

Guidance notes

to advise on the inspection of road tankers
for the completion of an inspection report
to issue a Safe Loading Pass.

Part B

Trailers and tank equipment

Section number	B.0	Issue number	2	Issue date	January 2009	Vehicle Inspection Guidance Notes	Trailers and tank equipment
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Safe Loading Pass Scheme 2006

Guidance notes

Part B

Trailers and tank equipment

Updated pages – January 2009

Issue	Section	Item	Change summary
2	B.1.3	Wiring systems (Pierced insulation)	Regularises use of wiring as original equipment that pierces insulation on trailers pre-June 2006 which pre-date SLPS 2006. (Note: this particularly applies to Cobo trailers; repairs, however, need to be in junction boxes)
2	B.5	Fire extinguishers	Updates fire extinguisher requirement brought about by change in ADR Regulations
2	B.6	Interlocks to prevent tanker drive-away	Section added to require the prevention of attachment of liquid and vapour couplers and the overfill prevention system plug unless the tanker's parking brake has been applied.
2	B.7	Continuity (axles)	Takes account of low continuity greases used in some wheel bearings and relaxes resistance requirement to less than 1000 ohms across all wheel bearings.
2	B.8	Tank certificates	Simplifies inspection requirement for vapour tightness testing certificates; regularises inspection of Department for Transport B3 leakproofness certificate only on tanks less than 2 years old.
2	B.8.5	Central conductor	Regularises use of non-approved central conductor design in tanks that predate 2006 Scheme.
2	B.9	Labelling	Expands requirement for visibility of compartment labelling (a) contrasting colour of digits with background and (b) visibility when connecting a loading coupler.
2	B10.3	Fill hole covers	Note added concerning non-requirement for security screws and locks for safety reasons.
2	B12.4	Loading adaptor	Clarifies requirement for any sealed delivery system fitted to be operational.
2	B.15.1	Overfill prevention	Adds Equiptank to accepted list of overfill prevention systems
2	B.15.6	Overfill prevention	Adds requirement for sealing and identifiable sealing of overfill prevention sensor housings of new tankers.

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Item ref	Item and inspection requirements	Applicability:
B.1	Wiring and electrical components	Trailers
<p data-bbox="174 316 309 359">B.1.1</p> <p data-bbox="174 432 309 475">B.1.2</p> <p data-bbox="174 639 309 683">B.1.3</p> <p data-bbox="174 1166 309 1209">B.1.4</p>	<p data-bbox="315 268 875 300"><i>Note: trailers should be wired insulated return</i></p> <p data-bbox="315 311 551 343"><i>Wiring system type</i></p> <p data-bbox="315 354 1794 418">All wiring should be in accordance with the examples of systems given in Annex B.1, ie within continuous conduit or sheath, or multi-core cable with moulded secondary protection. Split conduit may only be used as further additional protection.</p> <p data-bbox="315 435 528 467"><i>Wiring condition</i></p> <p data-bbox="315 478 1256 510">Individual insulated wires should not be exposed throughout their entire length.</p> <p data-bbox="315 515 1178 547"><i>Note: this particularly applies to their connections to items of equipment.</i></p> <p data-bbox="315 563 1794 627">Wiring should be free from chafing and damage; particular attention should be paid to conduit termination points, attachment to equipment, and areas which subject the wiring to stress such as hinged components through or by which wiring is routed.</p> <p data-bbox="315 644 557 676"><i>Wiring connections</i></p> <p data-bbox="315 687 1711 751">Connections of conduit / wiring sheath to individual components should be properly secured - insulation tape is not acceptable; silicone sealant should only be used for sealing, not for repairs requiring mechanical or structural strength.</p> <p data-bbox="315 772 1787 836">Adaptors or junctions that pierce insulation should not be used for cable repairs and branches; repairs or alterations to wiring should only be made in secured junction boxes.</p> <p data-bbox="315 857 1240 888">Cable systems that pierce insulation should not be used as original equipment.</p> <p data-bbox="315 904 1361 936">Wiring conduit and junction boxes should be free from damage and excessive corrosion.</p> <p data-bbox="315 952 1778 1016">Push-in electrical connections should not be used unless they are fitted with a durable and effective mechanical latch as part of the original connection design.</p> <p data-bbox="315 1037 864 1069">Trailer - tractor electrical connections should</p> <ul style="list-style-type: none"> <li data-bbox="360 1074 931 1106">— feature a positive locking arrangement, and <li data-bbox="360 1117 1395 1149">— be free from obvious defects such as exposed wires and damage caused by chafing. <p data-bbox="315 1166 454 1198"><i>Light units</i></p> <p data-bbox="315 1209 1003 1241">Lights using bulbs with screw-in caps should not be used.</p> <p data-bbox="315 1252 1547 1284">All lights should function, and there should be no loose, distorted, cracked or broken lenses or housings.</p> <p data-bbox="315 1295 1641 1327">Rubber housings should be in good condition and not swollen (through contamination with petroleum products).</p>	<p data-bbox="1823 772 1977 804">All vehicles</p> <p data-bbox="1823 847 2056 911">New vehicles after June 2006</p>

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Item ref	Item and inspection requirements	Applicability:
B.2	Permanently powered equipment	Trailers
B.2.1	Powered from the vehicle's battery	
B.2.1.1	<p><i>Certification</i></p> <p><u>Any</u> electrical equipment that is powered other than through the battery master switch should be certified to be electrically safe in accordance with Annex B.2, and each component should carry a visible approval label in accordance with Annex B.3 and Annex B.4 according to its location.</p>	
B.2.1.2	<p><i>Wiring circuit</i></p> <p><i>Note: where permanently powered equipment is trailer-mounted, the tractor should be inspected in accordance with section A.5.2 of the Guidance Notes. A barrier unit or fuse should be clearly labelled and mounted as close as practicable to the master switch on the tractor.</i></p> <p>The dedicated tractor – trailer electrical connection should be certified (and marked) safe to use in a Hazardous Area Zone 1 (see Annex B.4)</p> <p><i>Wiring</i></p> <p>The electrical supply lead to the equipment from the barrier unit or fuse should be by a dedicated cable separate to other wiring, connectors and junction assemblies.</p> <p>The cable should be</p> <ul style="list-style-type: none"> — armoured, braided and reinforced in accordance with Figure N° 4 in Annex B.1 ('metal threaded'), or — protected in accordance with the other designs given in Annex B.1 and distinctively marked where visible. 	

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Item ref	Item and inspection requirements	Applicability:
B.2.2	Powered other than from the vehicle's battery	Trailers
B.2.2.1	<p><i>Certification</i></p> <p>Where any equipment fitted has its own battery (including that for the purpose of 'back up' of the main battery), it should be certified safe to use in accordance with Annex B.2 and each component should carry a visible approval label in accordance with Annex B.3 and Annex B.4 according to its location.</p>	
B.2.2.2	<p><i>Wiring circuit</i></p> <p>A barrier unit or fuse should be clearly labelled and mounted as close as possible to the system's battery.</p> <p>The electrical supply lead from the barrier unit or fuse should be by a dedicated cable separate to other wiring, connectors and junctions.</p> <p>The cable should be</p> <ul style="list-style-type: none"> — armoured, braided and reinforced in accordance with Figure N° 4 in Annex B.1 ('metal threaded'), or — protected in accordance with the other designs given in Annex B.1 and distinctively marked where visible. 	

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Item ref	Item and inspection requirements	Applicability:
B.3	Tyres	
	Tyres should be free from obvious defects (such as exposed cords).	Trailers
B.4	Mudwings (Other than those over the front axle)	
	<p>Mudwings should be manufactured from steel, aluminium or fibre reinforced plastic (FRP). Thermoplastic wings are not acceptable. Where mudwings consisting of multiple sections are fitted, each section should be stamped and there should not be excessive gaps between sections. Flame retardant paint alone is not acceptable</p> <p>Mudwings should be free from major defects such as worn through areas or cracks likely to affect the strength of the wing.</p> <p>Mudwings should be manufactured from steel or aluminium; they may be made from another material, eg FRP, <i>if marked as being in accordance with Fire Research Test 104603 or WFR TP 002.</i></p> <p>Mudwings should be free from defects such as worn through areas or cracks likely to affect the strength of the wing.</p> <p>Repairs to mudwings in FRP material, other than cracks less than 100 mm long or holes less than 20 mm × 20 mm should not be in the area between 10 o'clock and 2 o'clock.</p>	<p>All trailers first used before 1 January 2000.</p> <p>All trailers first used after 1 January 2000</p>

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Item ref	Item and inspection requirements	Applicability:
B.5	<p data-bbox="315 209 555 252">Fire extinguishers</p> <p data-bbox="315 256 1816 359">The road tanker - rigid or articulated combination - should be equipped with at least one fire extinguisher on the chassis / trailer of at least 6 kg capacity (in addition to the fire extinguisher(s) in the cab of at least 2 kg capacity), with a total capacity of 12 kg for tankers over 7.5 tonnes GVM / GCM.</p> <p data-bbox="315 375 981 406">It should be verified that for each extinguisher fitted, it:</p> <ul data-bbox="360 411 1518 585" style="list-style-type: none"> <li data-bbox="360 411 734 443">— has a seal that is unbroken <li data-bbox="360 448 1070 480">— is marked with its <u>next</u> test date and this has not passed <li data-bbox="360 485 1048 517">— is operational (as far as can be verified by inspection) <li data-bbox="360 521 801 553">— is free from excessive corrosion <li data-bbox="360 558 1518 585">— is accessible and readily removable from its stowage position (eg its clips are free to release). 	

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Item ref	Item and inspection requirements	Applicability:
	<u>Note: before carrying out any testing that involves opening any item of tank service equipment, the tank must be de-pressurised first, outside the workshop, in the designated area.</u>	
B.6	Interlocks to prevent tanker drive-away	
	<i><u>Note: Particular attention should be paid to the operation and effectiveness of anti-drive away systems as fitted to the liquid, vapour and overfill prevention systems, as there have been frequent occurrences on loading gantries of drive-away incidents caused by inadequacies in system designs.</u></i>	
B.6.1	<p><i>Attachment of gantry connections only when parking brake applied</i></p> <p>It should not be possible to attach the liquid or vapour recovery couplers, or the overfill prevention system plug unless the tanker's parking brake has been applied,</p>	All tanks with a hydraulic test date after 1.1.2009
B.6.2	<p><i>Anti-driveaway feature when gantry connections made.</i></p> <p>It should not be possible to drive away the tanker when:</p> <ul style="list-style-type: none"> — a hose is connected to a liquid bottom loading adaptor — a hose is connected to the vapour adaptor — a plug is connected to the overfill prevention bottom socket — a plug is connected to the overfill prevention top socket (if fitted). <p>Note:</p> <ol style="list-style-type: none"> 1. When checking the function of an anti-drive away interlock system, each of the items listed should be tested separately in accordance with the test procedure given below. Suitable dummy couplers may be required. 2. The testing of the anti-driveaway system may require <u>two people</u>. 3. The vapour adaptor may be mounted remotely from the liquid adaptors (particularly on rigid vehicles) and the guard bar may not cover it; in this case the hose coupling interlock may be used to provide the required anti-drive away feature, and this should be checked by depressing the interlock with the parkbrake released. <p>Similarly the overfill prevention system sockets (particularly those mounted on the tank top) may be provided with an integral plunger to detect the coupling of a plug; the plunger should be depressed manually to check the operation of the park brake.</p>	

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Item ref	Item and inspection requirements	Applicability:
B.6	Interlocks to prevent tanker drive-away (continued)	
	<p>Note: this test procedure has been developed to take account of changes in braking systems (particularly articulated vehicles) where the practice of using the service line to assist the parking brake can result in the interlock being ineffective temporarily as the park brake control is released.</p> <p><i>Test procedure:</i></p> <p>The operation of the interlock arrangement on all rigid vehicles and semi-trailers should be checked as follows:</p> <ol style="list-style-type: none"> 1. Park the tanker in a suitable place, with at least 5 metres clear space in front. 2. With the vehicle park brake applied, build up the vehicle air system's pressure to its maximum. 3. Lift the interlock bar up so that it is in the fully raised position, or attach a dummy connection to the vapour adaptor and overfill prevention socket in turn if not mounted behind the bar. <i>Note: each should be tested separately if not behind the interlock bar.</i> 4. Return to the cab and after checking that there is nothing in the path of the vehicle, quickly release the park brake and attempt to drive forward. <i>(Note: this needs to be done quickly to replicate a known possible fault condition.)</i> 5. If it is possible to move the vehicle more than 150 mm (6 inches) forward with the wheels rotating then the vehicle (rigid, tractor or semi-trailer) should not be issued with a Safe Loading Pass. 6. After conducting the test, re-apply the park brake, remove any dummy connections to the vapour adaptor and overfill prevention socket, and lower the interlock bar. 	All tankers

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Item ref	Item and inspection requirements	Applicability:
B.7.	<p>Electrical continuity</p> <p>It should be verified (using a continuity meter) that there is continuity in accordance with (a) and (b) below.</p> <p>(a) There should be less than 10 ohms resistance between the earth pin fitted and</p> <ul style="list-style-type: none"> — any separate earth pins on the tank (if fitted), or the tank itself if only one earth pin is fitted — the run off pipe between the foot valve and outlet valve (loading adaptor or faucet) — the outlet valve (loading adaptor or faucet) — the vapour adaptor (if fitted) — the manhole cover — any manifold (coaming) ‘smart vent’ fitted — the dip tube, dip mandrel, and dip interlock assembly; or central conductor (see also Section B8.5) — pins 9 and 10 of the overfill prevention socket, and its body — for a trailer, the chassis of the tractor unit if attached. <p>Where any earth continuity cable or braid is fitted, it should be in good condition; particular attention should be paid to those connecting to the axles.</p> <p>(b) There should be less than 1000 ohms resistance between the earth pin fitted and</p> <ul style="list-style-type: none"> — all the trailer wheels, or all the drive axle wheels of a rigid vehicle. <p>The required electrical resistance figure (below 1000 ohms) may be considered satisfactory even if rotation of the wheel is required to obtain it.</p>	All tankers

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Item ref	Item and inspection requirements	Applicability
B.8	Cargo Tank and pipework	All tankers
B.8.1	<p>Statutory inspection plate</p> <p>The statutory tank inspection plate (ADR or ‘Regulation 11’ or Regulation ‘7’) should be stamped with the date of the most recent periodic inspection.</p> <p>This date should not precede the date of the expiry of the Safe Loading Pass issued by more than <u>six years</u>. (For example, if the Safe Loading Pass to be issued expires 31st May 2006 the most recent periodic inspection should not be earlier than 31st May 2000)</p> <p><i>Note: Periodic examinations and vapour tightness / leakproofness tests, including their date markings, are frequently confused.</i></p> <p>Where the condition of the tank is a cause for concern, the competent person inspecting the vehicle for the issue of a Safe Loading Pass may request sight of the tank’s most recent Periodic Inspection certificate. (For fuel oil tankers, which are not subject to statutory inspections, particular attention should be paid during the visual inspection of the tank to identify damage, corrosion and evidence of leaks.)</p>	
B.8.2	Tank integrity tests	
B.8.2.1	<p><i>Vapour tightness test</i></p> <p>At the time that a tanker is presented for a Safe Loading Pass inspection, a valid Vapour Tightness Test Certificate (including test or change of PV valves) should be presented with it. An example of a suitable certificate is shown in Annex B.5.</p> <p>The name of the test organisation and the date of the vapour tightness test certificate should be written on the Safe Loading Pass Inspection report.</p> <p>This date should not precede the date of the <u>expiry</u> of the Safe Loading Pass issued by more than two years. (For example, if the Safe Loading Pass to be issued expires 31st May 2006 the most recent vapour tightness test should not be earlier than 31st May 2004.)</p> <p>Where necessary, the date of expiry of the Safe Loading Pass should be brought forward so that it is not later than two years after the date of the vapour tightness test date. (See also the note in 8.2.2 concerning the validity of leakproofness and hydraulic test certificates.)</p>	All tanks except those less than 2 years old at the time of inspection

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Item ref	Item and inspection requirements	Applicability
B.8.2.2	<p><i>Leakproofness or hydraulic test</i></p> <p>At the time that a tanker is presented for a Safe Loading Pass inspection, a valid Leakproofness Test or Hydraulic Test certificate (eg a Department for Transport 'B3' certificate) should be presented with it.</p> <p>The name of the test organisation and the date of the leakproofness test or hydraulic test certificate should be written on the Safe Loading Pass Inspection report.</p> <p><i>Note: leakproofness tests are required every three years, hydraulic tests every six years; certificates for these tests should be accepted as if they were vapour tightness test certificates, but with the same validity of two years from date of issue.</i></p>	<p>Tanks that are less than 2 years old at the time of inspection.</p>

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Item ref	Item and inspection requirements	Applicability
B.8.3	<p>Tank construction / external condition</p> <p>The tank and pipework should be free from leaks (as evidenced by peeling paint, damp patches and drips), excessive corrosion and damage.</p>	
B.8.4	<p>Tank internal inspection</p> <p><i>Remember:</i> before carrying out any testing that involves opening any item of tank service equipment, the tank must be de-pressurised first, outside the workshop, in the designated area.</p> <p><i>Note:</i> Inspection of the tank interior for the purposes of issuing a Safe Loading Pass should be carried out via the opening fill hole cover / emergency pressure relief valve (EPRV). See B.10.3.</p> <p style="padding-left: 40px;">Fill covers / EPRVs are of three types:</p> <ul style="list-style-type: none"> — Openable (conventional) — Openable but fitted with a security bolt(s) (see section B.10.3.) — Fixed closed. <p>In all cases, it is essential that EPRVs are opened (or removed) to obtain access to each compartment interior in order to:</p> <ul style="list-style-type: none"> — ensure that there are no loose objects or debris that could be an accumulator of a static electrical charge, — verify that a central conductor, where required, is in place, — verify that the pressure vacuum valve is secure, and — carry out a wet test of the overfill prevention sensors (see also section B15.4). <p>The inspection process also facilitates inspection of the fill hole cover / EPRV seal, and verification of the lubrication of any hinge / catch.</p> <p>Where dip tubes are fitted, their gauzes should be free from damage.</p>	

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Item ref	Item and inspection requirements	Applicability:
B.8.5	<p>Central conductor</p> <p><i>Note: when fuel is loaded into a tank compartment, a static electrical charge is generated within the fuel, which needs to be dissipated safely to earth (through the tank shell). Low sulphur fuels tend to have a greater ability to retain such a charge, and the provision of a safe path to earth is particularly important.</i></p> <p>Each compartment and any chamber (see note below) therein should:</p> <ol style="list-style-type: none"> 1. Have a nominal capacity less than 2 000 litres (with no additional requirements); or 2. Have a nominal capacity between 2 000 litres and 15 000 litres <u>and</u> be equipped with <ol style="list-style-type: none"> a) at least one full height baffle or surge plate, or b) at least one central conductor so that no part of the liquid surface, in plan view, is more than 0,8 m from one of the conductors or the tank shell, or 3. Have a nominal capacity greater than 15 000 litres (with no additional requirements). <p><i>Note: A chamber is the space created in a compartment when that compartment is subdivided by baffles or surge plates into spaces of smaller capacity.</i></p> <p>It should be verified by internal inspection that, where required (see ‘Applicability’ column), a suitable central conductor exists, ie</p> <ul style="list-style-type: none"> — a full height baffle, or — a centrally mounted service, vapour recovery or dip tube, or — a specially designed central conductor. <p>All conductors should be checked for security and continuity (see section B.7).</p>	<p>Compartments more than 2 000 litres and less than 15 000 litres nominal capacity</p>

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Item ref	Item and inspection requirements	Applicability:
B8.5 (cont'd)	<p>Where a central conductor is required, it should be</p> <ul style="list-style-type: none"> - an un-insulated metal component such as angle-section aluminium - an electrically continuous metallic un-insulated cable, wire or tube which has electrical continuity with the tank shell of 10 ohms. <p>If a cable or wire, the central conductor should:</p> <ul style="list-style-type: none"> — have a diameter between 2 mm and 10 mm, or more than 50 mm; — be fixed to the roof and to the floor of the compartment or chamber; and — have sufficient strength to withstand flexing caused by loading and transport operations, including its end fittings and attachments. <p>If a tube (which may be a dip, service or vapour recovery tube), the central conductor should:</p> <ul style="list-style-type: none"> — have a diameter more than 50 mm; and — be fixed to the roof of the compartment or chamber and continued to the floor or vice versa. <p><i>Note:</i> drain tubes may only be considered suitable if mounted centrally, as in tanks having recessed manholes; drain tubes fitted to tanks with coamings are generally not centrally positioned.</p> <p>Any overflow or other probe in a compartment should be fitted less than 0,5 m from a compartment division, or a baffle, surge plate or central conductor.</p>	<p>Tanks made prior to June 2006</p> <p>Tanks made since July 2006</p>

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Item ref	Item and inspection requirements	Applicability:
B.9	<p data-bbox="315 209 1816 252">Compartment number and capacity labelling</p> <p data-bbox="315 261 1816 363">Each bottom loading vehicle should have a label or labels, with digits in contrasting colour to the background, readily visible to an operator approaching the loading adaptors and while connecting a loading coupler (<i>ie</i> with the guard bar / panel in the open position), adjacent to each compartment's loading adaptor (API) indicating</p> <ul data-bbox="367 368 860 435" style="list-style-type: none"> <li data-bbox="367 368 763 400">— the compartment number and <li data-bbox="367 405 860 435">— the associated compartment capacity. <p data-bbox="315 453 1816 512">Where an overfill prevention socket is mounted on the tank top, labels showing compartment number and capacity should similarly be fitted <u>adjacent to</u> any opening fill hole covers.</p>	

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Item ref	Item and inspection requirements	Applicability:
B.10	Manhole and fill hole cover / emergency pressure relief valve assemblies	
B.10.1	<p><i>Manhole covers (Approx 410 mm – 500 mm diameter, attached direct to the tank shell.)</i></p> <p>Manhole covers ('base-plates') should be secure.</p> <p><i>(For fuel oil, a combined manhole / fill hole using 3 wing nuts may be fitted.)</i></p>	
B.10.2	<p><i>Emergency pressure relief valves</i></p> <p>An emergency pressure relief valve, either as part of a fill cover assembly or as an individual component, should be fitted to each compartment.</p>	
B.10.3	<p><i>Fill hole covers (Approx 250 mm diameter, usually hinged.)</i></p> <p>Where opening fill hole covers are fitted, their latches and locks should be checked for correct operation and to verify that they are suitably lubricated (particularly those fitted to vehicles normally bottom loaded).</p> <p>Seals should be checked for excessive hardness by depressing the seal, and for sealing to the rim by examining for evidence of concavity in the sealing face.</p> <p>Fill hole covers should be compressed on their springs (relative to their cover arms) to ensure the springs are functioning.</p> <p>Note: Where fill hole covers are fitted with security sealing screws, these should be removed to permit internal inspections; this may require a special tool for removal. See section B.8.4. Neither security sealing screws nor locks are generally required to be fitted for safe operation.</p> <p><i>(For fuel oil, attention should be paid around the fill hole that could indicate an ineffective seal.)</i></p>	
B.10.4	<p><i>Pressure - Vacuum (pv) breather valves</i></p> <p>PV Valves should be checked for security and damage.</p> <p>At two yearly intervals PV valves should be changed or tested for pressure and vacuum settings, and leakage in the inverted position; evidence of this should be given on the vapour tightness the certificate See section B.8.2 and Annex B.5.</p> <p><i>(For fuel oil, it should be ensured that the pv valves are not blocked.)</i></p>	
B.10.5	<p><i>Dip tubes, mandrels, caps and interlocks (if fitted);</i></p> <p>Dip tubes should be checked for security, and security of the gauze.</p> <p>Dip mandrels and interlocks (if fitted) should be secure to the mounting pads; dip caps should fit securely to dip tubes, and be retained by chains, wires or straps.</p>	

Section number	B.10	Issue number	2	Issue date	January 2009	Vehicle Inspection Guidance Notes	Trailers and tank equipment
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Safe Loading Pass Scheme 2006

Item ref	Item and inspection requirements	Applicability:
B.11	Control system	
	<p><i>Note:</i> for testing of the control system pressure switch, see section B.15.5.</p> <p>B.11.1 <i>Controls</i> The control box should be inspected to verify that</p> <ul style="list-style-type: none"> — all footvalve controls are identified for the associated footvalve (number) — control knobs are fitted, and — the control box door secures closed. <p>If automatic shut-down of the control system is provided by the design of the lid being closed, this should be operational.</p> <p>B.11.2 <i>Control system operation</i> As far as can be reasonably determined, the operation of <u>all</u> control system components including any emergency shut down buttons should be tested for correct functionality.</p> <p><i>Note:</i> where additional control systems are fitted, they should be operational: eg for sealed compartment systems, they should be inspected for correct display of compartment contents and sealing condition.</p> <p>B.11.3 <i>Vapour containment at the loading gantry</i> The design or operation of the control system and service equipment fitted should not cause any vapour to be released to atmosphere from any vent (such as a manifold (coaming) / dump / ‘smart’ vent) when preparing to load or loading in a terminal, in accordance with one of the following:</p> <ul style="list-style-type: none"> (a) No manifold (coaming) dump valve is fitted (or, if fitted, is disconnected from the control system). (b) The Vapour Adaptor is immediately accessible (ie not fitted behind a guard bar or door fitted with locks that are released by the control system), and an instruction notice is fitted by the control box stating “Connect vapour hose before operating controls”. <i>Note:</i> This notice is not required if condition (a) is fulfilled. (c) An inhibited ‘Smart vent’ fitted in place of the manifold (coaming) dump valve, that does not vent when a plug is fitted to the overfill prevention socket. 	

Safe Loading Pass Scheme 2006

Item ref	Item and inspection requirements	Applicability:
B.11.4	<p><i>Control of vapour transfer valves</i></p> <p>The control system should require all vapour transfer valves to be open before loading can commence. This is normally achieved by each valve being sequentially controlled and operated with a final connection to the pressure switch linked to pin 8 of the overfill prevention system.</p> <p>See B.15.5 for details of testing</p> <p>An alternative arrangement is to use pressure balance footvalves, controlled sequentially after each associated footvalve.</p> <p><i>Note:</i> where vapour transfer valves are controlled individually with the associated non pressure-balanced footvalve, simple sequential operation does not provide an adequate interlock and is not acceptable.</p>	<p>Tankers first used pre 1995</p>

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Safe Loading Pass Scheme 2006

Item ref	Item and inspection requirements	Applicability:
B.12	Liquid loading / discharge adaptors (“APIs”) / discharge faucets (Top loading vehicles)	
	<p><i>Note: Before opening any outlet valve,</i></p> <ol style="list-style-type: none"> 1. <i>A suitable metal container with a lid and bonded to an earthing pin on the tanker should be available for the collection of any drips or retained product.</i> 2. <i>It should not be assumed that the run off pipe is dry: the sight glass or wet leg detector fitted should first be checked for indication of product.</i> 3. <i>The outlet valve should be cracked open cautiously to release any product into the container.</i> <p>B.12.1 <i>Location</i> The height of the centre line of the bottom loading adaptors should be > 0.5 m laden and <1.4 m laden.</p> <p>B.12.2 <i>Nose profile and condition</i> The bottom loading adaptor nose should be inspected — for correct profile (ie including the 7.25 inch diameter shoulder), and — any excessive (localised) wear using the wear gauge in Appendix B.7.</p> <p>B.12.3 <i>Poppet operation</i> Using a gravity discharge coupler fitted with a manual adaptor opening mechanism, the adaptor poppet should be tested for smoothness of function when opened, and readily return to the fully closed position under its spring force alone.</p> <p>B.12.4 <i>Additional features</i> Visual indicators – ‘visiwinks’ - (where fitted) should be operational. Sight glasses (where fitted) should be clear and floating balls (if used) operational. Hose coupling interlocks, if fitted, should be operational. Drip caps should be fitted with an effective seal and should be retained by a suitable cable / chain / strap. Any sealed delivery system fitted, including any display, should be operational..</p> <p>B.12.5 Faucets Faucets (top loading vehicles) should be secure and operational with caps fitted. <i>(For fuel oil, ball valves should be visually inspected for condition.)</i></p>	Top loading tankers

Section number B.12	Issue number 2	Issue date January 2009	Vehicle Inspection Guidance Notes	Trailers and tank equipment
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Safe Loading Pass Scheme 2006

Item ref	Item and inspection requirements	Applicability:
B.13	Vapour recovery system	
B.13.1	Label - maximum number of loading arms	Tanks first used after 1 st Sept 1996
	A label should be attached to the tanker confirming the maximum number of loading arms that may be connected for bottom loading.	
B.13.2	Vapour adaptor	
	<i>Location</i> The height of the centre line of the vapour adaptor should be > 0.5 m laden and <1.5 m laden.	
	<i>Operation</i> The vapour adaptor poppet (or valve) should function smoothly.	
	<i>Contents</i> The vapour adaptor should be free of product; where a sight glass is fitted, there should be no evidence of any liquid product.	
	Note: if the vapour recovery system contains liquid product, this should be investigated and resolved before a Safe Loading Pass may be issued.	
B.13.3	Vapour transfer valves	
	Hose connections between the manifold and vapour transfer valves should be inspected to verify that they are secure and free from tears etc which could be a source of vapour emissions.	
B.13.4	Manifold (coaming) vent	
	See Section 11.3.	

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Item ref	Item and inspection requirements	Applicability:
B.15	Overfill prevention system	
B.15.1	<p><i>System acceptability</i></p> <p>Overfill prevention sensors should be compatible with the installed base of loading gantry controllers. Sensors that are known to fulfil this requirement are Scully, Liquip, Civacon (Liberty), QED and Equiptank.</p> <p>The Alfons Haar Eurosafe system has been demonstrated to fulfil this requirement, but should be tested with a compatible test unit or controller.</p> <p><i>Note: the installed base of UK gantry controllers ('2-wire') is not the same as that given in the European (CEN) standard.</i></p>	
B.15.2	<p><i>Location of the socket</i></p> <p>The height of the centre line of the earth / overfill prevention socket should be > 0.5 m laden and <1.4 m laden.</p>	
B.15.3	<p><i>Inspection of data plate</i></p> <p>A plate showing the correct height setting of each sensor should be attached to the tank structure; an example is shown in Annex B.6.</p>	New tankers from January 2003
B.15.4	<p><i>Sensor inspection and test</i></p> <p>Sensors should be checked for security of attachment to the manlid or other mounting pad.</p> <p>A functional test of all sensors to replicate an overfill should be carried out, by reaching into the compartment and raising a beaker of suitable liquid over the overfill sensor including any shroud fitted.</p> <p><i>Note 1:</i> For tankers with openable fill covers that are fitted with a security sealing bolt, this should be removed to enable the test to be carried out.</p> <p><i>Note 2:</i> When inspecting tankers used for aviation fuels, the relevant fuel must be used for wet-testing the sensors.</p>	

Safe Loading Pass Scheme 2006

Item ref	Item and inspection requirements	Applicability:
B.15.5	<p><i>Control system pressure switch</i></p> <p>The pressure switch should be tested to ensure that it switches satisfactorily to provide a non-permissive state when there is insufficient system operating pressure.</p> <p><i>Test procedure:</i></p> <p>Connect an overfill prevention test unit to the overfill prevention system socket, and check that:</p> <ul style="list-style-type: none"> — a <u>non</u> permissive signal is given without a vapour hose connected to the vapour adaptor — a permissive signal is <u>only</u> obtained when <ol style="list-style-type: none"> a) the pneumatic control system is at operating pressure and b) a vapour hose is connected to the vapour adaptor. 	
B.15.6	<p><i>Sensor setting sealing</i></p> <p>The sensor setting should be sealed in accordance with the requirements of Annex B.8.</p> <p>The wire and sealing arrangement should be inspected to determine that their integrity has not been broken.</p> <p>The seals must feature a mark recognised by the safe loading pass scheme as published on the website http://www.slps.uk.com.</p>	All tanks with a hydraulic test date after 1.1.2009

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Safe Loading Pass Scheme 2006

Item ref	Item and inspection requirements	Applicability:
B.16	Tank accessories	
B.16.1	Ladder If fitted, the tank top access ladder (including all rungs and stiles) should be secure.	
B.16.2	Tank top surface (walkway) If a walkway is fitted, it should be secure and free from trip hazards.	

Section number B.16	Issue number 1	Issue date December 2005	Vehicle Inspection Guidance Notes	Trailers and tank equipment
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WIRING SYSTEM TYPES

Figure N°1

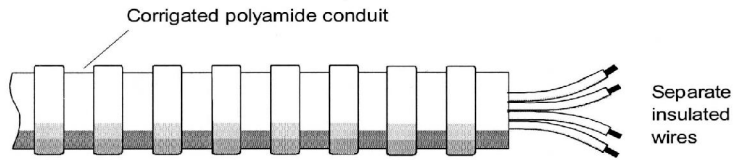


Figure N°2

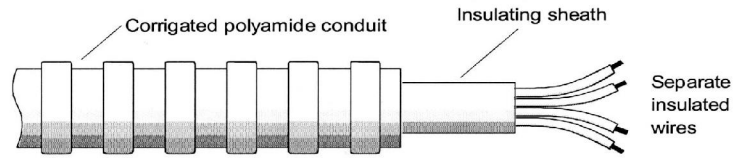


Figure N°3

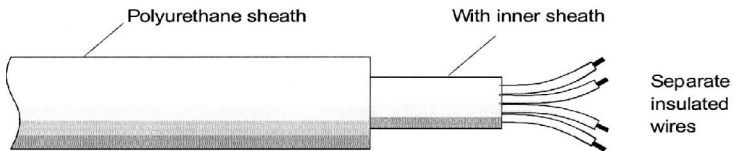


Figure N°4

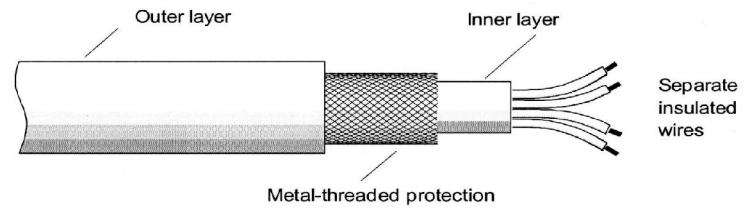
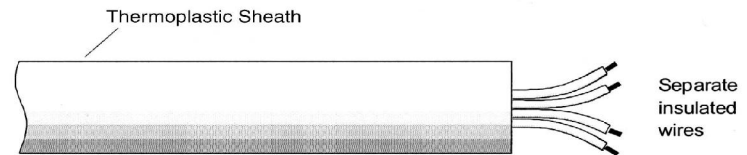


Figure N°5



Section number	Annex B.1	Issue number	1	Issue date	December 2005	Vehicle Inspection Guidance Notes	Trailers and tank equipment
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Safe Loading Pass Scheme 2006

Annex B.2

PERMANENTLY POWERED ELECTRICAL SYSTEM – CERTIFICATE/PLATE OF CONFORMITY

Vehicle fleet number	Tank number	Registration mark
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The general electrical/electronic wiring and equipment on this road tanker is installed in accordance with IP *Petroleum road tanker design and construction*. With the exception of the Tachograph, and the electrical equipment listed below, the system is totally disabled when the road tanker battery master switch is turned off. There are no energy storage components which remain live 10 seconds after the switch is set to the off position.

The following permanently powered electrical equipment has been installed:

--

The permanently powered electrical equipment is: *(delete as appropriate)*

- isolated from the main electrical wiring, and has its own battery
located
- permanently powered from the live side of the master switch via a barrier/fuse unit
located

The system complies with Annex B of IP *Petroleum road tanker design and construction*, 2002.

It has been certified by _____ which is a Notified Body,
Certificate number Ex _____.

This installation must not be modified other than with the detailed authorization of the supplier.

Name	Position
Date	Company

APPROVAL MARK FOR CERTIFIED ELECTRICAL EQUIPMENT



Section number	Annex B.3	Issue number	1	Issue date	December 2005	Vehicle Inspection Guidance Notes	Trailers and tank equipment
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HAZARDOUS AREA CLASSIFICATIONS FOR PERMANENTLY POWERED ELECTRICAL EQUIPMENT

Inside tank compartments, Zone 0, the following satisfies the requirements:

- Intrinsically safe EEx ia

Exterior to the tank shell, Zone 1, any of the following satisfy the requirements:

- Intrinsically safe EEx ia or EEx ib
- Increased safety EEx e
- Flameproof EEx d
- Encapsulation Ex m

Inside the cab, Zone 2, any of the following satisfy the requirements:

- Intrinsically safe EEx ia or EEx ib
- Increased safety EEx e
- Flameproof EEx d
- Encapsulation Ex m
- Type N protection Ex n

Section number	Annex B4	Issue number	1	Issue date	December 2005	Vehicle Inspection Guidance Notes	Trailers and tank equipment
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Safe Loading Pass Scheme 2006

Annex B.5

ROAD TANKER VAPOUR TIGHTNESS TEST CERTIFICATE

Certificate Number	
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Operator		Tank ID		Build/Conversion Date	
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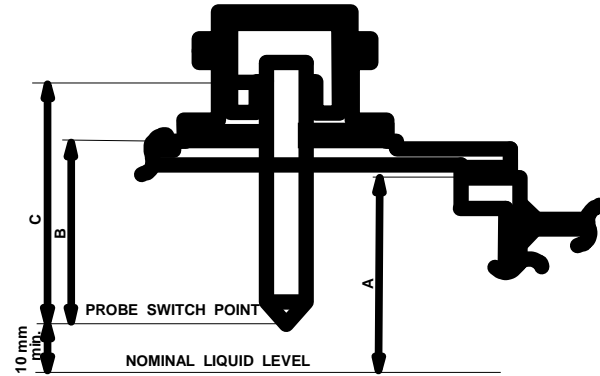
Vapour collection system test	Pass	Notes	Fail	Notes
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Comp'tment	Pressure test		Footvalve test (optional)		P/V valve dates	P/V valve settings	P/V valve test figure	P/V valve results	
	Pass	Fail	Pass	Fail				Pressure	Pressure
1									
2									
3									
4									
5									
6									
7									
8									

The road tanker detailed above has been tested in accordance with the IP publication: *Testing of vapour containment on petroleum road tankers* and has passed / failed* the testing procedure. (* Delete as appropriate.)

Inspected by:	Signed:	Date:
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PLATE FOR IDENTIFYING CORRECT SETTING OF OVERFILL PREVENTION PROBES



Tank serial number:			
Compartment Number	Dimension		
	A	B	C
1			
2			
3			
4			
5			
6			
7			
8			

Data **FORT VALE** **Operating Instructions-Adaptor for Bottom Loading and Unloading**

Operating Instructions for Fort Vale Loading Adaptor Wear Gauge, Part No. 94/2150

The Fort Vale loading adaptor gauge is used to inspect for wear of the location features on a bottom loading and unloading adaptor. It is important that the person using this gauge has an understanding of the surfaces to be checked.

It has been observed from loading adaptors that have reached the end of their safe working life that the outside diameter and the rear 45° surface are worn in a localised area that corresponds to the position of the clamping triggers of the loading Coupler or the position of the cam arms on a dump adaptor.

An initial visual inspection of the loading adaptor is recommended to identify the worn areas.

Gauging the diameter of the Loading Adaptor

The first feature to check is the outside diameter. The gauge has an eccentric internal profile that prevents the gauge passing over the loading adaptor if the adaptor is within the wear allowances.

Figure 1



To check the outside diameter, the gauge is passed onto the adaptor in a selected position using the arrows on the inside faces as a direction indicator (see Figure 1).

Figure 2



If the gauge passes over the adaptor, the diameter is worn beyond the 1.5mm allowance. It is necessary to gauge all positions that show signs of wear. On a new adaptor the gauge will stop on the centre of the adaptor face. (see Figure 2)

Maintenance

Periodic inspection of the gauge assembly is required to ensure that the gauge segment is free to rotate and that the gauge blocks are firmly secured in position. A gauging test on a new loading adaptor is recommended to ensure no wear or damage to the gauging elements. Gauge blocks can be removed by loosening the cap head screws; the gauge blocks can then have their positions exchanged, ensuring that the arrows are pointing in the same direction. This allows the spare face of the block to be used.

Gauging the 45° Rear Face of the Bottom Loading and Unloading Adaptor

The rear 45° face is checked for wear and also delamination of the steel inserts found on the rear face of some loading adaptors.

With the gauge held over a selected position and approximately passing across the centre of the loading adaptor, the gauging sector is rotated inwards to locate against the sealing face of the adaptor. The inside angled faces of the gauge block are held in contact with the rear 45° face of the adaptor. There are three gauging zones possible.

Provided the segment is between the positions shown in Figure 4 and Figure 5, the loading adaptor is within operational limits.

Figure 3



Zone 1 - This is when the central step of the gauge segment is in line with the top face of the gauge bar. This is the normal position found on a new loading adaptor with no wear or delamination present (see Figure 3).

Figure 4



Zone 2 - As the rear 45° face wears, the gauge segment will travel further into the gauge bar. When the top step of the gauge segment is in line with the top face of the gauge bar (see Figure 4), the maximum wear limit has been reached and the loading adaptor condition should be reported for replacement.

Figure 5



Zone 3 - This section of the segment indicates delamination of the loading adaptor and its steel face inserts. This condition is indicated when the gauge segment will not rotate to the central step or beyond. The limit of "growth" to the rear 45° face is reached when the bottom step is in line with the top face of the gauge bar (see Figure 5). This condition is to be reported for rectification.



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