



**Abu Dhabi Specification**

**معايير أبوظبي الفنية**



**ADS 17 / 2017**

**م أ ف 17 / 2017**

**First Edition**

**الاصدار الأول**

**Operational and Planning  
Specifications for Car Workshops**

**معايير أبوظبي الفنية التخطيطية  
والتشغيلية لورش السيارات**

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## About the Abu Dhabi Quality & Conformity Council

The Abu Dhabi Quality and Conformity Council (QCC) was established by law No. 3 of 2009, issued by His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE.

QCC is responsible for the development of Abu Dhabi Emirate's Quality Infrastructure, which enables industry and regulators to ensure that products, systems and personnel can be tested and certified to UAE and International Standards.

Products, Services and Systems certified by the QCC may receive the Abu Dhabi Trustmark. The Trustmark is designed to communicate that a product, service or system conforms to various safety and performance standards that are set by Abu Dhabi regulators.

### 1. Foreword

The Car Workshops Working Group for Operational & Planning Specifications was established in November 2016 to identify and consolidate all Emirate's planning and operational requirements to operate a car workshop. In order to do so, the working group examined various existing standards and technical regulations related to the subject. It is intended also to prioritize the car workshops operational and planning standards topics to be studied and reviewed at the level of Abu Dhabi Emirate. Abu Dhabi Specifications (ADS) is developed on subjects that have no clear specifications or local legislation.

### 2. Purpose

The ADS for car workshops is intended to achieve the following:

- 2.1 Contribution to the achievement of Abu Dhabi Vision.
- 2.2 Support the expansion of the industry to meet the emerging needs and requirements while maintaining the best standards.
- 2.3 Facilitation and enhancement of audit/inspection standard to allow for a rapid emergency response.
- 2.4 Enhancement of public health and safety and the protection of the environment



2.5 Provision of vocational model records for vehicle repair workshops with the modern development of standards and operating procedures.

2.6 Improving the customers' experience when using Car workshop facilities and services.

### 3. Acknowledgments

The QCC would like to thank the members of the working group listed below:

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## 4. Scope

- 4.1 These specifications are intended for car workshops in Abu Dhabi of all sizes and activities.
- 4.2 These specifications are not substitutes for any other legislation issued in the UAE, and the shops shall comply with the relevant UAE Federal and Abu Dhabi legislations.

## 5. Terms & Conditions

**Core Requirements:** Mandatory requirements that require 100% compliance

**Conditional Core Requirements:** Mandatory requirements that require 100% compliance in specific categories of workshops (according to size and/or activity)

**Optional Requirements:** Complimentary requirements that add value if implemented

**Body & Paint Activities:** Activities related to the body of the vehicle, such as plumbing and paint

**Mechanical Activities:** Activities related to the mechanics of the vehicle

**Electrical Activities:** Activities related to the electricity of the vehicle

## 6. Requirements

The car workshops' planning and operational requirements are categorized into seven (7) different groups. Each category has core, conditional core and optional requirements. The seven categories of requirements are:

- 6.1 Security: Requirements that ensure the protection of the security of the facility, workers, vehicles, visitors and surrounding facilities. The list of planning and operational requirements for the workshop security is available in Appendix 1A.
- 6.2 Health & Safety: Requirements that ensure safety of the facility, workers, vehicles, visitors and surrounding facilities against occupational and environmental hazards. The



list of planning and operational requirements for the workshop health and safety is available in Appendix 1B.

6.3 Appearance & Environment: Requirements related to the general appearance of the facility: Workplace space, storage rooms, restrooms, ventilation, lighting ... etc. The list of planning and operational requirements for the appearance and the environment of the workshop is available in Appendix 1C.

6.4 Manpower: Requirements that ensure the competency and ability of workers to perform the jobs they are assigned at the facility. The list of planning and operational requirements for the manpower operating the workshop is available in Appendix 1D.

6.5 Machines, Tools & Equipment: Requirements related to the machines, tools and equipment critical to carry out the jobs required at the facility. The list of planning and operational requirements for the machines, tools and equipment used in the workshop is available in Appendix 1E.

6.6 Materials & Consumables: Requirements related to the basic materials used and necessary to conduct the jobs at the facility. The list of planning and operational requirements for the materials and consumables used in workshop is available in Appendix 1F.

6.7 Method: Requirements related to the working methods and documentation necessary to perform tasks. The list of planning and operational requirements for the methods applied in the workshop is available in Appendix 1G.



## 7. References

- Decree of the Prime Minister No. (26) of 2000 on the regulation of labor relations
- Order No. (42) of 2009 (Environment and Health Administration of the Emirate of Abu Dhabi) system
- Act No. (24) of 1999 on the protection and sustainability of the environment
- Decree No. (5) of 1998 on the issuance of a license in the emirate
- Administrative Decree No. (25) of 2008 on the organization of economic activities and the issuance of licenses issued based on Article (18)
- Hygiene and sanitary conditions for the general commercial shops (Abu Dhabi Municipality)
- Decree of the Prime Minister No. ( ) of 2017 on the Emirati System for Car Repair Workshops
- OSHAD-SF Mechanism 5.0: Requirements for Medium Risk Entities



## Appendix 1A

Mandatory Requirements				
#	Suggested Classification	Applicable Activity	Applicable Size	Description
1	Core	All	All	A metal/aluminum gate, fence or door is available at the main entrance
2	Core	All	All	Customers cars are always locked if parked outside of the workshop and parking must always be available; keys are tagged with registration or chassis number and kept in a dedicated cabinet
3	Core	All	All	All cars within the workshop premises which are received for the purpose of accident repairs must have a valid police accident report that authorizes the repair and clears the car's legal status
4	Core	All	All	Employees ID Card are available and valid for all staff members; Copies of the labor card are kept in a special file
5	Core	All	All	Emergency contact numbers and Security formal authorities and workshop management contact numbers are available for all staff and are clearly displayed
6	Core	All	All	Hazardous and dangerous chemicals (flammable or exploding) should be clearly labeled and kept in isolated area
7	Core	All	All	Shelves, stands and barriers (if present) should be of non-flammable materials
8	Core	All	All	A security man and/or CCTV Camera should be always present/installed at the facility (the number varies according to the size of the shop)
9	Core	All	All	Insurance (General/Liability) against any damages & road risk insurance must be made available

Optional Requirements	
#	Description
1	A comprehensive security system must be installed to monitor the workshop and that could include CCTV, Antitheft alarm, etc.
2	All customers' cars must be monitored and looked after at all times
3	Opening hours must be defined and clearly displayed at the front door
4	Customers vehicles must be checked properly for any body damages, and findings must be documented
5	The workshop must outsource security functions to a certified security company

## Appendix 1B

Mandatory Requirements				
#	Suggested Classification	Applicable Activity	Applicable Size	Description
1	Core	All	All	A barricade must be made available in the shop. A barricade is a physical structure used to create restricted access area to prevent unauthorized entry into a particular work area or area where a hazard may exist. The barricade can be made from any material that will prevent access such as tape, fence panels mesh or similar objects.
2	Core	All	All	First Aid toolboxes must be made available and loaded with medicine and medical consumables; the toolboxes must be easily reachable and accessible for all staff (The number of boxes varies according to the size of the shop)
3	Core	All	All	Expiration dates of medicine and medical consumables inside the first aid toolbox must be maintained and monitored
4	Core	All	All	"No smoking" signboards must be clearly visible inside the workshop and reception area
5	Core	All	All	Fire extinguishing systems or cylinders must be available (at least 1 water hose and fire pump system or water sprinklers fire system); the system should be certified according to the Civil Defense Regulations and the workshop nature of activity
6	Core	All	All	Fire Extinguishers must be available for all 3 types (Water, CO2 and Powder) distributed over the workshop, at least 1 per 5 work bays and 1 per office, checked and certified yearly
7	Core	All	All	Employees must be trained on using primary fire extinguishing means
8	Core	All	All	Signboards such as: (Chemicals - hazardous materials - inflammable materials) must be clear and visible in the required areas
9	Core	All	All	Batteries must be placed on a wooden platform not directly on the floor; broken or leaking batteries must be disposed of immediately (A dedicated batteries storage room is available is preferred)
10	Core	All	All	Safety shoes - safety equipment for technicians must be made available
11	Core	All	All	Painting masks (Half or full masks) - safety equipment for painters must be made available
12	Core	All	All	Professional cleaning chemicals and detergents cleaning workshop are required and no gasoline is used for any cleaning purpose (Cleanliness must be maintained inside and outside the shop for a distance of 5 meters)
13	Core	All	All	Shops must not be used as a housing accommodation or cooking kitchen for employees
14	Core	All	All	Necessary measures must be taken to prevent the spread and breeding of insects and rodents inside the shop
15	Core	All	All	If the shop undertakes work of grinding, welding, thermal or oxygen cutting or heating, and other related heat-producing or spark-producing operations, then it must comply with the OSHAd CoP "Hot Work". The CoP also includes requirements for the storage and use of Gas Cylinders. 'Hot Work' is a general term referring to grinding, welding, thermal or oxygen cutting or heating, and other related heat-producing or spark-producing operations.
16	Core	All	All	OSHAD CoP of Guarding Machinery must be met. This CoP establishes the requirements and standards so that the risks associated with the guarding of machinery are assessed, that control measures are implemented in accordance with the hierarchy of controls and those control measures are implemented to prevent injury, illness and disease to persons who might be exposed to risks arising from those activities



17	Core	All	All	Compressed Gases and Air Requirements: • an absolute pressure reading greater than 276 kPa (40 psi) at 21°C (70°F) or • an absolute pressure greater than 717 kPa (104 psi) at 54°C (129.2°F) or • any flammable liquid having a vapor pressure greater than 276 kPa (40 psi) at 38°C (100.4°
18	Core	All	All	If there is a washroom and/or a washing tub, it must be maintained clean and sterile always and/or approved by the Sewerage Network
19	Core	All	All	An appropriate mechanism to store and handle all dangerous goods/hazardous substances must be put in place
20	Core	All	All	At least 1 of 10 employees must receive first aid training and approved course in Medium and Large Workshops; and 1 employee in Small Workshops
21	Core	All	All	All electrical installations, sockets and connectors must be properly maintained and no open isolators must be present
22	Core	All	All	Chemical containers, cans and barrels in the shop must be safe for usage and transportation (no leaks)
23	Core	All	All	A dedicated smoking area far from any chemical or flammable material must be identified
24	Core	All	All	Hazardous materials must be stored in accordance with the classification and properties and according to the requirements of prevention and safety from the Civil Defense
25	Core	All	All	Suitable protection materials must be used to protect the Electrical wiring
26	Core	All	All	A contract to conduct pest control activity must be available
27	Core	All	All	Any Asbestos containing materials must be identified, managed and removed
28	Core	All	All	Exposure to airborne Lead containing products must be managed
29	Core	All	All	Exposure to noise at a level which could lead to noise induced hearing loss must be managed
30	Core	All	All	Requirements for workplace rehabilitation and return-to-work to ensure that employees receive the appropriate treatment and benefits, including assistance in returning to their normal duties after a workplace injury, disorder or disease
31	Core	All	All	OSHAD: Requirements for working in the heat and incorporates the midday work ban as set by the Ministry of Human Resources
32	Core	All	All	OSHAD: Requirements for the prevention and control of legionnaires' disease. Legionnaires disease is commonly found in equipment that uses, stores, or disseminates warm water. This includes, but is not limited to, swimming pools, hot tubs, heated spas, cooling towers, hot water tanks, large air conditioning systems, water treatment facilities, metalworking systems that use water, equipment for manufacture of plastic parts using injection molding, emergency water systems (to include safety showers, eye wash stations, and fire sprinkler systems), artificial fountains/waterfalls, water features, and other similar equipment that use and/or stores large amounts of water.
33	Core	All	All	OSHAD: Requirements that employers take measures to prevent or minimize the occurrence of violence in the work place and to protect employees and other potentially affected persons against it, ensuring that they have access to assistance and recourse if they happen to be exposed to it



34	Core	All	All	OSHA: Requirements that all employers must implement to prevent manual handling injuries
35	Core	All	All	OSHA: Requirements that employers must put in place for anyone who has special needs, including making reasonable adjustments to the workplace and emergency evacuation
36	Core	All	All	OSHA: Requirements for confined places
37	Core	All	All	Workshop lifts should have safety locks and a yearly load certification through an authorized company
38	Core	All	All	Workshop equipments, including lifts should all have an annual service and a record of maintenance history
39	Conditional Core	All	Medium & Large Workshops	Emergency exits must be available without any obstacles in each area clearly guided with lightened signboards, an evacuation plan is in place, and staff are trained on it
40	Conditional Core	All	Medium & Large Workshops	An isolator for the main power supply must be available and can be operated manually and automatically in case of emergencies
41	Conditional Core	All	Medium & Large Workshops	Barrier railing must be installed on all higher floors stairs or balconies
42	Conditional Core	Body & Paint Activities	All	Painters must go through periodic medical test for lungs, as per municipality regulations
43	Conditional Core	All	Medium & Large Workshops	At least one separate customer toilet must be available in a clean condition with washroom and urinals

Optional Requirements	
#	Description
1	The workshop should apply methods to ensure a safe and healthy environment inside the workshop
2	The availability and use of relevant safety equipment for technicians
3	Electrical boards must have clear and appropriate signboards
4	Signboards must be used throughout the workshop to inform customers of each dedicated area
5	Workshop floor must not be slippery and impermeable (either tiled or concrete or painted floor but not shiny and slippery material)
6	Emergency exits doors must be equipped with automatic locks
7	At least 10% of the personnel working in the workshop must attend an approved health and safety training course
8	Belts and gears rotating equipment and machinery should have protective barriers to prevent injuries
9	A generator or an alternative source of electrical power in case of power cut off must be available

## Appendix 1C

Mandatory Requirements				
#	Suggested Classification	Applicable Activity	Applicable Size	Description
1	Core	All	All	A valid trade license must be present and shops must exercise the jobs licensed by the regulator
2	Core	All	All	Any internal building changes or walls adding the approval of the civil defense must be obtained in advance
3	Core	All	All	Proper and sealed waste containers dedicated according to the type of waste (hazardous and non-hazardous) in a sufficient number & placed within the shop premises and not outside it must be made available
4	Core	All	All	A clear contract to clear all types of waste skips with a dedicated company registered, approved and licensed by The Waste Management Authority must be made available
5	Core	All	All	Sewage system and network must be active through municipality authorities approvals and must be maintained
6	Core	All	All	Waste oils and other vehicles fluids must be drained or sucked into storage containers, drums or industrial standard
7	Core	All	All	Shop must be equipped with proper lighting and ventilation
8	Core	All	All	The front space for shops must not be used to switch tyres, exercise fittings or any other activity that may be detrimental to the public appearance of the shop
9	Core	All	All	A clear shop panel display must be installed
10	Core	All	All	Materials must be stored in a proper manner to allow for an easy and flexible movement inside the shop
11	Core	All	All	Entrance/Exit gate/s must allow for a smooth access and movement
12	Core	All	All	Parking in front of the station on the public road must be properly managed
13	Core	All	All	The required workshop area must be a minimum of 100 m <sup>2</sup>
14	Core	All	All	Minimum work bay area must be 4m x 7m for passenger cars, with a height clearance of 4m, and 4.5m x 10m and height clearance of 6m for each single van and commercial vehicle
15	Core	All	All	Distance from shop's door to the door of the nearest food store (grocery, restaurant, cafeteria ... etc) must not be less than 10 meters
16	Conditional Core	All	Medium & Large Workshops	The office and the waiting room in the shop must be equipped with décor, furniture, air conditioners, lighting, fans and refrigerators
17	Conditional Core	All	Medium & Large Workshops	A proper storage area for frequently used tools/equipment for the workshop must be available
18	Conditional Core	All	Medium & Large Workshops	A separate staff toilets inside the workshop must be available

Optional Requirements	
#	Description
1	Trees in and around the workshop must be present
2	Two parking spaces for each bay available in the workshop must be made available
3	Easy access must be made for public parking
4	The workshop main signboard must meet the Municipality requirements, and must be properly maintained
5	A transparent glass door or similar material must be used for the entrance of the workshop
6	The front area of the workshop must always be clear for visitors
7	Customers reception area and waiting area with suitable furniture and proper air conditioning must be made available
8	The workshop floor that is not used for the workshop activities must be equipped with solid materials
9	The walls must be painted or tiled with an easily washable layer
10	A least 1.5M from the floor of the walls should be painted or tiled
11	The ceiling height must be appropriate to the type of activities conducted in the workshop (4m for passenger cars and 6m for buses and commercial vehicles)
12	Natural lightening is recommended and light intensity must be at least 500 Lux in reception area and inside the workshop and 800 Lux inside the body shop
13	Cars must be received and handed over in a dedicated area
14	The workshop must have an easy access for customers' cars to get into the workshop and exit the workshop
15	The workshop must have appropriate facilities to comfort the customers such as customers' toilet, prayer room, rest area
16	The workshop must have appropriate facilities to staff such as toilets, prayer room, rest area
17	Air conditioning or cooling fans within the workshop must be made available
18	A proper and organized storage area must be made available in the workshop
19	New and used items must be labeled and stored separately and appropriately
20	Waste oils and other vehicles fluids must have a special separate drain network near to each work bay

21	The workshop can be a sub dealer for any authorized car dealer or agent
22	A list of partner car dealers and agents must be clearly displayed
23	The building must be properly maintained through a maintenance contract
24	Environmentally friendly accessories (lights, water fixtures, paints, etc) must be used
25	A Welcome and/ or information sign must be available on customers reception desks
26	Workshop personnel must wear specific uniforms and name badges
27	All facility rooms must be used as per the plan or the signboards
28	A dedicated room for air compressor, includes the compressor system, dryer and properly ventilated with air inlet possibility must be made available; temperature inside the room should not exceed 40 degrees
29	The workshop must be specialized in a particular car brand services through brands certified employees
30	A process of clearing the waste containers properly must be put in place
31	The distance between the ceiling and the stored items must not be less than 60cm
32	Assembly points must be clear and visible for all personnel in site
33	Emergency exits doors must be equipped with automatic locks
34	Main and sub electrical boards must have clear signboards
35	Changing room for technicians with lockers must be made available

## Appendix 1D

Mandatory Requirements				
#	Suggested Classification	Applicable Activity	Applicable Size	Description
1	Core	All	All	A clear level of responsibility must be assigned to each employee in the shop; job descriptions must be available at the shop for all staff signed by the staff and management
2	Core	All	All	Evidence of competence that does not exceed three years (training, certification,...etc) must be available for all staff
3	Core	All	All	Personnel working in the workshop must meet the occupational standards set by the QCC ; Personnel must obtain the QCC Certificate of Conformity
4	Core	All	All	An Arabic speaking service advisor must be present in the workshop
5	Conditional Core	All	Medium & Large Workshops	The minimum number of workers must be related to the number of cars and volume of work (must be set at a very low minimum) specific job roles (% of technicians)
6	Conditional Core	Welding Activities	All	At least one specialized and certified welding technician must be present if the workshop classification involves exhaust repairs
7	Conditional Core	Electrical Activities	All	At least one specialized and certified electrician in AC repairs and other electrical components with an experience and education level in electric wirings and electronics repairs must be present if the workshop classification involves electrical works
8	Conditional Core	Mechanical Activities	All	At least one specialized and certified mechanic specialized in engine/ transmission overhauling and repairs with an experience and education level in machines repairs must be present if the workshop classification involves mechanical works
9	Conditional Core	All	Medium & Large Workshops	A qualified receptionist for customer contact and sales inquiries must be present

Optional Requirements	
#	Description
1	Appropriate educational levels must be obtained for all personnel working in the workshop
2	Repair technicians must have valid manufacturing training certificate (not more than 3 years)
3	Certified technician for each activity performed by the workshop must be present
4	All personnel working in the workshop must attend at least one relevant technical training course per year
5	An updated file for each employee that has a list of all qualifications, knowledge, certificates, etc must be present
6	10% of employees must be Emiratis
7	One quality controller for each 10 bays in the workshop must be present
8	One supervisor for each 10 bays in the workshop must be present



## Appendix 1E

Mandatory Requirements				
#	Suggested Classification	Applicable Activity	Applicable Size	Description
1	Core	All	All	Vehicles lifts capacity should be at least 3.5 Ton
2	Core	All	All	Work bays supply of water, compressed air and power supply must be made available
3	Core	All	All	Minimum of 2 manual hydraulic Jacks, and Mechanical Jacks must be made available
4	Core	All	All	New spare parts ( if its required by law ) must be certified
5	Core	All	All	All tools which require calibration should be calibrated according to manufactures standards. Records of calibration have to be available upon request; The test and measuring tools are calibrated from an independent calibration lab.
6	Core	All	All	A trolley must be used to carry a heavy components
7	Core	All	All	Battery charger, ideal for recharging 12/24V batteries must be made available
8	Core	All	All	An isolated and ventilated painting area (proper painting room)/ with curtains (The same goes for welding)
9	Core	All	All	Engine oil drain trays, used under the vehicles in case draining engine oil occurs must be made available; minimum requirement is one tray per two working bays
10	Core	All	All	At least one coolant system pressure gauge must be made available to determine any coolant leaks or losses
<b>The following machines, tools and equipment must be available in shops that exercise the activities mentioned:</b>				
11	Conditional Core	Mechanical Activities	All	Availability of a device that pumps oil out of cars automatically
12	Conditional Core	Mechanical Activities	All	Emission tester (gasoline and Diesel) is ready for use
13	Conditional Core	Mechanical Activities	All	There are suitable cranes for carrying a heavy components
14	Conditional Core	Mechanical Activities	All	Ball Joint Press and other Special Tools
15	Conditional Core	Mechanical Activities	All	Brake Pedal Depressor
16	Conditional Core	Mechanical Activities	All	Hand Grease Gun
17	Conditional Core	Mechanical Activities	All	Shock Absorber Tools
18	Conditional Core	Mechanical Activities	All	Tie Rod Puller
19	Conditional Core	Mechanical Activities	All	Tire Mounting Machine (rim clamp type)
20	Conditional Core	Mechanical Activities	All	Tire Patching Tools and Supplies
21	Conditional Core	Mechanical Activities	All	Wheel Balancer - Electronic Type
22	Conditional Core	Mechanical Activities	All	Wheel Weight Pliers
23	Conditional Core	Mechanical Activities	All	Bearing Seal and Race Driver Set
24	Conditional Core	Mechanical Activities	All	Brake Bleeder, Pressure or Vacuum
25	Conditional Core	Mechanical Activities	All	Brake Disc Micrometer

26	Conditional Core	Mechanical Activities	All	Brake Drum Micrometer and Calibration Equipment
27	Conditional Core	Mechanical Activities	All	Brake Lathe (bench with disc and drum service attachments)
28	Conditional Core	Mechanical Activities	All	Brake Shoe Adjusting Gauge
29	Conditional Core	Mechanical Activities	All	Brake Spring Remover/Installer Brake Spring Pliers
30	Conditional Core	Mechanical Activities	All	Brake Spoon
31	Conditional Core	Mechanical Activities	All	Piston Retraction Set
32	Conditional Core	Electrical & Cooling Activities	All	A/C Compressor Clutch Service Tools A/C Service Port Adapter Set
33	Conditional Core	Electrical & Cooling Activities	All	Leak Detector
34	Conditional Core	Electrical & Cooling Activities	All	Manifold Gauge Set or equivalent - For all types of AC Gases
35	Conditional Core	Electrical & Cooling Activities	All	Refrigerant Charging Station (For all types of AC Gases) or equivalent Refrigerant Identification Equipment
36	Conditional Core	Electrical & Cooling Activities	All	Thermometer
37	Conditional Core	Mechanical Activities	All	Cylinder Power Balance Tester
38	Conditional Core	Mechanical Activities	All	Fuel Injection Pressure Gauge Sets with Adapters
39	Conditional Core	Mechanical Activities	All	Compression Tester
40	Conditional Core	Mechanical Activities	All	Infrared Thermometer (or appropriate substitute)
41	Conditional Core	Mechanical Activities	All	Leak Detector (Smoke or Nitrogen)
42	Conditional Core	Mechanical Activities	All	Timing Advance Light
43	Conditional Core	Mechanical Activities	All	Vacuum/Pressure Gauge
44	Conditional Core	Mechanical Activities	All	Hydraulic Pressure Gauge Set
45	Conditional Core	Mechanical Activities	All	Transmission/Transaxle Removal and Installation Equipment
46	Conditional Core	Mechanical Activities	All	Transmission/Transaxle Special Tool Sets (appropriate for units being utilized)
47	Conditional Core	Electrical & Electronic Activities	All	Connector Pick Tool Set
48	Conditional Core	Electrical & Electronic Activities	All	Door Panel Trim Tool(s)
49	Conditional Core	Electrical & Electronic Activities	All	Headlight Aimer or Screen
50	Conditional Core	Electrical & Electronic Activities	All	Wire and Terminal Repair Kit
51	Conditional Core	Mechanical Activities	All	Axle Nut Socket Set (or equivalent)
52	Conditional Core	Mechanical Activities	All	Universal Joint Tools
53	Conditional Core	Electrical & Cooling Activities	All	Antifreeze/Coolant Tester
54	Conditional Core	Mechanical & Tyres Activities	All	Tyre-Changers suitable for fitting/removing all kinds of tires for passenger's cars
55	Conditional Core	Mechanical & Tyres Activities	All	General wheel balancer
56	Conditional Core	Mechanical & Tyres Activities	All	Roller brake tester to measuring the brake forces per wheel and the difference between the left and right sides

57	Conditional Core	Mechanical & Tyres Activities	All	Automatic Digital Tyre Inflator
58	Conditional Core	Mechanical & Tyres Activities	All	Brake Bleeding suitable for bleeding the hydraulic brakes and clutches of all motor vehicles
59	Conditional Core	Mechanical & Tyres Activities	All	Tyre inflator for checking and restoring the pressure of any type of tyre
60	Conditional Core	Mechanical & Tyres Activities	All	Washing tank for quick washing of mechanical parts and components in general
61	Conditional Core	Mechanical & Tyres Activities	All	Manual waste oil drainers
62	Conditional Core	Mechanical & Tyres Activities	All	Mechanic/tyre fitter is equipped with a range of manual handling aids appropriate to the tasks to be undertaken, e.g wheel dolly, and brake drum lifter
63	Conditional Core	Mechanical & Tyres Activities	All	Mechanic/tyre fitter is provided with manual handling aids at the host workplace. The suitability of this equipment is not assured by risk assessment process
64	Conditional Core	Mechanical & Tyres Activities	All	Lifting equipment suitable for the task is not supplied by employer and is not available on site. Tyre fitter/mechanic manually handles heavy objects, eg truck wheels, brake drums, etc.

Optional Requirements	
#	Description
<b>The following machines, tools and equipment must be available in shops:</b>	
1	At least (1) lift and Manual hydraulic jacks, and Axle stands
2	Bushing Driver Set
3	Coil Spring Compressor Tool Chassis Ear
4	Inner Tie Rod End Tool
5	Pitman Arm Puller
6	Power Steering Pump Pulley Special Tool Set (appropriate for units being taught)
7	Power Steering Pressure Gauges
8	Strut Spring Compressor Tool
9	Steering Column Special Tool Set (appropriate for teaching units being utilized)
10	Wheel Alignment Equipment-4 wheel (including alignment tools)
11	Dye Injector
12	Hygrometer
13	Refrigerant Recovery/Recycling Machine (HFC-134a)
14	Graphing Multimeter (GMM) and/or Digital Storage Oscilloscope (DSO)
15	Injector Pulse Tester
16	Oxygen Sensor Socket
17	Pinch-off Pliers
18	Sending Unit Socket(s)
19	Spark Plug Thread Tap
20	Spark Tester
21	Transmission Jack(s)
22	Transmission/Transaxle Flushing Equipment
23	Transmission/Transaxle Holding Fixtures
24	Heat Gun (or equivalent for heat shrinking operations)
25	Clutch Alignment Set
26	Clutch Pilot Bearing/Bushing Puller/Installer
27	Constant Velocity Joint (CV) Service Tools: Boot Installation Tool & Boot Clamp Pliers or Crimping Ring

28	Front Wheel Drive Engine Support Fixture
29	Rotating Torque Wrench (beam-type or equivalent)
30	Special Tools for Transmissions/Transaxles (appropriate for units being taught)
31	Oil Pressure Gauge
32	Straight Edge
33	Torque Angle Gauge
34	Tyre-Changers equipped with automatic finger-tool, to remove tire bead without using the traditional bead lifting lever.
35	The wheel balancer utilize with integrated laser measurement units with cameras
36	Automatic wheel alignment chock unit with camera.
37	Suspension tester can record the dynamic force for each wheel
38	Nitrogen Generator and Conversion System
39	Air operated liquid drainer suitable for sucking petrol or diesel oil from any vehicle or motorcycle.
40	An exhaust gas extractor exists to prevent the accumulation of exhaust gases in the workshop
41	Mobile hydraulic crane, an availability of one hydraulic crane is recommended
42	Hydraulic stand press, an availability of one hydraulic press i.e. recommended
43	Headlight adjusting machine, used for adjusting and aiming headlights, an availability of one unit is recommended
44	Spot welding machine for high strength steel, availability of one machine is recommended
45	Chassis and body straightening equipment is computerized and adjusts the pulling force automatically through a computer software
46	Paint color code identifier equipment, which helps in finding the precise color codes of the cars to mix the appropriate color in the paint mixing process
47	One lift must be at least 3 Ton capacity for SUV and 4x4 cars
48	If the workshop is dealing with vans and commercial vehicles one lift must be with a capacity of 5 Ton
49	Wheel alignment must be 4 post lift, all other lifts can be either 2 post lift or in ground lift or 4 post lift,
50	Trolley car jack, a minimum of one trolley car jack is required in the workshop
51	Torque wrench, the workshop must keep a range of torque wrenches that covers different torques from 50 - 650 Nm
52	Air compressor, a sufficient capacity air compressor that supplies for each tapping point (at least 6 bar required) in the workshop, with a dryer to minimizes the moisture.
53	Work bench, one work bench is required for every three work bays, vices can also be fixed on it, refer to capacity matrix for increased workshop capacity
54	Dismantled parts trolley, dismantled components of vehicles under repair to be kept on trolleys or shelves and not on the floor, at least one unit in the workshop

55	Body saw, pneumatic or electrical for steel and plastic cutting, also used for exhaust pipes cutting, at least one piece in the workshop
56	Roll-out windshield and glass removing set, minimum requirement is one set per ten work bays, refer to capacity matrix
57	Manual riveting gun, minimum requirement is one per ten work bays
58	Cartridge gun, used for different types of sealant cartridges and glues, one unit as a minimum requirement
59	Tool trolley/ box for denters with a basic tool set for body repairs is required, every three denters can share up to one tool set
60	Oxy-acetylene welding set, minimum of one set is required for the workshop
61	Inert gas welding set, minimum of one set is required for the workshop
62	Dent pulling equipment, minimum of one machines required for the workshop
63	An equipment for aligning and straightening chassis and body frame, including pulling capability to adjust frame and chassis measurements and to meet manufacturers recommended measurements
64	Infrared lamp with a positioning adjustable stand, a minimum of one unit is required
65	Paint guns, availability of separate guns for primer, colors and clear coats, at least one for each, also minijet guns for spot repair
66	Paint booth, availability of a proper closed paint booth with interior lighting, filter system, air flow capacity minimum of 15,000 m <sup>3</sup> /h, and can heat up to 60 Celsius degrees
67	Paint booth chimney is properly connected and in working condition
68	Pneumatic or electric sanding machine, minimum requirement is one sanding machine per 2 work bays
69	Electric polishing machine, minimum requirement is one polishing machine per 5 work bays
70	All the handheld equipments are stored in cabinets or on shelves inside a room or in a designated area
71	Universal or dedicated diagnosis computer that reads vehicles control units faults and helps in identifying the problems in the cars, at least one unit in the workshop
72	Tool trolley/ box for mechanics or electricians with a basic tool set is required, every two technicians can share up to one tool set
73	Battery tester, the workshop must have enough quantity of battery testers, a minimum of one tester per ten work bays, refer to the capacity matrix.
74	Digital multimeter, a minimum of one digital multimeter is available for every 5 work bays
75	Air conditioning service unit, one air conditioning service unit is required for every 10 work bays, refer to capacity matrix
76	Welding machine is available and in proper safe condition, a minimum of one piece is required specifically for exhaust welding jobs
77	Tyre changing machine, a minimum of one tyre changing machine exists

78	Tyre inflator with a gauge, a minimum of one gauge per four work bays is required, refer to capacity matrix
79	Wheel balancing machine, a minimum of one balancing machine exists
80	Wheel alignment equipment, a minimum of one wheel alignment machine exists
81	Brake fluid changing machine, a minimum of one machine per ten work bays, refer to capacity matrix
82	Engine assembly stand, a minimum requirement of one engine holder or bracket, to be used while assembling engines
83	Fuel extractor unit, a minimum of one fuel suction unit exists in the workshop
84	Transmission lift/ platform, a minimum of one transmission lift exists in the workshop
85	Engine oil is supplied through a network of hose reels and a bulk tank, one hose reel per three work bays as minimum, this is a recommended system that saves time and oil wastage
86	Engine oil suction unit, used for sucking the oil out of the engine rather than draining it, required one unit per five work bays
87	Washing unit for small parts (engine and transmission) uses mechanical parts washing chemicals and not gasoline, at least one unit available in the workshop
88	PDR tool set, at least one set of paintless dent repair and pulling hand tools
89	Operating computer system, the workshop has a computer system to print job cards and estimates, parts inventory management if parts are stored, and mainly capable to produce a final invoice for the customer
90	All gas cylinders that are used either for welding or tires inflating should always be stored vertically and the holders equipped with chains to protect them from falling
91	Availability of a generator or an alternative source of electrical power in case of power cut off

## Appendix 1F

Mandatory Requirements				
#	Suggested Classification	Applicable Activity	Applicable Size	Description
1	Core	All	All	AC gases R134, R1234 and R12 must be made available, and all should not be mixed together; gases must be kept in a clear status to identify them (It should be from a known supplier or reputable brand)
2	Core	All	All	The used engine oil must be obtained from a known supplier or reputable brand, the specification must match the serviced vehicles engines requirements, vehicles owners manuals can always be the reference to identify the suitable oil specification of the vehicles
3	Core	All	All	Hazardous materials must be stored in accordance with the classification and properties and according to the requirements of prevention and safety from the Civil Defense
4	Core	All	All	Material storage guidelines must be followed (ie. Expiry dates, storage temperatures and handling) according to Manufactures Safety data sheets
5	Core	All	All	Spare parts quality Only OEM or original parts must be used. Origin of parts should be declared to customer by vendor
6	Conditional Core	Body & Paint Activities	Medium & Large Workshops	Paint mixing system with a computer paint scale must be made available and staff must be trained on how to use it; it must be able to provide the colors' mixing formulas for the desired color codes (if the workshop provides the mixing service)

Optional Requirements	
#	Description
1	The workshop must use disposable seat covers and floor mats for every car that comes in
2	All consumable materials must be purchased from an authorized and licensed shop
3	Consumable materials that vary in shapes, colors, sizes, etc must be available in the workshop



## Appendix 1G

Mandatory Requirements				
#	Suggested Classification	Applicable Activity	Applicable Size	Description
1	Core	All	All	Customers cars receiving: it must be done by the service advisor using a receiving form at the presence of the customer or representative (signature is mandatory; a copy of the owner's registration card or ID is mandatory), the car to be checked exterior and interior for any damages or scratches or broken trims and all findings to be mentioned on the form also for any inoperative functions, windows, lights, horn, AC or others (at exit too). Also the customer must be advised to remove all belongings before handing over the car to the workshop.
2	Core	All	All	Quality control, All cars must go through a quality control check by supervisor or foreman after the required jobs are finished and before hand over to customers, quality control checklist should be used and signed and attached with the job card
3	Core	All	All	If the customer is paying for the repairs, then the expected cost of the required repairs including parts and labor must be agreed with the customer and written on the job card while receiving the car from the customer; costs always must always be agreed and approved before the jobs are performed
4	Core	All	All	Activity must be exercised inside the shop's boundaries only
5	Core	All	All	The workshop must have valid contact details (phone number and/or email address)
6	Core	All	All	Customer complaints must be recorded in writing and processed in line with the needs of the customer
7	Core	All	All	Customer and vehicle data / unit data for all orders must be recorded
8	Core	All	All	A final inspection must be carried out for each order by the person responsible for the workshop or service
9	Core	All	All	The invoice must be complete, clear and understandable to the customer
10	Core	All	All	Storage of the spare parts and consumables must be carried out according to the manufacturer's requirements (Expiration dates and special storing conditions must be taken into consideration)
11	Core	All	All	Inspections, servicing and maintenance activities must be recorded in a proper manner (e.g. Job Card, Work Order ...etc)
12	Core	All	All	Terms and conditions should be displayed in the reception and on repair orders, visible to customers.

Optional Requirements	
#	Description
1	The repair or service order must be assigned to a relevant personnel
2	The job card must include the details of the repair process and activities
3	The repair activities performed in the job card must be approved by a supervisor
4	The initial estimated cost must be provided to the customer or the insurance company within 48 hours of registering the car
5	The expected time needed to perform the job shall be indicated prior of starting the job
6	All cars must be handed over to customers cleaned and washed
7	A method to measure customer satisfaction must be put in place
8	Customer feedback shall be obtained after the delivery of the car
9	customers complains must be registered and followed up by management
10	Repairs manuals: the workshop should keep some general repair manuals as a reference for the technicians specially for engine, transmission and AC deep repairs
11	The company management must conduct a staff meeting at least once per quarter. Improvement measures and activities for increasing the orientation to the needs of the customer must be discussed and documented at the very least
12	A clear warranty policy that is clear to all staff must be displayed
13	The workshop should have valid contracts with all its suppliers
14	An electronic workshop management system (accredited is a plus point) must be used by the shop
15	A process of getting rid of damaged and scrapped parts must be available
16	A system of obtaining spare parts must be made available
17	One PC is required at least for every two service advisors, in order to keep track of customers records and agreed jobs and costs
18	Technicians should have an access to at least one PC connected to internet, this is to help them search the web to identify the suitable engine oil specifications and any other specific repair instructions for the vehicles under repair