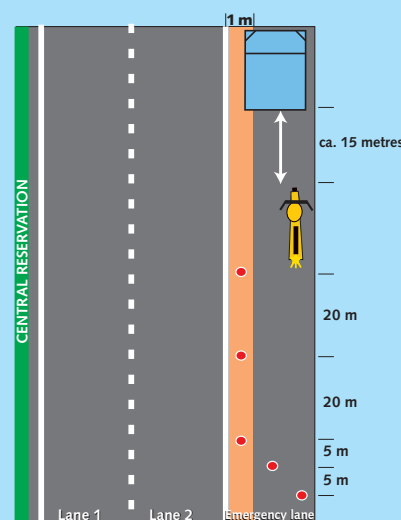
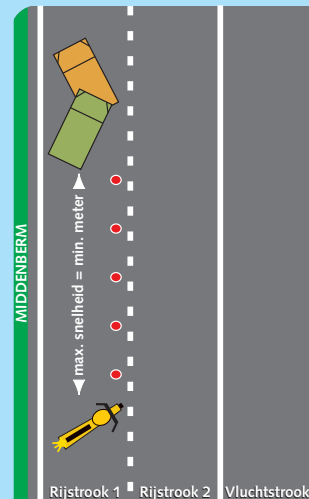
In situations where there is traffic coming from both sides, the motorcycle is placed in a position indicating that cars are not allowed to drive along the incident, as shown in the illustration below.



On a hard shoulder the motor is placed out of the way of the traffic as far as possible, as it only has a signalling function (see illustration ->).

If traffic cones are available on the motor, they are placed in accordance with the guidelines in chapters 4 and 5. The emergency worker always vacates the area near his motorcycle.

The next arriving four-wheel emergency vehicle immediately takes over from the motorcycle.



2.2 Use emergency vehicle as protective vehicle

All IM emergency services drive in conspicuous vehicles that either have retro-reflective markings or a striking colour. These vehicles are used to shield the incident location.

The way in which the protective vehicle is placed depends on whether traffic is allowed to continue along the protective vehicle or not:

- 1 If traffic is allowed to continue, the protective vehicle is placed diagonally in the fend-off position in the lane in which the incident has occurred (see chapter 4).
- 2 If traffic is not allowed to continue, the protective vehicle is placed straight (see chapter 5).

In both cases handle as follows:

- apply the handbrake;
- put the gear in neutral;
- leave the rotating light on (the engine is still running);
- turn the front wheels away from the traffic;
- step out on the side away from the traffic.

NB If hazardous substances are present, follow the procedure described in frame 2, page 12).



2.3 Request traffic measures from traffic control

If traffic signalling is available at the incident scene, ask traffic control to close the lane(s) affected as soon as possible. Requesting traffic signalling measures is part of the initial safety measures (see chapter 3).

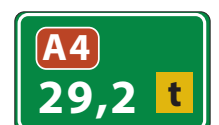
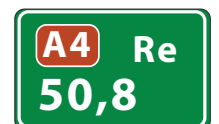
2.3.1 Procedure for requesting traffic signals

Traffic signalling facilities - if available - will offer extra possibilities for protecting an incident scene. Traffic can be slowed down or guided to a different lane and lanes can be closed with overhead red crosses. All emergency workers can request traffic signals. To be able to do so reliably, however, it is necessary to have sufficient knowledge of the system of green hectometre signs in the Netherlands as well as of the way the lanes are numbered (see below and also frame 4 and 5 on page 16).

2.3.2 Hectometre sign with roadway indicator

All information on the hectometre sign needs to be passed on to enable the RVC to coordinate the emergency services and close lanes:

- 1 the road number e.g. A4 or N148, and
- 2 the hectometre indicator e.g. 50,8 and
- 3 the roadway indicator:
 - The roadway indicator for the main roadway depends on the direction of the traffic i.e. Li (left) or Re (right): Re has an ascending hectometre indicator; Li has a descending hectometre indicator (see illustration).
 - The roadway indicator for slip roads, parallel lanes and interchanges is a black letter on a yellow background, e.g. t (see illustration).



N.B. To avoid confusion between the left and right roadway (Li or Re on the hectometre sign) and the right and left lane of the roadway, lanes should be designated only with numbers (see 2.3.3).

Frame 4 Procedure for requesting traffic signal measures

Police, fire and ambulance services, road operators, recovery firms, the ANWB Breakdown Service and the Royal Netherlands Marechaussee may request traffic signal measures under the following conditions:

- 1 The IM emergency team is on the scene or the Regional Traffic Centre (RVC) has camera surveillance of the location.
- 2 The person who requested the measure at the RVC is also the person who cancels it.
- 3 If the person who requested the measure leaves the scene before the situation is resolved, he transfers responsibility for cancelling the measure to a policeman or a road authority worker and gives the name and telephone number of this person to the RVC.

Ways of requesting

- Police, fire and ambulance services request traffic signal measures from the RVC via their own control or alarm centre.
- Road authority workers, recovery firms and ANWB breakdown services request traffic signal measures from the RVC directly.
- Truck services call 112 and the police control centre to request traffic signal measures from the RVC.

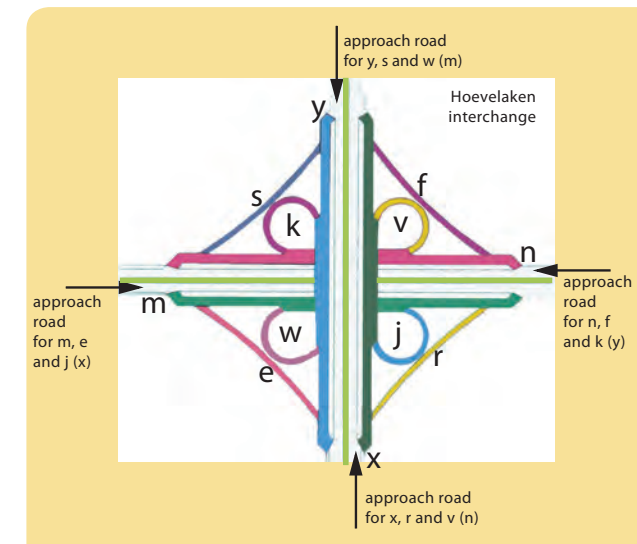
The RVC is responsible for the traffic signal measures. If in doubt, the measure will not (immediately) be granted.

To be able to request a traffic measure, an IM emergency worker must have completed a training course in safety measures at traffic incidents. The emergency services themselves are responsible for anchoring the procedure in their organization.

Frame 5 Information needed for requesting traffic signal measures

The RVC needs the following information to implement a traffic signal measure:

- 1 the road number;
- 2 the hectometre indicator;
- 3 the roadway indicator:
 - of the main roadway, Left (Li) or Right (Re), or
 - for slip roads, parallel lanes and interchanges, the black letter on the yellow background
- 4 the number of the lane in which the incident occurred.

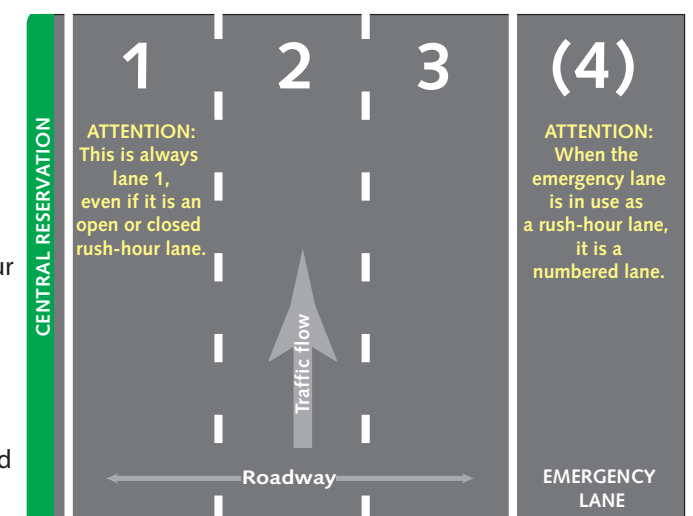


Hoevelaken interchange

This diagram illustrates the importance of the black letter on the yellow background on the hectometre signs. If this letter is not clearly reported, chances are that the IM emergency team ends up in the wrong lane and unnecessarily wastes time to reach the scene of the incident.

2.3.3 Lane numbers

A roadway consists of one or more lanes. These lanes are numbered from the central reservation to the verge. The lane that runs immediately alongside the central reservation is lane 1 (even if it is an open or closed rush hour lane), the lane to the right of lane 1 is lane 2 and the lane to the right of lane 2 is lane 3, etc. The emergency lane is not numbered, unless it is in use as a rush hour lane. The lane numbers may be found on the panels of the overhead traffic signals.



2.4 Wear safety clothes

It is crucial to the safety of IM emergency workers that they be clearly visible to other road users. Safety clothes with retro-reflective stripes must therefore always be worn at incident scenes. To guarantee maximum visibility the safety clothes must be clean and fastened. One official of the police, the fire service, the ambulance service and the road authority wears a green safety vest. Together they form the Coordination Team at the Place of the Incident (CTPI/Copi).



Safety vest label

A vest with this label meets category 2 safety requirements.

Frame 6 Emergency vehicle lighting

In the Netherlands new regulations were introduced In 2009 for visual and auditory signals.

Existing vehicles must meet the new regulations by 1 January 2014. The rule is now: blue lights for moving vehicles and amber lights for stationary vehicles. This means that the protective vehicle at the scene of an incident must have an amber rotating light.

The first or only vehicle at the scene must be used as a protective vehicle and may use the blue rotating light if this is deemed necessary to shield the incident from traffic. Frontal strobe warning lights must always be turned off while using the vehicle as a protective vehicle.

If the emergency vehicle does not have alternating flashing lights at the back, the warning lights must be used.

- The use of rotating lights**
- At an incident scene only the protective vehicle uses rotating lights (preferably amber). Frontal strobe warn- ing lights are turned off. All other IM emergency service vehicles turn off their rotating lights and frontal strobe warning lights as soon as they park beyond and in line with the incident. The unnecessary use of rotating and flashing lights distracts drivers on the other roadway and increases rubbernecking, queues and secondary accidents.
- Rotating lights may be used in IM only in the following situations:
- By IM emergency vehicles on their way to an incident;
 - By the protective vehicle at the incident scene;
 - By IM emergency vehicles entering or leaving the incident location, to indicate that they are re-joining the traffic.
 - By IM emergency vehicles entering or leaving the emergency lane (see frame 19, page 34).

For the proper use of amber emergency vehicle lights at incident locations, see also the Appendix, pp. 57-61.

Frame 7 Direct - and indirect - aid to victims!

It is of course essential where casualties are involved to attend to the physical needs of the victims straighta- way. But victims have other needs as well.

It is also important to the victims that the circumstances of the incident be established. So tyre tracks must be traced and vehicles need to undergo technical inspections. All emergency workers on the scene are therefore required to:

- Assist in and refrain from hampering investigative activities that could help to determine the cause(s) of the accident;
- Pass on any changes in the accident situation to the head of the investigation.

- For example:
- The head of the investigation must be informed of any necessary steps that have been taken such as mov- ing vehicles, unbuckling/cutting safety belts, unscrewing battery cables (never cut them!) and deflating tyres;
 - Glass shards, skid marks or oil tracks and any strewn parts of vehicles should be left untouched. If this proves impossible, the original position must be outlined in chalk on the road surface;
 - Keep skid marks intact by driving as little as possible over them.
 - Do not park vehicles in the soft verge.
 - Do not add unnecessary skid marks by braking at the last moment or by puncturing tyres to stabilize vehicles.

Obviously, the overriding priority is to save lives, but victims can also be helped by ensuring that the circum- stances of the accident can be established.

2.5 Place traffic cones

Five cones must be placed between the protective vehicle and the incident, to visibly separate the incident scene from the rest of the roadway. Although 75 cm cones are more noticeable and thus offer better protection, for practical reasons 50 cm cones have been chosen as being obligatory. If these smaller cones have initially been placed, they will be replaced as soon as an IM emergency service arrives with larger cones. The police, fire services, road operators, recovery firms, ANWB Breakdown Services and Truck breakdown services all carry at least 5 cones. In the Netherlands, all road operators use 75 cm cones.



Placing cones is part of the initial safety measures (see chapter 3).

2.6 Use the ‘METHANE’ card

The METHANE card is a tool for the first emergency worker at the scene. It enables him to pass on brief factual information about the incident to the control centre. The reverse shows a list of examples for identifying a high-energy collision. This information enables the control centre to mobilize the required emergency services.

METHANE is an international, multidisciplinary system for reporting all sorts of incidents. Here it is applied specifically to traffic incidents.

Traffic incident M	Number, types of casualties N
<ul style="list-style-type: none">• Material damage only?• Casualties	Number of casualties, ABC compromised - life-threatening? A Airways free? Pale, blue skin? (Tongue, teeth) B Breathing audible? (Snoring) C Circulation. External bleeding? Pallor, perspiration? D Responsive? E Cold/heat injuries? (fire, freezing, ...)
Exact location E	<ul style="list-style-type: none">• Casualties thrown from the vehicle?• Casualties in the vehicle?
Type of incident T	Number of vehicles? • Passenger cars? • Lorries? • Rollable/unrollable?
<ul style="list-style-type: none">• What happened?• High energy collision?¹	Extra services E² Above information leads to the deployment of IM emergency services. • Is extra back-up needed?
Hazard H	
<ul style="list-style-type: none">• Hazardous substances: licence number, substance number, hazard number• Fire?• Explosion?• Drowning?• Exceptional weather conditions? (ice, mist, snow, heat, ...)	
Access route A	
<ul style="list-style-type: none">• Best access route: hazard zone, wind direction, accessibility?	

Multidisciplinary reconnaissance and reporting

All emergency services need information on the incident’s nature and scale. Therefore, it is important that the first emergency worker at the incident scene includes in his report not only vital information for his own service, but also for all the other services. His dispatch/control centre will then pass on this information to the other services’ control centres.

- A multidisciplinary reconnaissance answers a number of questions:
- Is it a traffic incident without or with (suspected) casualties?
 - What is the exact location?
 - What is the nature of the incident: what has happened and does it involve a high-energy collision?
 - Are there additional hazards: hazardous substances? Fire? Submerged vehicle? Leakage?
Are there exceptional weather conditions heavy rain, snow, slippery roads, fog, low sun?
 - Access route: what’s the best access route: is there a danger zone, what is the wind direction, are

Frame 8 Providing emergency services to electric/hybrid¹ vehicles

The number of electric and hybrid vehicles on the roads is on the increase and with it the change in-creases that emergency workers engage with such vehicles. All vehicles allowed to use the public roads are severely tested, and electric/hybrid motorcars are no exception. Vehicles are explicitly tested for user safety and safety for mechanics and emergency workers. Although a wide array of safety devices is built into electric/hybrid cars, just as for cars running on petrol, diesel or LPG, a guideline is needed to be able to safely assist such cars at incidents. Incidents with electric/hybrid cars are categorized as follows:

- A Incidents without damage to the vehicle;
- B Incidents with light body damage;
- C Incidents with activated air bags;
- D Incidents with heavily damaged occupant compartments.

A Incidents without damage to the vehicle

Incidents without damage are for instance break-downs, incidents with a medical cause, such as becoming unwell. In such cases it is impossible that the body is carrying electricity. The only risk is that the vehicle may start to move because it is still in Drive mode. To prevent this, place the vehicle in Park mode and activate the mechanical or electrical parking brake. This demobilises the vehicle.

If the dashboard lights are out, the vehicle is switched off. If the dashboard lights are on, switch the vehicle off by removing the ignition key. If the car is operated by a key-card (or a keyless entry system) AND the dashboard lights are on, press the start/stop button to de-activate the car. Take care that the key card is removed from the vehicle and at least 15 metres removed.

B Incidents with light body damage

In case of light body damage, the air bags are usually not activated. In such cases it is also impossible for the body to carry electricity. The only danger, again, is that the vehicle may start to move because it is still in Drive mode. Act as described under ‘A Incidents without damage to the vehicle’.

C Incidents met with activated air bags

If an air bag is activated, a safety device will kick in and switch off the electricity coming from the high-voltage battery. This again makes impossible for the body to carry electricity. In very exceptional cases it is possible that after a heave collision the air bags are not activated, for instance when the vehicle is hit from behind. Even then there is no risk of the body carrying electricity as long as the rigid occupant compart-ment is not damaged. The only danger, again, is that the vehicle may start to move because it is still in Drive mode. Act as described under ‘A Incidents without damage to the vehicle’.

D Incidents with damaged occupant compartments

In electric and hybrid vehicles, the high-voltage batteries are placed within the rigid occupant compart-ment. In very exceptional cases it might be possible for the body to be carrying electricity. Therefore, in case of an extremely deformed vehicle, every emergency worker is obliged to always first call the fire brigade to the incident scene.

Fire

A burning electrical/hybrid vehicle releases the same combustion product as every other vehicle. Therefore, take the usual safety measures. Only if the high-energy batteries start to burn, extra and distinctive gasses will be released. Leave approach and extinguishing to the fire brigade.

¹ In this context ‘hybrid vehicles’ are ‘hybrid electrical vehicles’.

² In cases where the rigid occupant compartment is heavily deformed, the electricity supply from the high-voltage battery has been auto-matically switched- off, either through activated air bags or because the system is short-circuited. However, in very extreme cases deforma-tion of the high-voltage battery compartment might lead to electricity ‘leaking’ to the body. Signs that this is happening are sparks, smoke, the smell of short-circuiting or the smell of bad eggs. Always leave approach to the fire brigade.

Steps in approaching electric/hybrid vehicles

Step 1 Establish that it is an elektric / hybrid vehicle

- 1a Ask driver/ passenger (if responsive)
- 1b Have the licence number checked (if visible)
- 1c Watch for signs: Type-incidations / body stickers
Orange wiring (visible through crash)

Step 2 Evaluate the danger

A No damage	>	No danger
B Only body damage	>	No danger
C Activated airbags	>	No danger
D Heavily damaged occupant comp.	>	Danger possible ²

the specific problems with accessibility?

- Incident scale:
 - Number of victims? Are they inside or out of the car? Are there life-threatening injuries?
 - Number of vehicles? How many motorcars/lorries?
Can the vehicles roll?
- Extra services: are there specialist teams required?
For example:
 - Is fact-finding deemed necessary?
 - Is there damage to the environment, the road surface, the guardrail, etc.?
 - Is assistance of a vet required? (Is livestock present)
- What is the expected overall handling time?

2.7 Keep access and exit routes clear

The space between the protective vehicle and the incident is a safety zone, which must be kept free of IM emergency service vehicles. Only ambulances and fire service vehicles may be parked along the 10-metre operational circle. The other IM emergency service vehicles must be parked beyond the incident and in line with the incident in order to leave an access and exit route clear. See 4.1.1, page 27 for parking instructions on divided roadways and 5.1.1, page 44 for parking instructions on undivided roadways.

2.8 Request additional traffic measures

Quick initial measures are necessary to protect the incident scene. These initial measures will make the situation safer, but most of the time not safe enough. Additional measures/materials are often required. The road authorities, the Department of Public Works and Water Management and to a lesser extent the other road authorities, can provide the following additional materials:

- Arrow trailers (for visual protection);
- Trucks with arrow signs and TMA (for visual and physical protection);
- Text trailers (for advance warning);
- Calamity screens (to prevent secondary accidents);
- Mobile Lane Signalling (if there is no permanent signalling);
- Mobile Route Information panels (to support diversions);
- Flexible signposting: Dynamic Route Information Panels (DRIPs) and yellow shields (to mark diversion routes);
- Motorists can be informed through traffic information via Verkeerscentrum Nederland (VCNL).

These can be requested from the road authorities.



Handling a traffic incident with **FIRA**

The IM emergency worker arriving first at the incident scene, takes the safety measures summarized below as **FIRA**. (in Dutch: De vier V's)

FIRA is applicable to every traffic incident, whether it be on roads with divided or undivided roadways. In chapters 4 and 5 the **FIRA** approach is explicated. In 4.1 the procedure is explained for incidents with one-sided collision risk on divided roadways and then applied in some examples. In 5.1 the same is done for incidents with two-sided collision risk, followed by examples.

F Fend-off incident

Create a safety zone (see 2.1, page 13)

Use your emergency vehicle as a protective vehicle (see 2.2, page 15)

I Initial safety measures

Request traffic measures (see 2.3, page 15)

Wear safety clothing (see 2.4, page 17)

Place traffic cones (see 2.5, page 19)

Halt traffic (see frame 26, page 42)

R Recon en report

Recon and report for multidisciplinary use (see 2.6, page 19)

A Additional measures

Decide whether or not to close the road (see frames 27 & 28, page 42)

Request additional traffic measures (see 2.8, page 21)

Please note!

In case of an incident involving hazardous substances, the following safety precautions must be applied (see frame 2, page 12):

- | | |
|----------------------------|---|
| Keep your distance | Keep a distance of at least 100 metres and notice the direction of the wind: keep the wind in your back or increase the distance; |
| Cordon off the area | Cordon off the area at a distance of at least 100 metres in a tailwind and 500 metres in a headwind; |
| Wait | Wait, with the wind in your back, until the experts arrive. The fire service has the necessary personal safety equipment and measuring devices to assess the situation; |
| Do not touch | For your own safety, do not touch anything if you suspect the presence of hazardous substances. |

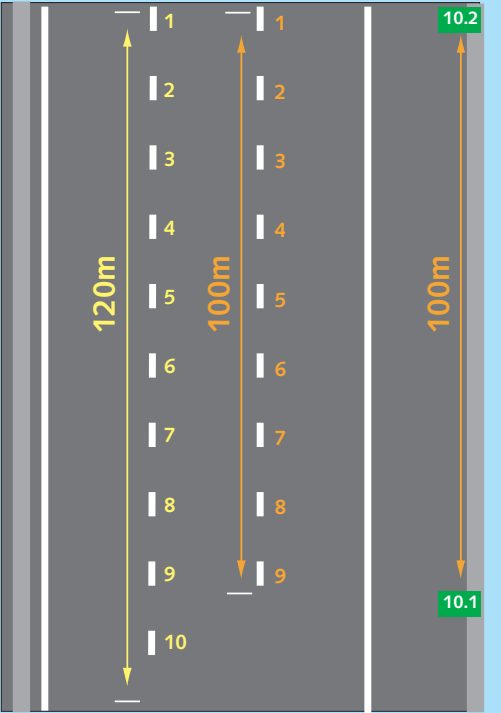
Frame 9
Estimating the length of the safety zone

On Dutch motorways two aids can be found to help estimate the length of the safety zone.

In the first place there are green hectometre shields every 100 metres.

Secondly, the lines on the road can be used to estimate the length. One line (3 metres) and a gap (9 metres) equal 12 metres.

Thus, nine lines and eight gaps equal ± 100 metres and ten lines and ten gaps equals 120 metres.



Frame 10 **Warning traffic manually**

In certain situations - for example, in a sharp bend or in misty weather - it is best for one of the emergency workers to warn the traffic manually.

Obviously, the emergency worker must then stand at a substantial distance (100 metres) ahead of the fend-off vehicle and in a safe spot, preferably behind the crash barrier. He can use a amber light to guide the traffic in the desired direction.



Initial protection of traffic incidents with one-sided collision risk - on all roads with divided roadways

4.1 General procedure for accidents with one-sided collision risk

Any IM emergency worker to arrive first at an incident with one-sided collision risk, takes the following safety measures (summarized in chapter 3 as **FIRA**).

F Fend-off incident

- *Create a safety zone*
Create a safety zone by positioning the protective vehicle at a distance of [max. speed limit = min. metres] ahead of the incident.

Maximum speed limit	Length of the safety zone
50 km/h	a minimum of 50 metres
60 km/h	a minimum of 60 metres
70 km/h	a minimum of 70 metres
80 km/h	a minimum of 80 metres
100 km/h	a minimum of 100 metres
120 km/h	a minimum of 120 metres
130 km/h	a minimum of 130 metres

The risks for the emergency workers increase with the speed of the traffic. This does not mean that traffic in a tailback cannot become a safety risk again. The situation may change and new traffic may approach the incident at speed. Therefore, the formula [max. speed limit = min. metres] must always be adhered to, be it with fast moving or stationary traffic.

NB If hazardous substances are suspected, cordon off the area at a distance of at least 100 metres in a tailwind and 500 metres in a headwind (see frame 2, page 12).

- *Use emergency vehicle as protective vehicle to fend-off the incident*
Place the emergency vehicle in the fend-off position: Oblique and as widely as possible across the affected lane. Position your vehicle so that it indicates to the drivers on which side it is allowed to pass. Leave the amber rotating lights to warn the traffic.



An emergency worker arriving first at an incident scene with one-sided collision risk acts as follows:

- Stop at [max. speed limit = min. metres] ahead of the incident;
- Place you emergency vehicle in the fend-off position;
- use the handbrake;
- switch the gear lever to neutral;
- leave the (amber) rotating lights on (and your engine running!);
- switch on your alternating lights at the back;
- turn the front wheels away from the traffic.

The protective vehicle must always be vacated immediately.

Frame 11 Taking over the fend-off position

If an ambulance arrives first at the incident scene, it is placed at a distance of [max. speed limit = min. metres] ahead of the incident as a protective vehicle. The ambulance is immediately vacated.

The ambulance driver keeps into contact with the ambulance dispatch centre while the nurse surveys the incident and engages in triage. As soon as the next emergency service arrives, the fend-off position is taken over from the ambulance, so that it can be used for the assistance of casualties.



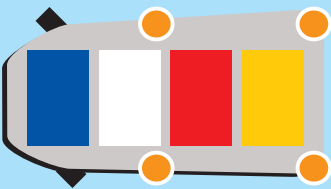
As soon as a conspicuous police car or a road-authority emergency vehicle arrives at the incident scene, it takes over the fend-off position of all other emergency services.

The road-authority emergency vehicle, if available and on the scene, always takes over the fend-off position, even from the police.



A road-authority emergency vehicle

Frame 12 Colours indicate the various IM emergency services



In the illustrations a vehicle with various colours indicates to which emergency services the illustration apply.

Blue = police
White = ambulance services
Red = fire services
Yellow = road authorities, recovery services and breakdown services

I Initial safety measures

- *Request safety measures*
As soon as you arrive at the scene, ask traffic control to close affected lane(s) (see frame 4, page 16).
- *Wear safety clothing*
Unless you are already wearing traffic safety clothing, put on a safety vest. Every service has one worker in a green vest. He is in charge and is the other services' liaison (see 2.4, page 17).
- *Place traffic cones*
While keeping a watchful eye on the traffic, place five traffic cones between the protective vehicle and the incident.
- *Halt traffic*
Unlike situations with two-sided collision risk, in principle traffic is not halted at incidents with one-sided collision risk.

R Recon and report

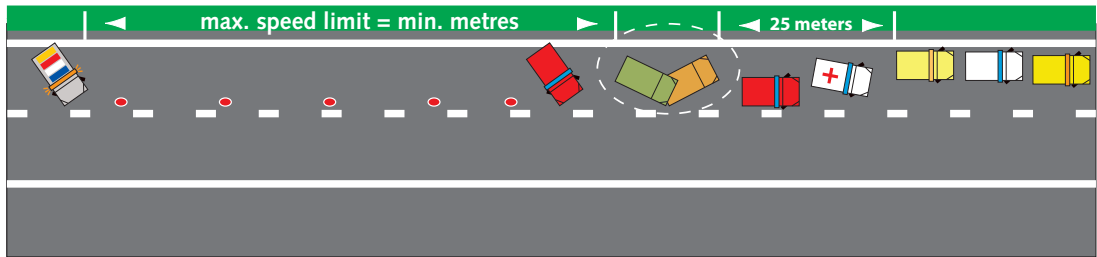
- *Recon and report for multidisciplinary use*
Survey the incident along the lines stated on the METHANE card (see 2.6, page 19). Report concisely to your dispatch, control centre.

A Additional measures

- *Decide whether to close the road or not*
Decisions to close the entire roads must be taken at an early stage. If you wait, traffic will try to find its own way around the incident. Then it becomes much more difficult to get a grip on the traffic situation. In making the decision to close the road, take into account the need for a safe working place and sufficient room to provide assistance. In general, with divided roadways road are much less often closed than with undivided roadways.
- *Request additional traffic measures*
Putting the initial safety measures in place makes the situation safer, but depending on the circumstances, more often than not additional traffic measures will be necessary. (see 2.8, page 21).

4.1.1 Keeping access and exit routes clear on divided roadways

The space between the buffer vehicle in fend-off position and the incident is a safety zone, which must be kept free of IM emergency service vehicles. Ambulances and fire service vehicles must be parked along the 10-metre operational circle; the fire service vehicles ahead of the incident and the ambulances beyond the incident.



The other IM emergency service vehicles must be parked beyond the incident and in line. Soft verges should be kept clear. The emergency lane must also be kept clear to allow the IM emergency services free access and exit. If the emergency workers park beyond the incident and in line with it, they will not have to cross lanes to get to the incident. Should the situation allow it, the cleared route can be used for moving along the traffic.

Frame 13 A motorcycle is not a motorcar

An emergency motorcycle does not offer the same safety as an emergency motorcar and is less conspicuous. And the emergency worker on the motorcycle also has to consider his own safety first. That is why he has to make two decisions before placing his motorcycle on the roadway as a protective vehicle. Given the circumstances,

- 1 do I have to increase the length of the safety zone;
- 2 should I refrain from using my motorcycle as a protective vehicle.

Circumstances that increase the risk are for instance:

- traffic arriving at high-speed;
- a wet road surface;
- an obstructed view (due to bends in the road, fly-overs, lane displacements, poor road lighting, poor visibility, etc.)

If any of these conditions apply, the emergency worker on the motorcycle may decide that it is too dangerous to place the motorcycle on the roadway as a protective vehicle. The alternative is to place the vehicle beyond and in line with the incident, inform the control centre of the dangerous situation, walk back against the flow of the traffic and start alerting the traffic (see frame 10, page 24).

Frame 14 Use of the emergency lane after incidents on the roadway

Frequently, motorway accidents are dealt with in the emergency lane. The vehicles are moved to the emergency lane and police start to interview people, check licences, and fill in claim forms etc. It is not until these formalities are settled that the damaged vehicles are towed away. This is not desirable, even if these formalities take place outside the one-metre risk zone.

The emergency lane may not be used any longer than is strictly necessary.

If there is only light damage, the affected vehicles must be directed to the nearest exit or service area to settle the formalities.

If one or more vehicles are so badly damaged that they need to be towed away, a recovery service must do so as soon as possible and administrative formalities must be settled elsewhere.

The incident in the emergency lane must be protected from the moment the vehicles are moved there to the moment the recovery service has towed them away. If necessary, the adjacent lane must be closed for traffic as well with an overhead signal.

4.2 Protection of incidents on the roadway

As it is impossible to describe all situations that could occur, this paragraph discusses four basic situations with one-sided collision risk. These examples demonstrate how the safety measures can be applied to incidents on the roadway.

These situations are:

- 1. Protection of incidents on a two-lane roadway (4.2.1);
 - 2. Protection of incidents on a three (or more)-lane roadway (4.2.2);
 - 3. Protection of incidents on a roundabout (in divided roadways) (4.2.3).
- The protection of incidents in the emergency lane is described in 4.3.

4.2.1 Protection of incidents on a two-lane divided roadway

If lane 2 is affected by the incident, the protective vehicle in fend-off position directs traffic to lane 1.



If lane 1 is affected by the incident, the protective vehicle in fend-off position directs traffic to lane 2.



Act in accordance with the procedure described in 4.1 (page 25).

Frame 15 Calamity screens

For safety and to maintain the traffic flow, it is important to use screens, particularly on the main road network. A screen obscures the incident from the traffic on the other roadway and any adjacent lanes. The positive effects are:

- No rubbernecking: rubbernecking impedes the traffic flow and raises the risk of secondary accidents;
- Risk reduction: more stationary traffic creates more risks because people get out of their cars.

Screens are available at strategic points throughout the country and can be deployed quickly. Once a screen is in place, rubbernecking stops fairly soon.

When is a screen used?

A screen can be used for every incident on the main road network, which is expected to take at least two hours to clear. To optimise the effects, a decision to use a screen should be taken in the earliest stages. In the interest of safety, calamity screens are not used when there are wind gusts or at gale force 5 or more.

Use screens during postponed recovery

When an accident happens during or just before a rush hour, safety and the flow of traffic are more easily maintained by postponing the recovery procedure, if the circumstances allow it. When recovery is postponed, calamity screens should be set up to prevent rubbernecking.

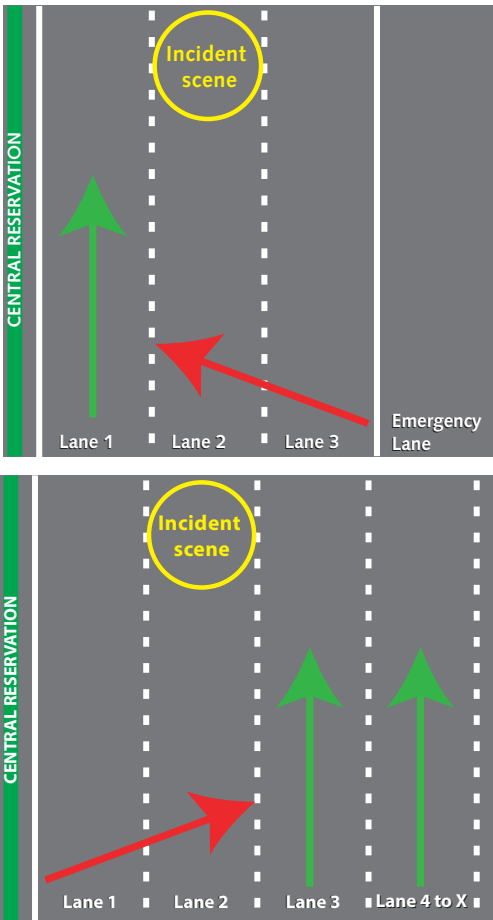


4.2.2 Protection of incidents on a three (and more)-lane divided roadway

If an incident occurs on a roadway with three or more lanes, care must be taken to avoid traffic driving along the incident on two sides. Creating incident islands should be avoided.

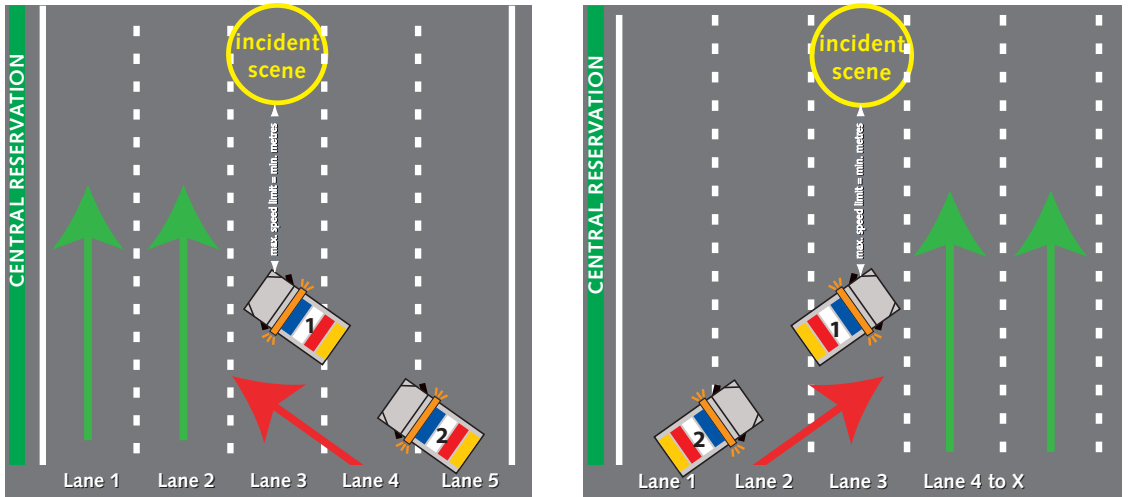
The creation of incident islands can be avoided in two ways:

- 1 The protective vehicle in fend-off position closes lanes 2 and 3 and directs the traffic to lane 1. This is in line with the traffic's expectancy, because it likens overtaking on the left-hand side.
- 2 The protective vehicle in fend-off position closes lanes 1 and 2 and directs the traffic to lane 3 and 4. This section of the road needs to be closed when an incident takes place next to slip roads or weave lanes. In these cases the buffer vehicle must be parked in fend-off position across lanes 1 and 2. The traffic can pass in lane 3 and make use of the slip roads and weave lanes.



If more lanes have to be closed, more protective vehicles are needed. For instance, if three lanes need to be closed, at least two emergency vehicles are needed. The emergency worker arriving first concentrates on shielding the lane in which the accident has occurred. He informs control centre (a) which lanes need to be closed and (b) that more emergency vehicles are needed to physically protect the incident.

Act in accordance with the procedure described in 4.1 (page 25).



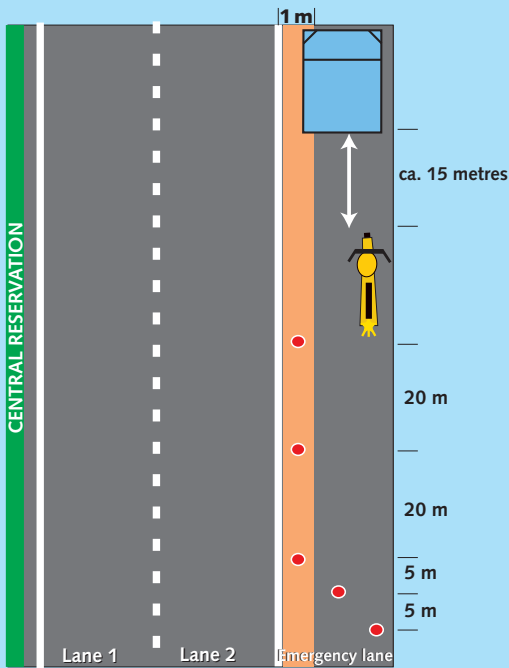
Shielding the incident from the emergency lane out

Shielding the incident from the central reservation out, to keep slip roads and weave lanes accessible

Frame 16 Protecting incidents in emergency lanes with a motorcycle

The protection of incidents in the emergency lane is directed against the greatest danger: vehicles that cross the continuous white line that divides the roadway from the emergency lane because the driver is doing other things. Therefore, a high-risk zone of 1 metre from the continuous white line is maintained. In principle, only stranded vehicles are protected that by their width are in the high-risk zone. Vehicles outside the high-risk zone can also need protection if they are worked on in the emergency lane.

The first emergency vehicle to arrive at an incident scene in the emergency lane has the function of warning the traffic. Therefore it is placed parallel to the continuous white line and as far away from the moving traffic as possible. This is also the case when the first arriving emergency vehicle is a motorcycle. If traffic cones are available, they are placed in the emergency lane in the manner shown in the illustration to the right. The emergency worker should never linger near his motorcycle. However, before any work may be done on the stranded vehicle, the motorcycle must be replaced by an emergency car, van or truck.



Frame 17 Traffic cones are lifesavers

Many emergency workers think that traffic cones are only used to make the incident more visible. However, placing traffic cones has yet another very important function: the production of sound as they are hit by a vehicle. Provided that the traffic cones are placed in the right place and at the right distance, the emergency worker has a few seconds to bring himself to safety. The driver of the vehicle hitting the traffic cone reacts to the sound as well and acts by steering in the right direction. A number of emergency workers owe their life to it.

Frame 18 Protecting an ambulance in the emergency lane



The ambulance dispatch centre must ensure that the moment an ambulance is sent to an incident in the emergency lane, either the police or the road authority must send an emergency vehicle along as well for protection.

In the first place, ambulances generally do not have traffic cones on board. Secondly, because of their width they will almost always be in the high-risk zone when standing in the emergency lane. And finally because the ambulance-nurse will usually have to be in the high-risk zone when assisting to a vehicle's unwell occupant.

Upon arrival of the ambulance in the emergency lane, the police or road authority must take the necessary safety measures and the traffic control centre must immediately close the adjacent lane (if overhead signalling is present).

4.2.3 Protection of incidents on a multi-lane roundabout (in divided roadways)

The emergency vehicle arriving first is placed on the roundabout in fend-off position. The safety zone is adapted to accommodate the actual space. In situ the length of the safety zone will in most cases be determined by the first entry road to the roundabout ahead of the incident.

Rule

On roundabouts with 3 or more lanes*:

- Place the emergency vehicle in fend-off position on the roundabout.
- Close the affected lane.
- Take care that traffic can pass the incident on one side only.
- If necessary, close an adjacent lane as well to achieve this.

In figure a, an example is given of incident protection on lanes 3 and 4 and in figure b, of incident protection is lanes 1 and 2 (on a roundabout with 3 or more lanes).

Act in accordance with the procedure described in 4.1.



Figure a
The incident in lanes 3 and 4 are protected by an emergency vehicle in fend-off position. The length of the safety zone is determined by the entry road ahead.

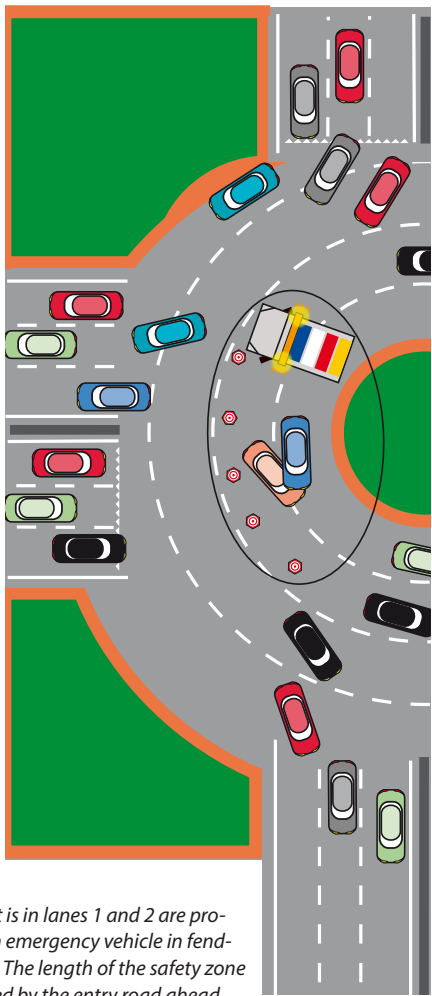


Figure b
The incident in lanes 1 and 2 are protected by an emergency vehicle in fend-off position. The length of the safety zone is determined by the entry road ahead.

*One or two-lane roundabouts are discussed in 5.2.4, page 52.

Frame 19 Use of the emergency lane by the emergency services

IM emergency services allowed to use the emergency lane must adjust their speed to the speed of the traffic on the adjacent lane. They are allowed to drive up to 20 km/h faster than that traffic, with a maximum of 50 km/h. N.B. Emergency vehicles driving along a tailback must switch on rotating lights and frontal strobe lights.

The use of lights when accessing and exiting the emergency lane

Accessing the emergency lane:

- While driving in the adjacent lane, use the indicator to let the traffic know you are changing lanes;
- Switch on the rotating lights and change to the emergency lane;
- While driving in the emergency lane, switch on your alternating lights (in their absence use warning lights) and switch off your rotating lights.

Exiting the emergency lane:

- While driving in the emergency lane, switch on your rotating lights (warning lights) and switch off your alternating (or warning) lights;
- Use the indicator to let the traffic know you are changing lanes;
- Change lanes;
- While driving on the main roadway, switch off your rotating lights.

Frame 20 Only work on breakdowns if circumstances allow it

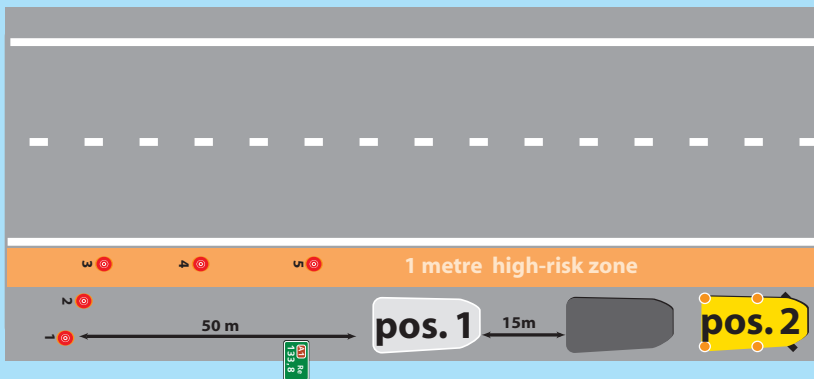
For all breakdowns in the emergency lane outside the 1-metre high-risk zone the basic principle is:
Repairs should only be carried out if circumstances allow it

If safety cannot be sufficiently guaranteed, the broken-down vehicle is first taken to a safer place before making repairs.

For broken-down vehicles outside the 1-metre high-risk zone, the following procedure applies:

In order to take the broken down vehicle to a safer place, the recovery vehicle is moved from position 1, the safeguarding position, to position 2:

- Always leave the traffic cones where they are (see illustration).
- Make the necessary preparations for taking the vehicle to a safer place.
- Make certain that the warning lights of the broken down vehicle are on.
- Use your indicator and rotating lights to exit the emergency lane. If there is heavy traffic and the road has overhead signalling lights, traffic control may be requested to briefly close the adjacent lane (see frame 4, page 16).
- Leaving your rotating lights on, pass the broken down vehicle and use your indicator again to re-enter the emergency lane.
- Just before leaving, collect the traffic cones from 5 till 1, while keeping an eye on the traffic. Return to your vehicle as far as possible from the traffic.



4.3 Protection of incidents in the emergency lane

Stationary vehicles in the emergency lane always form a danger, because:

1. The speed difference between a stationary vehicle in the emergency lane and traffic in the adjacent lane is 80-130 km/h. As a result, the consequences of a collision will be very serious.
2. Motorists tend to drive in the direction they are looking: if there is anything to see in the emergency lane, motorists will look and unintentionally steer in the direction they are looking. This increases the risk of being hit by a car while in the emergency lane.
3. Vehicles frequently cross the continuous white line that divides the roadway from the emergency lane. While the driver is concentrating on other things (changing a CD, using a mobile phone, etc.), he often thinks it is safer to drive partly in the emergency lane while doing so. But particularly when driving behind a lorry, that driver cannot see what's in the emergency lane. This behaviour highly increases the collision risk.

It is through these risks that the first metre of the emergency lane is regarded as a high-risk zone. This has led to the protection of incidents on the right-hand emergency lane to be categorized in:

- a protection of incidents outside the one metre high-risk zone (4.3.1), and
- b protection of incidents inside the one metre high-risk zone (4.3.2).

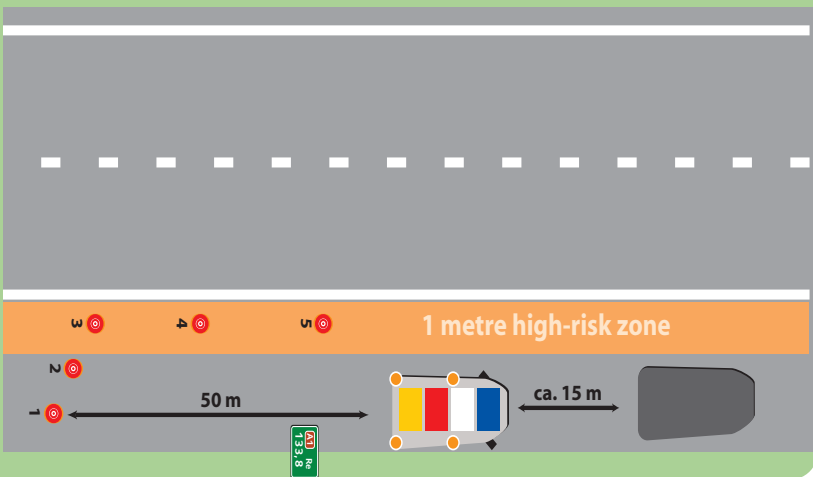
Emergency lanes along the central reservation are considered a high-risk zone in their entirety (4.3.3) All emergency services are required to take the measures described below for the protection of incidents in the emergency lane. A stationary vehicle in the emergency lanes always forms a threat to road safety, even outside the high-risk zone. Therefore, always take adequate measures and shorten the stay in the emergency lane as much as possible. For incidents in the emergency lane outside the high-risk zone no additional measures are taken and no special IM recovery operation is started, unless an IM emergency worker decides that additional measures and/or IM recovery are necessary. Note that the position of the incident in the emergency lane determines the emergency measures. See 4.3.1 if the incident is situated outside the one meter high-risk zone and 4.3.2 if it is within this zone.

4.3.1 Protection of incidents outside the 1 metre high-risk zone

Situation The incident is outside the 1 metre high-risk zone and the emergency worker is not working within this zone.

Incident protection in the emergency lane

- 1 Place the emergency vehicle approx. 15 metres ahead of the incident, parallel to the continuous white line and as far as possible out of traffic's way;
- 2 Switch or leave on alternating lights (in their absence use warning lights);
- 3 Turn the front wheels away from the traffic;
- 4 All occupants must abandon the vehicle and go to a safe place, behind the guardrail if possible;
- 5 While keeping a watchful eye on the traffic, place five traffic cones in the emergency lane, ahead of the IM emergency vehicle.
Start at 50 metres ahead and place the cones as indicated in the illustration. The final 3 are placed 0,5 metre from the white line.
- 6 Just before leaving, collect the traffic cones from 5 till 1, while keeping an eye on the traffic. Return to your vehicle as far as possible from the traffic.



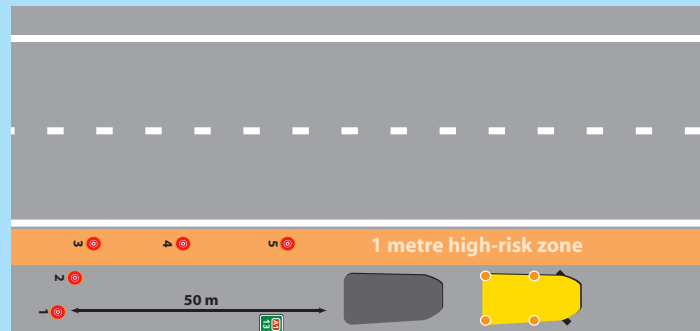
Frame 21

Exception: moving a breakdown -> place emergency vehicle beyond it

If a breakdown or recovery service has been ordered to take the broken down vehicle to a safer place, it is allowed to place its vehicle beyond the broken down vehicle straight away.

- 1 Place the breakdown/recovery vehicle beyond the broken down vehicle, as far as possible out of the way of moving traffic,

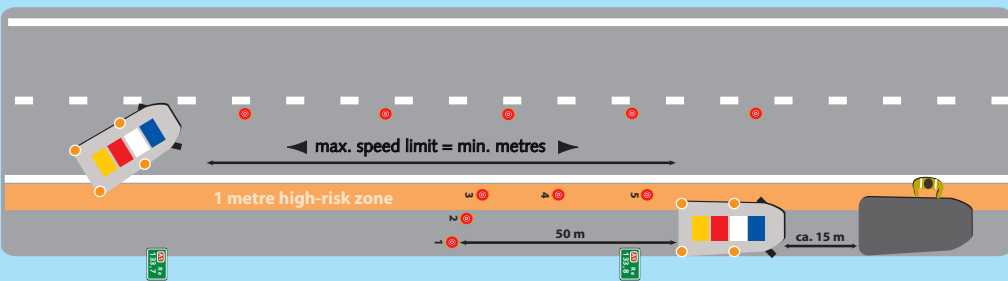
Then execute steps 1-6 of 'Incident protection in the emergency lane' on page 35.



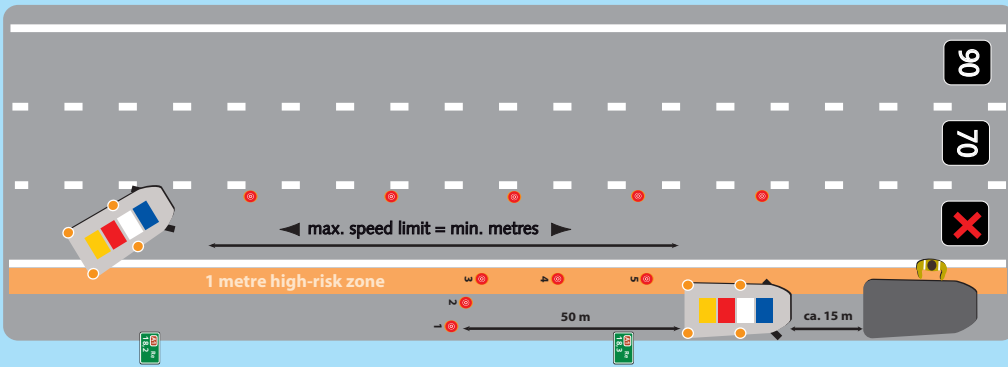
If the breakdown/recovery service has been ordered to take the broken down vehicle to a safer place, it is allowed to place its vehicle beyond the broken down vehicle straight away. As ever, traffic cones are placed before any work is done.

Frame 22 Exception: if immediate emergency assistance is required

If immediate assistance is required, as with urgent assistance, fire, hazardous substances or livestock, there is no time to wait for the truck with a TMA. Execute steps 1-5 of 'Incident protection in the emergency lane' on page 35. On top of this, the adjacent lane is closed with the help of an emergency vehicle in **fend-off** position [max. speed limit = min. metres].



Situations without overhead signalling in which immediate emergency assistance is required



Situations with overhead signalling in which immediate emergency assistance is required

4.3.2 Protection of incidents within the 1 metre high-risk zone

Situation Something or someone is or needs to be in the high-risk zone. This is the case when:

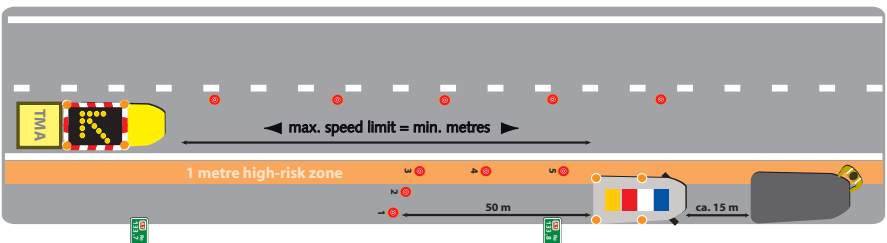
- the incident remains in the high-risk zone;
- or work has to be done in the high-risk zone.

Vehicles and people in the high-risk zone form a considerable safety risk. Therefore, additional measures must always be taken.

No overhead signalling available

Execute steps 1-5 of 'Incident protection in the emergency lane' on page 35. In addition to that:

- 6 The adjacent lane is closed with a truck with a TMA at [max. speed limit = min. metres] ahead of the incident (see illustration);
- 7 Five traffic cones are placed along the broken line (see illustration).

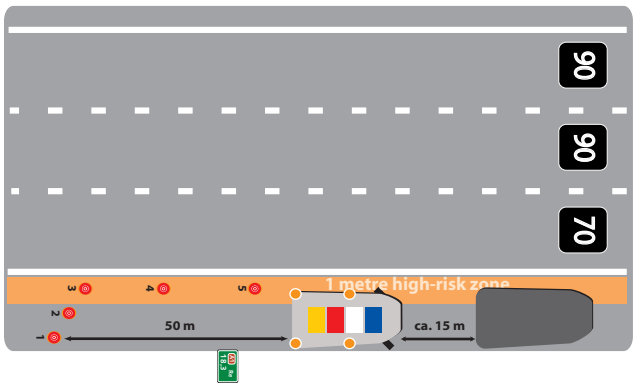


Additional measures in situations without overhead signalling when work is being done

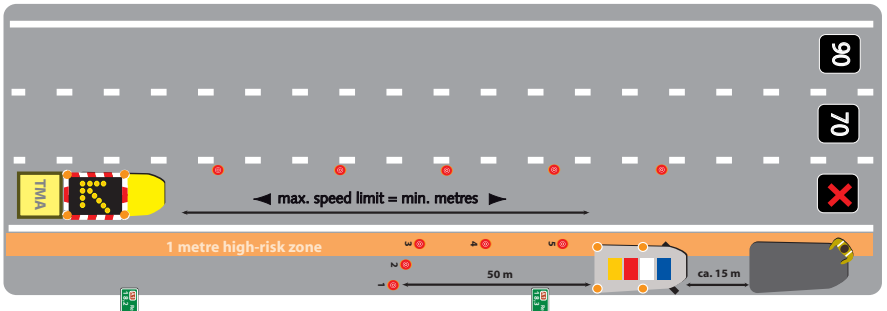
Overhead signalling available

Execute steps 1-5 of 'Incident protection in the emergency lane' on page 35. In addition to that:

- 6 As long as the emergency/recovery service has not yet arrived, a speed reduction to 70 km/h is displayed on the overhead signalling. However, if the incident has taken place in an extremely dangerous spot (e.g. partly in the roadway or just beyond a bend in the road), or if there are unfavourable circumstances (e.g. poor weather conditions or poor visibility), or if there are any other circumstances that cause a direct threat to road safety, the lane adjacent to the emergency lane must immediately be closed for traffic;
- 7 Using the overhead signalling, the lane adjacent to the emergency lane is closed upon request as soon as the emergency/recovery service arrives at the scene;
- 8 Moreover, the adjacent lane is closed with a truck with a TMA at [max. speed limit = min. metres] ahead of the incident (see illustration);
- 9 Five traffic cones are placed along the broken line (see illustration);
- 10 As soon as the scene is vacated, inform traffic control that the measure is no longer needed.



Additional measures in situations with overhead signalling as long as no work is being done



Additional measures in situations with overhead signalling when work is being done

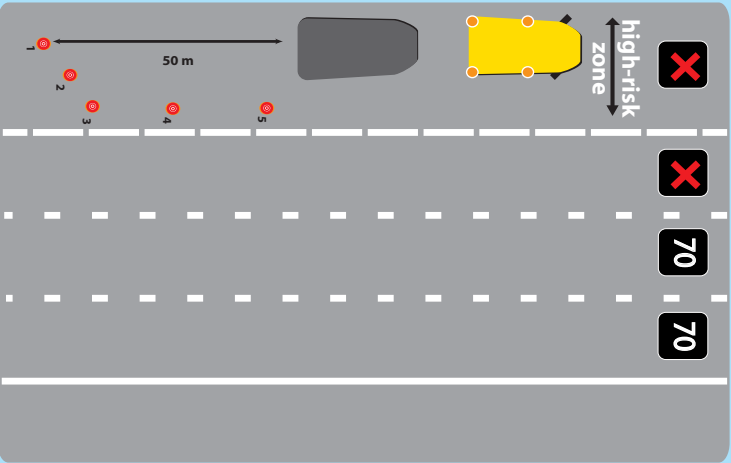
Frame 23

Exception: breakdowns in the emergency lane / closed rush-hour lane along the central reservation

As emergency lanes along the central reservation are considered a high-risk zone in their entirety, it is strictly prohibited to work on a broken down vehicle.

Actions

- 1 Place the breakdown/recovery vehicle beyond the broken down vehicle, as far as possible out of the way of moving traffic and then:
Execute steps 1-5 of 'Incident protection in the emergency lane' on page 35 and:
- 6 Request traffic control to close the adjacent lane. This done, the breakdown/recovery vehicle can back up and take the broken-down vehicle to a safer place.
- 7 As soon as the scene is vacated, inform traffic control that the measure is no longer needed.



Moving a broken down vehicle from the emergency lane / closed rush-hour lane along the central reservation

Frame 24 Requirements for breakdown services

- A conspicuous vehicle, preferably yellow in colour, with at least retro-reflective marking and horizontally alternating lights;
- OR
- A vehicle equipped with a red-white frame and four horizontally alternating lights;



- Safe, clearly visible and clean clothing that meets the European norm;
- A set of five traffic cones, preferably 75 cm tall.

VACO en BOVAG can provide detailed information on the way recovery vehicles can be adapted to meet the requirements.

4.3.3 Protection of incidents in the emergency lane / closed rush-hour lane along the central reservation

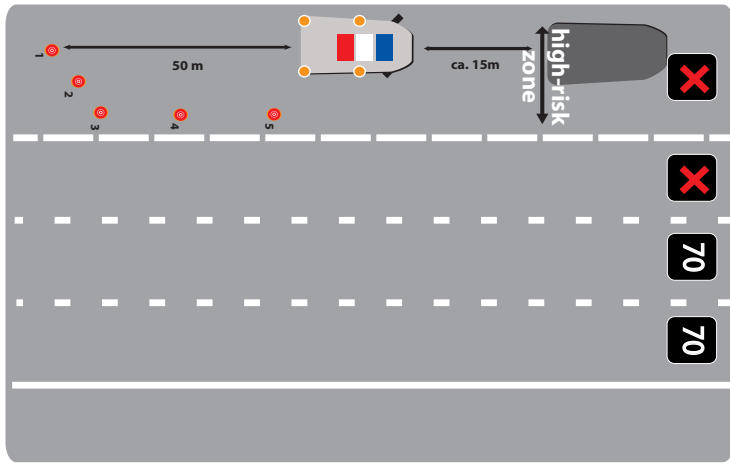
Due to the high speed of the traffic in the adjacent lane, an emergency lane or a closed rush-hour lane along the central reservation is considered a high-risk zone in its entirety.

Situation An incident in an emergency lane or a closed rush-hour lane along the central reservation that is not a broken down vehicle. (for broken down vehicles, see frame 23, page 38)

Actions

- Execute steps 1-5 of 'Incident protection in the emergency lane' on page 35. In addition to that:
- 6 Request traffic control to close the adjacent lane (see for the procedure frame 4, page 16).
 - 7 As soon as the scene is vacated, inform traffic control that the measure is no longer needed.

NB If there is an emergency lane or a rush-hour lane along the central reservation, overhead signalling is always available.



Safety measures on an emergency lane or a closed rush-hour lane along the central reservation

Frame 25 Breakdown service vehicles and lights

The use of frontal strobe warning lights

Frontal strobe warning lights may be used only when the rotating lights are also turned on. As soon as the breakdown/recovery vehicle is stationary the frontal strobe warning lights must be switched off.

- Rotating lights and frontal strobe warning lights are mandatory when driving in the emergency lane along a tailback. (When there is no tailback, alternating lights are mandatory when driving in the emergency lane.)

The use of lights when moving broken-down vehicles

- A breakdown/recovery vehicle may use rotating lights until it reaches the first safe location. Only the regular lights of the broken-down vehicle are on, the warning lights are off.
- Rotating lights may not be used for further transportation of the broken down vehicle. Attach extra lights to the rear of the broken-down vehicle and turn off the warning lights.

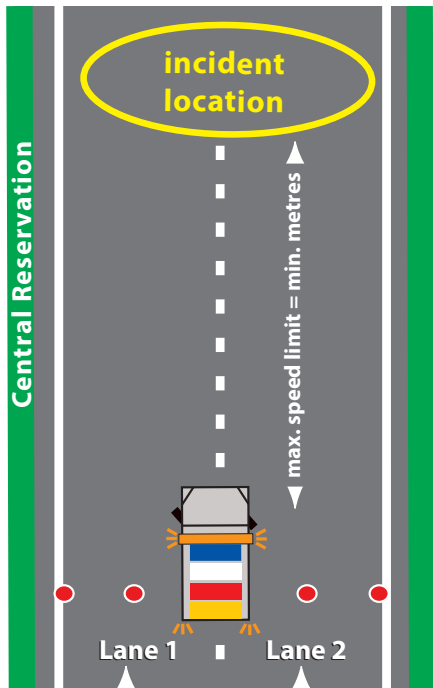


4.4 Complete closure of a divided roadway

Should an IM emergency worker chance upon an incident demanding complete closure of the roadway, the IM emergency vehicle is placed on the broken line separating the first lane from the second. This first safety measure is described for roadways with two lanes (4.4.1), three lanes (4.4.2), and more than three lanes (4.4.3).

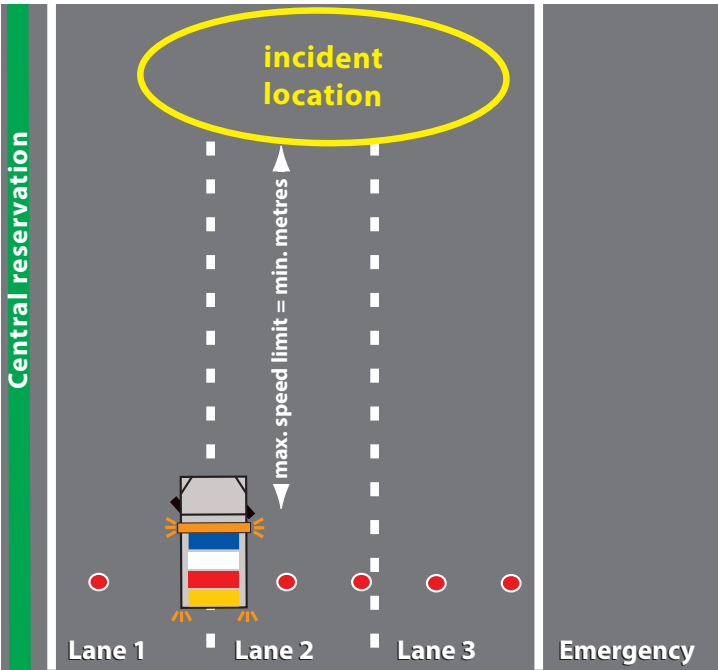
4.4.1 Complete closure of a two-lane divided roadway

- if you chance upon an incident on a two-lane divided roadway:
- Place your IM emergency vehicle straight on the broken line separating lane 1 from lane 2
 - Turn the front wheels away from the traffic
 - On both sides of the vehicle, place two traffic cones.
 - Place the fifth traffic cone in the emergency lane, if present.
- Quickly vacate the roadway and get behind the guardrail.
- In placing the emergency vehicle and the traffic cones it is important that:
1. Traffic is prevented from driving past it.
 2. Sufficient room is left for other emergency vehicles to pass your vehicle on the right-hand side.
- Other emergency workers arriving will have to remove the two traffic cones on the right, pass, and immediately place them back after passing to safeguard the situation.



4.4.2 Complete closure of a three-lane divided roadway

- if you chance upon an incident on a three-lane divided roadway:
- Place your IM emergency vehicle straight on the broken line separating lane 1 from lane 2
 - Turn the front wheels away from the traffic.
 - Place one traffic cone on the left- and four on the right-hand side of the vehicle.
- In this position your IM emergency vehicle is best visible. Between lanes 2 and 3 the visibility would be greatly hampered by the lorries in lane 3.



4.4.3 Complete closure of a divided roadway with more than three lanes

In this situation it is impossible to realise a complete closure of the roadway with just one IM emergency vehicle and one IM emergency worker operating on his own. Therefore, in such cases you are advised to 'act along the lines of the directive', with the emergency workers' own safety as a first priority. Immediately ask the control room to have the roadway closed through the overhead signalling that is always present on roadways with more than three lanes. Then decide whether the physical closure of the roadway should take place from lane 1 to lane 4/5, or from lane 4/5 to lane 1.

Note that an IM emergency motorcycle is unsuitable for complete roadway closure.

Frame 26 Halting traffic

Every IM emergency worker is authorized to halt traffic after an incident. At that moment he is not regulating traffic, but enhancing safety to prevent secondary accidents. Halting traffic should not be confused with closing the road (see frames 27 & 28 below).

Frame 27 Close the road to all traffic? Decide early!

The decision to close a road and divert the traffic at a junction should be taken as soon as possible. It takes time for the necessary people and materials to arrive at the scene, and if too much time elapses, traffic will start finding its own way around the incident. In making this decision, take into account that sufficient space should be created to ensure a safe and effective working environment for the emergency workers. In situations with two-sided collision risk, the decision should also include whether one or both sides need to be closed. Inform your control dispatch/centre of your decision, so that the road authorities can be informed that extra manpower and materials will be needed.

NB Never divert traffic via cycle paths or through verges.

Frame 28 Close the road from one side or both?

As the decision to close a road and divert the traffic at a junction should be taken as soon as possible, the first IM emergency worker to arrive at the scene should take this decision. The police and/or the road authority will organise road closure. It requires extra deployment of people and materials and is not part of the initial safety measures.

There are three options:

- a do not close the road; halting the traffic suffices;
- b close the road to traffic from one direction;
- c close the road to traffic from two directions.

Option a: no closure; halting the traffic suffices
Halting the traffic may suffice in incidents where there is only material damage and no casualties.

Options b and c: closing the road to traffic from one or two direction(s)
The first IM emergency worker at the scene takes the decision. The circumstances and the layout of roads vary widely. Therefore, it is impossible to formulate rules for making this decision. However, there are a number of questions that can be asked to help you make it:

- Is it necessary to collect evidence?
- Is there enough work space for the services that are yet to arrive?
- Is there heavy traffic? Which direction has the highest intensity and therefore takes priority?
- Are there contaminants on the road surface, in the verge or the ditch?
- Are there many onlookers?

Option c: closing the road to traffic from two directions
There are three situations in which the road is always closed to traffic from two directions:

- 1 If an ambulance and/or fire-fighting vehicle is needed: to ensure safety and enough working space;
- 2 To preserve evidence if an investigation is necessary;
- 3 If hazardous substances are involved: a safety precaution until the fire service gives the all clear.

5

Initial protection of traffic incidents with two-sided collision risk - on all roads with undivided roadways

5.1 General procedure for accidents with two-sided collision risk

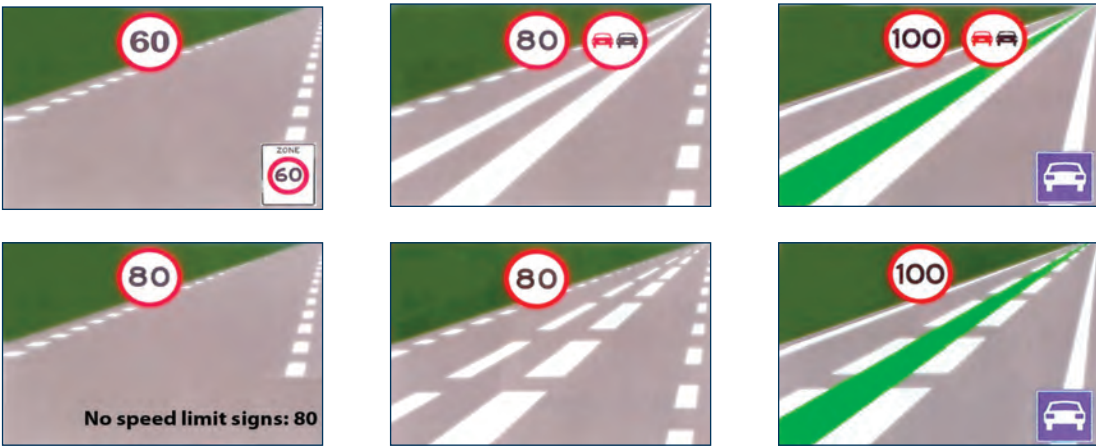
Any IM emergency worker to arrive first at an incident with one-sided collision risk, takes the following safety measures (see chapter 3 for **FIRA**: **F**end-off incident, **I**nitial safety measures, **R**econ and report, **A**dditional measures).

F Fend-off incident

- Create a safety zone
Create a safety zone by positioning the protective vehicle at a distance of [max. speed limit = min. metres] ahead of the incident.

Maximum speed limit	Length of the safety zone
50 km/h	a minimum of 50 metres
60 km/h	a minimum of 60 metres
70 km/h	a minimum of 70 metres
80 km/h	a minimum of 80 metres
100 km/h	a minimum of 100 metres

If a road layout adheres to the principles of sustainable safety, the maximum speed limit can be inferred from the layout. And with it the minimum length of the safety zone.



The standard nationwide road layout in the Netherlands follows the principles of sustainable safety.

- NB If hazardous substances are suspected, cordon off the area at a distance of at least 100 metres in a tailwind and 500 metres in a headwind (see frame 2, page 12).
- Use emergency vehicle as protective vehicle
Place your emergency vehicle **straight** (i.e. parallel to the lines on the road) in the affected lane at [max. speed limit = min. metres] ahead of the incident to create a safety zone. The protective vehicle must be placed straight to indicate to road users that they must stop and wait, as opposed to the procedure for roads with divided roadways, where the protective vehicle is placed in the fend-off position to guide traffic around the incident. Placing the emergency vehicle in a straight position goes for emergency motorcycle vehicles as well (see frame 3, page 14). If a motorcycle is used, always replace it with the first emergency van or truck to arrive at the incident scene.
 - Initial safety measures
 - Request safety measures
Roads with undivided roadways are usually not equipped with overhead signalling. However, should overhead signalling exist, ask traffic control to close affected lane(s) (see frame 4, page 16).

- *Wear safety clothing*
Unless you are already wearing traffic safety clothing, put on a safety vest. Every service has one worker in a green vest. He is in charge and is the other services' liaison (see 2.4, page 17).
- *Place traffic cones*
At incident scenes with two-sided collision risk, traffic cones are used not only to guide traffic along the scene, but also to (briefly) halt traffic. Paragraph 5.2 shows per situation how the traffic cones must be placed.
- *Halt traffic from both sides*
At incident scenes with two-sided collision risk it is necessary for the emergency worker's own safety to first halt the traffic from all sides. Doing this allows the emergency worker to survey the incident without the danger traffic forms (see frame 26, page 42). Halting traffic is an initial safety measure that should not be confused with closing the road and diverting the traffic (see frames 27 & 28, page 42).

R Recon and report

- *Recon and report for multidisciplinary use*
Survey the incident along the lines laid down on the METHANE card (see 2.6, page 19). Report the incident concisely to your dispatch/control centre.

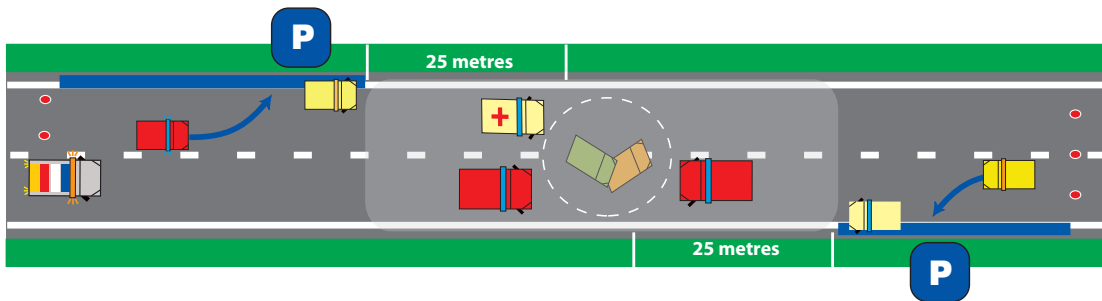
A Additional measures

- *Decide whether to close the road or not*
Decide in an early stage whether the road will have to be closed and, if so, whether one or both sides will have to be closed. Inform your control dispatch/centre of your decision (see also frames 27 & 28, page 42).
- *Request additional traffic measures*
Putting the initial safety measures in place makes the situation safer, but depending on the circumstances, more often than not additional traffic measures will be necessary (see 2.8, page 21).

5.1.1 Keeping access and exit routes clear on undivided roadways

All emergency workers must strive to keep clear access and exit routes to and from the incident scene. This means that emergency vehicles should not be left in the way of other arriving or leaving emergency vehicles. To prevent this from happening, the following has been agreed upon:

All emergency vehicles arriving at the scene are parked on the left-hand side of the road, 25 meters ahead of the incident. Keep well away from the soft verge, so that nothing or no one enters the verge and possible evidence remains untouched. Only fire service vehicles and ambulances can approach the incident up to the 10-metre area of operations to assist casualties.



So, regardless of the side you are arriving, you always park your vehicle on the left-hand side of the road, in line. Emergency vehicles are never parked perpendicular alongside one another.

5.2 Protection in 4 basic situations

As no two situations are the same, it is impossible to describe them all. We have therefore selected four situations to demonstrate the agreed **FIRA** approach (see chapter 3). These situations are:

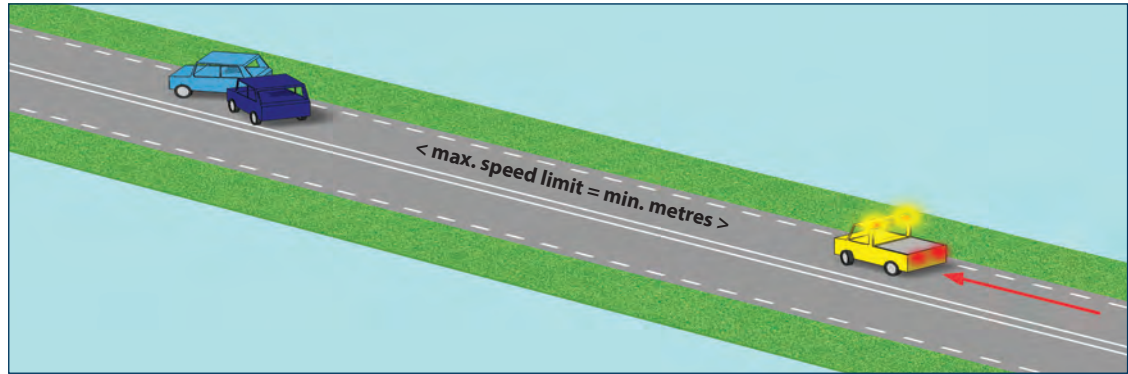
1. Protection of single-lane incidents (5.2.1);
2. Protection of road-wide incidents (5.2.2);
3. Protection of incidents on intersections (5.2.3);
4. Protection of incidents on roundabouts (in undivided roads) (5.2.4).

5.2.1 Protection of single-lane incidents

The **FIRA** approach for the first-arriving emergency worker at an incident affecting only one lane, on a road with two-sided collision risk:

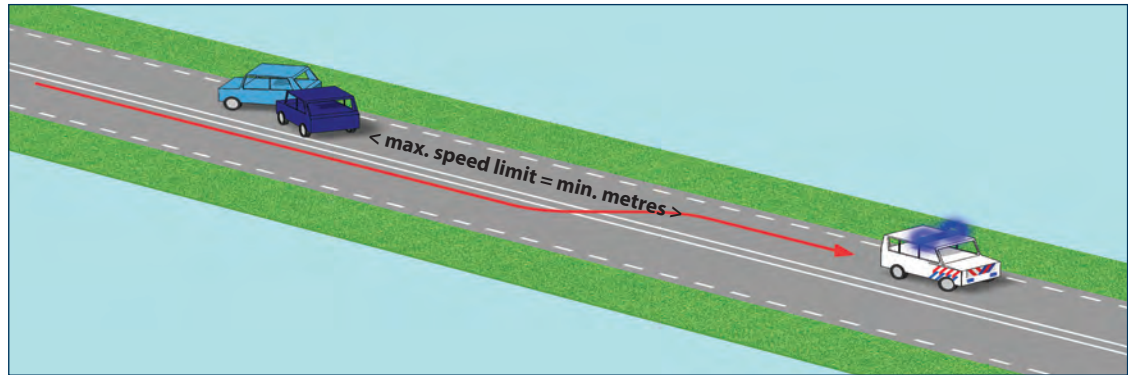
F Fend-off incident

- *Create a safety zone*
Create a safety zone by positioning the protective vehicle in the affected lane, at a distance of [max. speed limit = min. metres] ahead of the incident (see illustration below).
- *Use emergency vehicle as protective vehicle*
 - Place the emergency vehicle **straight** (i.e. parallel to the lines on the road) with front wheels turned away from traffic;
 - Switch on alternating lights;
 - Leave rotating lights on;
 - Switch off frontal strobe warning lights.



OR, if the incident is approached from the opposite direction (see illustration below):

- Place the protective vehicle in the affected lane, at [max. speed limit = min. metres];
- Place it **straight** (i.e. parallel to the lines on the road) with front wheels turned away from traffic
- Switch on alternating lights;
- Leave rotating lights on;
- Switch off frontal strobe warning lights.

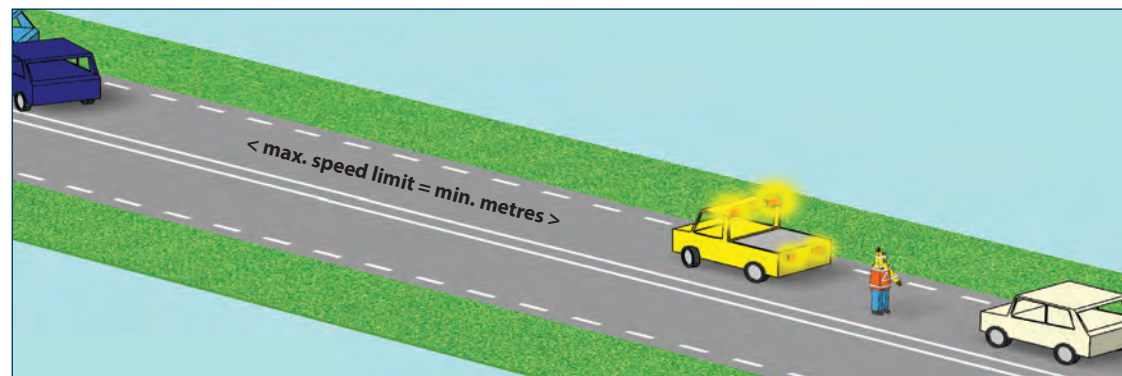


I Initial safety measures

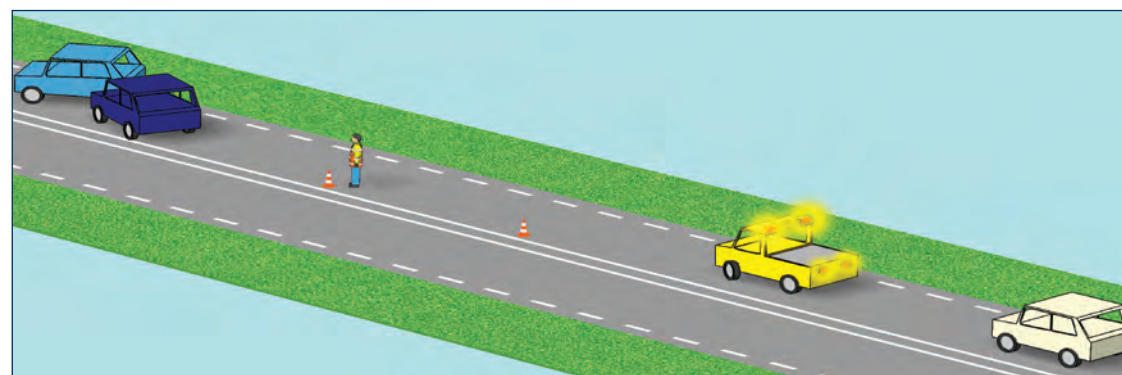
- **Request safety measures**
Request safety measures via your dispatch/control centre (if overhead signalling is available) (see frame 4, page 16).
- **Wear safety clothing**
Always wear safety clothing, a safety vest at the least (see 2.4, page 17).
- **Place traffic cones**
See next bullet
- **Halt traffic from both sides**

Direction 1

- Order the first vehicle behind you to stop and instruct the driver (from the occupant's side!) to remain in that position, with the warning lights on (see illustration below).

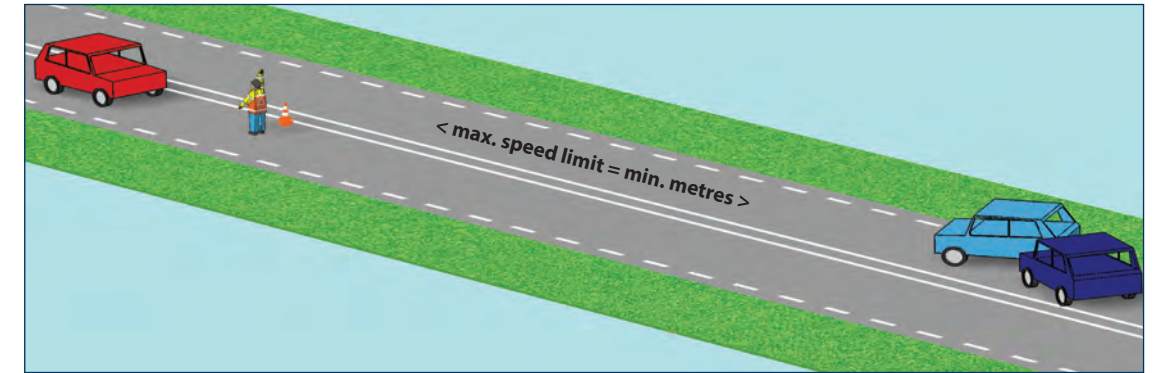


- Take 5 traffic cones;
- Keep a close eye on the traffic from the opposite direction;
- Place two traffic cones between the emergency vehicle and the incident (see illustration below).



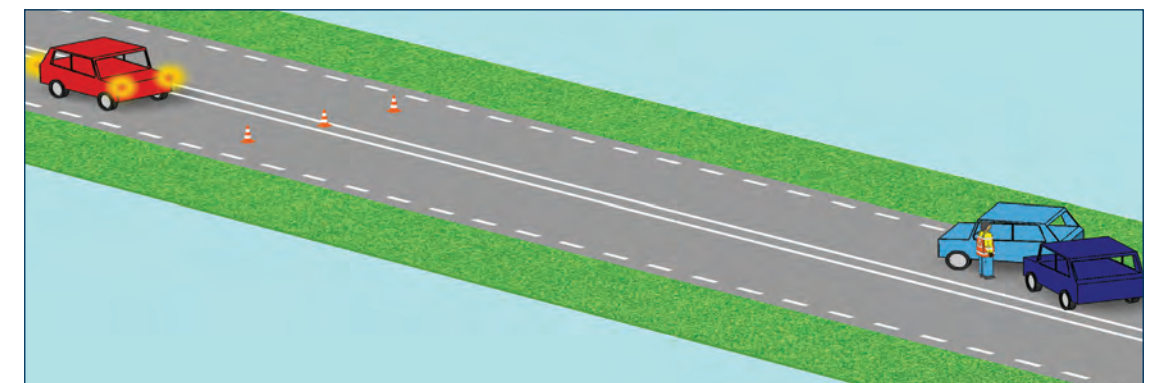
Direction 2

- Walk with the remaining 3 traffic cones [max. speed limit = min. metres] in the other direction. (As you walk along the incident, you will of course already get a first impression of the situation. However, do not let yourself be distracted from taking the necessary safety measures first, in particular halting the traffic from the opposite direction.)
- Order the first vehicle to stop and instruct the driver (from the occupant's side!) to remain in that position, with the warning lights on.
- Place the 3 traffic cones across the road (see illustration below).



R Recon and report

- **Recon and report for multidisciplinary use**
Survey the incident along the lines laid down on the METHANE card (see 2.6, page 19) and report concisely to your dispatch/control centre.



A Additional measures

- **Decide whether to close the road or not**
(see frames 27 & 28, page 42)
- **Request additional traffic measures**
(see 2.8, page 21)

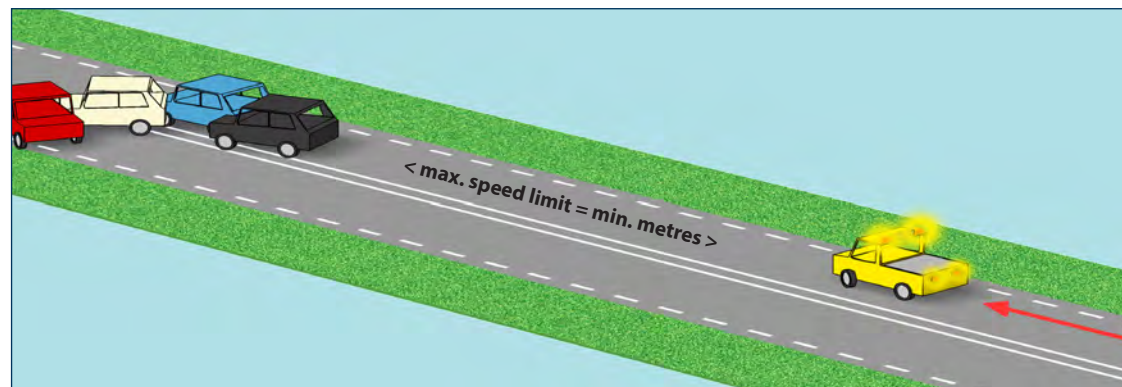
NB Keep access and exit routes clear (see 5.1.1, page 44)

5.2.2 Protection of roadway-wide incidents

The **FIRA** approach for the first-arriving emergency worker at an incident affecting the whole roadway on roads with two-sided collision risk:

F Fend-off incident

- **Create a safety zone**
Create a safety zone by positioning the protective vehicle at a distance of [max. speed limit = min. metres] ahead of the incident (see illustration below).
- **Use emergency vehicle as protective vehicle**
 - Place the emergency vehicle **straight** (i.e. parallel to the lines on the road) with front wheels turned away from traffic
 - Switch on alternating lights;
 - Leave rotating lights on;
 - Switch off frontal strobe warning lights.

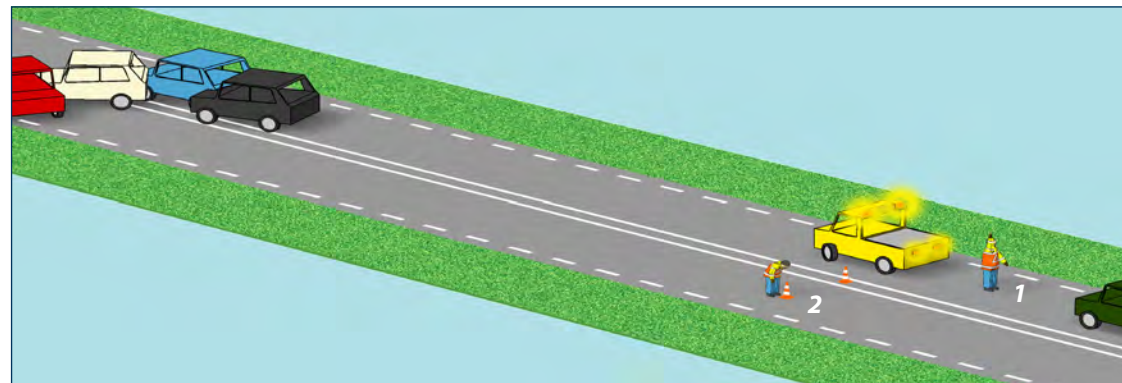


I Initial safety measures

- *Request safety measures*
Request safety measures via your dispatch/control centre (if overhead signalling is available) (see frame 4, page 16).
- *Wear safety clothing*
Always wear safety clothing, a safety vest at the least (see 2.4, page 17).
- *Place traffic cones*
See next bullet
- *Halt traffic from both sides*

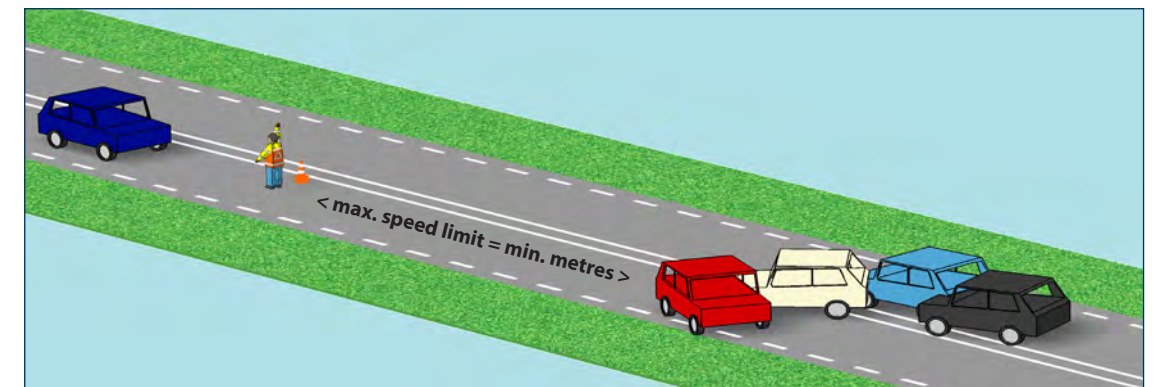
Direction 1

- Order the first vehicle behind you to stop and instruct the driver (from the occupant's side!) to remain in that position, with the warning lights on (see illustration below, action 1).
- Place 2 traffic cones next to your emergency vehicle (see illustration below, action 2).



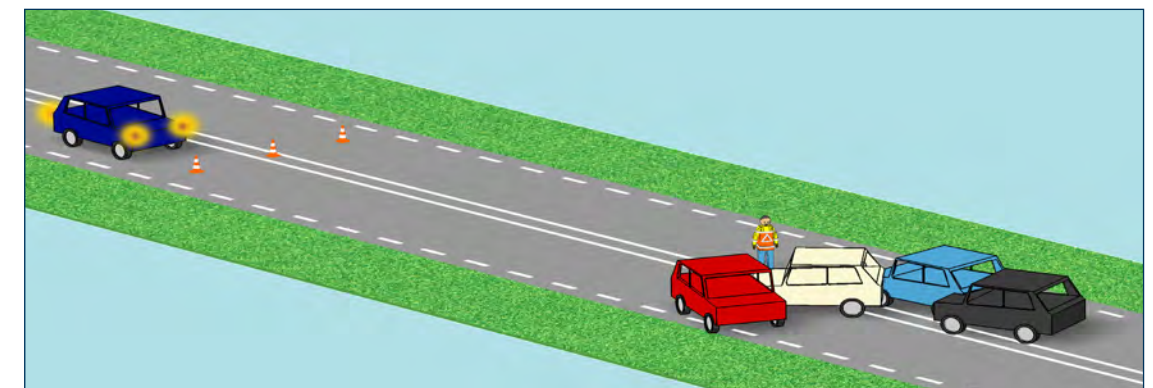
Direction 2

- Walk with the remaining 3 traffic cones [max. speed limit = min. metres] in the other direction. (As you walk along the incident, you will of course already get a first impression of the situation. However, do not let yourself be distracted from taking the necessary safety measures first, in particular halting the traffic from the opposite direction.)
- Order the first vehicle to stop and instruct the driver (from the occupant's side!) to remain in that position, with the warning lights on.
- Place the 3 traffic cones across the road (see illustration below).



R Recon and report

- *Recon and report for multidisciplinary use*
Survey the incident along the lines laid down on the METHANE card (see 2.6, page 19) and report the incident concisely to your dispatch/control centre.



A Additional measures

- *Decide whether to close the road or not*
(see frames 27 & 28, page 42)
- *Request additional traffic measures*
(see 2.8, page 21)

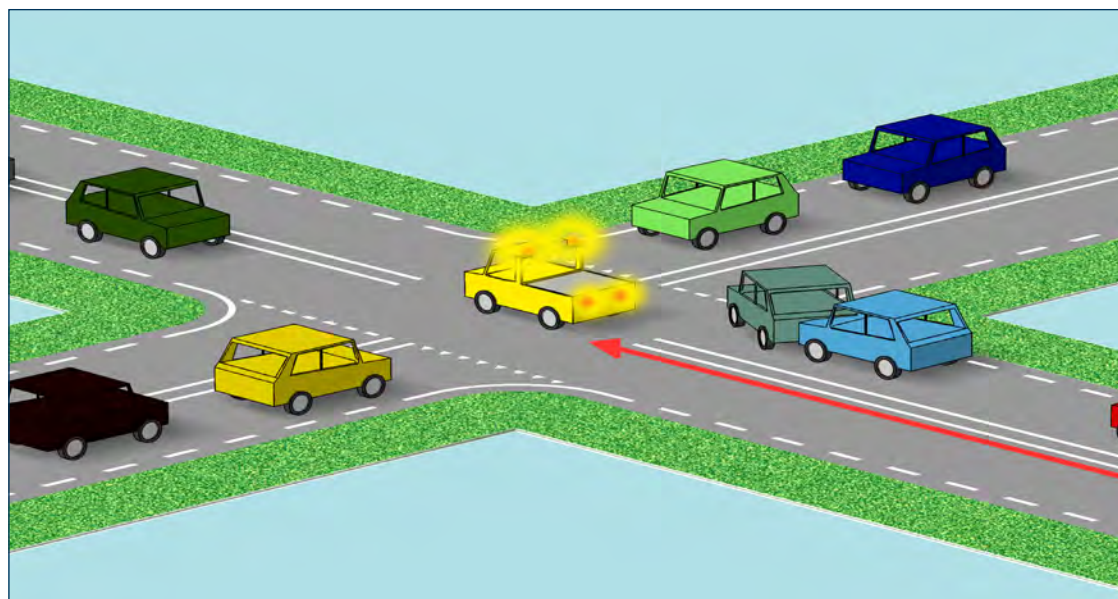
NB Keep access and exit routes clear (see 5.1.1, page 44)

5.2.3 Protection of incidents on intersections

The **FIRA** approach for the first-arriving emergency worker at an incident on an intersection:

F Fend-off incident

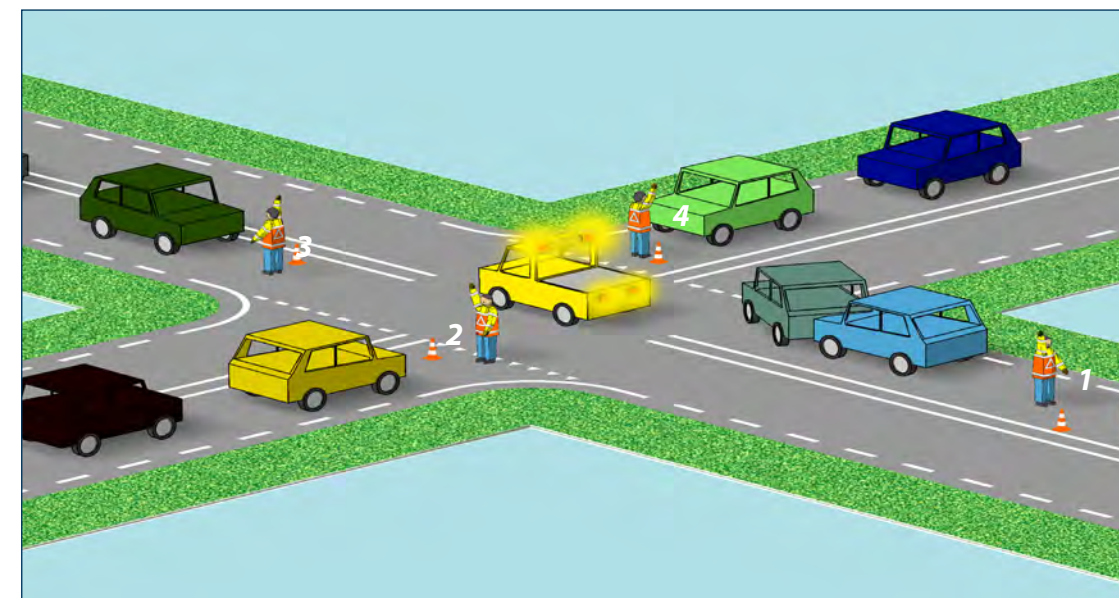
- *Create a safety zone*
Creating a safety zone is not applicable here.
- *Use emergency vehicle as protective vehicle*
 - Place the emergency vehicle in a central position on the intersection (see illustration below);
 - Switch on alternating lights;
 - Leave rotating lights on;
 - Switch off frontal strobe warning lights.



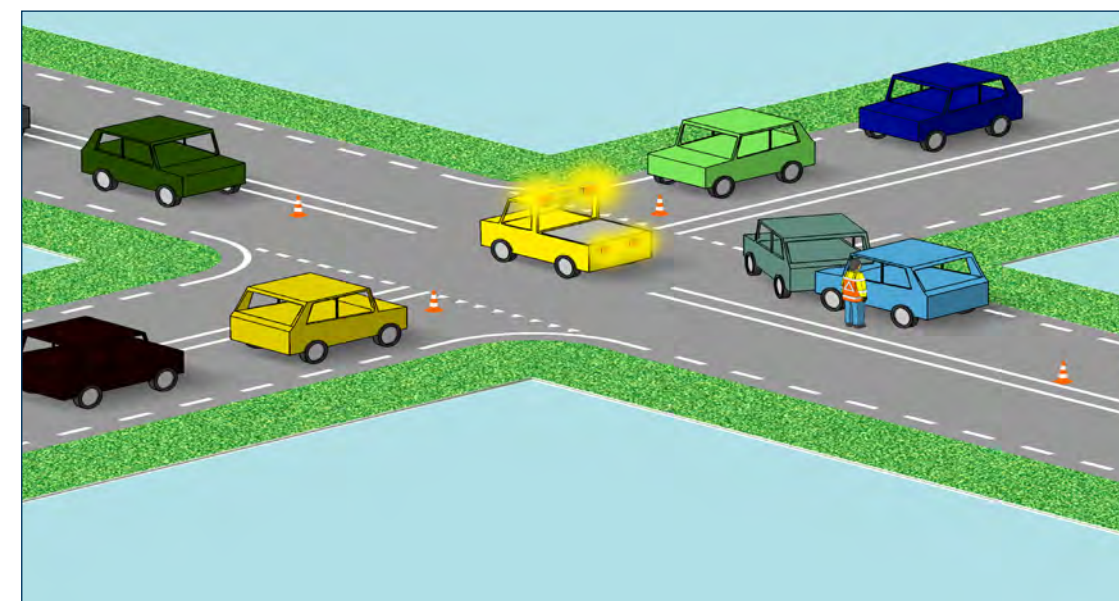
I Initial safety measures

- *Request safety measures*
Request safety measures via your dispatch/control centre (if overhead signalling is available) (see frame 4, page 16).
- *Wear safety clothing*
Always wear safety clothing, a safety vest at the least (see 2.4, page 17).
- *Place traffic cones*
See next bullet
- *Halt traffic from all sides*
 - Leave your car and get 4 traffic cones
 - Start at the side of the incident and work clockwise (see actions 1 to 4 in the illustration)
 - Order the first vehicle to stop and instruct the driver (from the occupant's side!) to remain in that position, with the warning lights on.
 - Place a traffic cone in front of the first vehicle
 - Repeat this for all directions

R Recon and report



- *Recon and report for multidisciplinary use*
Survey the incident along the lines laid down on the METHANE card (see 2.6, page 19) and report the incident concisely to your dispatch/control centre.



A Additional measures

- *Decide whether to close the road or not*
(see frames 27 & 28, page 42)
- *Request additional traffic measures*
(see 2.8, page 21)

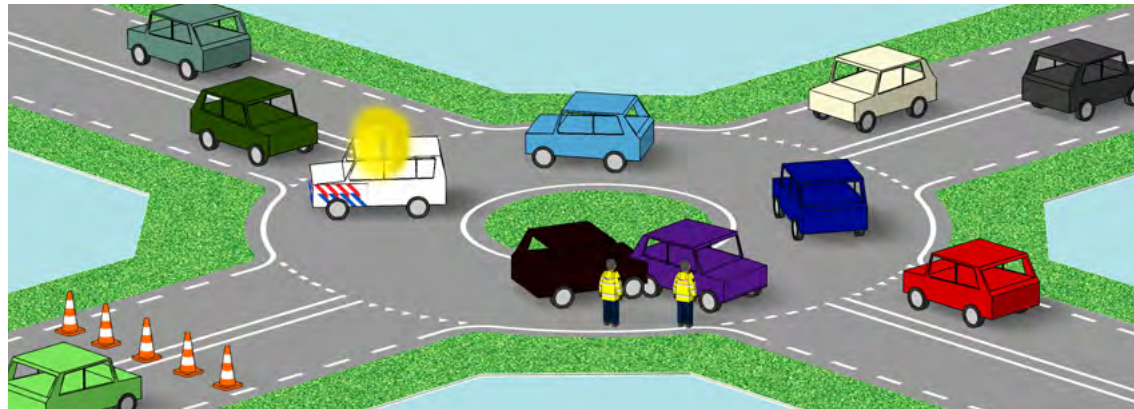
NB Keep access and exit routes clear (see 5.1.1, page 44)

5.2.4 Protection of incidents on roundabouts (in undivided roads)

The **FIRA** approach for the first-arriving emergency worker at an incident is also effective on roundabouts: **Fend-off incident**, **Initial safety measures**, **Recon and report**, **Additional measures**. However, the circumstances on roundabouts make it necessary to adapt it.

The Rule

On roundabouts with a maximum of 2 lanes*: place your emergency vehicle on the roundabout in such a way that no traffic can pass. Always do this 1 quadrant ahead of where the incident has taken place (see illustration 1). The only access to the roundabout that is still open is closed with traffic cones, at a maximum of 25 meters from the roundabout.



1 The main rules states that the emergency vehicle is positioned on the roundabout. This is what the initial measures look like.

The Alternative

If the incident blocks the roundabout in such a way that the emergency vehicle cannot access it, the access road to the roundabout is blocked with the emergency vehicle. The roundabout is subsequently blocked with traffic cones (see illustration 2). After the four traffic cones have been placed on the roundabout, a fifth cone is placed next to the emergency vehicle.



2 If the incident blocks access to the roundabout, the initial safety measures look like this.

* Roundabouts with more than two lanes are discussed in 4.2.3, page 33.

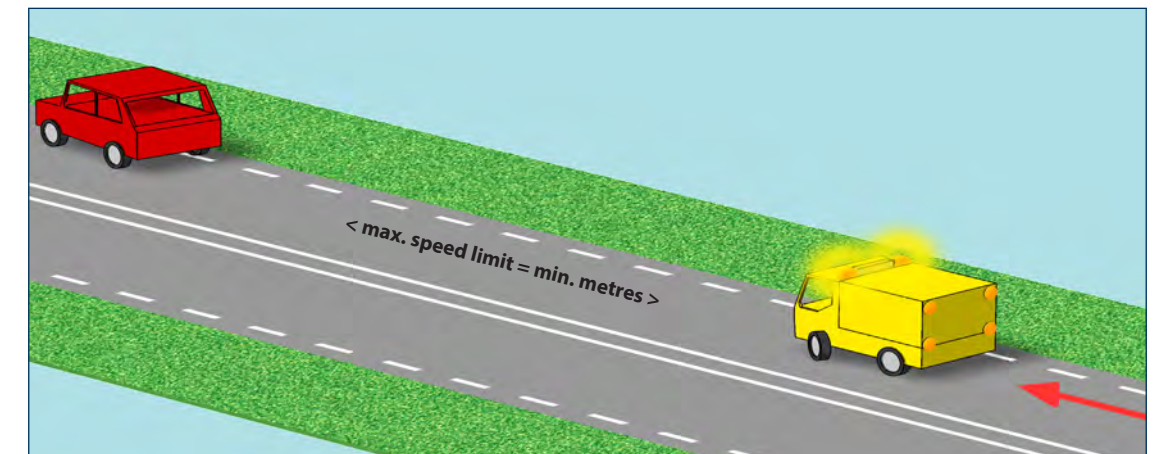
5.3 Protection of breakdown assistance on undivided roads

With breakdowns, as a rule the same initial safety measures apply as described earlier in chapter 5, so that traffic from both directions is halted. However, because drivers tend to place their broken down vehicles on the side of or next to the road, it may suffice to halt the traffic from just one direction.

The **FIRA** approach for the first-arriving breakdown/recovery service at the scene of a broken down vehicle:

F Fend-off incident

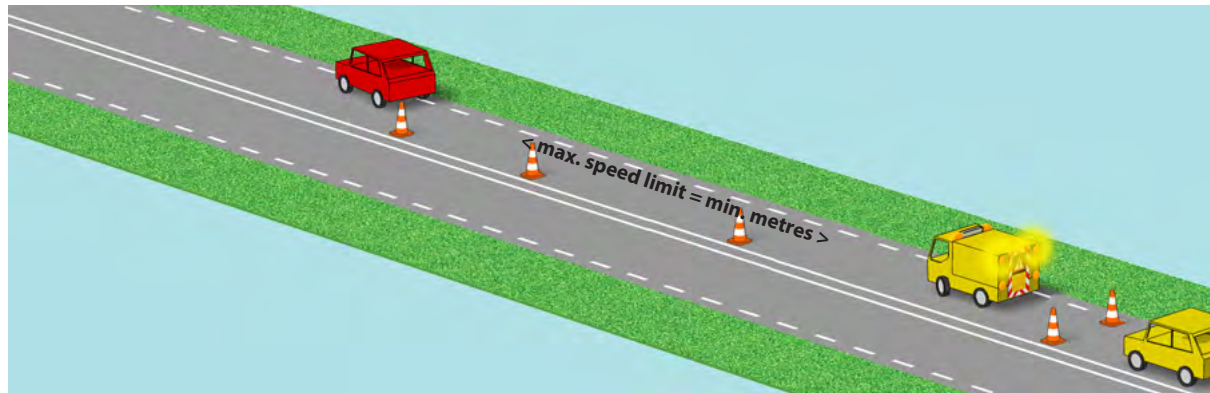
- **Create a safety zone**
Create a safety zone by positioning the protective vehicle in the affected lane, at a distance of [max. speed limit = min. metres] ahead of the incident (see illustration below).
- **Use emergency vehicle as protective vehicle**
 - Place the emergency vehicle **straight** (i.e. parallel to the lines on the road) with front wheels turned away from traffic
 - Switch on alternating lights;
 - Leave rotating lights on;
 - Switch off frontal strobe warning lights.



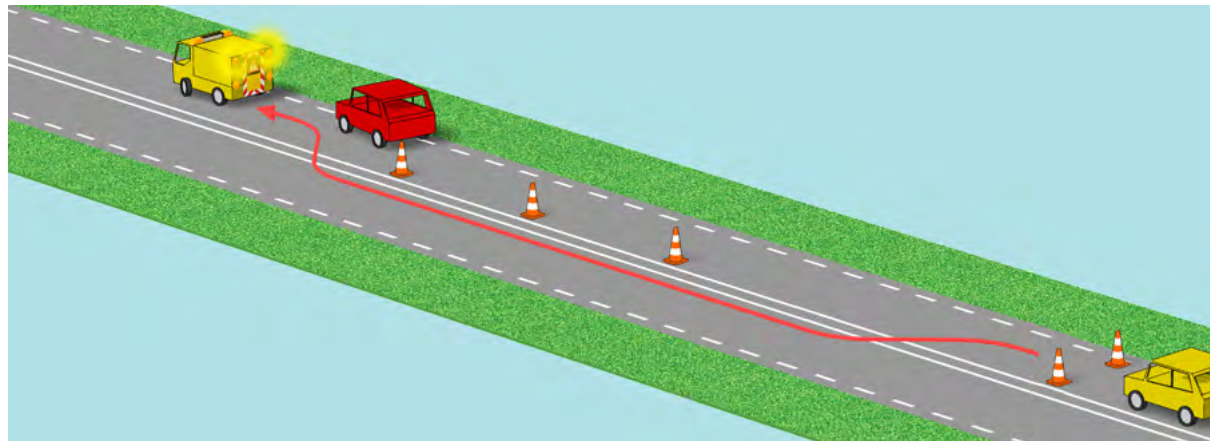
I Initial safety measures

- **Request safety measures**
Request safety measures via your dispatch/control centre (if overhead signalling is available) (see frame 4, page 16).
- **Wear safety clothing**
Always wear safety clothing, a safety vest at the least (see 2.4, page 17).
- **Place traffic cones**
See next bullet
- **Halt traffic**
 - Order the first vehicle behind you to stop and instruct the driver (from the occupant's side!) to remain in that position, with the warning lights on (see illustration below).
 - Place 2 traffic cones between that vehicle and your vehicle (see illustration below);
 - Keep a close eye on the traffic from the opposite direction;
 - Place three traffic cones between the emergency vehicle and the incident (see illustration below).

- Check the broken-down vehicle and make preparations to take the vehicle with you..

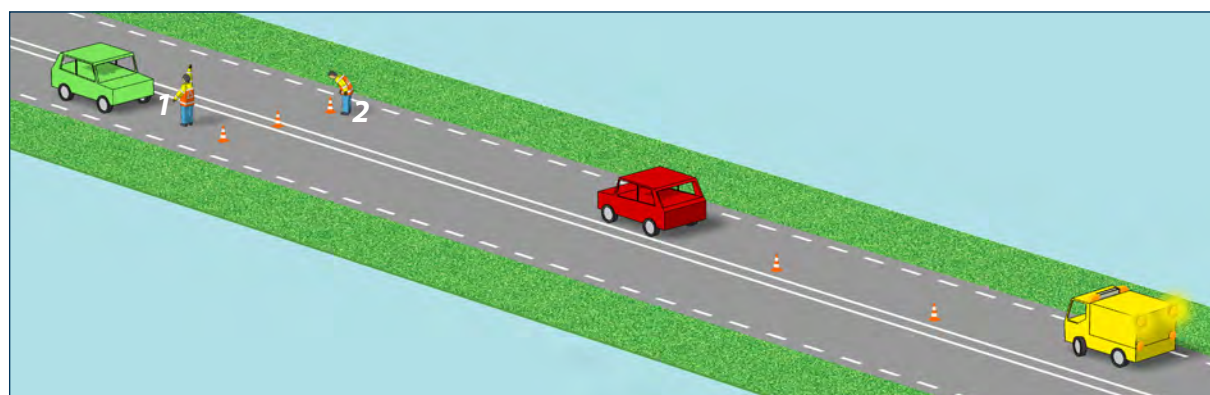


- Move your vehicle from the protective position to a position beyond the broken-down vehicle, when oncoming traffic permits.



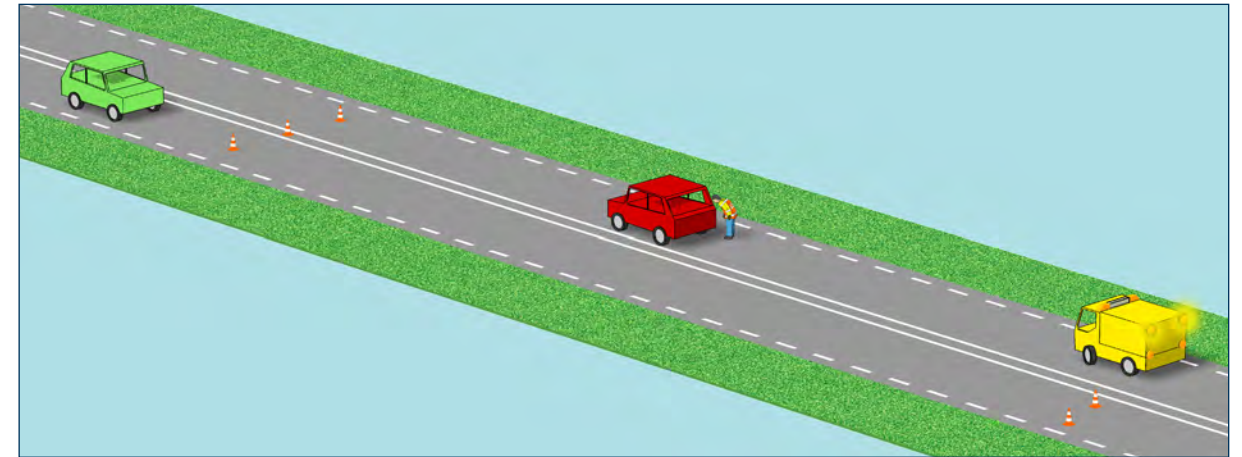
- Attach the broken-down vehicle to your vehicle, or loads it onto your vehicle.
- Collect the traffic cones.
- Tell the driver of the stationary vehicle that he can continue his journey by following your vehicle.

- *Halt oncoming traffic as well*
If the broken-down vehicle is positioned within a metre of the centre of the road, the oncoming traffic will have to be halted as well to provide a safe working area (see 5.2.1, page 43).
- At a minimal distance of [max. speed limit = min. metres] from the broken down vehicle, order the first oncoming vehicle to stop (see illustration below, action 1).
- Instruct the driver (from the occupant's side!) to remain in that position, with the warning lights on.
- Place 3 traffic cones across the road (see illustration below, action 2).



Close off the incident location

- Finally, close off the incident location by moving the two traffic cones to a position next to the recovery/breakdown service vehicle.



- Deal with the broken down vehicle and collect the traffic cones.

R Recon and report

This is not applicable when assisting broken down vehicles.

A Additional measures

This is not applicable when assisting broken down vehicles.





Appendix

The use of amber warning lights

**This appendix is part of the
Directive initial safety measures at traffic incident locations
and of the examination.**

The use of amber warning lights

Amber warning lights are used to draw the road-users' attention to the fact that something is the matter and that they have to take extra care. The objective of amber warning lights is to enhance the visibility of the vehicles using them, to reduce the risk of collision.

Excessive use of amber warning lights has an opposite effect: the road-user's attention is drawn in such a way that it leads to dangerous situations. It is a fact that motorists unintentionally steer in the direction they are looking.

Use of frontal strobe lights

- Frontal strobe lights may only be used in specific situations. They may:
- Only be used in support of amber rotating lights, and never on their own;
 - Only be used by IM emergency vehicles on their way to an incident, be it on the road or in the emergency lane. A stationary IM emergency vehicle has always turned its frontal strobe lights off.

Driving in the emergency lane

Rule 1: In the emergency lane it is not allowed to drive faster than 50 km/h;
Rule 2: the speed difference with the traffic in the adjacent lane may not exceed 20 km/h.
Thus if traffic has come to a halt, the speed limit for emergency vehicles in the emergency lane is 20 km/h. And if traffic is moving at a speed of 35 km/h, rule 1 applies and the speed limit in the emergency lane is 50 km/h.

Appendix layout

This appendix on the use of amber warning lights recognises three situations. An IM emergency vehicle may be:

- On the move,
- Stationary;
- Towing another vehicle.

Types of amber warning lights



Rotating lights
A console on the roof radiating light to all sides.



Frontal strobe lights
Lights in the grill of a vehicle. IM emergency vehicles may only use frontal strobe lights on their way to an incident. Frontal strobe lights are supporting warning lights, sometimes also called 'nearby warning lights': while the rotating lights of an IM emergency vehicle driving right behind motorists are not visible, the frontal strobe lights are.



Alternating lights at the back
Amber lights at the back of an IM emergency vehicle that alternate in horizontal pairs.



On-vehicle IM Infopanel
An information panel at the back of some IM emergency vehicles that can display various messages and can be turned towards the traffic. Some panels can even show alternating amber lights.

Hazard warning lights
The amber warning lights that are obligatory on all motor vehicles and are operated by the button on the dashboard showing an emergency triangle. On IM emergency vehicles these lights are not used as warning lights. Where hazard warning light are mentioned in this appendix, it concerns the hazard warning lights of vehicles being towed away.

➤ On the move

The use of amber warning lights on moving emergency vehicles		
	On the road	In the emergency lane
Rotating lights	> Obligatory when you: - are on your way to an incident - enter or leave an incident location ¹	> Obligatory when you: - drive along a tailback ⁴ - enter or leave the emergency lane ⁵
Alternating lights		> Obligatory, unless there is a tailback on the road ⁴
Frontal strobes	> Only on your way to an incident with rotating lights on ²	> Only when driving along a tailback with rotating lights on ²
IM infopanel	> ³	> ³

¹ It is obligatory to use your rotating lights briefly the moment you enter an incident location and also when you leave that location to join the traffic flow again.

² The use of frontal strobe lights is highly recommended in these situations.

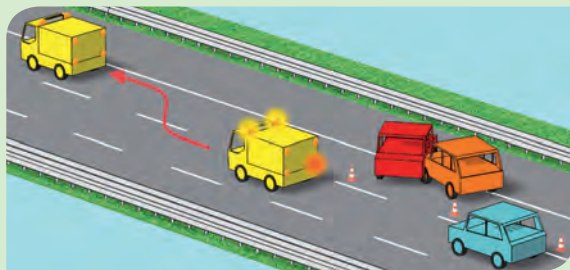
³ If possible and useful, display on your on-vehicle IM Infopanel with text and/or an illustration what is the matter and/or what the motorist is expected to do in the circumstances.

⁴ Alternating lights are obligatory when driving on the emergency lane, unless there is a tailback on the road next to you. Then it is obligatory to use your rotating lights, supported by your frontal strobe lights.

⁵ It is obligatory to use your rotating lights briefly the moment you enter the emergency lane and also when you leave it to join the traffic flow again.

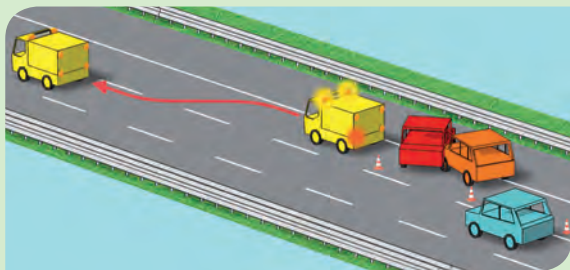
Entering an incident location

When entering an incident location, traffic must be prevented from following the IM emergency vehicle. Therefore, it is obligatory to briefly use your rotating lights when entering the closed lane behind and in line with the incident.



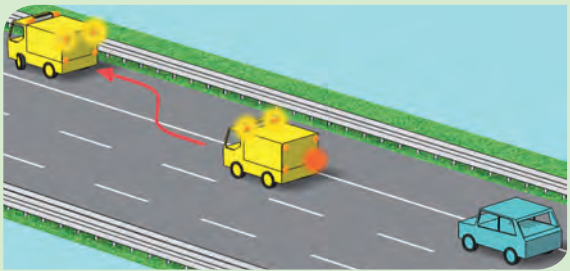
Leaving an incident location

When leaving the incident location, the rotating lights must be briefly used to indicate that the IM emergency vehicle is joining the traffic flow again.



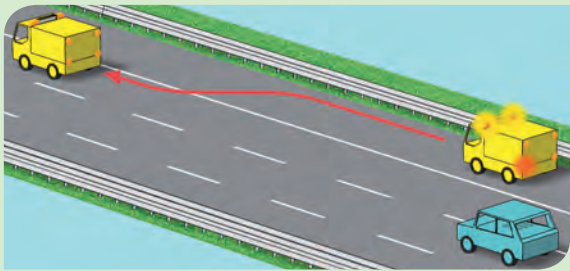
Entering the emergency lane

When entering the emergency lane, traffic must be prevented from following the IM emergency vehicle. Therefore, it is obligatory to briefly use your rotating lights when entering the emergency lane.



Leaving the emergency lane

When leaving the emergency lane, the rotating lights must be briefly used to indicate that the IM emergency vehicle is joining the traffic flow again.

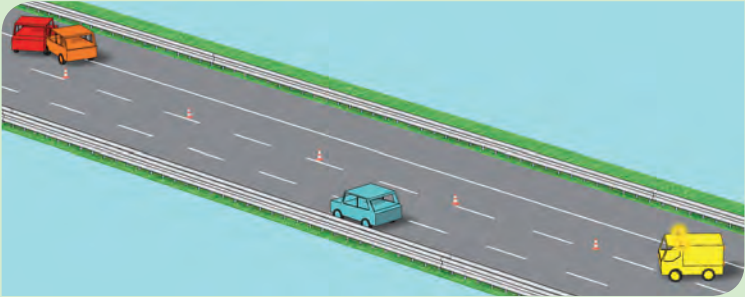


> Stationary

The use of amber warning lights on stationary emergency vehicles		
	On the road	In the emergency lane
Rotating lights	> Obligatory ⁶	> Allowed in exceptional circumstances ⁸
Alternating lights		> Obligatory ⁹
Frontal strobe lights		
Autodrip	> Use recommended ⁷	> Use recommended ¹⁰
<p>⁶ Applies to the IM emergency vehicle in fend-off position, [max. speed limit = min. metres] ahead of the incident. All other IM emergency vehicles are parked beyond and in line with the incident, with all warning lights turned off.</p> <p>⁷ Display on your on-vehicle IM Infopanel with text and/or an illustration what is the matter and/or what the motorist is expected to do in the circumstances. If the IM emergency vehicle is in the fend-off position, it is recommended to show alternating amber lights and an arrow indicating on which side traffic is allowed to pass.</p> <p>⁸ If weather conditions render alternating lights insufficient, it may be necessary to use rotating lights as well. (blinding sunlight, fog, or heavy rainfall, for instance)</p> <p>⁹ As soon as the IM emergency vehicle has entered the emergency lane the alternating lights are turned on. The vehicle's backdoor or tailboard remains closed for better visibility and to prevent loose materials from being flown around if the vehicle is hit.</p> <p>¹⁰ Display on your On-vehicle IM Infopanel with text and/or an illustration what is the matter and/or what the motorist is expected to do in the circumstances.</p>		

Stationary in fend-off position

On roads with divided roadways, the first-arriving IM emergency vehicle is placed [max. speed limit = min. metres] ahead of the incident in fend-off position. It is obligatory to use amber rotating lights in this position.



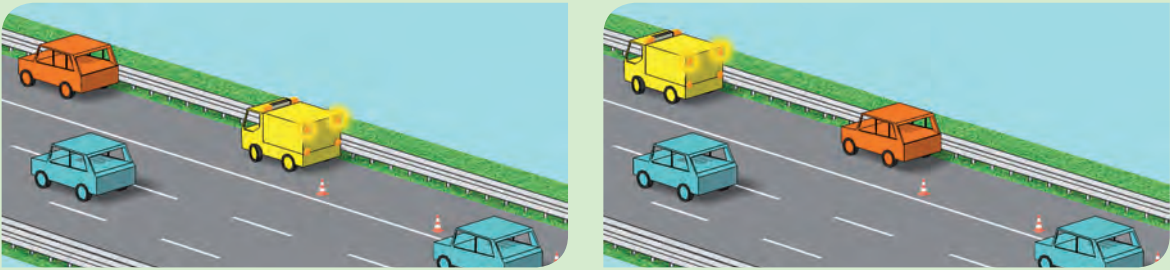
On-vehicle IM Infopanel

In the fend-off position, rotate the on-vehicle IM Infopanel so, that it faces traffic. Show at least an arrow that indicates on which side traffic is allowed to pass.



Stationary in the emergency lane

A stationary IM emergency vehicle in the emergency lane is obliged to use alternating amber lights. The use of rotating lights for extra attention is only permitted in weather conditions that severely hamper visibility.



> Towing

	In built-up areas	In the emergency lane or on secondary roads
Rotating lights	> Obligatory ¹¹	> Obligatory ¹²
Alternating lights		
Frontal strobe lights		
<p>¹¹ The towing vehicle is obliged to use amber rotating lights. The hazard warning lights of the vehicle in tow are off, so that the direction indicators can be used to indicate to the traffic, which way the tow is going. The head- and taillights of the vehicle in tow are on.</p> <p>¹² The towing vehicle is obliged to use amber rotating lights. The hazard warning lights of the vehicle in tow are off and its head- and taillights are on.</p>		

Towing to the first safe location using a salvage- or blade vehicle

	In built-up areas	In the emergency lane or on secondary roads
Rotating lights	> Use permitted ¹³	> Use permitted ¹⁴
Alternating lights		
Frontal strobe lights		
<p>¹³ The salvage vehicle may use amber rotating lights during transport to the nearest safe location. Only the head- and taillights of the broken-down vehicle are on. For further transportation, see the red frame below.</p> <p>¹⁴ The salvage vehicle may use amber rotating lights during transport to the nearest safe location. Only the head- and taillights of the broken-down vehicle are on and the hazard warning lights are off. For further transportation, see the red frame below.</p>		

Safety

If the broken-down vehicle cannot be fully secured to the salvage vehicle, because it cannot safely be done in the emergency lane, the vehicle may only be transported to the nearest safe place via the emergency lane and the salvage vehicle is obliged to use rotating lights. For further transportation, see the red frame.



Further transportation

The use of amber rotating lights is not permitted for further transportation. Use magnets or suction pads to attach alternative lighting to the vehicle's back. The vehicle's hazard warning lights are off.

