

LAND TRANSPORTATION MANAGEMENT PROCEDURE

AGREEMENT NO. : 09-5578-E-4

PROJECT NAME : Ruwais Refinery Expansion Project
EPC-4: Tankage & Associated
Interconnecting Piping


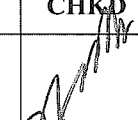

COMPANY : Abu Dhabi Oil Refining Company (TAKREER)

PMC : Mott MacDonald Ltd.

CONTRACTOR : Daewoo Engineering & Construction Co., Ltd.

TAKREER	RUWAIS REFINERY EXPANSION PROJECT	DAEWOO E&C	
	EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING		
	AGREEMENT No. 09-5578-E-4		
PROJECT No. 5578	Doc. No. 5578-E4-HSE-HU-00013	Rev. 0	Page 2 / 27

This page is a record of all revisions of this document. All previous issues are hereby superseded and are to be destroyed.

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NOTES:

- (a) Revisions are denoted by a vertical line placed in the right-hand margin against the revised text.
- (b) PREP = Prepared by, CHKD = Checked by, REVD = Reviewed by, APP'D = Approved by.
- (c) In case of conflict between any requirements stipulated in this document with the contractual requirements, the contractual requirements shall prevail.

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1. INTRODUCTION

1.1 Purpose

The purpose of this procedure is to define the Land Transportation Management System that shall be implemented in every aspect of motor transport on the Ruwais Refinery Expansion Project. Driving is a high-risk activity for both CONTRACTOR and COMPANY workforce and this has been highlighted by accidents and fatalities records internationally. Therefore, this subject is an integral part of the Daewoo E&C Health, Safety & Environment Plan.

1.2 Scope

The Land Transportation Management Procedure is applicable to all motor transportation related issues associated with design, procurement, fabrication, construction and commissioning, to project completion and hand over of the project to the client. This procedure shall focus on all vehicle and driver requirements relating to the Ruwais Refinery Expansion Project throughout all phases, however as conditions change, this procedure will be updated accordingly to reflect the different circumstances and functional conditions.

Specific vehicles, heavy equipment and crafts for exclusive use on working sites and yards, such as cranes, bulldozers, and fork-lift trucks are excluded from this procedure.

1.3 Objectives

The Land Transportation Management Procedure aims to ensure that any vehicle in the project constructions are suitable for the purpose intended, are completely roadworthy and maintained in a clean and meaningful manner.

A corresponding objective is to ensure that any driver involved with the project, either with the COMPANY, CONTRACTOR or Subcontractor employed is trained to a reasonable level of driving competence and to ensure that the level is maintained throughout the tenure of the project.

More specifically, this procedure targets the following;

- Reduction in Loss of life and Human suffering
- Improvement in health and reduction in related illnesses
- Reduction in the risk associated with the transport operations
- Control and minimization of damage when an incident occurs
- Contribution to reduce our carbon footprint through better selection and maintenance of vehicles
- Provisions of guidance to the project in setting or revising local policies and rules
- Improvement of operational safety procedures
- Adoption of common standards within the project
- Enhancement of DEC and the project image within the local communities and authorities

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2. DEFINITION

2.1 Driver

Any person employed by, or under contract to the RRE project, driving a vehicle for project construction.

2.2 Incident

Any or all of the following consequences; injury or fatality, damage to the environment, material or loss of image.

2.3 Project Vehicle

Any vehicle owned or rented by the CONTRACTOR and used for the construction of the project. The vehicle shall be used for transporting project personnel and materials.

2.4 Risk

Combination of the probability of occurrence of a defined hazard and its estimated consequences.

2.5 Subcontractor

Any organization or entity that is performing works for DEC relating to the RRE Project contracted.

2.6 LTMP

Land Transportation Management Procedure

3. ROLES AND RESPONSIBILITIES

The project team is fully committed to the safe operation of road transportation, providing clear operating procedures and standards, which must be met by CONTRACTOR and its Subcontractors operating transportation within the scope of the project construction.

3.1 Project Manager

Will demonstrate commitment to conduct land transport operations in a safe, healthy and environmentally responsible manner. Such commitment will be achieved by ensuring that adequate facilities, for vehicle selection and maintenance, and drivers training are established in early phase of the project.

3.2 HSE Manager

Will ensure the implementation and control of a land transport management procedure that provides vehicles, facilities, personnel and equipment that conform to the project HSE Management System principles and standards. The HSE Manager will also ensure that quarterly vehicle safety campaigns are developed and driven on site amongst all drivers and workforce.

3.3 Section Manager

- Allocate the necessary resources to land transport operations.
- Promote land transport safety issues in meetings, including manager's meeting.
- Communicate clearly that land transport safety standards are an important project requirement.
- Provide appropriate training and assessment for all parties involved in land transport operations.
- Encourage safety promotions and employees suggestions to improve safety performance and practice.

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- Set plans and objectives, and monitor vehicle safety performance of all employees.
- Control that land transport subcontractor operations meet the required standards.
- Shall ensure that checklists are completed on a daily basis on all vehicles prior to daily operation.
- Shall ensure that vehicles tires are replaced amicably when in substandard condition or when maximum life has been reached.

4. LAND TRANSPORTATION MANAGEMENT PROCEDURE

The project, as an integral part of the HSE Management System, shall instigate a Land Transportation Management Procedure that will define the Driving Rules which in turn will ensure that the following items are managed and clearly documented;

- Vehicles management (selection criteria, replacement policy, safety equipment requirements, etc.).
- Driver and personnel management (selection, training etc.).
- Responsibilities and duties of subcontractor.
- Compliance with Local laws and traffic regulations (TAKREER, ADNOC, CNIA etc.).
- The implementation of active journey management and risk assessment where appropriate.

The main objectives of LTMP (Land Transportation Management Procedure) shall be to improve driving performances and to ensure vehicles are fit for purpose and roadworthy, in order to achieve such an objective the following shall be implemented;

Objectives to improve driving performance are set at regular intervals, as a minimum, at least annually.

Communication of the requirements and conditions of this LTMP, by arranging translations, as appropriate, issue and display making it available to all persons, and integrating into contractual documents.

Ensure that the project driving standard and the condition of the vehicles are not detrimental to the DEC corporate image.

Specific audits shall be performed by the HSE Manager's designated Supervisor on a regular basis.

Local initiatives to improve driving standards are developed as part of the annual HSE Plan for the project.

Safety driving performance is integrated into the individual end of year appraisal.

5. DRIVER MANAGEMENT

The driver management aspect of LTMP ensures the assessment and selection of drivers are conducted in accordance with the documented management procedure. This management system contains the elements detailed in the following paragraphs. By correct use of this management procedure the competency of the driver can readily be verified.

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5.1 Driver Selection and Qualification

Only approved drivers are permitted to operate RRE Project vehicles and any authorized driver shall hold a valid license for the Host country or accepted by the national authority as being equivalent. Approved drivers shall have CONTRACTOR's certification which could be formalized by specific driving authorization which can only be obtained once the CONTRACTOR's Ruwais Refinery Expansion Project Defensive Driving Training has been attended and successfully passed. It will be mandatory for drivers to permanently keep this document in their possession at all times when driving and be ready to offer it for inspection to authorized persons, i.e. the Project Manager, the HSE Manager or security staff of the project.

The management systems shall retain a copy of the driver's license in the person's personnel records. In countries where the driving license, or permit, does not include photograph, a second document giving proof of identity will also be kept in the records of the driver.

In all cases, the licenses must be valid for the category of the vehicle being operated by the driver, should there be an infringement of this rule by a driver, his license validity will be reviewed and his suitability to drive on the construction work scope will be re-assessed.

Certain circumstances may demand a locally arranged driver competency test. Such tests would become necessary if the driver, although in the possession of a valid license, displayed any of the following;

- A noticeable lack of driving ability
- Careless or dangerous driving maneuvers
- A lack of respect for the vehicle or passengers

The locally arranged driver competency tests would include driving ability and attitude, rudimentary vehicle knowledge and basic inspection requirements, such as installed safety equipment, oil levels, tires pressures, etc.

5.2 Driver Training

All drivers shall be medically fit for the job and a medical certificate shall be systematically delivered by the CONTRACTOR approved Doctor and renewed on a regular basis, which will be defined by the project. In particular, the sight test including color blind tests are mandatory for all drivers.

Drivers training can only be undertaken under the supervision of a appropriately qualified person, and only when authorized by the project. It shall be the responsibility of the project to ensure that progressive training for defensive driving is made available to all people in land transportation. Additional training will be required for four wheel driving, including, off-road, for specific persons whose duties involved such specialized transportation.

Drivers assigned for personnel transportation must have their competency regularly assessed. The project recommendation is that these re-assessments are conducted on an annual basis, and the re-assessment procedure is to be endorsed by the HSE Manager and implemented under his supervision. Every re-assessment shall be duly validated and recorded in the project personnel records. Each driver shall receive a personal certificate book where every competency re-assessment is registered and can easily be traced.

The general education of drivers will also be assessed in order to verify that user manuals, signs, policies and rules can be readily understood.

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Drivers assigned to the transportation of dangerous goods or hazardous substances shall have a valid, appropriate and specific license and their driver competency shall be regularly re-assessed as for the drivers transporting personnel.

5.3 Driver Duties

It shall be the driver's responsibility to ensure that only passengers, authorized by the project, may be transported on board CONTRACTOR's vehicles.

Daily checks to be performed by the driver are the following;

- Wheel nut security
- Tire pressures (including spare wheel)
- Condition of jacking equipment
- Oil level
- Windscreen washer liquid level
- Mirror visibility and adjustment
- Wiper operation
- Safety equipment
- Seat belts
- Headrests
- Fire extinguishers
- Warning triangles
- Lights (driving, brake, indicator and hazard)
- Horn

All drivers shall operate the vehicle with an appropriate code of conduct, and exceeding the defined speed limits, either local regulation or set by the project (TAKREER, ADNOC, CNIA), shall be prohibited. Drivers are responsible for the vehicle, including its condition and roadworthiness, whenever it is assigned under their control. Drivers are also responsible for the clean condition of the vehicle.

The use by the driver of radios, walkie-talkies (except on listening mode) and mobile phones, even when provided with hands free equipment, is prohibited when the engine of the vehicle is running, or the vehicle is in motion.

It is also forbidden for any driver to operate a vehicle for the project construction while under the influence of alcohol or drugs or medication susceptible of impairing driver's ability to safely operate the vehicle. CONTRACTOR and the project management reserves the right to request blood, or urine, samples as appropriate from drivers for alcohol and drug test in the event of an accident involving a fatality or injury resulting in a person being detained in a hospital for medical examination or treatment.

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6. VEHICLE MANAGEMENT

CONTRACTOR and its Subcontractor's shall ensure that purchasing, leasing and contractual arrangements for vehicles lead to the provision and maintenance of vehicles that are fit for the intended purpose. Only vehicles that are fit for the intended purpose shall be in the project construction, and they must only be operated in accordance with the design specification.

Special attention shall be given to the vehicles safety equipment which will include;

- Three points seat belts
- Adjustable head rest (for all seats)
- Air bags (driver and front passenger as a minimum)
- Reinforced bumpers
- External reversing alarm
- First aid kit
- Fire extinguisher (Dry powder)
- Warning Triangle
- Drive Right Monitor or In Vehicle Monitoring System (IVMS)

For vehicles that may be used in rough, or difficult terrain the provision for roll over protection is compulsory. Other specialist equipment, not mandatory but may be required as defined by risk assessment are the following;

- Comprehensive tool kit
- Shovel
- Wrecking or jimmy bar
- Straps and shackles
- GPS or compass and maps as minimum
- Additional fuel container or supplementary fuel tank installed
- Potable water containers

All vehicles to be used in operational areas shall be diesel powered and shall be fitted with an appropriate spark arrestor and over speed protection. Only vehicles equipped in this manner will be permitted to enter the process and/or SIMOPS area.

6.1 Vehicle Maintenance

CONTRACTOR shall ensure that a comprehensive vehicle preventive maintenance program is put in place for all vehicles operated in the project. All vehicles shall be maintained in accordance with the manufacturer's recommended maintenance program, which is detailed in the vehicle documentation. In the absence of any documentation the vehicles shall be serviced in intervals of at least every three months

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or 500 km whichever comes first, and the service will include mandatory checks of the vehicle safety systems and equipment, such as tires, brakes, steering and lights.

The effectiveness of the maintenance program will be ensured by regular and specific inspection performed by the HSE Manager. The frequency of the inspection shall not be less than every six months.

At anytime, either during the regular maintenance program, daily checks or random inspection, that a vehicle should be discovered to be not in good roadworthy condition, or any of its safety equipment is not functioning properly, or if it is involve in any type of vehicle incident will be immediately withdrawn from service. Any vehicles withdrawn for these reasons shall not be re-instated for the project until a full comprehensive vehicle examination has been performed and the vehicle is declared to be roadworthy and safe.

The project shall formally define a program of technical control of the vehicles which will be in accordance with Host country regulations; however in the absence of such, recognized regulations and standards shall be used. The frequency of the regular technical controls shall not exceed two years.

Spare parts required as part of the maintenance program or as normal replacement, shall be supplied by a reputable supplier, and ideally the parts should be the manufacturer's specialized parts.

Tire replacement shall only use high quality, international standard, tires which are the size and type specified in the manufacturer's specification.

6.2 Vehicle Generalities

It is CONTRACTOR requirement that all vehicle documentation shall be valid and current for the subject vehicle, and shall be kept with the vehicle. Copies of the vehicle documentation shall be retained by the HSE Manager and Vehicle maintenance section (Heavy Equipment). CONTRACTOR shall ensure that all vehicles are provided with valid insurance with full coverage of the potential risks that passengers may be exposed to during transportation in operation of the project. Vehicles that are not roadworthy, or in unsafe condition, or are not being used for the intended purpose shall not be used, and not be re-instated for use in the project until a full and comprehensive vehicle examination has been performed, and the vehicle is declared to be roadworthy and safe.

Under no circumstances are motorcycles permitted for use in the project construction.

7. JOURNEY MANAGEMENT

CONTRACTOR shall implement a journey management system to be applied for four wheel drive, off-road excursions, or where journeys are undertaken in isolated environment or well known high risk areas. The active planning and management of such journeys shall include a documented risk assessment, performed to identify hazards, mitigation and control of those hazards, provision of an emergency survival pack, appropriate communications and an emergency response plan. There will be no exceptions to this rule. As part of the journey management a responsible person shall be designated to monitor the safe progress of any such journey, and he must be advised of the Expected Time of Arrival (ETA) and Expected Time of Departure (ETD) of the schedule related to journey.

For routine journeys and journeys of non-hazardous or non-perilous nature, the DEC shall implement a travel schedule which will be planned to reduce driver fatigue and that daily limitation on driving time

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and distance can be complied with. For journeys exceeding four hours, positive rest periods shall be defined prior to departure and shall be strictly adhered to.

In the event that any vehicle whether on a journey as described above or any routine journey that is more than one hour past its ETA without any communication given or cannot be contacted using all means of communication devices such as radio or mobile phone, an alert will be raised and the emergency response plan will be implemented.

8. VEHICLE TRAFFIC MANAGEMENT

CONTRACTOR will ensure appropriate planning to make sure that the flow of traffic within the construction area and the nearby communities is adequately controlled. Dispatching of vehicle will be controlled to minimize the hazards associated with the transportation including road congestion, especially to the neighboring communities. Vehicles producing excessive noise or beyond the noise level standard shall be subject to maintenance.

9. WIDE LOAD TRANSPORTATION MANAGEMENT

Any movements of wide loads (which extend beyond the body of the transport vehicles and encroach into the oncoming traffic lane or shoulder of the road) are required to have authorization from HSE Manager and the Local authorities (if will be passing into public road) prior to commencing.

The in-charge section shall make a written request to be submitted with a minimum of 48 hours notice. This written request must include the following;

- Date and Time of expected movement
- Name of responsible person for safe movement
- A clear map of the intended route
- Method of temporarily closing the roads (if required)
- Method of traffic control (flagmen, escort vehicles. Lights, etc...)

The responsible person named in the request must accompany the movement to ensure maximum safety of personnel, including civilians if involved.

10. ATTACHMENTS

Attachment 10.1: Safety Seat Belt Policy

Attachment 10.2: Alcohol and Drug Policy

Attachment 10.3: Speed Limit Policy

Attachment 10.4: Journey Management Slip

Attachment 10.5: Daily Driver's Check list

Attachment 10.6: TAKREER Light Vehicle Requirements

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Attachment 10.7: TAKREER Heavy Goods Vehicle Requirements (HGV)

Attachment 10.8: Bus Requirements

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10.1 Attachment

SAFETY SEAT BELT POLICY

TO ALL PERSONNEL INVOLVED WITH PROJECT ACTIVITIES

Wearing seat belts shall be **mandatory** for the driver and all passengers in moving vehicles used on the project. No passengers are allowed to travel in project vehicles if seat belts are not installed.

"NO SEAT BELTS, NO SEAT"

The driver is responsible for enforcing the use of seat belts in his vehicle. The vehicle **will remain stationary** until the driver and all passengers have fastened their seat belts.

Security personnel at gates shall check the use of seat belts, stop and report any of the occupants of the vehicle not wearing seat belts.

The above policy is for **strict compliance**: any violation may result in **removal** from the project.

Daewoo E&C / Administration Manager

Date: _____

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10.2 Attachment

ALCOHOL AND DRUG POLICY

TO ALL DRIVERS INVOLVED WITH PROJECT ACTIVITIES

Driving under the influence of alcohol and/or drugs is an unacceptable: **extreme risk of accident.**

Therefore:

Drinking any alcohol or taking drugs during the normal working time is **strictly forbidden** on the project.

Alcohol and/or drug tests shall be carried out on a **'with cause' basis.**

Driving under the influence of alcohol and/or drugs will result in **DISMISSAL:**

'REMEMBER'

YOU WILL LOOSE YOUR JOB - YOU MAY CAUSE DEATH - YOU MAY DIE

IT IS NOT WORTH THE RISK TO DRIVE UNDER THE INFLUENCE OF DRUGS OR ALCOHOL

Daewoo E&C / Administration Manager

Date: _____

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10.3 Attachment

SPEED LIMIT POLICY

TO ALL DRIVERS INVOLVED WITH PROJECT DRIVING ACTIVITIES

All drivers on the project shall **strictly adhere** to the following speed limits:

Max. Speed allowed on public streets and road: _____ **km/h**

Max. Speed allowed at the Base/Site: _____ **km/h**

Posted speed limits lower than those above **shall be mandatory**. During adverse weather conditions such as during periods of heavy rain, speed shall be reduced accordingly.

Offenders may be required to attend a further defensive driving course or may be **dismissed** from the project.

Remember: **You could lose your life trying to get there 5 minutes earlier.**

Daewoo E&C / Administration Manager

Date: _____

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10.4 Attachment

JOURNEY MANAGEMENT SLIP

IMPORTANT: This Journey Management Slip shall be completed and returned to the Driver Supervisor at the end of the working day.

Locality / Spread / Base: _____

Date: _____

PERSONNEL DESCRIPTION

Driver's Name: _____ Badge No: _____ Working Area: _____ Passengers Names: _____

1) _____

2) _____

3) _____

4) _____

Max speed allowed on main road
is 80km/h

Seat belts shall be used at all
times when travelling in
project vehicles.

Drinking of any alcoholic
substance or use drug
During working time is strictly
prohibited.

VEHICLE DESCRIPTION

Vehicle Type & Color: _____ Plate No: _____ Company No: _____

Reason for Travel: _____

Locality/Position of Destination: _____

Going Departure Hour Out: _____ Arrival at: _____

Followed Itinerary: _____

**Complete and attach a completed Daily Drivers Checklist, Any deficiencies found will be rectified prior to
journey or another suitable vehicle must be used. NO EXCEPTIONS**

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10.4 Attachment

JOURNEY MANAGEMENT SLIP

NOTICE:

- 1) Any variation of destination or itinerary shall be communicated to the office.
- 2) The arrival of destination shall be communicated to the office.
- 3) The return hour will be communicated to the office.
- 4) In case of emergency or vehicle breakdown, passenger(s) are to wait for the arrival of a rescue crew.

Driver's Printed Name _____

Driver's Signature _____

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10.5 Attachment

1. DAILY DRIVER'S CHECKLIST

Driver's Name: _____ Date: _____

Vehicle Reg. No: _____ Site: _____

Type of Vehicle: _____ Driver's Signature: _____

S/N	ITEM (S: Satisfactory & U: Unsatisfactory)	S	U	N/A	Remarks
1	General roadworthy condition (cabin, doors, windows)				
2	Battery and Terminals secured				
3	Tire condition				
4	Light condition				
5	Brake system				
6	Steering system				
7	Back mirrors condition				
8	Wipers and washer condition				
9	Check of leaks				
10	General status of fluid levels				
11	Status of seat belts				
12	Hazard lights				
13	Cargo properly loaded and secured				
14	Availability of spare tires and related tools				
15	Availability of spare fuses				
16	Availability of triangle				
17	Availability of fire extinguisher				
18	ID badge & driver's license				
19	Maintenance sticker available and updated				
20	Verify compliance with scheduled maintenance				

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10.6 Attachment

ALL LIGHT VEHICLES SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

General/Legal	<ul style="list-style-type: none"> Comply with the terms of UAE Federal Law No. 21 of 1995 Regarding Traffic. Be suitable for operation in ambient temperatures of up to 55°C No modification may be made to any vehicle without endorsement from the vehicle manufacturer or the local agent. Shall not be fitted with a bull-bar even if provided or fitted by the manufacturer
Tyres	<ul style="list-style-type: none"> Have tyres, including spares, of the same manufacturer, type, profile and tread pattern, except when the vehicle or tyre manufacturer recommends a different type for certain axles. Tyres shall be radial, with a minimum tread depth of 1.6mm across 75% of the tyre width. Tyre type and pattern shall be recommended by the vehicle or tyre manufacturer for use on the vehicle in the UAE, and be fit for purpose. Re-treaded tyres are not permitted on light vehicles. Information about manufacturers recommended tyre pressure should be available on the vehicle. Be fitted with a spare wheel and equipment to safely change a wheel.
Seat-Belts	<ul style="list-style-type: none"> Be fitted with a 3-point inertia reel type seatbelt for the driver, all front seat passengers, and rear outer seats. All other rear seats shall be fitted with either a 3-point inertia reel seatbelt or a 2-point lap seatbelt. 3-point inertia reel seat belts are encouraged and recommended.
Seats	<ul style="list-style-type: none"> Shall not be fitted with inward facing or folding seats. Seats shall be fitted with headrests except rear middle seats, the latter being optional. If there is more than one row of seats the vehicle shall have at least four doors (two door cars and station-wagons shall have the rear seat(s) permanently removed).
Luggage and cargo space	<ul style="list-style-type: none"> Luggage space shall be physically separated from the passenger area by a solid partition (for saloon or hatchback passenger cars), or a wire-mesh grid (for estate cars, station wagons and vans). Have the maximum payload details (in kilos) of a cargo or load area painted or applied so that it is clearly visible to persons loading the vehicle. Vehicles used for the transport of hazardous materials shall comply with the requirements of <u>HSE-CP12 Waste Management</u>.

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ALL LIGHT VEHICLES SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

In-cab	<ul style="list-style-type: none"> • Be fitted with a serviceable air conditioning system able to maintain an in-cab temperature of less than 30°C under all driving conditions. • Be fitted with a working radio-cassette. • Signs, stickers or labels shall be fitted in such a manner that they do not obstruct the driver's vision or impede the driver's use of any controls. • Not have ornamental fittings mounted or hung inside the cab, or outside the vehicle, which can obscure the driver's view.
Anti Lock Braking and Airbags	<ul style="list-style-type: none"> • Anti-Lock Braking Systems (ABS) for all light vehicles first registered after 01 September 2001. EXEMPTIONS: Light trucks e.g. Canters, Dynas and minibuses, are exempt from the requirement to be fitted with Anti Lock Braking Systems (ABS) and driver and front seat passenger airbags-until local market availability in UAE. • Airbags for both the driver and front seat passenger (i.e. dual airbags) for all light vehicles first registered after 01 September 2001.
Emergency Equipment	<ul style="list-style-type: none"> • Be fitted with dry powder fire extinguisher with a capacity of 0.9 kg that complies with <u>HSE-CP02 Fire and Explosion Hazards</u>. The fire extinguisher shall be securely mounted on a bracket and located so that it is easily accessible in an emergency. • Be fitted with a securely stowed first aid kit that complies with <u>HSE-CP07 Occupational Health Hazards Medical Examination and Treatment</u> requirements. • Carry a minimum of one hazard warning triangle. Vehicles that are more than 2 metres wide shall carry a minimum of two. Each hazard warning triangle shall be no less than 440mm wide and 440mm tall, and shall not weigh less than 1 kg.
Towing	<ul style="list-style-type: none"> • Towing equipment, including tow bars and tow-hooks, shall be fitted by the vehicle manufacturer or shall comply with relevant international standards.
Reversing Alarms	<ul style="list-style-type: none"> • Be fitted with an audible reversing alarm. If the vehicle is longer than 6 metres.

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ALL LIGHT VEHICLES SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

Additional Requirements	<ul style="list-style-type: none"> • all vehicles shall comply with the GCC construction standards and be fully insured and currently registered in accordance with the U.A.E Traffic Regulations. • all light vehicles shall be fitted with high intensity rear lights. • all vehicles shall wherever practical be fitted with roll over protection; (if to be used for off road) • all light vehicles shall be provided with neck restraints (head protection) in both front and rear outer seats; • spark arrestors shall be fitted to vehicle exhaust systems and any relevant auxiliary equipment (e.g. pumps powered by diesel or gasoline), where this vehicle / equipment is entering TAKREER Classified Areas (Class I, Division II). • all light vehicles should be provided with a means to segregate passengers and goods in the rear of vehicle; • all light vehicles shall be provided with jack & tools sufficient to change the wheel, a pressure gauge, reflecting safety triangle, a large bottle of drinking water and first aid kit; • in addition, light vehicles used off-road shall have a four-wheel drive transmission with limited slip differential or differential lock and shall carry a hand shovel (for high risk journeys, e.g. desert travel.)
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ALL HEAVY GOODS VEHICLES SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:	
General/Legal	<ul style="list-style-type: none"> Comply with the terms of UAE Federal Law No. 21 of 1995 Regarding Traffic. Be suitable for operation in ambient temperatures of up to 55°C No modification may be made to any vehicle without endorsement from the vehicle manufacturer or the local agent.
Tyres	<ul style="list-style-type: none"> Have tyres, of the same manufacturer, type, profile, weight rating and tread pattern, on the same axle. Tyres shall be radial, with a minimum tread depth of 1.6mm across 75% of the tyre width. Tyre brand and pattern shall be recommended by the vehicle or tyre manufacturer for use on the vehicle in the UAE, and be fit for purpose. Re-treaded tyres are not permitted on the steering axle. Re-treaded or re-grooved tyres are permitted on drive axles. Have the tyre manufacturer's recommended tyre pressure painted at the top of each wheel arch, or on the body near the tyre if there is no wheel arch Be fitted with a spare wheel and equipment to safely change a wheel.
Seat-Belts	<ul style="list-style-type: none"> Be fitted with a 3-point inertia reel type seatbelt for the driver, all front seat passengers, and rear outer seats. All other rear seats shall be fitted with either a 3-point inertia reel seatbelt or a 2-point lap seatbelt. 3-point inertia reel seat belts are encouraged and recommended.
Brakes	<ul style="list-style-type: none"> A vehicle retarder, which may be an exhaust brake. A dual-circuit, dual-line service brake system with a secondary braking system, and (for vehicles which will tow a trailer) two-line or three-line colour coded trailer brake system fittings. All braking systems to be fail-safe in the event of loss of air pressure.
Cargo space	<ul style="list-style-type: none"> Have the maximum payload details (in kilos) of a cargo or load area painted or applied so that it is clearly visible to persons loading the vehicle The maximum payload details shall be applied on both sides of the vehicle, except on prime-movers. Vehicles used for the transport of hazardous materials shall comply with the requirements of <u>HSE-CP12 Waste Management</u>.
In-cab	<ul style="list-style-type: none"> Be fitted with a serviceable air conditioning system able to maintain an in-cab temperature of less than 30°C under all driving conditions. Be fitted with a working radio-cassette. Signs, stickers or labels shall be fitted in such a manner that they do not obstruct the driver's vision or impede the driver's use of any controls.

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**ALL HEAVY GOODS VEHICLES SHALL COMPLY WITH THE FOLLOWING
REQUIREMENTS:**

	<ul style="list-style-type: none"> Not have ornamental fittings mounted or hung inside the cab, or outside the vehicle, which can obscure the driver's view.
Exterior: Stowage and rear bumper	<ul style="list-style-type: none"> A storage box for tools and auxiliary lashing equipment. Rigid HGVs and heavy trailers shall be fitted with a heavy-duty rear bumper. This bumper shall be no more than 500mm above the ground when the vehicle is unladen. It shall not extend beyond the outer edge of the tyres and shall not be less than 100mm less than the distance between the outer edges of the outer tyres. The bumper shall be connected to the vehicle chassis side members. It shall be capable of withstanding an impact of 2500kg at its middle point and half the gross vehicle weight (up to a maximum of 10000kg) at the attachment points. A band of alternate yellow and black chevrons, 150mm high, shall be painted across the entire rear width of the HGV, except on prime-movers
Emergency Equipment	<ul style="list-style-type: none"> Be fitted with an in cab fire extinguisher with a capacity of 1.5 litres of foam or a multipurpose dry powder fire extinguisher with a capacity of 1.5 kg that complies with <u>HSE-CP02 Fire and Explosion Hazards</u>. The fire extinguisher shall be securely mounted on a bracket and located so that it is easily accessible in an emergency. Be fitted with a securely stowed first aid kit that complies with <u>HSE-CP07 Occupational Health Hazards</u> requirements for Medical Examination and Treatment. Carry a minimum of two hazard warning triangles each hazard warning triangle shall be no less than 440mm wide and 440mm tall, and shall not weigh less than 1 kg.
Towing	<ul style="list-style-type: none"> Towing equipment, including tow bars and tow-hooks, shall be fitted by the vehicle manufacturer or shall comply with relevant international standards.
Reversing Alarms	<ul style="list-style-type: none"> Be fitted with a rear mounted audible reversing alarm audible from 8 metres.
Prime mover Additional Specific Items	<ul style="list-style-type: none"> Palm couplings shall be colour coded. Colour coded dual brake lines (Red: emergency, yellow: service brake) A fifth wheel, which oscillates longitudinally only (unless hauling a specialised type of trailer, such as steerable, which may require a freely oscillating fifth wheel).

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Additional Requirements	<ul style="list-style-type: none"> • Two red high-intensity lights fitted as high and as far apart as practicable, wired to the headlight switch, but also with an override switch. • spark arrestors shall be fitted to vehicle exhaust systems and any relevant auxiliary equipment (e.g. pumps powered by diesel or gasoline), where this vehicle / equipment is entering TAKREER Classified Areas (Class I, Division II). • Power to at least two axles, limited slip differential or differential lock. • Off-road tyres • All heavy vehicles shall carry a first aid kit.
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10.8 Attachment

**ALL LIGHT AND HEAVY BUSES SHALL COMPLY WITH THE FOLLOWING
REQUIREMENTS:**

General/Legal	<ul style="list-style-type: none"> • Comply with the terms of UAE Federal Law No. 21 of 1995 Regarding Traffic. • Be suitable for operation in ambient temperatures of up to 55oC • No modification may be made to any vehicle without endorsement from the vehicle manufacturer or the local agent.
Tyres	<ul style="list-style-type: none"> • Have tyres, of the same manufacturer, type, profile, weight rating and tread pattern, on the same axle. • Tyres shall be radial, with a minimum tread depth of 1.6mm across 75% of the tyre width. • Tyre brand and pattern shall be recommended by the vehicle or tyre manufacturer for use on the vehicle in the UAE, and be fit for purpose. • Re-treaded tyres are not permitted on buses. • Have the tyre manufacturer's recommended tyre pressure painted at the top of each wheel arch, or on the body near the tyre if there is no wheel arch • Be fitted with a spare wheel and equipment to safely change a wheel.
Seat-Belts	<ul style="list-style-type: none"> • Be fitted with a 3-point inertia reel type seatbelt for the driver, and all front seat passengers. All other passenger seats shall be fitted with either a 3-point inertia

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	reel seatbelt or an inertia 2-point lap seatbelt. As a minimum; 3-point inertia reel seat belts are encouraged and recommended. The vehicle or bus body manufacturer for the type of vehicle or seat configuration being used shall approve passenger seatbelts.
Seats	<ul style="list-style-type: none"> • Seats shall be of fabric material, and if fitted with seat covers these shall be of fireproof fabric. • Seatbacks and any wall panel or fixture in front of any passenger seat shall be smooth and padded with no sharp edges.
Luggage Space	<ul style="list-style-type: none"> • Internal luggage space shall be completely enclosed. A sliding webbing net top enclosure is acceptable. If the door or lid is hinged, it shall be secured by a latch or bolt. If an enclosed luggage compartment is not available, a notice on the passenger door shall state in Arabic and English "Luggage, tools, and other loose objects may not be carried inside the vehicle".
Interior of bus body	<ul style="list-style-type: none"> • Be fitted with a serviceable air conditioning system able to maintain an in-cab temperature of less than 30oC under all driving conditions. • Be fitted with a working radio-cassette. • Have a sign in Arabic and English stating "Danger! Do not stand up or move from your seat until the bus has stopped". • Signs, stickers or labels shall be fitted in such a manner that they do not obstruct the driver's vision or impede the driver's use of any controls. • Shall not have ornamental fittings mounted or hung inside the cab, or outside the vehicle which can obscure the driver's view. • Have padding fitted to any handrail adjacent to the main doors of the bus.
Emergency Equipment	<ul style="list-style-type: none"> • Be fitted with an in cab fire extinguisher with a capacity of 1.5 litres of foam or a multipurpose dry powder fire extinguisher with a capacity of 1.5 kg that complies with <u>HSE-CP02 Fire and Explosion Hazards</u>. The fire extinguisher shall be securely mounted on a bracket and located so that it is easily accessible in an emergency. • Be fitted with a securely stowed first aid kit that complies with <u>HSE-CP07 Occupational Health Hazards</u> medical examination and treatment requirements • Carry a minimum of one hazard warning triangles Buses that are more than two metres wide shall carry a minimum of two warning triangles. Each hazard warning triangle shall be no less than 440mm wide and 440mm tall, and shall not weigh less than 1 kg.

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**ALL LIGHT AND HEAVY BUSES SHALL COMPLY WITH THE FOLLOWING
REQUIREMENTS:**

External Mirror	<ul style="list-style-type: none"> • Have a 'look down lens' in the rear window or a wide-angle mirror mounted at the rear of the vehicle.
Reversing Alarms	<ul style="list-style-type: none"> • Be fitted with a rear-mounted audible reversing alarm if the bus is longer than 6 metres.
ABS and Airbags	<ul style="list-style-type: none"> • Buses are exempt from the requirement to be fitted with Anti Lock Braking Systems (ABS) and driver and front seat passenger airbags-until local market availability.