

Vehicle Inspection Checklist A

Inspection Checklist for bulk transportation Prime mover and trailer (bulk tank, ISO tank) Road tanker (single entity lorry)

* Transport of petroleum and flammable materials in bulk means transport of petroleum and flammable materials in container more than 250 litres water capacity

(A)	Documents Requirements
1	Manufacturer's report (new application)
2	Vehicle Log Card (new application)
3	A copy of prime mover/trailer/tanker photos from front, side, and rear (including licence plate)
4	A copy of prime mover/trailer/tanker drawing endorsed by PE (new application)
5	Hydrostatic test or any equivalent test report (once every 5 years) endorsed by local PE
6	Radiographic test or any equivalent test report (once every 10 years) endorsed by local PE
7	Certificate of Fire Safety Inspection in accordance with Regulation 5 of the Fire Safety (Petroleum/Flammable Materials) Regulations
8	Hazardous Materials Transport Driver Permit
9	ASTRATA Certificate for Annual Inspection for vehicle transporting ≥ 3 metric tonnes or Tube Trailer.
(B)	Technical Requirements
1	Exhaust system in order
2	Fire shield at rear of cabin provided & in order
3	Battery cut off
4	Discharge faucets
5	Emergency cut off for tanker
6	Transport Emergency Information Panel (TEIP) according to Singapore Standard 586 shall be displayed at the back and both sides of the vehicle
7	Warning sign "Danger, Highly Flammable" according to Petroleum & Flammable Material Regulations shall be displayed at the back of the vehicle
8	Bumper (heavy duty steel) 15 cm from tank
9	Earthing strap touching the ground
10	Metal conduits for all wirings in good condition
11	Manhole covers in order
12	Coaming satisfactory and projected at least 25 mm above manhole covers
13	Pressure, level & temperature gauges provided
14	Safety & hydrostatic relief valves provided
15	Proper battery compartment
16	Vehicle is equipped with one 9 kg dry powder fire extinguisher and <ul style="list-style-type: none"> i) 1 x 1 kg dry chemical fire extinguisher, or ii) 1 x 2.3 kg dry carbon dioxide fire extinguisher

Vehicle Inspection Checklist B**Inspection Checklist for package transportation
Prime mover and trailer (trucking container containing petroleum or Flammable materials in package, examples drums, bottles, pallets etc)**

* Transport of petroleum and flammable materials in package means transport of any petroleum or any flammable materials in one or more containers of less than 250 litres water capacity

(A)	Documents Requirements
1	Certificate of Fire Safety Inspection in accordance with Regulation 5 of the Fire Safety (Petroleum/Flammable Materials) Regulations
2	Vehicle Log Card (new application)
3	A copy of prime mover / trailer photos from front, side and rear (including licence plate)
4	Hazardous Materials Transport Driver Permit
5	ASTRATA Certificate for Annual Inspection for vehicle transporting ≥3 metric tonnes
(B)	Technical Requirements
1	Exhaust pipe directed downwards and adequate shrouding (metal cover) to be provided
2	Fire shield at rear of cabin provided & in order
3	Battery cut off
4	Earthing strap touching the ground
5	Warning placard according to Singapore Standard 586 shall be displayed at the back and both sides of the vehicle
6	Warning sign "Danger, Highly Flammable" according to Petroleum & Flammable Material Regulations shall be displayed at the back of the vehicle
7	Earthing strap touching the ground
8	Metal conduits for all wirings in good condition
9	Proper battery compartment
10	Vehicle is equipped with one 9 kg dry powder fire extinguisher and i) 1 x 1 kg dry chemical fire extinguisher, or ii) 1 x 2.3 kg dry carbon dioxide fire extinguisher

Vehicle Inspection Checklist C

Inspection Checklist for package or bulk transportation Vehicles constructed to carry goods (e.g. lorries, pick-ups)

* Transport of petroleum and flammable materials in package means transport of any petroleum or any flammable materials in one or more containers of less than 250 litres water capacity

* Vehicles used for transport of flammable gases must not have a roof covering.

(A)	Documents Requirements
1	Vehicle Log Card (new application)
2	Certificate of Fire Safety Inspection in accordance with Regulation 5 of the Fire Safety (Petroleum/Flammable Materials) Regulations
3	A copy of lorry / pick-up photos from front, side, and rear (including licence plate)
4	Hazardous Materials Transport Driver Permit
5	Supplier's authorization letter (for LPG dealers only)
6	ASTRATA Certificate for Annual Inspection for vehicle transporting ≥ 3 metric tonnes
(B)	Technical Requirements
1	Platform of the vehicle is lined with timber or is timber constructed so as to minimize contact between the metal parts of the platform and any container
2	Protective railings lining the platform of the vehicle are at least 1 m in height in order to secure any container and to prevent such container from falling off the vehicle when the vehicle is in motion
3	Glass at the back of the driver cabin, if any is of wired glass or toughened or safety of not less than 6 mm in thickness to act as a fire resisting shield
4	Battery is covered with appropriate insulation material to prevent electrical spark from igniting any flammable vapor from any container
5	Exhaust pipe is extended at least 150 mm outwards away from the vehicle tail box or is directed downward to keep vehicle exhaust away from any container
6	Warning placard according to Singapore Standard 586 shall be displayed at the front, both sides and the back of the vehicle
7	Warning sign "Danger, Highly Flammable" according to Petroleum & Flammable Material Regulations shall be displayed at the back of the vehicle
8	Vehicle is equipped with one 9 kg dry powder fire extinguisher and <ul style="list-style-type: none"> i) 1 x 1 kg dry chemical fire extinguisher, or ii) 1 x 2.3 kg dry carbon dioxide fire extinguisher

Vehicle Inspection Checklist D

Inspection Checklist for package transportation Enclosed Vehicles (e.g. Van or box up vehicle)

* Transport of petroleum and flammable materials in package means transport of any petroleum or any flammable materials in one or more containers of less than 250 litres water capacity

(A)	Documents Requirements
1	Vehicle Log Card (new application)
2	Certificate of Fire Safety Inspection in accordance with Regulation 5 of the Fire Safety (Petroleum/Flammable Materials) Regulations
3	A copy of van / box up vehicle photos from front, side, and rear (including licence plate)
4	Hazardous Materials Transport Driver Permit
5	ASTRATA Certificate for Annual Inspection for vehicle transporting ≥ 3 metric tonnes
(B)	Technical Requirements
1	Adequate ventilation shall be provided on top and bottom (louvres) and exhaust fan according to Petroleum & Flammable Material Regulations
2	Platform of the vehicle is lined with timber or is timber constructed so as to minimize contact between the metal parts of the platform and any container
3	Battery is covered with appropriate insulation material to prevent electrical spark from igniting any flammable vapor from any container
4	Exhaust pipe is extended at least 150 mm outwards away from the vehicle tail box or is directed downward to keep vehicle exhaust away from any container
5	Warning placard according to Singapore Standard 586 shall be displayed at the front, both sides and the back of the vehicle
6	Warning sign "Danger, Highly Flammable" according to Singapore Standard 586 shall be displayed at the back of the vehicle
7	Vehicle is equipped with one 9 kg dry powder fire extinguisher and <ul style="list-style-type: none"> i) 1 x 1 kg dry chemical fire extinguisher, or ii) 1 x 2.3 kg dry carbon dioxide fire extinguisher

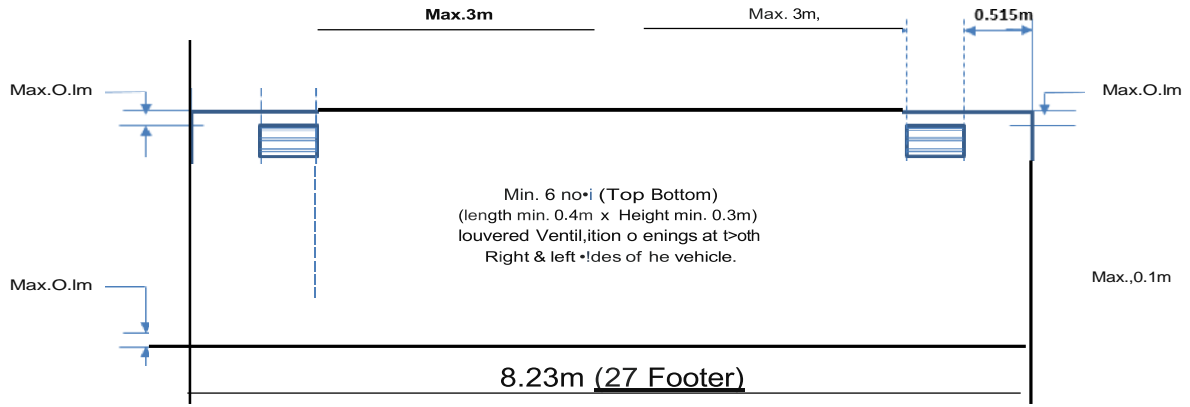
Annex D

Inspection Checklist for package transportation Vehicles (e.g. van or box up vehicle)

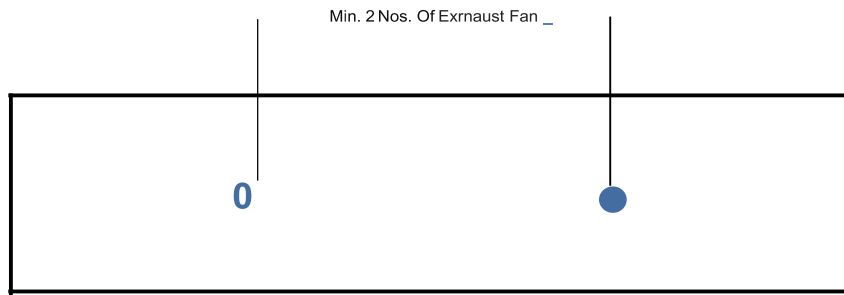
Apart from the opening on top behind the driver's cabin, please see our requirement:

- 1 Only Class 3 FM Liquid/Petroleum & Class 4 Solid are permitted to be transported in a box-up/enclosed vehicle with:
 - Adequate ventilation shall be provided as to prevent the accumulation of any flammable vapors in the vehicle.
 - Spacing between ventilation louvers (top and bottom) shall not exceed 3m horizontally.
 - Exhaust fan to circulate air inside the vehicle.
 - The glass at the back of the driver cabin is of wired glass or toughened or safety glass of not less than 6 millimeters in thickness to act as a fire shield.
- 2 Class O petroleum or any FM GAS Class 2 gas flammable material is not permitted to be transported in a box-up vehicle or vehicle with roof covering whether permanent or otherwise.

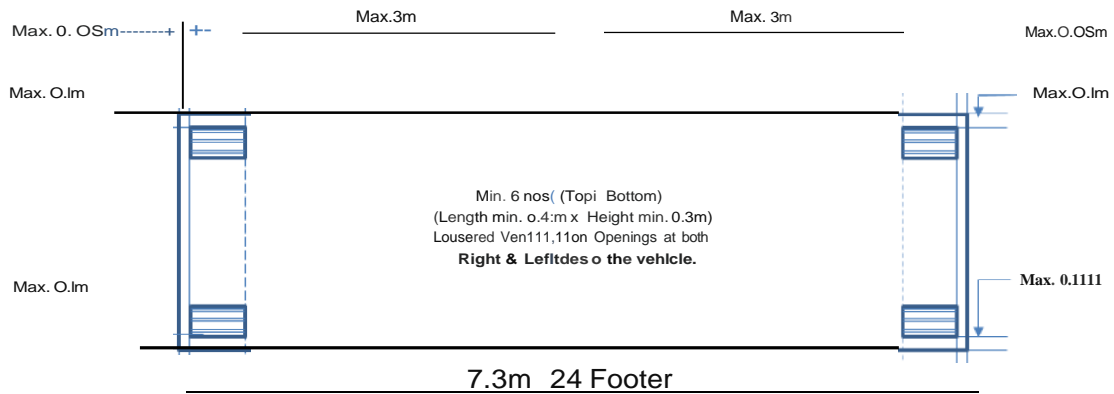




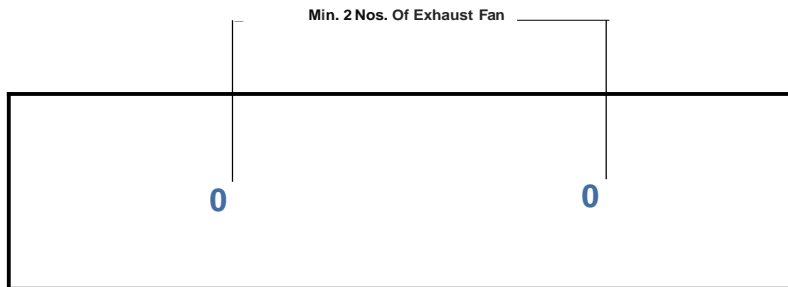
SIDE VIEW



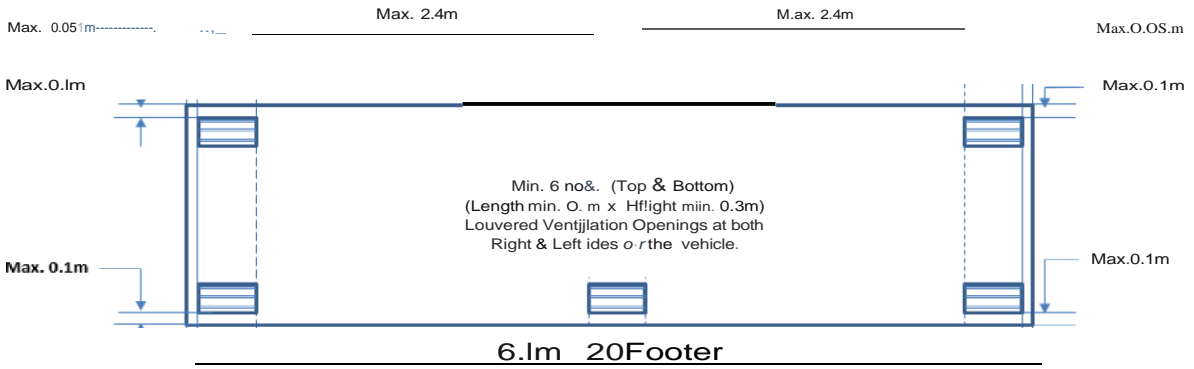
TOP VIEW



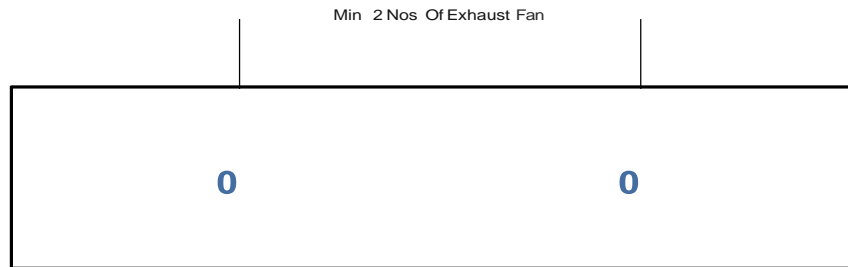
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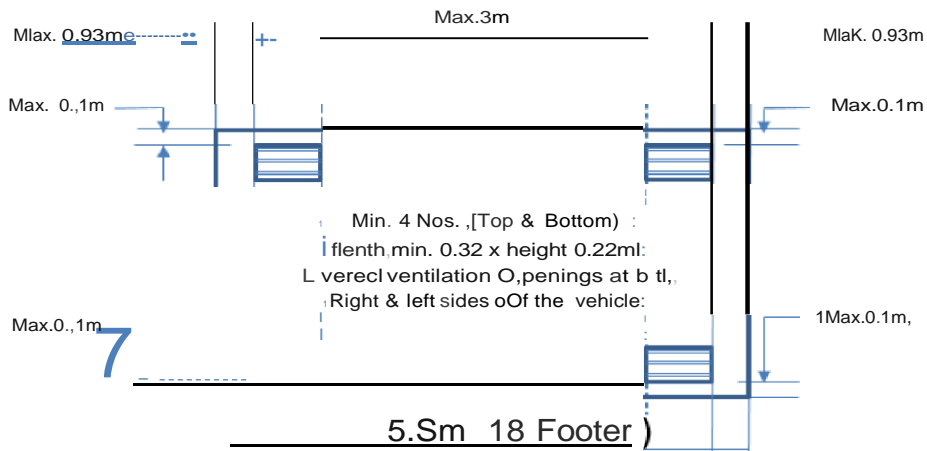
TOP VIEW



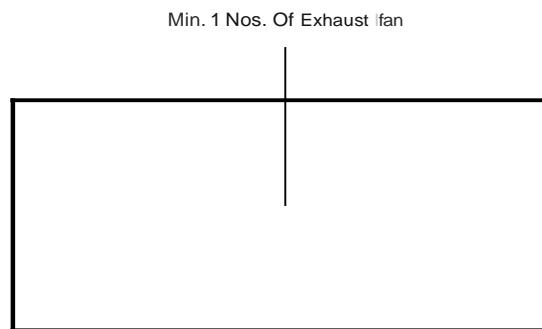
SIDE VIEW



TOP VIEW



SIDE VIEW



TOP VIEW

Vehicle Inspection Checklist E**Inspection Checklist for LNG transportation****Vehicles (e.g. Prime Mover, Trailer and Road Tanker)**

(A)	Documents Requirements
1	Vehicle Log Card (new application)
2	Manufacturer's data report (eg. ASME U-Stamp, EN code, etc...)
3	A copy of prime mover/trailer/tanker drawing endorsed by PE
4	A copy of prime mover/trailer/tanker technical calculations for stability endorsed by PE (New Tank)
5	Certificate of Fire Safety Inspection in accordance with Regulation 5 of the Fire Safety (Petroleum/Flammable Materials) Regulations
6	A copy of prime mover/trailer/tanker photos from front, side and rear (including licence plate)
7	Hazardous Materials Transport Driver Permit
8	Hydrostatic test or any equivalent test report endorse by local PE (New Tank)
9	Radiographic test or any equivalent test report endorse by local PE (New Tank)
10	Pneumatic or equivalent test report for tank and manifold piping system (working pressure) endorsed by PE (once every 5 years)
(B)	Technical Requirements
1	Prime Mover/ Road Tanker equipped with ABS system
2	Fire shield at rear of cabin provided and in order
3	Roll Over Prevention Stability System provided
4	Exhaust system in order (adequately shielded from direct contact with fuel from overfilled tanks and leaks)
5	Rear and side under-run protection (heavy duty steel) 15 cm from tank
6	Metal conduits for all electrical wirings in good condition
7	Anti-Tow Interlocks systems (to prevent driving away while connected to driving rack or during dispensing) in order
8	Battery cut off in order / Proper battery compartment
9	2 x 9 kg dry powder and 1 x 1 kg dry powder / 2.5 kg CO2 fire extinguishers
10	Transport Emergency Information panel (TEIP) complying with GHS (Warning notices) provided at 3 sides
11	Earth winch shall be provided for operating during load and unloading of LNG
12	Spark arrestor (Flame Trap) provided
13	Earthing strap provided and touching the ground
14	Visual Inspection on Outer Vessel / Tank (eg. to inspect for any sign on sweating, cold spots or algae)
15	All vent pipe nozzles are piped upwards and are not piped downwards to the chassis (LNG Trailer/ ISO Tanker)
16	Discharge Faucets in order
17	Lighting in cabinets shall be Vapor Proof design or explosion proof design (Intrinsically safe)
18	Cabinet enclosure shall be designed with louvers
19	Wiring circuit shall be house in steel conduits
20	All valves and Safety pressure relief valves in working order
21	Pressure and Level gauges in working order
22	Vacuum reading in working order (< 20 micron)
23	Emergency cut off device in working order
24	Pump, Vaporizer and piping yearly maintenance report (Renew)

SCHEDULE CHEMICALS

Annex F

S/N	Chemical	Schedule	Transport Licence Duration and Additional Conditions	Documents and Technical Requirements	
1	O-Alkyl ($\leq C_{10}$, including cycloalkyl) N, N- dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidocyanidates	S1A	<ul style="list-style-type: none"> • 12 months Licence only • Compulsory ASTRATA report • Compulsory to provide armed escorts • Compulsory at any one time transport not more than 100 mg • Transport timing, 9 to 5pm only 	Prime Mover/Trailer (BULK/ISO TANK)/ Road Tanker – To follow Annex A	
	E.g. Tabun: O-Ethyl N, N-dimethyl phosphoramidocyanidate			Prime mover and trailer (trucking container containing petroleum or Flammable materials in package, examples drums, bottles, pallets etc) – To follow Annex B	
2	Sulphur mustards	S1A			Vehicles constructed to carry goods (e.g. lorries, pick-ups) – To follow Annex C
	(a) 2-Chloroethylchloromethylsulfide				
	(b) Mustard gas: Bis(2-chloroethyl)sulfide				
	(c) Bis(2-chloroethylthio)methane				
	(d) Sesquimustard: 1,2-Bis(2-chloroethylthio)ethane				
	(e) 1,3-Bis(2-chloroethylthio)-n-propane				
	(f) 1,4-Bis(2-chloroethylthio)-n-butane				
	(g) 1,5-Bis(2-chloroethylthio)-n-pentane				
	(h) Bis(2-chloroethylthiomethyl)ether				
(i) O-Mustard: Bis(2-chloroethylthioethyl)ether	Enclosed Vehicles (e.g. Van or box up vehicle) – To follow Annex D				
3	N, N-Dialkyl (Me, Et, n-Pr or i-Pr) phosphoramidic dihalides (>30% purity)	S2B	<ul style="list-style-type: none"> • 12 or 24 months subject to 3000L, similar to the rest of PFM requirements 	Prime Mover/Trailer (BULK/ISO TANK)/ Road Tanker – To follow Annex A	
4	N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-ols and corresponding protonated salts (>30% purity)	S2B			
5	Pinacolyl alcohol : 3,3-Dimethylbutan-2-ol	S2B			
6	Trimethyl phosphite	S3B			
7	Triethyl phosphite	S3B			
8	Dimethyl phosphite monochloride (>30% purity)	S3B			
9	Sulfur monochloride (>30% purity)	S3B			
10	Sulfur dichloride (>30% purity)	S3B			
11	Ethyldiethanolamine (>30% purity)	S3B			
12	Methyldiethanolamine (>30% purity)	S3B			Enclosed Vehicles (e.g. Van or box up vehicle) – To follow Annex D

S/no	Inspection Bodies approved to carry inspection on vehicles base on above checklist / approved agent for installation of tracking device, horns and blinkers, orange vehicle number plate	Checklist A	Checklist B	Checklist C	Checklist D	Checklist E	Installation of Tracking Device etc
1	<p>Apave TIV Asia Pte. Ltd.</p> <p>450 Alexandra Road #04-01 UE Bizhub West, Singapore 119960 Tel: 63298921</p>	yes	yes	-	-	yes	-