



Technical Assignment of Škoda Auto a.s. Part I – 05 Environmental Protection

Contents

1. Principles.....	2
2. Permission.....	2
3. Disturbing the Surroundings by Noise.....	3
4. Waste liquidation.....	4
4.1 Principles.....	4
4.2 Assignment.....	4
5. Substances and Mixtures.....	5
5.1 Substances and Mixtures Harmful to Environment.....	5
5.2 Usage of Substances and Mixtures.....	5
6. Usage of Environmentally Friendly Cooling Devices in Air Conditioning.....	5
7. Energy Efficiency.....	6
8. Water Protection.....	7
8.1 Preventive Protection of Groundwater and Soil for Equipment with Substances Harmful to Water Environment.....	7
8.2 Waste Water from Production.....	8
9. Air Quality Management.....	8

Abbreviations (see Term Definition in part I-00 Structure of Assignment Conditions)

Change History

Status	Date	Description
1.0	1 Oct 2016	New wording
1.1	29 Jun 2018	Treatment of points 1, 3, 5.1, 7, 8 and 8.1



1. Principles

The VOLKSWAGEN group has set a goal for this period to improve by 2018 environment-relevant production indicators per manufactured vehicle or component (energy, CO₂, water, waste, solvent emissions) by 25% in comparison to 2010. Therefore, measures must be aimed on effective process concept, utilisation of innovative environmental technologies and permanently sustainable energy supply. Sub-suppliers of products/processes are also required to adhere to these policies.

By presenting the offer, the supplier confirms that they have access to the B2B supplier platform of the Volkswagen group (www.vwgroupsupply.com), are familiar with the information on environmental protection therein and comply with the implied requirements.

Therefore, they bear the responsibility for completing the subject of the delivery according to the law, the general purchasing conditions and internal technical standards of the ordering party, as well as meeting all the requirements regarding environmental protection in the following areas:

- Air protection,
- protection from noise,
- water protection,
- efficient using of materials and energy,
- waste management,
- protection of nature and soil.

Requirements and conditions for environmental protection and adherence thereof during the operation of the equipment made by the manufacturer are a part of the training which must be provided by the supplier as a part of the handover and an integral part of the performance.

All project intentions influencing environmental requirements must be approved with the relevant worker from the specialised department and the person responsible for environmental protection. If the works on the equipment are subject to expert responsibility, the supplier is obliged to present the ordering party with the relevant documentation prior to initiating the work.

The environmental policy, as well as the environmental policies of the Volkswagen group, must be known and adhered to by the supplier, their employees and sub-suppliers that work on the order. The supplier is to make sure to have clearly defined environmental responsibilities and procedures for their activities. Above all, they are obliged to inform their employees working in these plants about behaviour in accordance with the environmental goals.

The supplier is obliged to treat resources provided by the ordering party (pressurised air, electricity, water, heat, process material, consumable material etc.) efficiently.

2. Permission

All contacts with offices required to get the permit for environmental notification or approval must be sorted out via the person responsible for environmental protection. This person and the operator also sign all background documentation for the requests, notifications etc. The person responsible for environment then presents them to corresponding authorities. Required background documentation, such as plans, process description, operational regulations, as well as ownership receipts etc., must be provided by the supplier to their full extent and in the local language of the ordering party's plant, as well as the agreed language of the project. If the dates are not defined when the order is issued, it is the supplier's responsibility to communicate the binding date to the ordering party. When planning dates, processing and approval times etc. have to be taken into consideration (including potential time required for participation of the public at meetings).



When accepting the project, the supplier needs to cooperate with the relevant local environmental department to demonstrate that all the legally specified environmental conditions and obligations are satisfied. Costs related to such activity, such as costs for acceptance from the expert side or measurement costs, are to be covered by the supplier unless agreed otherwise in the contract.

3. Disturbing the Surroundings by Noise

The following specification applies for both new equipment as well as for extensions and noise reduction measures on the current equipment of the ordering party.

Noise emissions sent by the equipment into the surroundings need to be minimised according to the current noise reduction equipment. The acoustic power level of the source is to be defined by the plant's environmental protection department.

Noise emissions:

Škoda auto a.s. requires fulfilment of the following conditions:

- For a noise source in an outside area located at the site of the production plant at a distance of greater than 300 m from the nearest inhabited dwelling and whose area does not exceed 3.5 square metres (HVAC units and their exhausts and suction, compressor stations, cooling units, electric generators and transformers and windows, light fixtures, entrances to buildings with high noise levels), non-exceeding of noise level LAeq, T 70 dB(A) during period T of running of a source at a distance of 1 m from the source,
- For sources with an area greater than 3.5 square metres, non-exceeding of the acoustic output level LW Aeq 75 dB(A).
- For a noise source at a distance of less than 300 m from the nearest inhabited dwelling, or if it directly neighbours a dwelling, non-exceeding of the noise level LAeq, T during the day of 50 dB(A) and at night of 40 dB(A) during period T of running of the source at a distance of 1 m from the source. The maximum acceptable noise level of the source must be detectable by acoustic calculation, so that the acoustic contribution of the source at the boundary of the dwelling does not exceed 20 dB(A).

Noise reduction measures required to achieve guaranteed values exceeding the current state of the noise minimisation of equipment must be included separately in the order.

If the device produces sounds consisting of individual distinct tones, impulses and low frequency portions, the ordering party reserves a right to reduce the guaranteed value by the share of such tones and impulses. If it is not possible to uphold the guaranteed values despite the current equipment status, the supplier is obliged to state the acoustic power level of their equipment, point out the possible noise reduction measures and discuss a new guaranteed value with the corresponding planning department.

The device includes all machine parts that produce sounds, especially pipes, channels, covers, auxiliary equipment, discharge openings, air inlets and outlets etc.

At their own expense, the supplier is to demonstrate adherence to the guaranteed values within the framework of the specialized equipment acceptance unless agreed otherwise in the contract. The ordering party reserves the right to conduct their own acceptance tests.

Between 8:00 p.m. and 7:00 a.m., the noise-causing work may only be performed based on an agreement with the person responsible for environmental protection.



4. Waste liquidation

4.1 Principles

The concept of waste management must adhere to the following hierarchy of requirements, as well as take efficiency into consideration:

- Waste by-production needs to be prevented if possible.
- Waste volume needs to be reduced with regard to its quantity and/or harmful substance content.
- Waste needs to be assessed as a secondary resource or energetically.
- Waste disposal must be environmentally sound.

Machines and devices must be conceived so that they by-produce as little waste as possible when used.

If contaminated soil, groundwater, building materials or substances containing asbestos/mineral fibre are found during ground, demolition or disassembly works, the person responsible for environmental protection must be informed immediately.

Waste must be separated in a way that does not make the disposal overly expensive or prolonged, while achieving a high assessment rating. It is not acceptable to mix hazardous waste with other waste or mix wastes with unique disposal methods.

Waste must be marked and transported in accordance with national/international legislation.

When waste disposal has been finished, the supplier is obliged to present the related specialised waste management department (appointed by the person responsible for environmental protection) with all legally required documents on waste handling and transportation, as well as quantity data on individual waste types. Only after presenting those are all of the supplier's works to be covered, unless agreed otherwise in the contract.

The aforementioned specialised department of the ordering party's plant is available in case of individual questions.

4.2 Assignment

Unless the individual contractual provisions or legal obligations define otherwise, the following requirements are mandatory for the supplier:

Waste Disposal Priorities

Waste disposal must be done with prior approval of the related specialised department of the ordering party (with disposal method and cost declaration taken into consideration). If the waste disposal is unavoidable, these must be transported to waste facilities (junkyards) of the ordering party.

Waste from Ground and Underground Buildings, Equipment Construction and Extension

When constructing or extending buildings, transport areas or equipment, the supplier is obliged to take care of all hazardous and other waste and dispose of it in accordance with applicable legislation. For hazardous waste disposal, it is always necessary to give a prior notice to the specialised department of the ordering party. If the supplier is unable to classify the waste (to hazardous, other) by themselves in order to adhere to the obligations implied from 4.1, they are obliged to contact the person responsible for environmental protection. Potential verifications are to be initiated by the ordering party at their own expense.

Waste from Demolition and Disassembly Works

This obligation applies for waste by-produced by full or partial demolition or disassembly works or modification of buildings/equipment.

By-produced substances and waste, as well as equipment and its parts, remain in the ownership of the ordering party. The supplier is responsible for the preparation of the individual sorted waste types. If the supplier is unable to classify the waste (to hazardous, other) by themselves in order to adhere to the obligations implied from 4.1, they are obliged to contact the person responsible for environmental protection. Potential verifications are to be initiated by the ordering party at their own expense.



In case it is required to deploy containers suitable for storage of the sorted waste, the supplier is usually responsible for it, while taking into account that filled containers will be required for a maximum of 8 weeks.

The containers may also be deployed by the ordering party after an agreement with the specialized department. It is not acceptable to use the area within the plant as an in-process storage area for waste unless discussed with the ordering party.

5. Substances and Mixtures

5.1 Substances and Mixtures Harmful to Environment

It is forbidden to use asbestos, polychlorinated biphenyls, chlorinated hydrocarbons, chlorine-fluorinated hydrocarbons, halogenated chlorine-fluorinated hydrocarbons, cadmium, lead, mercury or HBCD. Other potential forbidden substances are listed in the national legislation and must be approved with the ordering party's person responsible for environmental protection.

The following substances/mixtures may only be used on the basis of approval of the ordering party or the person responsible for environmental protection and must be avoided if possible: chromium (VI), fluorinated hydrocarbons, SF₆, CMR substances (carcinogenic, mutagenic and toxic for reproduction), organic complex-creating substances, polyfluorinated/perfluorinated surfactants, cyanides, organic zinc compounds, sulphides and organosulphates, as well as substances/mixtures that are hard to biologically degrade.

Deployment/use of materials with fire retardant Hexabromcyclododecan (HBCD) (e.g. Polystyrene-based) is generally prohibited.

Substances and mixtures harmful to the environment may only be used by the supplier for the equipment construction/installation or operation if it is technically unavoidable. These substances and mixtures must be declared in the machine documentation, including confirmation of the possibility of their long-term disposal.

In case of an accident during the construction or installation involving such substances/mixtures, the fire protection department must be immediately notified via the emergency line so that specialised measures can be taken immediately. In this case, costs are charged to the supplier. In case of contamination of soil, groundwater or surface water, the supplier is to cover the remediation/treatment costs as well.

5.2 Usage of Substances and Mixtures

Substances and mixtures required for operation and serial maintenance of the equipment are non-productive process materials (auxiliary or operation substances) and may only be used once they are released according to the specifications of all relevant Czech and European legal and technical regulations, especially regarding package marking for hazardous chemical substances, mixtures and objects, provision of safety sheets and chemical substance registration.

Substances and mixtures may not influence wettability of paints. The supplier is obliged to present the ordering party with one-time samples of substances and mixtures for crater creation check. The supplier shall receive a report on the test.

The equipment must be dimensioned in order to minimise the solvent emissions into the surroundings when handling substances and mixtures. Solvent content in substances and mixtures must be as low as possible. It is also necessary to consider and demonstrate the efficiency and quality assurance of the products.

6. Usage of Environmentally Friendly Cooling Devices in Air Conditioning

For new equipment, do not use any cooling equipment with usage method altered by the international agreement on enactment of the Montreal Protocol. In case of installation of new devices, the deviances from this requirement must be clearly included in the offer. Cooling devices harmful to the ozone layer are not acceptable, and it is necessary to prioritise cooling devices with the lowest possible greenhouse gas potential (< 2500). It is necessary to verify if natural cooling means can be used instead of fluorinated hydrocarbons.



It is also necessary to prioritise usage of industrial cooling/air-conditioning devices over small ones.

Devices with greenhouse gas potential > 5 t CO₂ equivalent (amount of cooling agent x GWP) must be checked for leaks. Data on devices, such as their placement, cooling power, electrical power, type and amount of cooling agent in cooling/air-conditioning devices must be continuously documented in the electronic data processing system used in the related plant.

For repairs, maintenance and leak testing of cooling/air-conditioning devices, you may only employ certified personnel. It is also necessary to prevent any leaks of cooling agent.

7. Energy Efficiency

When designing, planning and manufacturing machines and devices, it is necessary to account for the expected energy consumption throughout the equipment lifespan. This energy consumption represents an important part of costs in the device lifecycle, making it a significant decision-making criterion for the tender and order assignment.

The supplier is committed to deliver an energy efficient machine device. In the design, they are to account for measures/concept for energy efficiency (e.g. control according to the device usage). The supplier must meet the following minimum requirements: If the individual group brands or business areas specify higher demands, those are applied instead.

Data below are considered minimum requirements for measuring devices and measurement points.

Different or higher requirements must be implemented according to specifications in the technical standards of the ordering party (ITS), or part II/III.

Stationary measurement must be installed for appliances with the following connection power:

- Electricity > 100 kVA (for manufacturing equipment, apply data listed in the part I-09 – Electrical Part of the Equipment or parts II and III),
- Heat > 500 kW,
- Cold water > 400 kW,
- Cooling water > 100 m³/h,
- Pressurised air 6 bar > 500 Nm³/h,
- Pressurised air 12 bar > 300 Nm³/h,
- Natural gas in case of all appliances.

Measurement access points for temporary consumption recording and/or acceptance and power measurement must be planned in case of the following connection types:

- Electricity > 30 kVA (for manufacturing equipment, apply data listed in the part I-09 – Electrical Part of the Equipment)
- Heat > 50 kW,
- Cold water > 100 kW,
- Cooling water > 14 m³/h,
- Pressurised air 6 bar > 100 Nm³/h,
- Pressurised air 12 bar > 100 Nm³/h,

In addition:

- When acquiring new equipment, it is necessary to install asynchronous motors (0.75 kW to 375 kW) with efficiency level IE3 and/or preferably according to IEC 60034-30:2008. For substitute powering of existing equipment, exceptions may be permitted following approval with the ordering party.
- If using three-phase induction motors, it is necessary to adhere to the directive mentioned in part I-09, or parts II and III.
- Frequency converters and suitable means of control are required to adapt the rotation speed to the needs.
- Choke or by-pass control for rotor systems is resoundingly forbidden.
- When switching on or running in, power peaks must be kept at minimum level.
- Prevent requirement of pressurized air if possible.
- Pressurised air devices must be dimensioned to 6 bar, higher pressure may only be produced in exceptional cases.
- It is necessary to utilise waste heat.
- The heat may only be generated electrically in isolated cases, which need to be approved by the ordering party.



- For appliances that require cooling, it is necessary to prefer free cooling if technically possible.
- During the process of selecting a supplier, energy and utility consumption at the facility will be taken into consideration. During the acceptance process, IST and SOLL data will be compared. The exact data are specified in the technical-specific parts of the Documentation.

Efficiency must be considered and demonstrated for the aforementioned requirements. Deviances are subject to approval by the ordering party and shall be explicitly included in the offer.

8. Water Protection

The devices have to be dimensioned and operated with regards to fresh water conservation. It is necessary to prioritise usage of re-processed or recycled water over fresh water. The devices should be equipped with suitable meters. Use of chemicals should be minimised.

If possible, environmentally hazardous substances should be substituted with less hazardous substances (see Chapter 5).

8.1 Preventive Protection of Groundwater and Soil for Equipment with Substances Harmful to Water Environment

Equipment in which water comes into contact with pollutants, secondary safety protection must always be ensured (2 barrier principle).

In the event of failure of the first wall, which surrounds the water pollutant, the second, tight and sufficiently dimensioned capturing device must safely prevent water pollutants from escaping into the environment.

This equipment must be tight and sufficiently resistant against expected mechanical, temperature and chemical effects. Single-wall underground reservoirs and pipes are not acceptable.

Lack of tightness in any parts of the equipment coming into contact with water pollutants must be quickly and reliably detectable. Reservoirs in equipment for treatment of these substances must be secured against over-filling.

In the event of a leak, the substances must be quickly and reliably detectable, captured and diffused or properly liquidated. The equipment must be fitted with a tight, permanent and resistant capturing space, if not created as double-wall structures, and must be equipped with a device for detecting breaches of tightness.

In case of fire, the water must be used for extinguishing, or cooling and spraying water must be captured and evaluated, or properly liquidated following approval from a person responsible for environmental protection and from the ordering party's project manager (Measures specific according to the facility or use of existing features of the construction).

Work must be performed in a way that prevents the risk of soil or ground water pollution. If such pollution occurs or is discovered nonetheless, then the emergency line must be used immediately to inform the facility guards, followed by the person responsible for environmental protection, and the Client's Project Manager.

If the supplier requires data necessary for producing a list of equipment that could jeopardise the environment, it must be provided in accordance with the requirements of the General Purchasing Terms and Conditions of ŠKODA Auto.

The Supplier is required to provide documentation regarding equipment, which shall contain basic information about it. This shall include in particular data about the structure and definition of the equipment, about used materials, about the development method and about materials of individual parts of the equipment, safety and protective devices, retention fire extinguishing water, static calculations, tests of capability, approval, permits, etc.



8.2 Waste Water from Production

It is necessary to prevent by-production of waste water.

As long as technologically and economically possible, the waste water must be treated so that the substances contained therein can be recycled.

Waste water that is produced inevitable during production or operation can be discharged into sewage or waste water treatment plant after an agreement with the person responsible for environment and the local operator.

It is necessary to prevent and minimise pollution by substances contained in technological baths. Multi-step washing devices must be constructed in cascades.

Rainwater should not be discharged; it should be used for company purposes if possible.

9. Air Quality Management

Collection and discharge of waste air must be conceived in accordance with construction-technical requirements and work hygiene requirements. The supplier is to verify if it is necessary to clean the waste air according to legal specifications and must offer suitable cleaning equipment. The supplier is obliged to adhere to the additional requirements implied from the approval process of specific devices and the plant permissions and obtain them from the corresponding planning personnel.

It is necessary to prioritise central deaeration devices and waste air cleaning equipment over decentralised ones.

It is necessary to make sure to keep the amount of waste gases (flowthrough volume) as low as possible and continuous. Equipment that by-produces air pollutants must be enclosed if technically acceptable.

Waste air must be discharged in a way that allows its smooth discharge along with free air flow.

Waste air treatment equipment must be provided with indication of potential deviances from proper operation (e.g. defective filter, full volume). In individual cases, it is necessary to consider automatic notice to the control centre – after a discussion with the ordering party.

If there is a danger of exceeding the limit values in case of the device outage, it is necessary to consider forced shutdown of the device that produces the waste air – unless agreed otherwise with the ordering party.

The inspection openings must be designed for all exhaust devices / chimneys – unless agreed otherwise. Measurement holes allowing for standard-defined sampling must be made for all ventilation holes containing harmful substances with emissions that need to be monitored in accordance to legal specifications or requirements necessary to get permission, as well as places that can contain amounts/concentrations of harmful substances equal to 30% of the applicable limit value during normal operation.

The maintenance and disposal concept must be such that no separated substances (such as dust or volatile organic substances) can leak into the work area or the device's surroundings during the device maintenance or waste disposal.