



**SUPPLY CHAIN SAFETY  
LEADERSHIP GROUP**

**Highways Safety Hub  
Raising the Bar No.38  
IPV Inspection & Testing**

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## Objective

This Raising the Bar Guidance Document provides practical guidance on how to comply with the Supply Chain Safety Leadership Group Common Intent Document on IPV Strike and Temporary Traffic Management Incursion Avoidance as well as providing guidance to the Designer and Contractor as to the standardised method of compliance preferred by National Highways.

The overall objectives specific to this Raising the Bar are to:

- Promote and ensure that a consistent and common standard of inspection and maintenance for Impact Protection Vehicles (IPVs) is in place across all National Highways contracts, that it is accepted as best practice, and supported by all crash cushion manufacturers and operators
- Ensure consistent levels of appropriate competency of the engineers and technicians carrying out regularised inspections, and that it is to an acknowledged common standard
- Mitigate the likelihood of potential invalid contractor's insurance if the minimum manufacturers guidance on cushion maintenance has not been followed should an IPV be struck
- Promote the awareness and progressive phasing out of the use of older non-compliant crash cushions that currently enjoy grandfather rights afforded by the transition to CD378
- Enhance communication and best practice, such as bulletins and updates, and make information more accessible within the sector

## Scope

This guidance applies to all Tier 1 providers to National Highways (both Major Projects and Operations) who are responsible for the sourcing, procurement and management of services which may require the

deployment of IPVs. The intention is to ensure industry compliance with this document by 1<sup>st</sup> October 2022.



## Background

Currently in the UK, there is estimated to be over 1,500 active crash cushions in operation fitted to highway safety vehicles and, more recently, recovery vehicles.

It is estimated that only a third of these vehicles operating on the UK roads, have any form of robust inspection regime designed to ensure the safe operation of these safety critical units.

A voluntary scheme has been in place for some time testing crash cushion units, which is an industry wide initiative known as TMATA (Truck Mounted Attenuators Testing Agreement). The TMATA scheme works to ensure that all Impact Protection Vehicles (IPVs) working in the UK are built, installed, equipped and maintained in accordance with the specifications, performance standards and maintenance regimes set out by the relevant manufacturers, and upon which the road speed ratings for the operation of the equipment are based.

However, whilst the TMATA scheme was developed to address the general industry legislative and insurance requirements, it is not in itself currently enshrined into legislation, and although utilised by many of the Tier 1 providers as a voluntary scheme, not all companies operating on the UK roads comply with the principles of TMATA, or it is believed, even carry out any form basic inspection undertaken by a competent individual.

It is worth noting that on average, out of those units that have a TMATA test, only c.50-60% pass first-time without any defects being recorded. This implies that even with regular inspection vehicles still need remedial work on a regular basis, and if checks aren't undertaken, then it translates that a significant proportion of IPVs operating may have faults that could compromise the safety and effectiveness of the equipment.

As TMATA is currently the only industry acknowledged scheme promoting a consistent best practice approach to IPV Inspection and Testing, its

principles have been adopted in the following pages to set out by way of example best practice expectations for IPV Inspection and Testing.



## Governance Requirements

It is incumbent upon all those involved in the design and implementation of traffic management related activities, including vehicle recovery, that the end-to-end operation is as safe as can be reasonably foreseen. This includes the assurance that all related plant and equipment is compliant and fit for purpose.

Whilst not mandatory, the TMATA scheme is largely recognised to represent industry best practice in addressing the current lack of legislative inspection and testing requirements for IPV's. The TMATA regime is, therefore, a standardised method of compliance preferred by National Highways (noting the lack of any other related industry initiative) for service providers to demonstrate assurance to an IPV manufacturer's operational guidance.

Further details of the governance arrangements of TMATA can be found in Appendix 1.

Administration of the TMATA scheme is currently undertaken by TRL, acting as an independent administering authority.

## Minimum Requirements - General

The overarching aim of the TMATA test is to verify that IPV's are safe to use, then certify accordingly. IPV's will only be certified if the critical components tested are deemed to meet the relevant standards (manufacturers' specification, CD378 compliance, Chapter 8 compliance, and Road Vehicles Lighting Regulations 1989).

The TMATA servicing and maintenance standard shall apply only to all impact protection vehicles fitted with truck mounted attenuators (TMA's) compliant to DMRB standard CD378 - Impact test and assessment criteria for truck mounted attenuators (formerly TD49/07). All non-compliant TMA's are not recommended for use on the Strategic Roads Network, whether directly or indirectly associated to traffic management and vehicle recovery operations.

If an IPV successfully passes the TMATA test a physical certificate is issued by the tester and fitted in a holder in the cab, like a plating certificate. This certificate lists details of the test, including the date testing was undertaken and by whom, as well as when the next test is due. The tester will also leave a copy of the test sheet (including any deficiencies or advisories) with the operator.

Copies of both the certificate and inspection sheet will be returned to the office of the tester for their files; a copy of the inspection sheet will also be sent to TRL to be recorded and filed against the IPV, and as a reminder for the next test to be updated.

Following an upcoming update to the scheme, a small certificate (similar to a tax disc) is planned to be fitted on the cushion itself to provide proof of certification at a glance. It is hoped that this will further enhance visibility of the TMATA scheme as best practice, encouraging operators to test their IPV's and raising the bar within the industry.

## Minimum Requirements - Testing

Whilst the TMATA test remains a voluntary, its principles are modelled on the MOT and consists of a uniform procedure carried out every six months by authorised testers. Backed by a manual that lists standards and relevant inspection criteria, testers check the installation and operation of the components of an IPV with a view to issuing certification. The most critical components include:

- TMA
- Light board
- Autobrake system
- Camera system
- Beacons
- Hydraulics

IPVs built by existing members of the TMATA scheme are initially supplied with TMATA certification valid for six months, after which the IPV should be booked in for a TMATA test with an authorised member of the scheme. The test can be carried out on any day in the calendar month it is due i.e. if an IPV is tested (and passed) on 15th June, the subsequent test could be booked in for any day in December, with TMATA certification valid until 31st December.

Due to the relatively low number of TMATA testers/testing stations, the test is usually carried out in the operator's own depot.

If an IPV meets the safety standards required in the testers' manual, it will pass its TMATA test. If any of the criteria for failure are met instead, the IPV is considered to have failed its test until the faults are rectified. If any remedial repairs are carried out within two weeks of the initial test, a full re-test is not required, and the original tester can issue certification. If repairs are not carried out within two weeks, a full re-test should be carried out prior to certification.

Advisories may be issued regardless of the IPV passing or failing its test. These cover any information the tester believes the operator should be made aware of regarding the IPV, and can range from items on the TMATA test that currently pass but may be close to failing and should be monitored (e.g. a mildly corroded pipe, or a cracked lens) as well as anything else not covered by the TMATA test (e.g. issues with the vehicle itself e.g. warning lights on the dash).

Testing criteria in the manual can and will be updated, for instance if new cushions or light boards enter the marketplace and require additional testing procedures. Bulletins and/or an updated manual will be issued to testers as appropriate.

### **New installation TMATA.**

Every new Crash Cushion fitted to a truck chassis will be issued with a 'new installation' TMATA. New installation TMATA's can be issued by trained installation engineers. Although there is a need to be trained, the training will be of a lesser nature owing to the fact that the equipment being fitted is deemed new and hence defect-free.

### **Minimum Requirements - Maintenance**

As an additional measure to ensure the overall safety of an IPV, a portion of the time and cost of the TMATA test is set aside for service and maintenance. This includes:

- Lubrication of relevant pins and points using grease
- Lubrication and protection of relevant electrical components using non-conductive water repellent
- Replacement of missing minor components that nonetheless contribute to overall safety e.g. split pins

Some cushions also require certain key components to be replaced on a six- or twelve-monthly basis so this is usually carried out by the tester as an additional service, and includes:

- MPS350 – support straps & g-links (every twelve months) and shear bolts (every six months)
- Scorpion – ram and pivot pins (every twelve months)

In addition to the service and maintenance regime carried out by TMATA testers, it is recommended that operators carry out checks to the crash cushion and light board at each PMI. Any advisories listed on a TMATA test will be specifically checked for on the subsequent TMATA test in case they have deteriorated further, but they should also be closely monitored by the operator and repaired if/when necessary.

## People Requirements

### Training and Competency Requirements

All trainers should hold a training qualification ([https://www.train-aid.co.uk/courses/level-3-award-in-assessing-competence-in-the-work-environment?course\\_delivery\\_id=24](https://www.train-aid.co.uk/courses/level-3-award-in-assessing-competence-in-the-work-environment?course_delivery_id=24)) and undergo a manufacturers training session prior to commencement of training to Testers. Trainers will be expected to hold a minimum of five years' work experience on service and repair of Truck Mounted Attenuator's

### Independent assessment of TMATA certifications.

A suitably qualified assessor will be appointed who will 'spot check' a number of completed tests per agent, per year. The number of tests will depend on the quality of the work found. More fails will result in more checks, ultimately requiring further training for the tester and, in the worst case, for the tester to be 'struck off' the register.

## References

CD 378 - Impact test and assessment criteria for truck mounted attenuators ([CD378](#))

## **Appendix 1 – Further Notes on TMATA:**

### **Background to Existing IPV Inspection & Servicing Issues**

TMATA has developed its own governance arrangements via its Membership Board, comprising one representative of each Manufacturers' Appointed Agents (MAA) supplying attenuators into the UK market, plus one independent Chair (e.g an individual who has no financial interest in the supply of IPV's).

Many of the historic issues the industry faces have been caused by an IPV inspection not being an item of legislation, such as an MOT. To address this Kings and Acklea developed the TMATA scheme (which has subsequently been expanded to accommodate new industry membership), however, due to the gap in legislative requirement underpinning the scheme, not all of the crash cushion manufacturers have been actively involved in the scheme. This has led to inconsistency across the industry and the choice to inspect or not to inspect being left to individual fleet operators, in consequence leading to:

- Over 1500 cushions on the network of which approximately only 30% undergo a robust safety inspection
- No consistent 'set of rules' to bind operators
- No consequence of non-compliance
- No group/industry wide sign up to the TMATA principles
- Lack of general awareness of the above leading to the industry being no closer in making an IPV inspection part of legislation

### **General Principles governing the Membership of TMATA**

TMATA is directed by a Board made up of members. Membership of the Board includes one representative from each MAA supplying attenuators into the UK market, plus one neutral Chair who has no financial interest in the supply of IPV's.

Representative companies acting as Manufacturers' Appointed Agents (MAAs) for the manufacturers must be British companies, registered in the UK and preferably hold as a minimum ISO9001. (Alternative standards are considered). It is essential that the representative TMATA Board members have full backing and access to technical and compliance information from the manufacturers to support the work of TMATA, and will need to cover matters concerning importation, installation, testing, parts supply and technical advice.

### **Governance of TMATA Test Sub Agents**

In addition to the MAAs mentioned above, the Membership Board may approve the appointment of UK companies able to carry out TMATA tests on behalf of a member company or companies. Appointments of these TMATA Test Sub Agents (TTSA) will be determined by geographic need, based on IPV populations and compliance with TMATA stipulations concerning facilities, capabilities, financial stability and the competence of Qualified and Authorised permanent staff of TMATA



trained Testers. Appointment of TTSA companies must be endorsed by the majority of all TMATA Board members. All MAAs can utilise the services of any TTSA. TTSA's must be equipped and able to test all makes of IPV's.

Candidates seeking to become TMATA testers must have a strong working knowledge of mechanical engineering and maintenance. To that end, candidates must be able to exhibit prior experience of 12 months working on TMAs (demonstrated by completed, signed service sheets) in addition to meeting at least one of the following criteria to be eligible to join the programme:

- Documented Apprenticeship prior to three years' service as a vehicle mechanic
- City & Guilds level Five or level Three Heavy Vehicle Maintenance
- Equivalent standard qualifications in Scotland, Northern Ireland or the Republic of Ireland
- Equivalent relevant military service qualifications
- Documented record of relevant practical work in the service of a commercial company in Transport, Vehicle Manufacture, Distribution or Maintenance.

However, demonstrable 'significant experience' of three years working on TMAs negates the need for a formal qualification.

Suitability is also a necessary endorsement required from the candidate's employer. This is as important as technical understanding in the interests of encouraging the acceptance and growth of the TMATA campaign – TMATA testers must take seriously their responsibility for ensuring the safety and effectiveness of IPV's in their role as vital 'Life & Death' pieces of machinery.

A Register of Qualified and Authorised Testers is maintained by TRL, with an authorisation renewal mechanism on a three-year basis following a refresher course and examination.

### **Involvement of TRL in TMATA**

TRL act on behalf of TMATA as an independent administrator and hold records of all tests completed, along with a register of authorised Testers and monitor inspection expiry dates.