

**ESAD S 2022**

**Questionnaire & Guidelines**

  

Version 12/04/22

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| **ESAD S - Questionnaire & Guidelines - English version -** **2022 - New text in blue** |  **Comments Compulsory**  |
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| **Item N°** | **Question** |  | **Guideline** |  |
|  |  |  | **Complementary to the guidelines below, please find three attachments which further describe and illustrate the requirements and the associated good practices (inserted at the end of this questionnaire).Attachment 1: ATEX Assessment.Attachment 2: Good Practice for Discharge of Flammable Liquids.Attachment 3: Examples of Fire Fighting Equipment/Capability.** |  |
| **1.** | **The Site In General** |  | **The Site In General** |  |
| **1.1.** | **Site Infrastructure** |  | **Site Infrastructure** |  |
| 1.1.1. | Is the restriction for non-smoking respected? |  | It has to be clearly indicated that smoking is prohibited and that this is also followed and controlled. Check that there are no cigarette butts on the floor of the areas where smoking is prohibited. |   |
| 1.1.2. | Are traffic flow directions clearly marked? |  | Are these site requirements clear to visiting drivers? Ideally the requirements should be documented in the site risk assessment. For examples of good practices for site access, refer to national authorities guidance or the "Best Practice Guidelines for Safe (Un)Loading of Road Freight Vehicles", Part C, Annex 2.Whilst establishing whether traffic flow directions/notices are clearly marked, checks should be made to establish that the traffic flow is free from obstructions. |   |
| 1.1.3. | Are yards, roads, paths and steps, properly surfaced, in good condition, clean and free from obstructions ? |  | Are yard and road surfaces suitable for the operations being carried out?Are paths well surfaced?Are all steps in good condition and free from obstruction?Are there adequate guardrails for walkways and handrails for steps? |   |
| 1.1.4. | Is vegetation controlled in fire risk areas ? |  | Excessive vegetation must be controlled within risk areas such as those surrounding the storage areas. |   |
| 1.1.5. | Is the following waste segregated for disposal/recycling in a safe and practical way and are waste bins available and emptied regularly?  |  | Look for appropriate waste transfer notes. Check that the waste containers are correctly identified, labelled and contain waste properly segregated. |   |
| 1.1.5.a. | general site waste such as cartons, paper and broken pallets that needs to be disposed of separately |  | No guidelines. |   |
| 1.1.5.b. | product waste (hazardous and non-hazardous) |  | No guidelines. |   |
| 1.1.6. | Is the overall appearance of the site neat and tidy? |  |   |   |
| 1.1.7. | Are emergency showers where required by the risk assessment located close to all appropriate work areas, and are emergency showers and eyewash equipment easily accessible, in good working order and, if necessary, protected from frost? |  | The location of these facilities is particularly important where corrosive, irritant and toxic products are handled. Safety Data Sheets (SDSs) can be consulted. Where required by the risk assessment, emergency showers and eyewashes should be provided in accordance with EN 15154. Check that the expiry/inspection dates of the equipment/consumables have not been exceeded.  |   |
| 1.1.8. | Are unauthorised discharges into controlled waters prevented? |  | There should be a map showing the storm water drains and any other effluent pipes such as the foul sewer (usually flows to municipal sewerage plant). It is important that the storm water drains have adequate and maintained controls to prevent unauthorised discharges into rivers or public drains. ‘Controlled waters’ are usually defined by legislation and are rivers, streams, lakes and the coastal waters. Check procedures for opening/closing storm water drains and valves. Are any site interceptors regularly cleaned out? |   |
| 1.1.9. | Where emergency containment is in place, are there systems and procedures to ensure that containment is kept empty? |  | To be effective, containment systems must be liquid-tight and outlet valves closed. However, there must be an adequate system that disposes of any rain water that can potentially collect in the containment. |   |
| 1.1.10. | Is there a procedure which describes the way to keep the effluent water treatment units in good condition? |  | Mark N/A if there are no effluent water treatment plants on site. |   |
| **1.2.** | **Electrical Equipment**  |  | **Electrical Equipment**  |  |
| 1.2.1. | Is the installed electrical system suitably rated? |  | The electrical circuit must be fit for purpose and signed off by a qualified electrician/surveyor.  |   |
| 1.2.2. | Is the electrical system inspected annually by a competent, independent surveyor, relevant records kept, and corrective actions taken ? |  | Similarly, look for records that show the electrical system is inspected annually by a qualified electrician/surveyor. |   |
| 1.2.3. | Is electrical equipment zoned correctly, regularly inspected and maintained ? |  | All electrical equipment must be regularly inspected, maintained, and classified according to the appropriate ATEX zones in which they are situated. ATEX Dir 99/92/EU.The assessor should ask for the Explosion protection document (Article 8 Dir 99/92 EU). ATEX assessments are applicable when handling flammable products and with certain solid products, the dust of which can form explosive atmospheres **See Attachment 1 for more details** |   |
| 1.2.4. | Is portable electrical equipment powered from the site electrical supply regularly inspected? |  | Check local requirements for the frequency of the inspection and that the records are kept - this includes e.g. Portable radios, i-pods, phones etc. |   |
| **1.3.** | **Fire Protection Management** |  | **Fire Protection Management** |  |
| **1.3.1.** | **General** |  | **General** |  |
|  |   |  | In most countries in Europe, local Fire Authorities will inspect and/or authorise industrial premises, their fire protection systems and escape routes. There will be written evidence and this needs to be carefully inspected. The attitude, requirements and legislation vary widely from country to country.  |  |
|  |   |  | In some countries, chemical sites are expected to fight their own fires, have adequate resources and use Breathing Apparatus (BA). In others countries, if a fire cannot be quickly and safely extinguished by the employees, then all employees must retire to the assembly points for a roll call. The fighting of the fire is then done by the Fire Brigade with their own resources and/or those they have specified shall be on site. In some countries, the Fire Brigade will even maintain fire-fighting equipment that is on the site. |  |
|  |   |  | The Assessor needs to be familiar with what is expected from a chemical site by the Fire Authorities and delete appropriately those questions that are ‘not applicable’.  |  |
| 1.3.1.1. | Has a fire risk assessment been performed and has a fire protection management system (Fire Plan) been implemented? |  | A risk assessment and fire plan are key documents that will specify the hazards and the risks. The fire plan will specify the equipment required e.g. fire extinguishers and hydrants (number and siting), foam (type and quantity), fire-fighting team capabilities and equipment, response time of fire authority. Check that the company reviews it periodically. **See Attachment 3 for more details.** |   |
| 1.3.1.2. | Is the fire protection management system in compliance with the requirements of the operating permit? |  | All activities, which are intended to be carried out, should have been specified in detail in the operating permit, which is issued by the local and/or national authorities. The assessor must use a sitemap and the permit to acquaint himself with all details of these requirements. This orientation will serve as a useful first step for assessing all SHE elements. |   |
| 1.3.1.3. | Has the Fire Plan been handed over to the local authorities/local Fire Brigade or can they get access to the Fire Plan at any time on-site? |  | The government agency issuing the operating permit will have specified the requirements with regard to the fire protection management system. Verify if such requirements are detailed in the permit or in an expert's report prepared and signed by the official fire service. |   |
| 1.3.1.4. | Is the Fire Plan updated to reflect significant changes related to the products stored, the quantity stored and the construction, technical and administrative fire features and if there are no changes is it reviewed periodically? |  | Look for a management of change process and validate that it is executed by assessing a recent change-notification. |   |
| 1.3.1.5. | Are operators sufficiently trained on fire response and do they have adequate fire equipment? |  | Check training records. |   |
| 1.3.1.6. | Is there a fire team on site and have they received specific fire-fighting training? |  | Verify if existence of such team is documented and whether the involved personnel have received training. Look for records. Take spot checks of equipment. Monthly fire drills are good practice.  |   |
| 1.3.1.7. | Are measures taken to adequately contain contaminated fire water? |  | Check that a calculation has been made to define the volume of fire water contained by the site and whether this has been discussed with the fire authorities. |   |
| 1.3.1.8. | If stated in the Fire Plan, is Self-Contained Breathing Apparatus (SCBA) available, operable and regularly tested and are a sufficient number of employees trained? |  | Verify the training and equipment maintenance/testing records. If the equipment is available but not included in the Fire Plan, the assessor should mark the question based on the other requested criteria.  |   |
| 1.3.1.9. | Does the technical fire protection of the site (e.g. smoke detection, fixed extinguishing system, smoke and heat vents, fire extinguishers, sprinklers) comply with the local regulations and standards and is it documented in certificates? |  | Check technical information, building plans and local legislation and/or permits. |   |
| 1.3.1.10. | Is fire protection equipment maintained, tested or checked on a regular basis? |  | Verify that test information is displayed on the fire protection equipment as required. The mark that it has not been used must be available. Look for certificates, inspection labels or log book entries or indications on the equipment itself. Examples are: automatic closing fire doors, smoke detectors, sprinklers, fire hoses, hydrants, … |   |
| 1.3.1.11. | If fire pumps are required: |  |   |   |
| 1.3.1.11.a. | Are there written procedures for operating the fire pump and are these clearly displayed and easy to understand? |  | Verify that procedures are displayed. This question is non-applicable in auto-start pump systems that are switched on automatically as soon as the pressure in the piping network is decreased. |   |
| 1.3.1.11.b. | Is a standby pump available? |  | Self-explanatory. |   |
| 1.3.1.11.c. | Is the standby pump either diesel driven or powered by emergency back-up electricity supply? |  | A secondary electrical pump is acceptable when powered by emergency back-up electricity supply. |   |
| 1.3.1.11.d. | Are fire pumps regularly tested and results recorded? |  | Look for evidence e.g. the registration forms of tests and inspections. Verify the frequency of the tests and/or whether frequency is legally required. |   |
| 1.3.1.11.e. | Are fire-fighting systems such as sprinkler installations certified? |  | Certification may be on the equipment, the installation when first commissioned, or for an annual inspection, to recognised standards. |   |
| 1.3.1.12. | Are all "on-site" hydrants and hoses: |  |   |  |
| 1.3.1.12.a. |  - clearly visible, easily accessible, in good condition and easily operated? |  | Verify the company's fire plan against presence on the site. |   |
| 1.3.1.12.b. |  - regularly tested and results recorded? |  | Look for the registration of the testing.  |   |
| 1.3.1.12.c. |  - if necessary, protected from frost? |  | Self-explanatory. |   |
| 1.3.1.13. | Is the fire alarm system regularly tested and are results recorded? |  | Self-explanatory. |   |
| 1.3.1.14. | Are alarms in good condition and easily audible throughout the site? |  | If operationally possible, test the alarm. |   |
| 1.3.1.15. | Are on-site foam stocks: |  |   |   |
| 1.3.1.15.a. |  - adequate and appropriate for the fire risk involved and are they not past their shelf life? |  | Verify the company's fire plan against presence on the site. |   |
| 1.3.1.15.b. |  - protected and located such that they are immediately usable in an emergency? |  | Protect foam from frost. |   |
| 1.3.1.16. | Has a lightning strike survey been performed for the site and if appropriate have lightning conductor(s) been installed? |  | Self-explanatory. |   |
| 1.3.1.17. | Is the lightning conductor(s) regularly tested/inspected, including immediately after a lightning strike hit? |  | Check inspection reports. |   |
| 1.3.1.18. | Is there a connection of the alarm system with the local fire brigade and is this tested annually?  |  | Self-explanatory. |   |
| 1.3.1.19. | Is at any time a list of stored products available at the site showing all relevant information (quantities, locations, hazards)? |  | Verify if list is available as agreed with Fire Authority and spot-check if the listed products/quantities are consistent with actual storage. |   |
| 1.3.1.20. | Are forklift trucks charged in designated safe areas which are suitably ventilated and away from combustible materials? |  | Check the recharge area. Comments are compulsory. |   |
| 1.3.1.21. | If equipment using naked flames or generating sparks is operated, has a suitable risk assessment been undertaken and documented? Is the equipment used in a designated safe area away from storage of flammable products and combustible materials? Is suitably ventilated? |  | Risk assessment regarding this equipment should be present if such devices (gas heaters, .. ) are used. Sparks, for instance, generated by shrinking plastic around pallets or boxes in packaging lines are also a risk that must be considered under the scope of this question. If such equipment is not used (or can be used) this question is N/A. (Temporary) Work requiring permits are handled in ESAD Core 2.2.3. |   |
| 1.3.1.22. | Are products and combustible materials stored away from heating systems? |  | No guidelines. |   |
| 1.3.1.23. | If required as part of the Fire Plan: |  | No guidelines. |  |
| 1.3.1.23.a. | Are smoke vent panels available, regularly tested, maintained and are test records kept? |  | Check the practice against the Fire Plan during the field inspection round. Look for certificates and compare with local legislation or permits. If the equipment is available but not included in the Fire Plan, the assessor should mark the question based on the other requested criteria.  |   |
| 1.3.1.23.b. | Is a control panel/button to operate these smoke relief panels installed near to the exit doors? |  | Check plans and actual situation. If the equipment is available but not included in the Fire Plan, the assessor should mark the question based on the other requested criteria.  |   |
| 1.3.1.24. | Where automated fire-fighting systems are used for storage tanks, can all control valves be easily and safely accessed if an adjacent tank is on fire? |  | Check plans and actual situation. |   |
| **1.3.2.** | **Emergency Plan** |  | **Emergency Plan** |  |
| 1.3.2.1. | Does the site emergency plan cover: |  | Look for the emergency plan to show 24-hr phone numbers and job titles/names of respective contacts. |  |
| 1.3.2.1.a. | - the person responsible in charge of the emergency response? |  | No guidelines. |   |
| 1.3.2.1.b. | - contacts with public Fire Brigades? |  | No guidelines. |   |
| 1.3.2.1.c. | - contacts with public Ambulance Services? |  | No guidelines. |   |
| 1.3.2.1.d. | - contacts with Police? |  | No guidelines. |   |
| 1.3.2.1.e. | - contacts with products suppliers regarding the need for special equipment? |  | No guidelines. |   |
| 1.3.2.2. | Do employees possess the necessary equipment for personal protection and accident control? |   | Check that personal protective equipment is readily available.  |   |
| 1.3.2.3. | In the event of an emergency/incident, are safety data sheets or other substance-related safety information bulletins available and easily accessible? |   | Check also that, if the main office is destroyed, there are alternative arrangements to supply SDS. |   |
| 1.3.2.4. | Do you liaise with the Emergency Services in the preparation of emergency plans? |  |   |   |
| 1.3.2.5. | Are the public emergency services involved in the development of emergency plans? |  | Not applicable for most, if not all, "office only" companies. Check there is evidence that there is liaison with the emergency services. |   |
| 1.3.2.6. | Are the emergency services familiar with the local conditions inside the company? |  | Look for written evidence that the Fire Brigade visits the site regularly and that they have a regularly updated inventory of hazardous goods stored at the site. |   |
| 1.3.2.7. | Are joint emergency exercises held? |  | Look for evidence that the last exercise was held with a frequency commensurate with the level of risk, e.g. staff turnover, Seveso site classification, etc. |   |
| 1.3.2.8. | Access and emergency exits |  | Access and emergency exits. |   |
| 1.3.2.8.a. | Is unrestricted site access (to premises and buildings) available to the emergency service at all times (24 hr and 365 d per year)? |  | Check during field inspection round and interview operators and forklift drivers to check common practices at the site. Check whether the keys for all the gates and buildings on the premises are issued to the emergency service, or whether the keys are kept in a key box on the premises which is accessible to the emergency service. |   |
| 1.3.2.8.b. | Are there sufficient emergency exits (at least two per fire compartment, creating separate escape routes) and are they clearly marked, with unrestricted access at all times? |  | Check during field inspection round and interview operators and forklift drivers to check common practices at the site. Also check any reports of daily inspection rounds. Make a comment, if there is only one emergency exit but it has been recognised and approved by the Fire Brigade or Competent Authority written specifications. Check also if the emergency exits are unblocked and unlocked. |   |
| 1.3.2.9. | Does the plan cover guiding professional emergency providers on site to the location of the emergency?  |  |   |   |
| 1.3.2.10. | Are there specific written instructions documented in a plan for each type of emergency (fire, product spill and accidents)? |  | No guidelines. |   |
| **1.3.3.** | **SPILL PREVENTION AND HANDLING** |  | **SPILL PREVENTION AND HANDLING** |  |
| 1.3.3.1. | Is the requirement for spill clean-up equipment defined in a risk assessment and readily available? Are procedures in place for containing/collecting any spillage?  |  | There will be a risk assessment on potential spills and written procedure on spill control plus training records of operators. Examples of spill clean-up equipment include absorbent materials, shovel, drain covers, etc. |   |
| 1.3.3.2. | Is adequate PPE available for handling spillages and are appropriate personnel trained in its use? |  | The PPE mentioned as preventive equipment in the risk assessment and procedures should be present, maintained, certified (if needed) and personnel should be trained to use it. |   |
| 1.3.3.3. | Are enhanced spill procedures and protection measures taken for toxic products or that can produce toxic fumes (e.g. sodium hypochlorite)?  |  | Check the risk assessment. |   |
| **2.** | **Bulk Handling and Storage** |  | **Bulk Handling and Storage** |  |
| **2.1.** | **General Requirements** |  | **General Requirements** |  |
| 2.1.1. | Is a risk assessment in place for the loading/unloading operations? |  | A risk assessment for these activities has to be present. This RA must be conducted by competent people and must be kept up to date. Refer to the national authorities guidance or the "Best Practice Guidelines for Safe (Un)Loading of Road Freight Vehicles", Part B, Annex 7. |   |
| 2.1.2. | Is a procedure in place agreed between the driver and operator to monitor and control the loading/unloading operation? |  | Procedures, in accordance with Cefic guidelines should be present. Check "Best Practice Guidelines for Safe (Un)Loading of Road Freight Vehicles" Section 2: http://www.cefic.org/Industry-support/Transport--logistics/Best-Practice-Guidelines1/General-Guidelines-/Both drivers and operators should be aware of these procedures. |   |
| 2.1.3. | Are clear, written loading/unloading procedures available, and are the operators trained to these procedures? |  | Comprehensive procedures/instructions to the operators should be present for all loading/unloading activities. The link to the risk analysis should be obvious. Operators should be interviewed about these procedures and observed during their work. Also temporary operators should be involved. |   |
| 2.1.4. | Do the operators have and wear required PPE? |  | The PPE mentioned as preventive equipment in the risk assessment and procedures should be present, maintained, certified (if needed) and personnel should be trained to use it. The company must have a policy to replace the personal protection elements. |   |
| 2.1.5. | Have the loading/unloading processes been ATEX assessed and are the resultant zones clearly identified on site, a site plan developed and communicated to all relevant personnel?  |  | If the assessment shows ATEX does not apply, mark as not applicable. If applicable, a zoning plan has to be present for all areas and identified according to this ATEX assessment. Dir 99/92/EU. **See Attachment 1 for more details.** |   |
| 2.1.6. | Are procedures in place to avoid sources of ignition before and during loading/unloading e.g. flammable products? |  | Typical examples will include lighters, matches, mobile phones, sparking tools, unsuitably rated electrical equipment, e.g. air-conditioning units. |   |
| 2.1.7. | Are vehicle earthing points in good condition, is conductivity checked annually and are respective records kept? (for flammable products)                          |  | Is an earth point/lead provided for connection to the vehicle? Is a suitable vehicle connection clip provided and is it in good order? The integrity of the earthing/grounding system and its resistance to earth, which must not exceed 10 ohms, should be checked annually and records kept. A sign indicating the requirement to earth/ground vehicles/iso-tankers should be provided. The vehicle earthing mechanism may also be interlocked with the discharge pump, so that the pump will not operate unless the vehicle is properly earthed/grounded. **See Attachment 2 for more details.** |   |
| 2.1.8. | Are procedures in place covering the proper use of vehicle earthing points (for flammable products)? |  | Verify that appropriate instructions/signs are available or posted at the unloading location. |   |
| 2.1.8.a. | Are indicator light systems in place to demonstrate the earthing system is working during loading/unloading (for flammable products)? |  | Verify that those systems are present, worked with and operational. |   |
| 2.1.8.b. | Are automatic loading/unloading cut off systems in place which activate when earthing connectivity is lost (for flammable products)? |  | Verify that those systems are present, worked with and operational if flammable products are handled. |   |
| 2.1.9. | Are procedures in place to ensure that the right product goes into the right tank/tank compartment and there is sufficient space available? |  | Look for work instructions e.g. check that all tanks and inlet pipe connections are capped, closed unless in use and clearly marked to ensure that product is delivered to the correct tank. Instructions should also be available and used to control the free space in the receiving tank or tank compartment. |   |
| 2.1.10. | Are all other site activities conducted at a safe distance, as defined within local regulations, away from loading/unloading tank vehicles? |  | Check that distance from vehicles discharging flammable or corrosive products is consistent with local regulations. |   |
| 2.1.11. | Are hoses uniquely identified, in good condition and electrically conductive (for flammable products)? Are they regularly pressure tested? Are testing records maintained?  |  | The important point here, irrespective of whether the hose is distributor or haulier owned, is that the hose is properly selected for the service required, in visibly good condition and visually inspected at regular intervals with formal records kept. Hoses should be properly stored after use, ideally on racks to keep hoses straight. For flammable products also a conductivity test should be performed. The assessor should check the electrical conductivity requirements as mentioned by the assessed company either in a written procedure or on the certificates in use and be able to trace this requirement to a company decision, e.g. based on industry publications. A good indication is that the hoses should not have a resistance higher than 10 ohms measured between nipples (end flange to end flange).For pressurized discharge only, hoses should be tested annually at 1.5 times (max) operating pressure with water or periodically replaced. |   |
| 2.1.12. | Are dedicated hoses capped immediately after use? |  |   |   |
| 2.1.13. | Is loading/unloading pressure adequately controlled to protect the system including the receiving vessel?  |  | No guidelines. |   |
| 2.1.14. | Is the vehicle loading/unloading area liquid tight and well maintained?  |  | Self-explanatory. |   |
| 2.1.15. | Is there an adequate containment system in place in the loading/unloading area to ensure spill control?  |  | The containment system in this area should ensure that all potential amounts of product can be controlled. |   |
| 2.1.16. | Are emergency stop buttons present, easily accessible and clearly marked? |  | Verify that the emergency buttons are tested regularly and are in visible good condition. Check the presence of emergency buttons and signage. The system should stop the process immediately. |   |
| 2.1.17. | Can vehicle(s) easily leave the loading/unloading area in event of emergency and is the escape route unobstructed? |  | Check site plan. Access roadways should be in good condition such that vehicles can safely access and depart the discharge area. Roadways should be of sufficient width, unobstructed, clearly marked and sign-posted if necessary. |   |
| 2.1.18. | Has a risk assessment for 'working at height' been performed and are controls implemented? |  | A risk assessment for 'working at height' should be present and should include the hierarchy of working at height. Hierarchy is: not working at height preferred, provision of fall prevention and lastly a fall restraint system. Look for a detailed risk assessment plus controls and procedures that reflect the hierarchy in the question. Dir 2001/45/EC.Refer to the national authorities guidance or the "Best practice guidelines for safe working at height in the logistics supply chain"http://www.cefic.org/Industry-support/Transport--logistics/Best-Practice-Guidelines1/General-Guidelines-/ |   |
| **2.2.** | **Tanks and Fittings** |  | **Tanks and Fittings** |  |
| 2.2.1. | Are all inlet and outlet connections clearly identified, and in good condition? |  | Self-explanatory. |   |
| 2.2.2. | Are pipe apertures capped, flanged or plugged?  |  | All pipe apertures, when not in use, should be closed properly. |   |
| 2.2.3. | Are inlet and outlet connections controlled by lock off equipment where this is specified by the site? |  | Self-explanatory. |   |
| 2.2.4. | Are all tanks and fittings in a good condition, with no visible signs of product leakage? |  | Self-explanatory. |   |
| 2.2.5. | Are the tanks approved for the goods stored and identified/labelled accordingly? |  | Storage of goods in non-approved tanks can lead to serious accidents. Look for certificates showing the approval of the tanks used. Check labels on tanks and tubes, high level alarms, cathodic protection, bund capacity 110%.  |   |
| 2.2.6. | For flammable products:  |  |   |   |
| 2.2.6.1. | Is the tank earth conductivity annually checked and is the resistance less than 10 Ohm and are respective records kept?  |  | Look for records. |   |
| 2.2.6.2. | Do fill pipes enter the tank at low level ?  |  | Self-explanatory. |   |
| 2.2.6.3. | If top filling is employed, does the fill pipe include a drop tube to a suitable low level inside the tank with anti-siphon?  |  | Self-explanatory. |   |
| 2.2.6.4. | Are all tanks fitted with vent pipes with flame arrestors which are regularly checked for blockage and are records kept?  |  | Vent pipes avoid under and over pressuring of tanks. Flame arrestors must be used when containing flammable liquids. Blockages of this vent pipe and/or flame arrestor should be prevented at all times. Check inspection records. |   |
| 2.2.6.5. | Is the tank vapour vent to atmosphere via pressure/vacuum valve regularly checked and are these checks recorded? |  | Verify records. Are tanks protected against over- and under-pressurisation conditions? Tanks containing volatile products should ideally be fitted with a pressure/vacuum valve. If an open vent is fitted, this should be designed to ensure rain, etc. cannot enter tank. If product stored is flammable, the vent should be fitted with a flame arrestor. Flame arrestors should not be installed on P/V valves or pressure relief valves. Minimum P/V valve maintenance/inspection frequency should be annual. Attention should be paid to ensure that any protective dust caps are removed before reinstalling a P/V valve. |   |
| 2.2.6.6. | Has the vapour vent outlet(s) been included in the site ATEX assessment?  |  | Self-explanatory. **See Attachment 1 for more details.** |   |
| 2.2.7. | Where required for the product, is the vapour vent outlet connected to a vapour treatment unit?  |  | For information on scrubber units for these products, consult the SDS. |   |
| 2.2.8. | Are overfill protection devices installed, periodically inspected and maintained? |  | The high level alarm should be audible locally. Overfill protection devices should automatically stop the flow of the product. |   |
| 2.2.9. | Are connections between tanks and dedicated pumps constructed in fixed piping work?  |  | Give specific attention to flexible connections where not justified. |   |
| 2.2.10. | Are tanks periodically inspected and maintained according to legal requirements? |  | Check maintenance logs and inspection certificates. Check if repairs are carried out in a timely manner. |   |
| **2.3.** | **Pipelines** |  | **Pipelines** |  |
| 2.3.1. | Are all pipelines clearly labelled? |  | Self-explanatory. |   |
| 2.3.2. | Is all pipe work electrically continuous (for flammable liquids only)? |   | Electrical conductivity is normally assured if all pipe work is metallic. Bonding strips may be fitted and is good practice. |   |
| 2.3.3. | Is there no sign of visible product leakage? |   | Self-explanatory. |   |
| 2.3.4. | Are pipelines regularly inspected, maintained and actions recorded? |   | Pipe work should be constructed from material compatible with the product stored. If stainless steel is not used, the pipes need to be protected by painting. |   |
| 2.3.5. | Are pipe work joints flanged or welded with no threaded joints? |   | Threaded joints are not recommended on lines >50 mm (2") diameter as they are potentially more prone to failure/leaks. |   |
| 2.3.6. | Are all pipelines adequately supported? |   | Overhead pipelines at a height where they could be prone to damage by moving vehicles are particularly vulnerable. Overhead filled pipelines must have special protection to avoid leakage on people passing underneath. |   |
| 2.3.7. | Are they protected from mechanical damage by moving vehicles? |   | Look for adequate warning signs or structures for passing vehicles under overhead pipelines. |   |
| 2.3.8. | Is the bund free of any pipe holes? |   | Self-explanatory. |   |
| 2.3.9. | Where pipelines pass through a bund-wall, is the hole around the pipe completely sealed with the material compatible with the products stored within the bund and where necessary is it fire resistant material? |   | The integrity of bunds around storage tanks should not be impaired by pipe work which has been routed through the bund wall without completely sealing the resultant hole.  |   |
| 2.3.10. | Are all pipelines periodically inspected and maintained as required by law (if applicable)? |   | According to pressure equipment directive requirements. |   |
| **2.4.** | **Above Ground Tanks** |   | **Above Ground Tanks** |  |
| 2.4.1. | Is secondary containment available and in compliance with local regulations? |   | Are the tanks located in a bunded area? The bunded area should be liquid tight and in compliance with local regulations.  |   |
| 2.4.2. | Is secondary containment in good condition? |   | Check for rabbit holes in earth dykes. |   |
| 2.4.3. | Is tank area free of excessive vegetation? |   | Check during inspection round and check if there is a written procedure relating to frequency of checks and responsibility. |   |
| 2.4.4. | Are tank valves closed if not in use and are strict procedures in place for opening them? |   | Check procedures and the valves. |   |
| 2.4.5. | Is the tank spacing and positioning in compliance with local regulations?  |   | Check site plan. |   |
| 2.4.6. | Are tanks clearly marked with number or name of the product stored, and visible from outside the containment? |   | Tank markings should be clearly visible from outside the bund to facilitate tank identification for product integrity and in case of fire. |   |
| **2.5.** | **Underground Tanks** |   | **Underground Tanks** |  |
| 2.5.1. | Are tanks double wall designed or fitted with secondary containment and continuous leak monitoring? |   | Check specifications and drawings. Double wall (or double skin) design has become the standard for new tanks. Continuous leak monitoring may be carried out by slightly pressurising an intermediate fluid (e.g. nitrogen) in the space between the internal and the external wall and by monitoring the pressure of the fluid over time.  |   |
| 2.5.2. | For single wall tanks, is there an approved leak detection system installed and maintained, and are records kept? |   | Check installation and records. |   |
| 2.5.3. | Has cathodic protection been applied to tanks? |   | As minimum requirement for single wall tanks, cathodic protection is a method used to protect metal structures from corrosion using a sacrificial galvanic anode or by means of an impressed current. |   |
| 2.5.4. | Has an external coating been applied to tanks? |   | External coating also protects the tanks. Check specification of external coating. |   |
| 2.5.5. | Is the integrity of underground storage monitored, tested or periodically inspected in accordance with local legislation? |   | Check records and/or inspection reports. |   |
| **2.6.** | **Unloading Operations** |   | **Unloading Operations** |  |
| 2.6.1.a. | Has a risk assessment been performed and has a procedure been written to control the sampling of tanker contents prior to unloading? |   | A risk assessment should be available to cover sampling, especially if working at height is required. Refer to the national authorities guidance or the "Best practice guidelines for safe working at height in the logistics supply chain". Therefore an adequate sampling tool and sampling bottle should be used when sampling tankers from the top. For flammable liquids, the sampling equipment should be connected to the truck before sampling to ensure equipotentiality. If bottom sampling is done, it is good practice for the distributor to provide a spool piece fitted with a sampling valve. Appropriate PPE as recommended in the SDS should be used during sampling operations. |   |
| 2.6.1.b. | If samples have to be taken, is the work undertaken in accordance with the procedures by a trained and competent site operator or appointed surveyor with adequate safety precautions? (not the driver) |   | Check procedures, competence of employees and presence of applicable PPE and other applicable equipment. |   |
| 2.6.2. | For flammable liquids, is unloading by compressors prohibited? |   | Discharge by air pressurisation is not permitted for flammable products. Discharge by nitrogen pressurisation of a vehicle/iso-tank is acceptable but has the disadvantage that product hoses are under pressure (rather than suction when a pump is used), with more severe consequences in the event of a hose failure. Special attention needs to be given to labelling the empty truck/containment to warn for entry. Emergency shut down when discharging by nitrogen pressurisation is also more problematic. |   |
| 2.6.3. | When using a site supplied pump, are clearly indicated emergency stop buttons available in the vicinity of the unloading area? |   | Self-explanatory. |   |
| 2.6.4. | When the vehicle unloading pump is not used, is there a procedure in place to control "truck battery isolation" during unloading of flammable products? |   | Check procedure and practice. |   |
| 2.6.5. | Are the reception tank and the vehicle visible to the operator? |   | Check on site. |   |
| **2.7.** | **Substances of High Viscosity or Solids at Ambient Temperatures** |   | **Substances of High Viscosity or Solids at Ambient Temperatures** |   |
| 2.7.1. | Are receiving tank and pipelines heated/insulated to ensure that product temperature is maintained above solidification point? |   | If the ambient temperature is below the product solidification point, the storage temperature must be adequately controlled. The storage tank(s) should be insulated and/or fitted with a heating system, or be located in a temperature controlled enclosure. |   |
| 2.7.2. | Are temperature gauges/indicators fitted to storage tank(s)? |   | Temperature gauges should preferably be internally fitted or adequately protected against damage. |   |
| 2.7.3. | Are checks in place to ensure that the product temperature is appropriate for the method of unloading? |   | The road tanker/iso-tanker product temperature should be checked before discharge to ensure that product can be safely unloaded. |   |
| 2.7.4. | Are lines cleared with air or nitrogen after unloading? |   | Transfer lines should be properly cleared/drained after discharge in order to avoid product residues remaining. |   |
| 2.7.5. | Are elevated temperature warning signs in place? |   | If product is to be handled at high temperature, capable of giving thermal burns on skin contact, adequate warning signs and/or insulation on pipelines should be in place. |   |
| **2.8.** | **Top Loading** |   | **Top Loading** |  |
| 2.8.1. | Are loading procedures/instructions in place? |   |   |   |
| 2.8.2. | Is there an adequate loading gantry present?  |   | DIRECTIVE 2001/45/EC. |   |
| 2.8.3. | Is product quality protected from the weather by provision of suitable covers or roofs above man lids? |   | No guidelines. |   |
| 2.8.4. | Can the loading gantry be reached via a double stairway? |   | No guidelines. |   |
| 2.8.5. | Are the gantry and stairway steps constructed to prevent slipping? |   | No guidelines. |   |
| 2.8.6. | Are drop platforms or walkways present providing safe access to the top of vehicles? |   | No guidelines. |   |
| 2.8.7. | Is a fall protection system in place? |   | Refer to national requirements or best practice guidelines. |   |
| 2.8.8. | Are stairs/ladders clean and free from obstruction ? |   | No guidelines. |   |
| 2.8.9. | Does the installation include a loading arm cone to seal the man lid and pressure control system e.g. vapour return preventing weather/air ingress and vapour egress(for flammable and certain other products)?  |   | This to avoid huge evaporation of gases. |   |
| 2.8.10. | Are gantries and pipelines protected against collision? |   | This protection can be of different types, such as protection poles, removable gantries, protection devices. |   |
| 2.8.11. | Can loading pipes on the gantry reach the bottom of the truck compartments (for flammable products)? |   | A drop tube should extend to a low level inside the tank to avoid generation of electrostatic hazard from "splash" loading. This is very important for low conductivity flammable liquids. Low conductivity liquids have electrical conductivity of less than 50 pS/m (typically aromatics and hydrocarbon solvents). High conductivity liquids have electrical conductivity greater than 1000 pS/m (typically chemical [oxygenated] solvents). See also question 2.2.6.3. |   |
| **2.9.** | **Bottom Loading** |   | **Bottom Loading** |  |
| 2.9.1. | Are systems in place to ensure that tanker loading is performed in a safe manner? |   | This operation must be covered by a risk assessment and written procedures. The pump controls should ideally be located within sight of both the vehicle and the storage tank. At least one emergency stop button should be provided. If the loading area is remote from other operations on the site is there a telephone or alarm system to communicate with a control room or emergency centre in case of emergency? |   |
| 2.9.2. | Are these systems 'Failsafe' to prevent overfilling? |   | The system should incorporate a failsafe device to switch off the pump when the tanker is full. |   |
|  |  |  |  |  |
| **3.** | **IBC, Drum, Small Pack Filling and Blending Operations** |   | **IBC, Drum, Small Pack Filling and Blending Operations** |  |
| 3.1. | If filling is directly done from the tank vehicle, is it done via a fixed filling installation? |   | To unload into drums or IBCs safely, a fixed drumming or IBC filling installation must be available. ‘Fixed’ means that an installation is equipped with a fixed discharge connection, is sited in an area with the required explosion/safety zoning and is in line with the appropriate technical requirements. |   |
| 3.2. | Is the filling/blending area protected against adverse weather? |   | Self-explanatory. |   |
| 3.3. | Is the filling/blending installation well maintained? |   | Self-explanatory. |   |
| 3.4. | Is the floor area clean, dry and free from obstacles? |   | Self-explanatory. |   |
| 3.5. | Is there a liquid tight floor in the filling/blending area?  |   | The filling/blending area should be concreted. Check that there is no surface deterioration or cracks. |   |
| 3.6. | Does the filling area have a system of safe spill containment? |   | Uncontrolled drains in the filling/blending area are unacceptable. |   |
| 3.7. | Is any spilled material disposed of safely? |   | Spill procedures and equipment should be present. Employees should be aware of the correct methods. |   |
| 3.8. | Is there adequate lighting? |   | Lighting levels should be adequate for filling operations to be carried out safely.  |   |
| 3.9. | Is there adequate general ventilation? |   | If the drum filling/blending area is open on at least one of its 4 sides (as is often the case) then ventilation is usually adequate. In enclosed buildings exhaust systems should be in place to ensure workers are not exposed to high concentrations of vapours. Two air changes per hour are good practice. |   |
| 3.10. | Is local exhaust ventilation (LEV) installed to control exposure to product vapours below OEL's? |   | Are workers exposed to vapours? If yes, do they wear respiratory protection? If the area is enclosed there should be checks and controls in place to ensure that Occupational Exposure Limits (OEL's) and Lower Explosive Limits (LEL's) are not exceeded in the work area. If detectors are used, verify that they are regularly maintained and tested and in line with ATEX requirements. **See Attachment 1 for more details.** |   |
| 3.11. | Where required for the product, is the vapour vent outlet connected to a vapour treatment unit?  |   | Check that the vapour vent outlet is connected to a vapour treatment unit. Check that SDS requirements are included in the procedures. |   |
| 3.12. | Is there no sign of visible product leakage? |   | Self-explanatory. |   |
| 3.13. | Is there a procedure in place to ensure that filled IBC's and packages have a clean exterior and that any product is cleaned from the outside of the IBC or package(s)? |   | Check procedures or instructions and the practical implementation. |   |
| 3.14. | Is heat sealing or induction kept sealing prohibited for flammable products? |   | Check that this process is not used for flammable products because this process requires temperatures of 85°C-175°C. |   |
| 3.15. | Has the filling/blending process been ATEX assessed and are the resultant zones clearly identified on site, a site plan developed and communicated to all relevant personnel?  |   | ATEX is the process used to classify the flammability hazard within an area or ‘Zone’. This requirement is Mandatory when filling/blending flammable liquids. ATEX Dir 99/92/EU.  **See Attachment 1 for more details.** |   |
| 3.16. | Is the filling pump in good condition and well maintained? |   | The filling pump should have no leaks from seals, glands etc. |   |
| 3.17. | Are filling lances and/or hoses suitable for the product(s) and in good visible condition? |   | All flexible hoses on the filling system should be in good condition and regularly inspected with proper record maintained, or periodically replaced.  |   |
| 3.18. | Are dedicated hoses in use, capped immediately after use and stored in dedicated containments? |   | It is recommended to have dedicated hoses. But at least it is acceptable to have a hose per family of product in terms of risk of reaction and in terms of product quality.  |   |
| 3.19. | Where lances and/or hoses are used for more than one product, does a procedure exist and is suitable equipment present to control the change from one product to another? |   | Procedures and suitable equipment should be present to guarantee that product changes will not result in any risk or contamination. |   |
| 3.20. | Are fully enclosed filling machines available for packing toxic products e.g. chlorinated solvents, hydrofluoric acid? |   | No guidelines. |   |
| 3.21. | Are hoses used annually tested, maintained or replaced and respective records kept? |   | The hoses for flammable liquids must be tested annually for electrical conductivity and pressure (if applicable). |   |
| 3.22. | Are emergency exits from the filling/blending area clearly marked? |   | Do spot check of exits. |   |
| 3.23. | Are emergency exits from the filling/blending area immediately accessible and free from obstacles? |   | Do spot check of exits. |   |
| 3.24. | Is the packaging and filling machinery conductivity to earth in accordance with the appropriate CENELEC standard. Is there suitable monitoring equipment to ensure the resistance is within acceptable limits at all times and is the monitoring equipment tested at regular intervals and the record kept(for flammable products)? |   | The ideal earthing/bonding connection consists of a bonding wire with a robust clip that can pierce rust or paint layers and that will not pull off or break during operations. The bonding wire must ensure good electrical contact (< 10 W) between the container being filled and the source of the product (another container, a pump or pipe work). |   |
| 3.25. | Does the filling system incorporate an earthing safety interlock system?  |   | Verify records and also check in practice. |   |
| 3.26. | Has a risk assessment been conducted when non-conductive plastic drums are used for filling/blending flammable liquids? |   | Verify the risk assessment when flammable liquids are handled in plastic containment. |   |
| 3.27. | Are there clear written filling/blending procedures?  |   | Self-explanatory. |   |
| 3.28. | Are filling procedures known and followed by all operators (consider consistency with similar questions)? |   | Interview the operators. |   |
| 3.29. | Do blending and/or filling procedures contain measures to prevent dangerous reactions caused by product mix? |   | Check the completeness of the procedure including the risk for unwanted reactions caused by product mix. |   |
| 3.30. | For drums and/or IBC's, is there a procedure in place to inspect for correct specification, cleanliness and integrity prior to filling? |   | Drums and/or IBC's should be visually inspected for defects. Verify if UN certified packaging has to be used for involved products. Normally drums will be purchased either by contracted party or by the warehouse operator (outsourced) and directly delivered to the warehouse. It is the responsibility of the operator to ensure that correct drums are checked prior to use. Assess practices/ responsibilities and verify correct implementation.  |   |
| 3.31. | Is the package flushed with inert gas prior to filling, if required? |   | Check risk assessment, procedures and practice. Flushing with inert gas could be required for quality or safety reasons. |   |
| 3.32. | Is initial velocity of liquid entering the package limited until the inlet nozzle is well covered?  |   | The aim of this question is to obtain a sound assessment of the operations which take place in real practice. Specifically, the initial filling velocity of hazardous products is essential to avoid potential risk of accumulating static discharges.  |   |
| 3.33. | Are sub-surface filling lances used to avoid static electricity accumulation and foaming of the liquids? |   | See also question 2.8.11. |   |
| 3.34. | Is the maximum filling ratio/degree defined and controlled? |   | No guidelines. |   |
| 3.35. | Are individual closures from each package put back into the same package after filling and/or replaced with new closures? |   | It is also essential that correct closures are put back to the original packaging to avoid potential leakages. |   |
| 3.36. | Are closures applied in accordance with the UN test certificate/manufacturers recommendations (torque)? |   | No guidelines. |   |
| 3.37. | For products not classified as hazardous for transport are closures applied in accordance with packaging manufacturers recommendations (torque)? |   | No guidelines. |   |
| 3.38. | For products classified as hazardous for transport are the packages/IBCs labelled in accordance with applicable transport regulations? |   | Check a sample of packed products in storage against the ADR regulation. |   |
| 3.39. | For substances classified under the CLP supply and use regulations are the packages/IBCs labelled in accordance with the relevant requirements?  |   | Product safety labels are NOT transportation labels. The labels targeted in these questions are the use and supply labels. Globally Harmonized System of Classification and Labelling of Chemicals is applicable. Refer to CLP legislation: CLP http://echa.europa.eu/web/guest/regulations/clp/legislation |   |
| 3.40. | For substances not classified for carriage, supply or use is there sufficient information on the packages that makes this clear? |   | No guidelines. |   |
| 3.41. | Is there a labelling procedure? |   | No guidelines. |   |
| 3.42. | Do operators have and wear the appropriate PPE? |   | Check with risk assessment, procedures and practice. |   |
| 3.43. | Are products classified for transport packed in the correct UN compliant packaging? |   | Check the quality and the general condition of drums (signs of rust, dents, etc..). They should be marked with the UN symbol. |   |
| 3.44. | Are packages for classified products acquired from approved suppliers/ reconditioners? |   | No guidelines. |   |
| 3.45. | Is there a procedure in place for the legal disposal of packages? |   | Check that a procedure exists containing selection criteria for returnable packages returned from customers. |   |
| 3.46. | Are filled packages stored in a safe and proper way? |   | Self-explanatory. |   |
| 3.47. | Are empty packages stored in a safe and proper way? |   | Self-explanatory. |   |
| 3.48. | Are portable blending vessels stable and supported? |   | Self-explanatory. |   |
| 3.49. | Are all parts (e.g. piping/hoses/seals) resistant to or compatible with the products to be handled? |   | Check technical documentation. |   |
| 3.50. | Are conveyors equipped with appropriate gangways to allow safe crossing for the operator? |   | No guidelines. |   |
| 3.51. | Does the filling system incorporate an automatic shut-off driven by the measurement of the product dispensed? |   | No guidelines. |   |
| 3.52. | Is the measuring system calibrated regularly? |   | Check calibration documentation. |   |
| 3.53. | When filling is automated: |   |   |  |
| 3.53.a. |  - are filling line valves closed and the machine stopped automatically in an emergency? |   | Check technical information and practice. |   |
| 3.53.b. |  - is there an overflow protection device to detect a high liquid level in the receptacle, independent from the weigh scale/volume dispenser? |   | Check technical information and practice. |   |
| 3.54. | Are the loading lines and valves identified with clear, easy to read markings indicating contents or line number? |   | No guidelines. |   |
| 3.55. | Are there facilities for lifting larger packages to the blending vessels without risk of injury? |   | Risk assessment and certified lifting gear should be present. |   |
| 3.56. | In case of an emergency, can the filling/blending operation be shut down immediately by pushing a red (emergency stop) button? |   | No guidelines. |   |
| 3.57. | In case of an emergency, can the filling/blending operation be shut down from a safe location? |   | No guidelines. |   |
| 3.58. | Is an alarm system available in the area, so that an operator can call for help if needed? |   | Check practice.  |   |
| **4.** | **Packed Product Handling and Storage**  |   | **Packed Product Handling and Storage**  |  |
| **4.1.** | **General** |   | **General** |  |
| 4.1.1. | Is segregation applied between the different product classes as per national permit, guidance and/or local regulations? |   | Preferably storage of flammable products should be in a separate building of approved construction and within the boundaries of the maximum defined square meters fire area. If storage is not in separate buildings, separation from other products is required. Protection should consist of walls and fire doors in accordance with local requirements. Check fire resistance rates. Verify storage of the various products involved. Verify possible restrictions included in SDS. Seveso directive 2003/105/EU & 2012/18/EU - GHS directive 1272/2008 - Directives 98/24/EU and 2007/30/EC. |   |
| 4.1.2. | Is the requirement for spill clean-up equipment defined in a risk assessment and readily available? Are procedures in place for containing/collecting any spillage? Are people trained to follow the procedures and for the use of the equipment? |   | There will be a risk assessment and a written procedure on spill control plus training records of operators. Examples of spill clean-up equipment include absorbent materials, shovel, drain covers, etc. |   |
| 4.1.3. | Is all waste (including hazardous waste) classified, labelled and stored as required by national regulations? |   | Spot check waste receptacle and look for a procedure. |   |
| 4.1.4. | Has the storage area been ATEX assessed and are the resultant zones, if applicable, clearly identified on site, a site plan developed and communicated to all relevant personnel?  |   | ATEX is the process used to classify the flammability hazard within an area or ‘Zone’. This requirement is Mandatory when storing flammable liquids. ATEX Dir 99/92/EU. **See Attachment 1 for more details.** A zoning plan has to be present for all the storage areas and identified according to this ATEX assessment. The assessor should ask for the Explosion protection document (Article 8 Dir 99/92 EU). ATEX assessment is applicable when handling flammable products and with certain solid products, when its dust can form explosive atmospheres.  |   |
| 4.1.5. | Are filled IBC's and packaged goods labelled as required by local regulations and at least in the local language(s)? |   | Product safety labels are NOT transportation labels. The labels targeted in these questions are the use and supply labels. Globally Harmonized System of Classification and Labelling of Chemicals is applicable as from 01/12/2010.Refer to CLP legislation: CLP http://echa.europa.eu/web/guest/regulations/clp/legislation |   |
| 4.1.6. | Is there a management system in place to ensure stock rotation of products?  |   | This procedure should be in accordance with customer requirements and/or product properties such as plastic decomposition, polymerisation, corrosion of drums, … |   |
| 4.1.7. | Does a well-defined storage plan exist for warehouse and outside storage? |   | Check plan with existing situation. |   |
| 4.1.8. | Are all products stored/stacked in a well ordered, stable manner? |   | Self-explanatory. |   |
| 4.1.9. | Is storage racking operated within maximum loading limits? |   | Maximum loading limits should be calculated (constructor/user) and can be dependent on the products (packages) stored on the racks. Check several stacks. |   |
| 4.1.10. | Is the maximum weight indicated on the racks ? |   | Check if max weight is indicated on the racks. |   |
| 4.1.11. | Are the racking systems in good condition and protected from vehicle collision and weathering? |   | Check condition of the racks. |   |
| 4.1.12. | If racks were installed in the last 3 years, were they inspected prior to initial use? |  | Racks need to be inspected prior to initial use either by:- the rack manufacturer/rack installer: in this case the assessor will ask for a racking installation certificate;- a staff designated person: the assessor will check that records of his/her training as inspector are available and that the company has appointed him/her as responsible for initial inspection. |  |
| 4.1.13. | Are procedures in place to monitor and maintain the racking conditions? |   | A monitoring and maintenance procedure should be present and implemented. Check reports of monitoring and maintenance/repair reports according to the norm EN 15635 Steel static storage systems - Application and maintenance of storage equipment. Results and status of the monitoring and maintenance of the racks has to be traceable. |   |
| 4.1.14. | Are stacking heights in agreement with applicable regulations? |   | Product should not be stacked to heights which appear to be exceeding the structural strength of the packaging. Assess if there are significant indications, such as crushed boxes, leaning over of drums, pallets, etc. that stack heights are too high. Verify if local/national regulations and guidelines are available and followed (i.e. with regard to prescribed maximum allowable weight of racks). Check also if there are supplier's guidelines (Safety Data sheets or other separate storage instructions). |   |
| 4.1.15. | Are stacking heights in agreement with accepted industry practices and/or specific customer requirements? |   | Compare with customer guidelines/stacking guidelines. |   |
| 4.1.16. | Is there a procedure for the handling, storage, retention and disposal of samples? |   | Samples should be stored in accordance with local legislation and in conditions that their quality can be guaranteed during the retention period. Disposal of samples according to customer requirements and waste regulation.  |   |
| 4.1.17. | Is there a procedure for forwarding of samples? |   | Check procedures, competence of employees and presence of applicable PPE and other applicable equipment. |   |
| 4.1.18. | Is packaging material properly stored before use and identified according to the customers specification? |   | No guidelines. |   |
| 4.1.19. | Are empty pallets stored inside the warehouse at dedicated places and is the quantity limited to maximum half-a-day use in production? |   | The storage of empty pallets inside the warehouse should be kept to a minimum, preferably to a maximum half-day of production. If so stored, preferably it should be done in dedicated areas. Further, it is essential that stack height is limited to maximum two meters, preventing additional risks from a chimney effect in case of fire. Furthermore, it is not allowed to store pallets in some storage areas (e.g. storage areas for flammable liquids, according to International Standards). Where the number of empty pallets exceeds half a day production but is under the fire load calculation, a positive score shall be granted (a comment must be made by the assessor). |   |
| 4.1.20. | Are empty pallets stored outside the warehouse at a safe location? |   | No guidelines. |   |
| 4.1.21. | Are stack heights of empty pallets inside and outside the warehouse limited to the transport stack height (approximately 3 meters), if not supported?  |   | Check storage area of the empty pallets. |   |
| 4.1.22. | Are there floor markings in the warehouse indicating storage spaces and staging areas and do these comply with national and/or additional individual company guidelines? |   | Floor markings are essential in the warehouse(s) indicating storage spaces, staging area, routes, etc. Assess whether this is adequately available as well as sufficient aisle space taking into account the minimum required distance between stored packaging and warehouse wall. Verify existence of national and/or additional individual company guidelines and check whether these are all followed. |   |
| 4.1.23. | Are there markings in the warehouse indicating walkways? |   | No guidelines. |   |
| 4.1.24. | Is adequate aisle space taken into account? |   | Check during inspection round. |   |
| 4.1.25. | Are products stored with regard to temperature and ventilation requirements, if any? |   | Temperature and ventilation requirements should be in compliance with national regulations. In addition specific individual supplier's requirements might exist as documented in their Safety Data Sheet or otherwise provided information. Where needed, indirect heating such as steam, warm air is recommended. Such systems should be safe and permanent. Airflow should not be directly on stored goods, and stored goods should be at a safe distance from the heat source. Temperature regulation/control devices should be visible and accessible.  |   |
| 4.1.26. | Are procedures in place for daily inspection of forklift trucks by operators prior to use? |   | No guidelines. |   |
| **4.2.** | **Warehouse** |   | **Warehouse** |  |
| 4.2.1. | Is the warehouse well- constructed, in visibly good condition and in compliance with local regulations? |   | In most countries in Europe, the Local and Fire Authorities will have been consulted and given permission for the construction of the warehouse and authorised its use. Documentation varies widely across Europe but it should be consulted as it could list materials of construction, design and layout of the building. |   |
| 4.2.2. | Is the roof weatherproof ? |   | No guidelines. |   |
| 4.2.3. | Is the floor liquid tight? |   | Check that there is no surface deterioration or cracks. |   |
| 4.2.4. | Are measures taken in the storage areas to adequately contain spilled product? |   | Check by field inspection that the valves to the sewer system are normally closed. Check if the surface is made of crack-free asphalt or concrete. Check if the drainage system is blockable by manual or fixed installed systems. Refer to national legislation or guidance where it exists e.g. the containment capacity must be proportionate to the planned activity (e.g. unloading small packs or unloading a tanker).  |   |
| 4.2.5. | Is there adequate lighting? |   | Lighting should allow good visibility on all locations in the warehouse where vehicle movements or storage activities take place. |   |
| 4.2.6. | Are emergency exits clearly signed and are the emergency exists illuminated with emergency lights? |   | Do spot check of exits. |   |
| 4.2.7. | Are emergency exits immediately accessible and free from obstacles? |   | Do spot check of exits. |   |
| 4.2.8. | Does the warehouse have good general ventilation ? |   | Check the ventilation system. "Two air changes per hour" is recommended. |   |
| 4.2.9. | For storage of highly flammable products, is adequate ventilation provided through e.g. upper and lower louvres unobstructed in at least 2 facing walls or through forced ventilation? |   | In accordance with local requirements. |   |
| 4.2.10. | Are products stored according to local segregation regulations and are the rules clearly displayed in the storage areas? |   |   |   |
| 4.2.11. | If a heating system is installed is it compatible with the stored product? |   | In cold climates, it may be necessary to provide heating within the warehouse. Heating systems should ideally be based on steam or hot water with the heat source located outside so that direct heating of stored product cannot occur. Electrical heating equipment or portable gas or oil fired hot air units should not be used, unless risk assessed and special precautions implemented. |   |
| 4.2.12. | Can the forklifts operate easily and safely inside and outside the warehouse? |   | Pedestrian and vehicle traffic must be separated by demarcation barriers or painted lines. Look for evidence. Has allowance been made for fork truck widths, turning circles and overnight battery charging? |   |
| 4.2.13. | Is housekeeping in the warehouse at a good standard (eg. clean, tidy, paintwork, no spills, etc.)? |   | A warehouse should carry out housekeeping on a regular and routine basis. Assess how the general standard is. Is it done daily, weekly or when necessary. |   |
| 4.2.14. | Is there a sanitation procedure in place to control pests such as rodents, bugs and birds? |   | Pests such as rodents, bugs and birds can be a burden in the warehouse(s). Assess whether this is controlled and in existence, and whether this is removed. Assess whether there is a complete and documented sanitation programme in place. |   |
| 4.2.15. | Are exhaust emitting vehicles excluded in the warehouse other than fork lift trucks? |   | Normally only Forklift Trucks are used in the warehouse for handling material purposes. In principle, other exhaust emitting vehicles should not be allowed to protect operators and their working conditions. In some cases curtain sided or tilt trailers could enter for loading/unloading. In that case the truck engine should be shut off as soon as the vehicle is in place. |   |
| 4.2.16. | Are diesel powered forklift trucks excluded from the warehouse? |   | The standard is LPG or electrical. Diesel is not desirable, as all other types are cleaner. |   |
| 4.2.17. | Are the loading/unloading areas including docks safely accessible for vehicles (clearly signed, suitable road width, no difficult turns)? |   | Loading/unloading docks should be clearly marked with signs. |   |
| 4.2.18. | Are loading/unloading docks protected against collisions? |   | Check some loading/unloading docks. If docks are damaged check also the non-conformance documentation. |   |
| 4.2.19. | Outside Storage Areas |   |   |   |
| 4.2.19.a. | In those cases where products are stored outside, is it appropriate for the product/packaging? |   | This should be in accordance with customer requirements and/or product properties such as plastic decomposition, polymerisation, corrosion of drums, … |   |
| 4.2.19.b. | Are the conditions for outside storage of products defined and met? |  | The conditions can be defined by customers, legislation or guidance. |   |
| 4.2.19.c. | Are external storage areas adequately maintained? |  | Check the state of the surfacing of yards and roads. If needed (for the products to be stored), impervious flooring should be present where required by the product. |   |
| **4.3.** | **Loading Packaged Products** |   | **Loading Packaged Products** |  |
| 4.3.1. | Are procedures in place to check that vehicles are fit for purpose before loading? |   | Check the acceptance procedure for trucks and verify the current practice. Take local regulations into account. |   |
| 4.3.2. | Are procedures in place for checking cargo securing ? |   | Verify that procedures are in place to verify cargo securing prior to dispatching the vehicle and assess the awareness/training of operators. Refer to ADR 2013 section 7.5.7.1 in case of dangerous goods (European Standard EN 12195-1). |   |
| **5.** | **Security in Warehousing** |   | **Security in Warehousing** |  |
| 5.1. | Has a security plan been developed and implemented for storage proportionate to the risks either in accordance with applicable legislation or the application of Best Practice? |   | The security plan should be the outcome of the security risk assessment carried out in the SQAS/ESAD Core. Check from recent transactions, whether Dangerous Goods are being stored/transported. The company should develop and implement, as part of Best Practice, a security plan. Further to this, it is advised also to add food/pharma substances and goods destined to the USA on the list. The Dangerous Goods list is only indicative, and additions may be made whenever significant changes are noticed and considered necessary, e.g. precursors for chemical weapons, illicit drugs, explosive precursors and high value goods. |   |
| 5.2. | Has the site implemented security measures to control access of unauthorized persons? |  | It is essential to establish the level of risk associated with unauthorized access. Points to bear in mind are: |   |
|   |   |  | (i) COMAH, ADR SECURITY PLANS, HCDG, ISPS. |   |
|   |   |  | (ii) For distributors of High Consequence Dangerous Goods (HCDG), it is mandatory to have a Security Plan as set out in ADR Chapter 1.10 or to local requirements. |   |
|   |   |  | (iii) Are walls and fences in good condition and of a standard to make access difficult to unauthorised persons? |   |
|   |   |  | (iv) Are all gates/entrances to the site manned or monitored during operational hours? Are they locked during non-operational hours? |   |
|   |   |  | (v) Is the site manned/patrolled or monitored by security outside normal hours? |   |
|   |   |  | (vi) Is there a system for the positive identification of drivers and their delivery documents? |   |
|   |   |  | In view of these points, checks need to be made on the effectiveness of actual procedures and how the management monitors them. |   |
| 5.3. | Are doors of the warehouses closed and locked to prevent unauthorised access when there are no operations? |   |   |   |
| 5.4. | Do visitors to the site have to sign in and sign out? |   | The assessor has to be required to sign in before and out after the assessment. |   |
| 5.5. | Are visitors accompanied? |   | Look for a procedure that requires visitors to be accompanied. Check records of past visitors. |   |
| 5.6. | Are warehouse operatives provided with company workwear? |   | Company workwear helps to check if unauthorised persons or third party persons (like mechanics) are present in the warehouse.  |   |
| 5.7. | If a CCTV system is required by customer(s) or other parties, is it in place? |   |   |   |
| 5.8. | Is the CCTV data storage protected against loss and tampering? |   |   |   |
| 5.9. | Is the CCTV data storage area protected against unauthorised access? |   |   |   |
| 5.10. | Is there adequate signage that camera surveillance is operated on the site? |   |   |   |
| 5.11. | Is a checking system in place to ascertain that camera positioning is maintained and that camera's are properly working? |   |   |   |
| 5.12. | If required by customer(s) or third parties, are there other security control systems installed?  |   | First level of security control consists of locked doors and gates (see question 7.2). Second level (advanced examples) are the following: - Infra-Red Light Barrier Infra-Red light beams at various heights form a fence of its own. Alarm goes off when one beam or more is/are interrupted. Best known from popular spy and burglary movies. Can also be used as a single beam with a receiving eye at a distance – when beam interrupted, alarm goes off. Used for Gate area, window fronts, fence climbing.- Laser ScannerSame principle as the IR Beam, Laser Beam from one side caught by an eye at the other side, when interrupted the alarm goes off. Can be used at over quite a distance. Used for gate area, window fronts, fence climbing.- Magnetic AlarmMostly used for Door/Window/Gate alarms.- Cable Continuity Interruption alarm.Mostly used for fences and gates. A cable is put under an electric charge and the continuity is measured. If it is interrupted (e.g. by somebody cutting the cable) the alarm goes off.Note: Reference to Security guidelines, Annex 1, Temporary storage areas *include the link* |   |
| 5.13. | Is there a procedure in place to identify if stored products have been tampered with, or/and are missing? |   | Look for the results of annual stock taking.This issue may also be additionally covered by periodic inspections of the stored goods, partly by the issue given attention through clear instructions to operational staff on what to notice when seeing product at any time during its stay at the warehouse facilities. Closed Circuit TV, random checks.  |   |
| 5.14. | Are seal discrepancies investigated thoroughly, the shipment rejected if necessary, security personnel notified and extreme care taken if there is evidence of seal tampering?  |   | Check the practices on sealing through interviewing drivers and verifying the instructions. Look for a sealing procedure and the unique numbered seals to be recorded on transport documentation.Especially, look for evidence that seal discrepancies in inbound deliveries are recorded and actions taken. |   |
| 5.15. | Does the site have adequate security lighting? |  | There are two aspects to this question.Firstly, is the site well lit from a security point of view? This is a recommendation for dangerous goods to allow adequate safeguarding and secondly, is the lighting maintained? The assessor shall ask for records of periodic walk around checks that the lights are working adequately, these checks shall have a maximum quarterly frequency. The assessor will also ask for maintenance records of the lighting system (luminaires should be cleaned and any defective lamps replaced) with a minimum annual frequency.  |   |
| **6.** | **Bagging and/or debagging and/or Packing Operations of Solid Products (Bags, Big Bags, and/or Octabins)** |  | **Bagging and/or debagging and/or Packing Operations of Solid Products (Bags, Big Bags, and/or Octabins)** |   |
|   |  |  | Following questions should be asked additionally if the packaging of solids into bags, big bags, octabins or similar is carried out at the warehouse, otherwise the sections are marked N/A. Check all questions during field inspection and interview of the operators. |  |
| **6.1.** | **General** |  | **General** |   |
| 6.1.1. | Is the packaging area protected/covered against adverse weather? |  | The assessor will check with operators if this is the only place where this operation is carried out. |   |
| 6.1.2. | Is the floor area clean, dry and free from obstacles? |  |   |   |
| 6.1.3. | Are emergency exits from the packaging area clearly marked, immediately accessible and free from obstacles? |  |   |   |
| 6.1.4. | When bagging or packaging is done directly from the bulk vehicle, is it done via a fixed installation? |  | Bagging or packaging should never be done directly from the vehicle without use of an intermediate hopper, recipient and/or machine. |   |
| 6.1.5. | If the risk of an explosive atmosphere was identified, has the packaging area been ATEX assessed, have the resultant zones been clearly identified on site, and has a site plan been developed and communicated to all relevant personnel? |  | A zoning plan has to be present for the entire storage area and identified according to this ATEX assessment.  The assessor should ask for the explosion protection assessment document. An ATEX assessment is applicable when the (product) dust can form an explosive atmosphere; refer to the SDS of the handled products to define if ATEX is applicable.  |   |
| **6.2** | **Equipment** |  | **Equipment** |   |
| 6.2.1. | Is there a preventive maintenance programme on the packaging equipment? |  | Check records of the maintenance programme. Check that the equipment is in good visual condition. |   |
| 6.2.2. | Are conveyors equipped, if required, with appropriate gangways to allow safe crossing for the operator? |  | Short conveyors may not require gangways. |   |
| 6.2.3. | Is the weighing system calibrated regularly? |  |   |   |
| 6.2.4. | For the handling of dry-bulk products: is earthing equipment (mechanism) in good condition, regularly tested and is the conductivity to earth measured to confirm resistance within acceptable limits and recorded at regular intervals? |  | Adequate earthing is essential for handling of granulated or powder products. So, if wires and clamps are used to fix to the packaging and/or packaging equipment they should be in good condition. Verify if there is a procedure available describing earthing requirements. The integrity of the earthing/grounding system and its resistance to earth, which must not exceed 10 ohms, should be checked annually and records kept. Verify if this is done and documented.  |   |
| 6.2.5. | Are the facilities for lifting packages such as big bags or similar to the packaging machinery taken into account in the risk assessment of the packaging operation? |  |   |   |
| 6.2.6. | In case of an emergency, can the packaging operation be shut down immediately by pushing a red (emergency stop) button? |  |   |   |
| 6.2.7. | Is an alarm system available in the area, so that an operator can call for help if needed? |  | A functioning communication system such as walkie-talkies is also acceptable. |   |
| **6.3.** | **Environment** |  | **Environment** |   |
| 6.3.1. | Is any spilled material disposed of safely? |  | Check for a spill procedure and a resulting disposal contract. This is a contract with a third party who is collecting the waste |   |
| 6.3.2. | Is the exterior of the packaging equipment clean and free of product contamination? |  |   |   |
| 6.3.3. | Where the warehouse handles plastics: are there measures in place designed to prevent pellet /flake/powder loss? |  | The definition of "plastics" is the following: “Small mass of preformed moulding material, having relatively uniform dimensions in a given lot, often used as downstream customer feedstock in moulding and extrusion operations". Measures can include procedures, equipment/techniques, e.g.: suitable connections, appropriate spill collection tools e.g. filters, vacuum cleaners, designed to prevent loss to environment. |
| 6.3.4. | Is the company carrying out inspection for pellet/flakes/powder loss? |  | ‘Inspection’ means that pellet/flake/powder production, processing and logistics is included in site management auditing/assessment and/or controlled by the local Permit Authority. The assessor has to look for a listing of potential emission points.  |   |
| **6.4.** | **Operations** |  | **Operations** |   |
| 6.4.1. | Is a documented procedure for packaging in place? |  |   |   |
| 6.4.2. | Is there a procedure in place to check that the correct packaging is selected prior to starting the packaging? |  | Check for aspects such as bag sizes, use of slip sheets, etc. |   |
| 6.4.3. | Are empty packaging materials stored in a safe way ? |  |   |   |
| 6.4.4. | Is there a procedure in place for the legal disposal of classified and unclassified packaging waste? |  | Some packaging is designed for single use and becomes waste after that use. Other packaging is designed to be returnable and reusable, such packaging is not waste unless it is classified as waste by the owner. This also includes, for example, stretch wrap, cling film, plastic or steel banding. |   |
| 6.4.5. | For equipment that is not dedicated to one substance, is a procedure in place for decontamination and cleaning, after filling operations, to avoid substance cross contamination?  |   | To prevent cross contamination, filling lines, pumps and manifolds have to be cleaned. The written cleaning procedure should be checked against records of the cleaning activity. Sometimes, cleaning is not required because the equipment is dedicated or a compatible product is going to be filled in the next operation, in which case the question should be marked not applicable.  |   |
| 6.4.6. | Are product samples traceable and stored in a safe and proper way? |  | Check procedure and implementation of it. |   |
| **7.** | **Own Vehicle Transport Operations** |  | **When the company operates transport from the site, the following questions should be marked. If the transport serving the site is not controlled by the site, the following questions should be marked N/A.** |   |
| 7.1. | Is there a drivers manual that is distributed to all drivers in a language they can understand? |  | Check if a drivers manual (hard copy or electronic version) is available and is shared to all drivers (and fully integrated subcontractors (FIS)) in a language they can understand. Make a random check by asking a number of drivers (including FIS) if the manual is available in the drivers’ cabin. Examine selected instructions to check that the details are up-to-date. The score is “No” if significant details are out of date. |   |
| 7.2. | Have drivers (own and FIS) been trained in the content of the drivers manual? |  | Check training records and interview drivers. This can be done on an individual or group training. |   |
| 7.3. | Is the drivers manual updated regularly? |  | Check that the drivers manual is up-to-date by checking references to updates in ADR and/or other applicable legislation and developments. This requires a minimum of an update every two years. |   |
| 7.4. | Are there detailed instructions in the available driver manual regarding the following topics:- Behaviour Based Safety (BBS) principles- incident and near miss reporting- use of seat belt- use of company or private mobile phone- use of drugs and alcohol- actions to be taken in an emergency- security- inspection prior to loading- loading procedures- prescribed documentation, including instructions in writing, is on board- safety equipment required by legislation- after loading, verification that the vehicle and load have no obvious defects, leakages, cracks, missing equipment- after loading, verification that the vehicle is not overloaded- after loading, verification that danger labels and markings (orange plates) prescribed for the vehicles, have been affixed (ADR and IMDG goods)- operating/driving restrictions during bad weather conditions? |  | The assessor will check the items indicated in the question and score the question "No" if any of the items are missing. Mandatory comment(s) are required. |   |
|   | - actions to be taken if, during the journey, an infringement which could jeopardize the safety of the transport, is observed (ADR goods)- unloading procedures- observation of instructions/practices at loading and unloading sites and reporting of unsafe conditions- use of wheel chocks (to avoid uncontrolled vehicle movement)- defect reporting and rectification system- use of standard PPE- fall arrest harness- PPE for special products- entry into confined space?- if the container is used for bulk solids, is it tipped in stages, e.g., one ram at the time, to prevent product surge? |  |   |   |
| 7.5. | Does the drivers manual contain, in addition, and if applicable, specific detailed instructions for BULK GOODS, regarding: - visual inspection of tanks, valves and hoses for cleanliness? - correct hose connection and valve operation? - correct operation of any transfer equipment?- equipotential electrostatic bonding/earthling? - the use of correct equipment to tighten couplings?- a check on gaskets and seals prior to use? |  | When the company transports BULK GOODS, the following questions should be marked. Otherwise the following questions should be marked N/A. Score a "Yes" for each listed item for which an instruction exists that covers critical SHEQ&Sec aspects. - External tank cleanliness should be considered and also a visual inspection of the internal tank cleanliness from a safe external position. - The use of non-sparking equipment is demanded. Extensions on tightening equipment should not be used because this can cause over tightness and damage to the couplings. - The driver has to verify if all gaskets and seals are still in a (visually) good state.The assessor will check the items indicated in the question and score the question "No" if any of the items are missing. Mandatory comment(s) are required. |   |
| 7.6. | Does the drivers manual contain, in addition, specific detailed instructions for PACKAGED GOODS, regarding:Inspection of the cargo compartment for cleanliness and potential risks (e.g. nails)?- stowage and cargo securing?- product compatibility and segregation? |  | Scores a "Yes" for each listed item for which an instruction exists that covers critical SHEQ&Sec aspects.- Do the instructions cover the preferred method for securing packaged items and does it also specify the use of dunnage? See the "Guidelines for Transport Equipment used for chemical packed cargo" and, if applicable, the "IMO/ILO/UNECE Code of Practice for packing of Cargo Transport Units"- see ADR 7.5 The assessor will check the items indicated in the question and score the question "No" if any of the items are missing. Mandatory comment(s) are required. |   |
| **7.7.** | **Pre-Start Checks** |  | **Pre-Start Checks** |   |
| 7.7.1. | Is a pre-start list filled in by the driver including the following items: |  | The assessor will verify that there is a procedure (in the driver’s manual, as required by 7.4, or in other document) to carry out the checks of questions 7.7.1.a – 7.7.1.n. The procedure will require, for every item, a daily record frequency, as a minimum.To score positively the questions the assessor will: 1. Verify that, at least, one the following records are fulfilled by the driver: - One or several ticks in a board-computer / TMS (truck management system)- Checklist in hard copy with all items- A daily work record document with a box making a reference to the procedure.2. Interview drivers on this routine to confirm that the checks are done thoroughly. The items with the legend “to be verified by the assessor” will be checked by the assessor on the trucks during the interview to the drivers. |   |
| 7.7.1.a. | Inspection of vehicle for damage? |  | No guidelines. To be verified by the assessor. |   |
| 7.7.1.b. | Lubricating oil level and pressure check? |  | For modern trucks this is done automatically before ignition. |   |
| 7.7.1.c. | Brake operation? |  | No guidelines. |   |
| 7.7.1.d. | Condition of tyres? |  | No guidelines. To be verified by the assessor. |   |
| 7.7.1.e. | Lights? |  | No guidelines. To be verified by the assessor. |   |
| 7.7.1.f. | Inspection of vehicle for leakage? |  | Check for water, oil, diesel, product leaks. |   |
| 7.7.1.g. | Tightness of wheel nuts? |  | This should only be checked after tyre replacement. Driver to look for rust around the wheel nuts this would signify slackness and movement of the nuts.  |   |
| 7.7.1.h. | Fire extinguishers? |  | In accordance with legal requirements and instructions in writing. To be verified by the assessor. |   |
| 7.7.1.i. | Every PPE required? |  | In accordance with legal requirements and instructions in writing. To be verified by the assessor. The assessor should look for evidence of orders (carried out or planned) and compare the completeness of the PPE check against the hazard requirements for the carried products.Mandatory comment required. |   |
| 7.7.1.j. | Wheel chocks? |  | No guidelines. To be verified by the assessor. |   |
| 7.7.1.k. | Eye wash bottles? |  | Regarding ADR 8.1.5.2.To be verified by the assessor. |   |
| 7.7.1.l. | Drain cover and absorption material? |  | For drain cover refer ADR 8.1.5.3.To be verified by the assessor. |   |
| 7.7.1.m. | Emergency remote controls on bottom valve? |  | The bottom valve of a tank can be shut down with a remote control system. This system has to be checked on its operability: verify that the cable is connected to the valve.The emergency shutdown operating system must affixed and operable.  |   |
| 7.7.1.n. | No cracks on front windscreen |   |   |   |
| **8.** | **Transport of dry products including plastics and polymers**  |  | **When the company transports dry products, the following questions should be marked. Otherwise the following questions should be marked N/A.** |   |
| 8.1. | Is there a written procedure in place which requires the driver to verify if the (during and after loading and unloading) lost pellets are properly removed from the outside of the transport equipment before leaving the loading/unloading site? |  | The procedure could be part of the driver's manual. The loading/unloading operator can use dust suction systems or blowers (open or closed) to remove lost pellets. This also applies to sweeping out trailers of packed cargo after unloading (pellets after damages or released through filling openings of the packaging). Refer to the Cefic/ECTA/Plastics Europe Guidelines "Safety and Quality Best Practice Guidelines for Unloading of Polymers in Bulk", section 5. |   |
| 8.2. | Are there written instructions and precautions that the driver must take into account when unloading polymers in bulk? |  | Refer to the Cefic/ECTA/Plastics Europe Guidelines "Safety and Quality Best Practice Guidelines for Unloading of Polymers in Bulk", section 3. |   |
| 8.3. | Are there written instructions and precautions that the driver must take into account when unloading bulk chemicals by tipping of Silo trucks/Trailers, Silo Containers and bag-in-box containers? |  | Refer to the Cefic/ECTA "Best Practice Guidelines for Safe tipping of Silo trucks/ Trailers Silo Containers and bag-in-box containers", Section 10. |   |
| 8.4. | If rotary valve is used for discharge: is it fitted with an interlocked safety guard to prevent access when the blades are in motion? |  | The assessor will look for a reference in the driver's manual. |   |
| 8.5. | Are all twist locks checked before loading/discharge? |  | The assessor will look for a reference in the driver's manual. |   |
| 8.6. | Is the electrical resistance to earth of the earthing wire less than 10 ohms?  |  | The assessor will ask for records of annual test of the electrical resistance. |   |
| **9.** | **Water Discharges and Effluent Treatment** |  | **If an effluent treatment system is not used the relevant questions can be answered with N/A but always with clear comments on the subject.** |   |
| 9.1. | Does the company have a procedure to operate the waste water and effluent treatment? |  | Check if a procedure exists how the waste water treatment is operated and what checks are done to optimize the operation (Jar test: this is a simulation of the physico-chemical treatment), respiration test, visual inspections, check on the condition of electrodes (e.g. pH probe, Oxygen meter in the aeration, etc. ...). Records should be kept how this follow up was done and what measures were taken when the checks indicate that the discharge values risk not being met. |   |
| 9.2. | Are water discharges monitored according to the permit requirements? |  | Check the monitoring system |   |
| 9.3. | Is there a continuous effluent monitoring or does the site collect and retain samples of the cleaning water? |  | Check the procedure and the storing facility. |   |
| 9.4. | Are the data about water discharges and pollution measurements stored for a least one year (or the start-up in case of a new installation)? |  | Verify the documentation against applicable legislation when applicable in the country. In case there are no legal obligations, the company must have defined a list with the parameters they would check to follow up the proper operation of their installation. Also check that effluent measurements done in the own laboratory (if applicable) are periodically double-checked at external laboratories for verification. |   |
| 9.5. | Do these records show that the regulatory obliged discharge parameters are respected?  |  | Most permits put limits on the maximum value of certain parameters allowed to discharge (e.g. COD, BOD, pH, N, P, AOX, heavy metals, suspended solids, etc. ...). Check if such parameters exist in the permit and if they are followed up and respected during the operation of the locally obliged waste water treatment. |   |
| 9.6. | In case the (pre-wash) waste water is treated by an external party: |  | Pre-wash water is sent to external treatment to avoid the local water treatment to be overcharged. |   |
| 9.6.a. | Is there an official authorisation of this external plant? |  | This plant should be officially permitted for the treatment of external waste water. Check if the acceptance conditions of this plant are not restricted. |   |
| 9.6.b. | Are all legal requirements met for these transports? |  | These transports are "waste" transports and should meet the local regulations for waste |   |
| 9.7. | Is there a procedure in place to avoid the mixing or blending of incompatible chemical waste flows in the effluent system? |   | Uncontrolled mixing of chemicals in the effluent can cause hazardous reactions like explosions or the generation of toxic fumes.  |   |
| 9.8. | Is all potentially contaminated water in bunds collected and drained to the public sewer system via the local treatment unit? |   | Is the run-off of the cleaning area controlled by using containment and connection to the water treatment plant, to prevent direct flow into open waters, the soil or city sewer systems? The drainage of the storage area for packed goods and residues and all potentially polluted rainwater should be assessed/treated before being discharged in the public sewer system or surface water. |   |
| 9.9. | Does the preventive maintenance programme include the effluent treatment system? |  | The assessor shall ask what kind of effluent treatment is installed. Different arrangements are possible for treatments. All equipment not mentioned in the other maintenance questions and essential to the good operation of the installation such as: 1) General: flow meters, pH probe (calibration and maintenance), dosage pumps, storage & process tanks 2) Physico-chemical installation: oil separator, Dissolved Air Flotation (DAF unit), skimmers, Polyelectrolyte unit3) Biological treatment installation: blowers, recirculation pump, oxygen probe, settling tanks4) Dewatering installation: sludge tank, sludge pump, centrifuge, chamber filter press5) Tertiary purification: sand filter, activated carbon filter, shall be part of a preventive maintenance program because their good operation is essential for the tank cleaning activities.  |   |
| **10.** | **Measurement and management ofgreenhouse gas emissions (GHG)** |  | **Measurement and Management of greenhouse gas emissions (GHG)**The European Commission plans to establish a European framework for the harmonized measurement of transport and logistics greenhouse gas emissions, based on global standards, which could then be used to provide businesses and end-users with an estimate of the carbon footprint of their choices, and increase the demand from end-users and consumers for opting for more sustainable transport and mobility solutions.In the Sustainable and Smart Mobility Strategy published by the European Commission in Dec. 2020 the following objective was defined: 90% reduction in greenhouse gas emissions in transport by 2050, compared to 1990. |
| **10.1.** | **Scope 1: Emission measurement of fuel consumed** |  | Scope 1 emissions include the direct emissions from assets that are owned or controlled by the assessed company and is paid by the company. This includes the combustion of solid or liquid fuels purchased to produce energy, heat, or steam for use in stationary or mobile equipment (e.g. forklifts, generators) and/or associated buildings. This also includes fuel used in trucks and vehicles operated by the Distributor. **Fully integrated transport sub-contractors are not included in these questions.** |
| 10.1.1. | Does the company know the fuel consumed in its site activities on an annual basis? |  | Typically, diesel/petrol/gas are consumed to run forklifts and other mobile equipment or to heat warehouses  |  |
| 10.1.2. | Did the company calculate the emissions **TTW** from the fuel consumed in its site activities during the last year using the formula:kg CO2e = Σ (fuel (liters) × TTW fuel emission factor (kg CO2e/ liters fuel))? |  | The company will use fuel emission factors from **GLEC framework guideline: "Global Logistics Emissions Council Framework for Logistics Emissions Accounting and Reporting" last version**. The document can be downloaded from this link:<https://www.smartfreightcentre.org/en/downloads/>For every type of fuel three factors can be used: **WTT, TTW and WTW.** - **WTT (Well-to-Tank):** WTT emissions consist of all processes between the source of the energy (the well) through the energy extraction, processing, storage and delivery phases up until the point of use (the tank)- **TTW ( Tank-to-Wheel):** These are the emissions from fuels combusted to power activities (the wheel). - **WTW (Well-to-Wheel):** These are emissions from the full fuel life cycle and should be equivalent to the sum of WTT and TTW emissions.**For this question TTW should be used.** |  |
| 10.1.3. | Does the assessed company have a system to collect data enabling energy (fuel)-based calculation of its transport GHG emissions for all own trucks whose fuel is paid by the company? |   | In this section the expression "assessed company" has the same meaning as that in the other parts of the questionnaire: it refers to the company located at a specific site. If the assessed company does not operate its own trucks, this question is not applicable. Fully integrated contractors are not under the scope of this question.The assessed company needs to have a system to record the following data:- Consumed Fuel for each fuel type (e.g. via the fuel purchase invoices) The company could consume different fuels, for example: - Diesel  - Diesel/biodiesel blend - Biodiesel - CNG/LNG - Hydrogen - etc.- Total mileage driven (e.g. via the Odometer on periodical basis)- Transported Tonnage (e.g. via delivery notes, invoices) |   |
| 10.1.4. | Does the assessed company have a system to annually calculate transport GHG emission intensity (expressed as kg CO2 equivalent per tkm) using the data collected in question 10.1.3? |  | **kg CO2e** means **kg CO2 equivalent**: it is a unit that describes the impact of different greenhouse gases as a single measure related to the global warming potential of carbon dioxide.If the assessed company does not operate its own trucks, this question is not applicable. Fully integrated contractors are not under the scope of this question.The assessor will accept the calculation made by the company provided that the formula used in the numerator is the addition of the emissions from the fuel(s) annually consumed and the denominator is calculated by the formula mentioned in 10.6.2. |   |
| 10.1.5. | Does the company know the fuel consumed by **transport/business category** on an annual basis? |  | A company could have different transport/business categories:- Bulk truck (liquid/solid) - Packed goods - Refrigerated trucks- etc.If the assessed company does not operate its own trucks, this question is not applicable. Fully integrated contractors are not under the scope of this question.To score the question positively the company should measure the fuel consumed for every transport/business category and every type of fuel consumed. In case that the exact amount is not known a reasonable estimate will be accepted.For a detailed explanation on transport categories see the **GLEC framework guideline: "Global Logistics Emissions Council Framework for Logistics Emissions Accounting and Reporting". Last version. Module 5** *(Link to be inserted when the new version is ready)*. |  |
| 10.1.6. | Did the company calculate the emissions **TTW** from the fuel consumed during the last year using the formula:kg CO2e = Σ (fuel (liters) × TTW fuel emission factor (kg CO2e/ liters fuel))? |  | If the assessed company does not operate its own trucks, this question is not applicable. Fully integrated contractors are not under the scope of this question.The company will use fuel emission factors from the **GLEC framework guideline: "Global Logistics Emissions Council Framework for Logistics Emissions Accounting and Reporting" version 2.0, Module 1**. The document can be downloaded from this link:[*https://www.flexmail.eu/f-844a1f54174eb51e*](https://www.flexmail.eu/f-844a1f54174eb51e)For every type of fuel three factors can be used: **WTT, TTW and WTW.** - **Well-to-Tank** **(WTT):** WTT emissions consist of all processes between the source of the energy (the well) through the energy extraction, processing, storage and delivery phases up until the point of use (the tank)- **Tank-to-Wheel (TTW):** These are the emissions from fuels combusted to power activities (the wheel). - **Well-to-Wheel (WTW):** These are emissions from the full fuel life cycle and should be equivalent to the sum of WTT and TTW emissions.**For this question TTW should be used.** |  |
| 10.1.7. | Did the company calculate the **Scope 1 emissions?**kg CO2e = Addition of questions 10.1.2 and 10.1.6 |  |  |  |
| **10.2.** | **Scope 2: Emissions from electricity**  |  | **Scope 2 emissions** are indirect emissions from theproduction and distribution of electricity purchased by the assessed company for use in its own sites, electric vehicles or other owned asset requiring electricity.Consumption of energy for heating/refrigeration of offices should not be included in GHG calculations. This is in line with the SQAS 2022 Rev questionnaires. In case that there is no direct measurement of these energy consumptions, a reasonable estimation will be accepted by the assessor. |
| 10.2.1. | Did the company measure the electricity purchased for use in the warehouse, electric vehicles, or other owned asset (including offices on site) requiring electricity? |   | Electricity bills provide the most accurate information on electricity use.Typical energy consumptions come from vehicles running with batteries, electric forklifts and electricity used for heating/refrigeration, lighting, pumps, agitators, wrapping machines and packing/repacking devices. |  |
| 10.2.2. | Did the company calculate the **Scope 2 emissions from the purchased electricity WTT** mentioned in 10.2.1 during the last year with the formula:kg CO2e = Σ (electricity (kWh)× electricity emission factor (kg CO2e/ kWh electricity))? |  | TTW is considered to be zero for electricity, all emissions are in the WTT stages at the point of use.**The emission factors to be used depend on the electricity origin**. Companies must gather electricity emission factors for the countries or regions where the sites are located. Electricity factors by country can also be obtained from the International Energy Agency (IEA): <https://www.iea.org/data-and-statistics/data-product/emissions-factors-2020#emissions-factors> (fee to be paid).In absence of other data, an EU average electricity factor of 420 g CO2e/kWh can be assumed (source: GLEC framework guideline). Use of individual country mixes may give significantly different values, especially in countries with a highly decarbonized electricity supply. |  |
| **10.3.** | **Disaggregation of energy consumptions** |  |  |
| 10.3.1. | For its on-site activities, does the company disaggregate the emissions of Scope 1 and 2 considering the source? |  | Disaggregation of energy consumption helps to identify sources for potential energy reduction. The following list can be used:- Mobile equipment: Forklifts are typically used. They can run with fuel or batteries- Lighting- Refrigeration or heating system of stored product - Pumps, agitators, wrapping machines and packing/repacking devices.- IT systems, offices, workshops, generators: If IT system is subcontracted, this item is not applicable.Most of the equipment mentioned consume electricity. Direct measure of the energy consumption from equipment belonging to the same group is needed (i.e. the system should be able to differentiate lighting from heating consumption, for example). Nevertheless, if measurement of group equipment is not available, an estimation based on the individual equipment consumption will be accepted by the assessor. |
| **10.4.** | **Calculation of Total emissions (Scope 1 and 2)** |  | Measurement of total emissions is necessary because it has direct impact in global warming.  |
| 10.4.1. | Did the company calculate the **Total emissions** during last year **by addition of Scope 1 and 2?** |  | The following questions should be added: 10.1.7 + 10.2.2. |  |
| **10.5.** | **Calculation of Tonnes-km**  |  |  |
| 10.5.1. | Does the company know the tonnes of product transported and kilometers driven (both loaded and empty) **associated with each category** specified in 10.1.5? |  | If the assessed company does not operate its own trucks, this question is not applicable. Fully integrated contractors are not under the scope of this question.For additional explanation see the GLEC framework guideline: "Global Logistics Emissions Council Framework for Logistics Emissions Accounting and Reporting". Last version. Module 5 *(Link to be inserted when the new version is ready).* |
| 10.5.2. | Did the company calculate the tonne-Kilometers during the last year **by transport category** with the formula? Σ tkm by **transport category** = (ton shipment 1 x km shipment 1) + (ton shipment 2 x km shipment 2) +…. + (ton shipment n x km shipment n)  |  | If the assessed company does not operate its own trucks, this question is not applicable. Fully integrated contractors are not under the scope of this question.The assessor will take a sample of transport shipments and will ask the company how the tonnes and km transported were calculated.  |
| **10.6.** | **Calculation of emission intensity** |  |  |
| 10.6.1. | Did the company calculate the emission intensity during the last year? |  | Emission intensity (Kg CO2e/outbound tonnes or units) = Total emissions from question 10.4.1./number of outbound units (tonnes or units)The company will choose the denominator of the calculation (tonnes or units). It could be tonnes of shipped product or units (e.g. number of pallets). |
| 10.6.2. | Did the company calculate the **emission intensity by transport category** during the last year using the formula: Emission intensity factor by transport category (kg CO2e/tkm) = **Total emissions** obtained from 10.4.1 / **tkm by category** calculated in 10.5.2 |  | If the assessed company does not operate its own trucks, this question is not applicable. Fully integrated contractors are not under the scope of this question.For an explanation on how to calculate emissions by transport categories see the **GLEC framework guideline: "Global Logistics Emissions Council Framework for Logistics Emissions Accounting and Reporting". Last version. Module 5** *(Link to be inserted when the new version is ready).* |
| **10.7.** | **Consolidating and reporting emissions** |  |  |  |
| 10.7.1. | Does the company consolidate in a report the total annual emissions in the following form?- Scope 1 (question 10.1.7)- Scope 2 (question 10.2.2)- Total emission (question 10.4.1)- Emission intensity (question 10.6.1)- Emission intensity by transport category (question 10.6.2) |  | For example of calculations see the GLEC declaration framework guideline, last version.If the assessed company does not operate its own trucks, emission intensity by transport category is not applicable. |  |
| **10.8.** | **Reducing emissions**Defining strategy, objectives and programme**The first three questions of this section follow a hierarchy: every question has a level of requirement higher than the precedent one.** |  |   |  |
| 10.8.1. | Has the company defined a **strategy** to reduce its GHG emissions, based on the measurements made in 10.6.? |  |  |  |
| 10.8.2. | Has the company defined the **objectives** to reduce its **emission intensity**, based on the measurements made in 10.6. in a multiannual plan? |  | The assessor will check if the reduction is in line with the objective indicated in guideline of question 10., Sustainable and Smart Mobility Strategy. |  |
| 10.8.3. | Do the **objectives** include a reduction of the **total emissions as** calculated in 10.4.1., in the multiannual programme? |  | The assessor will check if the reduction is in line with the objective indicated in question 10., Sustainable and Smart Mobility Strategy. |  |
| 10.8.4. | Does the assessed company have a multiannual **programme** to reach the objectives mentioned in 10.8.2 or 10.8.3.? |  | To score one, the assessor will check that there is a detailed programme with responsible people and due dates. The programme will include intermediate steps and following up at least on a yearly basis.  |   |

