

Machinery Safety Specification

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Appendices

The appendices that are listed below and within the Minimal Safety Requirements – Equipment and Machinery are not attached to this document. These appendices are subject to updates when changes are implemented.

List of Minimal Safety Requirements – Equipment and Machinery appendices:

Appendix A: Requirements and Standards - Regional Requirements

Appendix B: ConSense Process “Equipment and Machinery Safety Requirements”

1. INTRODUCTION

1.1. Scope

The purpose of this document is to ensure that all desired equipment meets applicable Environmental, Health and Safety (EHS) requirements, ensuring that equipment is properly guarded against conditions that could result in injury or property damage and the risk is reduced to reasonably practical level.

The supplier is responsible for ensuring that all equipment as identified in the quotation complies with all applicable standards (ISO, ANSI, CSA, EC, etc.) as defined in this document, documents referenced in this document, and with local regulations.

The norms/standards and regulations contained in this document must be followed.

The supplier shall recognize that certain Autoneum requirements can be more stringent than local regulations.

This document applies to all:

- New production equipment, machinery, and infrastructure facilities
- Refurbished production equipment and machinery, and infrastructure facilities
- Second-hand production equipment and machinery, and infrastructure facilities

1.2. Definitions According to Directive 2006/42/CE and ISO 12100

“Machinery”

- an assembly of linked parts or components, at least one of which moves, with the appropriate actuators, control and power circuits, etc., joined together for a specific application, in particular for the processing, treatment, moving or packaging of a material,
- an assembly of machines which, in order to achieve the same end, are arranged and controlled so that they function as an integral whole,
- interchangeable equipment modifying the function of a machine, which is placed on the market for the purpose of being assembled with a machine or a series of different machines or with a tractor by the operator himself in so far as this equipment is not a spare part or a tool;

“Production Equipment”

- all devices/apparatus/machinery intended for use in Autoneum Group products manufacturing, directly or in a peripheral manner,
- machinery whose only power source is directly applied manual effort, unless it is a machine used for lifting or lowering loads,
- thermal oil and steam boilers, tanks and pressure vessels,
- means of transport intended for use in Autoneum Group products manufacturing.

“Hazard”

- a source or situation with a potential to cause harm in terms of injury, ill-health, damage to property, damage to the environment, or a combination of these
- is either permanently present during the intended use of the machine or can appear unexpectedly

“Risk”

- Combination of the probability of occurrence of harm and the severity of that harm
- Risk = severity of harm x likelihood of occurrence.

“Residual Risk”

- Risk remaining after protective measures have been implemented

“Risk Analysis”

- Combination of the specification of the limits of the machine, hazard identification and risk estimation

“Risk Evaluation”

- Judgment, on the basis of the risk analysis, of whether the risk reduction objectives have been achieved

“Risk Assessment” overall process comprising a risk analysis and a risk evaluation

“Protective Measure”

- A measure intended to achieve risk reduction implemented by the designer through safe design, safeguarding and protective measures, information for use and/or
- A measure intended to achieve risk reduction, implemented by the user through safe working procedures, supervision, use of PPE, training, etc.)

“Safeguarding”

- protective measure using safeguards to protect persons from the hazards which cannot reasonably be eliminated or risks which cannot be sufficiently reduced by inherently safe design measures

1.3. Supplier Assessment

Prior to sourcing, suppliers must undergo a supplier EHS assessment by Autoneum in order to ensure requirements are met.

The supplier must conform to all EHS requirements as set out in the assessment in order to be approved. If requirements are not met, the supplier will provide Autoneum with an action plan and verifications of completed actions. After Autoneum deems the corrective actions acceptable, the supplier can be sourced.

2. GENERAL REQUIREMENTS

2.1. Compliance with Regulations and Standards

All production equipment must be compliant with applicable laws and standards and in particular with the codes and standards in this document, in referred documents and in equipment specifications, where applicable.

2.2. Risk Assessment – Design Stage

A risk assessment of the equipment is required to be completed by the supplier (if qualified) or a qualified 3rd party during the design stage in order to:

- Assess the risk of bodily harm or technical damage that could result from identified hazards, covering all stages of the production equipment lifetime (from design to final decommissioning)
- Determine the degree of protection and the type of safeguard to be provided
- Ensure that all the preventive measures (design or information) have been taken into account

The assessment method must be completed during the design phase according to the standards listed in Table 1 Risk Assessments in Appendix A – Requirements and Standards – Regional Requirements.

During the risk assessment, proven methodologies must be used, such as:

- Deductive Method
- Failure Tree
- Inductive Method:
 - Risk Estimation Tools: Hazardous Rating Number (HRN)
 - FMEA
 - Preliminary Hazard Analysis

To implement risk assessment and risk reduction the supplier shall take the following actions, in the order given:

- a) determine the limits of the machinery, which include the intended use and any reasonably foreseeable misuse thereof;
- b) identify the hazards and associated hazardous situations;
- c) estimate the risk for each identified hazard and hazardous situation;
- d) evaluate the risk and take decisions about the need for risk reduction;
- e) eliminate the hazard or reduce the risk associated with the hazard by means of protective measures.

Whenever required, protective measures must be implemented to eliminate hazards as far as practicable to adequately reduce risks. If at any point in the project Autoneum deems the risk is higher than an acceptable level or a hazard still exists after measures taken, the supplier must take action to reduce the risk.

The risk assessment is to be recorded and kept by the supplier, but also must be presented to Autoneum representatives as a part of design acceptance. The risk assessment report submitted must be accompanied by the qualifications of the assessor (i.e. Certified Machinery Safety Expert, CMSE).

2.3. Hazards

The supplier must take in consideration all hazards when designing and constructing equipment or machinery and follow the requirements in Table 2 Hazards in Appendix A – Requirements and Standards – Regional Requirements.

2.4. Protection Against Fire and Explosion

All equipment and machinery must be designed and constructed to avoid all risk of fire, overheating, or explosion posed by the machinery itself or by gases, liquids, dusts, vapors or other substances produced or used by the machinery.

The supplier will follow the requirements listed in Table 2.1 Protection Against Fire and Explosion in Appendix A – Requirements and Standards – Regional Requirements when identifying hazards and performing a risk assessment. The supplier will utilize these codes and standards during the design and construction, to ensure all applicable requirements are met.

Fire and explosion hazards must be integrated in the mandatory Risk Assessment. For any identified risk of fire or explosion, the supplier is to propose technical solutions in compliance with the above codes and standards.

2.5. Ergonomics/Lighting

General ergonomic principles must be followed and applied in the design and construction of the equipment, its controls, its guards and safeguarding systems. Under the intended conditions of use, the discomfort, fatigue and physical and psychological stress faced by the operator must be reduced to the minimum possible, taking into account ergonomic principles. Appropriate fluorescent lighting has to be provided in areas where operators are working, areas with frequent inspections and adjustments, and maintenance areas. The supplier will ensure the requirements listed in Table 2.2 in Appendix A – Requirements and Standards – Regional Requirements are met and all equipment and machinery provided is designed in accordance to conform to these standards.

2.6. Noise/Vibration

The supplier shall obtain and understand the applicable legal requirements regarding noise levels and vibrations in the workplace from the Autoneum Project Manager or any other competent staff. Minimum noise levels must be compliant with local legal requirements as per the requirements listed in Table 2.3 in Appendix A - Requirements and Standards – Regional Requirements.

The noise level has to be properly measured at the supplier's facility, free from any other noise sources. Noise measurement techniques shall conform to those listed in Table 2.4 in Appendix A - Requirements and Standards – Regional Requirements. An acoustic measurement sheet, attesting the noise of level of the

production equipment, has to be presented to the recognized institution during the conformity control and also to Autoneum representatives. It must also be attached to the instructions manual.

Equipment must be designed and constructed so that risks resulting from the emission of airborne noise and vibrations produced by the equipment are reduced to the lowest level. The supplier is responsible for implementing noise reduction techniques to comply with the noise levels required before the equipment is put into service for production. If equipment or tools that are handheld generate vibrations, provisions must be made for special vibration resistant handles or holding devices.

2.7. Radiation

Equipment must be designed and constructed that any emission of radiation is strictly compliant with any applicable laws and limited to the extent necessary for its operation and that the effects on people are non-existent or reduced to non-dangerous proportions. This includes UV, visible lights, lasers, and radio frequency. The supplier will follow the requirements for radiation as listed in Table 2.5 in Appendix A – Requirements and Standards – Regional Requirements

2.8. Extreme Temperatures

Preventive measures must be taken to eliminate or, if not possible, reduce any risk of injury caused by contact with or due to proximity to equipment or materials at very high or very low temperatures. The supplier will ensure the requirements listed in Table 2.6 in Appendix A – Requirements and Standards – Regional Requirements are met and all equipment and machinery provided is designed in accordance to conform to these standards.

2.9. Emissions of Hazardous Substances

Preventive measures must be taken to eliminate or, if not possible, reduce any risk of injury caused by contact with or due to proximity to hazardous materials or substances that are emitted by the equipment or machinery. The supplier will ensure the requirements listed in Table 2.7 in Appendix A – Requirements and Standards – Regional Requirements are met and all equipment and machinery provided is designed in accordance to conform to these standards.

2.10. Chemical Agents

The supplier must follow all requirements as listed in Table 2.7.1 in Appendix A – Requirements and Standards – Regional Requirements to ensure that risks related to chemical agents are eliminated or minimized as reasonably practicable and classification, labeling and packaging of substances and mixtures regulations are followed where applicable

2.11. Signs/Warnings

If notices, signs, or warnings are required after deemed necessary due to residual risks, the supplier will ensure the requirements listed in Table 2.8 in Appendix A – Requirements and Standards – Regional Requirements are met and all equipment and machinery provided is designed in accordance to conform to these standards.

2.12. Environmental and Sustainability Considerations

All equipment and machinery must be designed and constructed to ensure environmental requirements are met as per Table 2.9 in Appendix A – Requirements and Standards – Regional Requirements.

Where a risk of release to the environment exists, equipment and machinery must be equipped in a way so that any substance can be contained and/or evacuated. The devices for containment and/or evacuation must be installed as close as possible to the source of emission.

Energy savings during design must be considered when selecting types and sizes of components. It must be designed to provide the lowest possible energy consumption. To reduce loss of energy, the supplier must ensure components are properly insulated. The temperature of the body of the machine or equipment must not exceed 40 degrees Celsius.

2.13. Equipment Breakdown

The supplier must consider that the equipment is selected or specified to provide for safety in use, and will be operated within its rated limits when it is put to its intended use. All components shall be selected or specified so as to ensure that they can operate reliably under all intended uses of the equipment. Particular attention shall be paid to the reliability of components that can cause a hazard in the event of their failure or malfunction.

2.14. Life Cycle Principle

The supplier must consider and eliminate any environmental, health or safety risks throughout the foreseeable lifetime of the equipment. All phases of the life of the equipment shall be considered including: transport, assembly, operation, maintenance, dismantling, disabling, and scrapping.

3. ENGINEERING AND DESIGN

3.1. General

All production equipment has to be designed and constructed so that they are in full compliance with the standards listed in this document and the equipment specifications.

First, risks must be reduced through the intrinsically safe design concept. All remaining risks identified shall be reduced by design before considering safeguarding or other controls. All hazards that cannot be eliminated shall be guarded against.

3.2. Design Acceptance

Based on the individual specification of the specific purchase order, the supplier shall issue the necessary construction design documents and forward them to Autoneum. Autoneum will review for possible changes. If necessary, the parties shall agree on a new individual specification, which shall replace the original individual specification and form the new basis of the manufacture of the production equipment. A new plan of action will be drawn up by both parties and agreed on, in which the obligations of each party are specified and detailed.

Autoneum shall approve and release the construction documents to the supplier in writing when no faults or missing parts are found, without having to assume responsibility for their correctness and completeness. The supplier is obliged to correct faults in the construction documents immediately after their discovery, at any time, and following prior approval from Autoneum. The Supplier must finalize the complete construction design and correct any faults within the time limit specified in the time schedule.

3.3. Safeguarding

3.3.1. General

During design, the supplier shall incorporate general machinery safety standards as listed in Table 3.1 in Appendix A - Requirements and Standards – Regional Requirements.

All safeguarding set-ups must meet the requirements as set out in the following standards listed in Table 3.2 in Appendix A – Requirements and Standards – Regional Requirements.

All safety devices, interlocks, and safeguarding shall be in place and operational prior to runoff. A written report on safeguarding device set-ups and calculations in regards to approach speeds and response times in accordance with the applicable standards and regulations shall be provided by the supplier to Autoneum prior to start of production.

The supplier is required to provide a complete plan to perform inspections of safety systems and devices which includes: procedures, frequency, a drawing with check points, materials/equipment to be used. This plan must be attached to the instructions manual along with calibration instructions of certain components or devices (i.e. sensors).

3.3.2. Guards

Guards must be robustly constructed and able to withstand, for the period of their working life, the conditions under which they must work.

Guards that will provide the required degree of protection within the operational requirements of Production Equipment, shall be selected within the proposed range of guard types as listed in the

standards in Table 3.2.1 Guard Selection in Appendix A - Requirements and Standards – Regional Requirements.

If permanent means of access to machinery is necessary for production requirements, the supplier will ensure that the requirements are met.

Barrier guards are the preferred means of safeguarding. Where it is not feasible to fit guards, safeguarding devices that detect the presence of a body or part of a body in, or approaching the hazard zone can be used.

Barrier Guards: Fixed and movable guards will be constructed and meet the requirements listed in Table 3.2.2 Barrier Guards in Appendix A – Requirements and Standards – Regional Requirements.

Where possible, a barrier guard shall be hinged at the point of access rather than require lift-off when access is needed.

If maintenance must be performed within a fenced area or barrier guard while the machine is energized, additional guards must be in place to prevent access to hazards.

Interlocking devices must be actuated as the guard moves from the safe position. Where motion is still present after the stoppage of the equipment or through activating an interlock, interlocks will be timed or have motion sensors to ensure access is restricted until all motion ceases.

Pressure-Sensitive Protective Devices: Where pressure-sensitive protective devices are used the supplier must ensure that these devices meet the requirements as set out in the standards listed in Table 3.2.3 in Appendix A – Requirements and Standards – Regional Requirements.

Electro-Sensitive Protective Equipment: When applicable, the supplier will ensure that electro-sensitive protective equipment complies with the requirements as listed in Table 3.2.4 Electro-Sensitive Protective Equipment in Appendix A – Requirements and Standards – Regional Requirements.

Two-hand Control Devices: The use of two-hand control devices alone is not a preferred mean of safeguarding and should only be used when all other safeguarding methods are impractical. If applicable, the supplier will ensure that two-hand control devices comply with the requirements as listed in Table 3.2.5 Two-Hand Control Devices in Appendix A – Requirements and Standards – Regional Requirements.

3.3.3. Control Systems

The supplier must ensure that control systems are in compliance with the requirements as listed in table 3.2.6 Control Systems in Appendix A – Requirements and Standards – Regional Requirements.

The risk assessment will assist the supplier in determining the control system performance level required. The supplier is encouraged to utilize the standards in Table 3.2.6 Control Systems in Appendix A – Requirements and Standards – Regional Requirements when reducing the risk of harm.

The minimum required performance level is PL =C. If the risk assessment indicates a higher performance level as required, the supplier must follow the highest level requirement.

The supplier will validate the specified safety functions prior to equipment start-up at the Autoneum facility in accordance with the requirements in Table 3.2.7 Validating Control Systems in Appendix A – Requirements and Standards – Regional Requirements. A copy of the report shall be provided to Autoneum prior to operation.

3.3.4. Emergency Stop Switches

Emergency stop switches shall be provided on every machine unless it can be shown that such a device would not contribute to minimizing the risk. They must be located at easily accessible points around the machine and clearly identified.

All emergency stop devices must comply with the requirements in Table 3.2.8 Emergency Stop Switches in Appendix A – Requirements and Standards – Regional Requirements

3.4. Control of Hazardous Energy – Lockout Tagout

The equipment shall be designed to facilitate total lockout and isolation from all energy sources and the release of stored energy. This includes, but is not limited to, electrical, pneumatic, hydraulic, gravity, and kinetic energy. The equipment must meet the requirements as listed in Table 3.3 Control of Hazardous energy – Lockout Tagout in Appendix A – Requirements and Standards – Regional Requirements.

Before final acceptance of the equipment, the supplier shall furnish for approval lockout tagout instructions. These instructions shall include:

- a. The description and location of each energy isolating device and storage device
- b. The actions to be performed to de-energize, block, and/or release stored energy
- c. Method of verification to ensure that equipment is de-energized and stored energy is released or blocked
- d. Procedures to safely restore the machine to service

3.5. Machine Controls

Operator and maintenance controls shall be located outside of all safeguarding devices and away from any hazards. Operators must not be required to reach past or in close proximity to, revolving spindles, moving tools, moving machine or equipment elements, to reach control buttons, switches, or valves.

Cycle start buttons, palm buttons, and operating valves shall be located so that they are out of any possible contact with the operator's body during the loading and unloading process and require deliberate manipulation by the operator to cycle the equipment.

3.6. Engineering

Before starting the manufacturing of the production equipment, all wiring, hydraulic, and pneumatic diagrams and the list of used components/devices has to be approved by Autoneum at the Design Acceptance stage.

The general design and construction of electrical, hydraulic, and pneumatic circuits must comply with the requirements as listed in Table 4 Engineering in Appendix A – Requirements and Standards – Regional Requirements.

Preventive measures must be taken to eliminate or, if not possible, reduce any risk of injury caused by contact with or due to electrical equipment. The supplier has to consider all hazardous electrical circumstances during all usage phases and the lifetime of the equipment, (e.g. failures/ faults in the electrical equipment, disturbances/disruption in power sources, loss of continuity of circuits due to sliding or rolling contact etc.) in the risk assessment as outlined in section 2.2 of this document.

Any additional requirements and arrangements will be designed and constructed according to the equipment specifications provided by Autoneum.

3.7. Other Requirements

Depending on the equipment or machine being produced, the supplier agrees to ensure the standards listed in 4.1 Other Requirements in Appendix A – Requirements and Standards – Regional Requirements are met, where applicable.

4. CONSTRUCTION AND MANUFACTURE

4.1. General

After design acceptance, the supplier shall manufacture and assemble the production equipment at the supplier's facility. Autoneum can verify the progress of the development and construction work at any time and accompanied by representatives of the OEM (Automotive Manufacturer) with prior notice, during normal hours of business in the facility of the supplier.

4.2. Tools

If the production equipment contains a tool, the following shall apply:

- If the tool has to be delivered by the supplier according to the equipment specifications or if the tool is already available at the Autoneum site, the supplier shall be responsible for the installation of the tool in the equipment
- If another supplier has to deliver the tool, the supplier of the equipment and the supplier of the tooling are jointly responsible for the correct installation.

5. PRE-ACCEPTANCE

5.1. Test-Run

Following completion of construction, a test-run of the equipment shall take place at the facility of the supplier for pre-acceptance testing. The correct design of all parts of the equipment shall be tested. These tests shall be carried out as specified in the equipment specifications – with or without an installed tool (if provided), with or without materials.

5.2. Conformity

During pre-acceptance testing directives and standards as listed in this document and its appendixes shall be verified for compliance by a recognized institution.

The conformity control will be performed by a recognized institution (e.g. Norisko, Veritas, TÜV). The Supplier/Manufacturer must check that the recognized institution has all the necessary agreements at the control date. If not, the Supplier will send to Autoneum Group the complete contact details of another recognized institution of its choice.

The recognized institution conformity control cost is at the Supplier expense. Two (2) copies of the control report will be provided to Autoneum. In addition, the Supplier/Manufacturer must ask the recognized institution to send the control report directly to Autoneum representatives.

All the findings and remarks noticed in the conformity control report, and especially the non-conformed ones dealing with health and safety requirements, must result in corrective actions at the entire Supplier/Manufacturer expense, and with the approval of Autoneum Group. Defects shall be eliminated immediately by the supplier at its own expense, so that pre-acceptance can take place within the deadline specified in the time schedule. If required by Autoneum, the supplier may eliminate defects at the Autoneum site.

All production equipment must comply with applicable laws and regulations as well as with the directives and standards as listed in this document and related appendixes as well as all other applicable directives.

5.3. Risk Assessment

A re-evaluation of the risk assessment completed in the design stage shall be completed by the institution in 5.2. to ensure that protective measures are implemented to eliminate hazards as far as practicable to adequately reduce risks.

Autoneum representatives will review the risk assessment and machinery during pre-acceptance. If Autoneum deems the risk is higher than an acceptable level or a hazard still exists after measures taken, the supplier must take action to reduce the risk.

5.4. Pre-Acceptance Report

Autoneum will provide the supplier with a pre-acceptance report if no defects are detected, risks are reduced to the lowest feasible extent and conformity control is verified, or if Autoneum has approved defects/hazards to be eliminated/reduced at the Autoneum site.

Upon receipt of the pre-acceptance report, the supplier can release the equipment for transportation to Autoneum facilities.

6. DELIVERY & ASSEMBLY

6.1. Delivery and Unloading

After successful pre-acceptance tests, the supplier will transport the equipment to Autoneum and assemble it at Autoneum's site. The transportation will be carried out by the supplier on its own cost and risk to the destination specified by Autoneum in the purchase order or in accordance with a written adaptation in the purchase order. Prior to delivery, the supplier will provide Autoneum with a statement of the methods to be used and a risk assessment for delivery and unloading of the equipment.

The supplier shall unload the equipment upon its arrival at its own cost and sole responsibility. Autoneum will provide on its own cost the necessary tools for unloading and, where needed, employees to assist with unloading; irrespective of the sole responsibility of the supplier for the unloading.

6.2. Assembly

Assembly of the equipment shall be carried out by the supplier in the area of the Autoneum building as indicated in the specifications. If a tool has to be integrated into the equipment, the installation shall be carried out as outlined in section 4.2. of this document.

Before beginning installation, all employees from the supplier must undergo site-specific safety training through the site's contractor management procedure explaining the rules at the Autoneum Site.

6.3. Insurance

The supplier must ensure that the production equipment is sufficiently insured from the point of its arrival at the Autoneum site and for the duration of the assembly process. These costs shall be borne by the supplier.

The insurance policy must cover the risk of loss of, or damage to, the production equipment, as well as the risk of damage caused by the production equipment.

The supplier shall provide proof of insurance to Autoneum before the equipment arrives by submitting the relevant written documentation.

7. START-UP & PRE- PRODUCTION TESTS

7.1. Start-up

Putting the production equipment into operation at the Autoneum site must be carried out under the responsibility and supervision of the supplier.

During the start-up phase, the equipment shall be put into operation, one piece at a time, until the production equipment is capable of manufacturing the automotive parts in series according to the contractual specifications.

If the equipment is fitted with a tool, the start-up must be conducted in the presence of the supplier of the tooling.

During the first phase of start-up, the equipment with the installed tools shall operate fault-free without materials and shall perform the contractually agreed upon specifications during pre-production tests (7.2.)

During the second phase, the equipment must operate fault-free with materials and tools and perform the contractually agreed upon specifications. In particular, the equipment is suitable for the series production of the automotive parts specified in the individual specification. This is established during final acceptance tests (8.1.)

During start-up, the supplier will provide training and instruction to Autoneum's operating and maintenance staff according to the General specification of the equipment.

7.2. Pre-Production Tests

Following assembly and initial start-up, operation tests without materials shall take place in accordance with the conditions set out in the general specifications. At this time, Autoneum will reconfirm that conformity control has been completed as per section 5.2. If Autoneum chooses to re-verify compliance with conformity control directives that were completed, the costs will be borne by Autoneum.

Where required, Autoneum will also ensure CE Marking.

Autoneum representatives will review the risk assessment and the machinery during pre-production testing. If at any part during the pre-production testing Autoneum deems the risk is higher than an acceptable level or a hazard still exists after measures taken, the supplier must take action to reduce the risk.

If defects or hazards are revealed, or Autoneum deems the risk to be too high, these deficiencies must be eliminated immediately by the supplier at its own cost so pre-production acceptance can take place within the deadline specified in the time schedule.

7.3. Pre-Production Acceptance

Autoneum will provide the supplier with a pre-production approval if no defects are detected, risks are reduced to as low as reasonably practicable and conformity control is verified.

8. ACCEPTANCE

8.1. Final Acceptance Tests

After the successful termination of pre-production tests, running tests will be conducted in which the specified automotive parts are produced using materials and tools provided by Autoneum as set out in the general specifications. The final acceptance tests will include the evaluation of the completion of the equipment and that it is suitable to produce automotive parts in series according to the specification.

8.2. Risk Assessment

Autoneum representatives will review the risk assessment and the machinery during and before final acceptance. During the final acceptance testing, Autoneum will conduct an internal risk assessment. If at any part during the acceptance stages or during the internal risk assessment, Autoneum deems the risk is higher than an acceptable level or a hazard still exists after measures taken, the supplier must take action to reduce the risk.

The final risk assessment shall be recorded and kept by the supplier, but also presented to Autoneum representatives as a part of acceptance. The risk assessment report submitted must be accompanied by the qualifications of the assessor (Certified Machinery Safety Expert, CMSE, at minimum).

If defects or hazards are revealed, or Autoneum deems the risk to be too high, these defects must be eliminated immediately by the supplier at its own cost so final acceptance can take place within the deadline specified in the time schedule.

8.3. Other Documents for Acceptance

Before final acceptance of the equipment, the Supplier shall, in addition to the standard documentation, furnish for approval a consolidated manual of safety information that details potential hazards associated with operating or maintaining the equipment. This manual shall particularly include:

- Introduction and overview of the hazards associated with the equipment. This includes the anticipated emission levels of any radiation, gases, vapors, fumes, dusts, and mists;
- The risk assessment reports as outlined above, including risk reduction and safety control system levels;
- The EC Declaration of Conformity (where applicable);
- If required, a glossary of terms;
- A detailed description and drawing of safeguarding and controls;
- A complete plan to perform maintenance inspections. This includes detailed operating procedures, frequencies, a drawing with check points, materials/equipment to be used.
- Plan for performing inspections of safety systems and devices, including calibration instructions;
- An acoustic measurement sheet, attesting the noise of level of the production equipment;
- Safety precautions for operators including: PPE, Emergency shutdown procedures, chemical hazards and precautions;
- Hazardous Energy Control procedures/Lockout Tagout instructions;

- Safety precautions for maintenance personnel, including procedures for maintenance that shall be performed while the equipment is energized;
- Housekeeping considerations;
- Any known byproducts or waste material generated by the equipment process; and
- Safety Data Sheets (SDS) for all chemicals, liquids, coolants, lubricants, dielectric materials, etc. that will be used;

8.4. Final Acceptance Certificate

Autoneum will provide the supplier with a final acceptance certificate if no defects are detected, risks are reduced to the lowest feasible extent, conformity control is verified, and all other documents as listed in 8.3. are approved by Autoneum. Up to one calendar year after final approval, if deviations are found, the supplier is responsible for the cost of any actions required to reduce the risk to the level acceptable.

If the supplier fails to remediate or make up for neglect of duties stipulated in this document, particularly fails to eliminate the defects or hazards immediately, Autoneum shall be entitled to claim damages. If the supplier fails to eliminate defects or hazards within a reasonable time frame determined by Autoneum, Autoneum shall be entitled to withdraw from the respective purchase order.

Revisions history

Revision	Date	Writer	Description
00	01.11.2019	Group Q&EHS	Initial release