



FEBELAUTO-NORM©
FOR THE APPLICATION OF THE TAKE BACK OBLIGATION FOR BATTERIES OF ELECTRIC VEHICLES BY THE ACCEPTANCE POINTS AND THE MANAGEMENT FOR EV-BATTERIES BY THE AUTHORISED TREATMENT FACILITIES ACCEPTING END-OF-LIFE HYBRID OR ELECTRIC VEHICLES.
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1. Scope of FEBELAUTO-norm©

Within the framework of the regional environmental policy agreements, which regulate the take back obligation of batteries for electric vehicles and for which FEBELAUTO has been appointed as the accredited body, the acceptance points and the treatment facilities authorized by FEBELAUTO that would like to accept end-of- life hybrid and electric vehicles and make use of the free collection of batteries for electric vehicles need to comply with the FEBELAUTO-norm©.

The batteries for electric vehicles are batteries that are specifically designed to provide power for the traction of hybrid or electric vehicles of category L for which type approval has been granted in line with the Regulation (EU) No 168/2013 and weighing more than 25 kg or which are specifically designed to provide electric power for the traction of hybrid or electric vehicles of categories M, N and O as stipulated in Regulation (EU) 2018/858. These are both batteries from original equipment as batteries from the replacement market. This concerns both the batteries for electric vehicles and the cells, modules and stacks of batteries for electric vehicles that are marketed separately.

An Acceptance Point (AP) is an official distributor of hybrid or electric vehicles, distributor of batteries for electric vehicles, authorized center, garage for repair and maintenance and bodywork or end-seller designated by the manufacturer or by the accredited body for the acceptance of reusable and discarded batteries for electric vehicles. The FEBELAUTO-norm© must be applied by any acceptance point that wishes to join or is affiliated with the official network of acceptance points. These points of acceptance are hereinafter referred to as 'AP'.

An Authorized Treatment Facility (ATF) that accepts end-of-life hybrid or electric vehicles is further referred to as an 'ATF+'. An ATF+ may or may not be an AP of batteries for electric vehicles (EV-batteries). An ATF+ must meet the FEBELAUTO-norm© to accept end of life hybrid or electric vehicles. An ATF+ that also functions as an AP identifies the operations as an AP and the operations as an ATF+ and keeps the two operations separate.

An AP and ATF+ that meet the FEBELAUTO-norm© may make use of the free of cost collection of EV-batteries.

This standard does **not** apply to the repair, reuse and recycling of EV-batteries or the repair of hybrid or electric vehicles. These activities are subject to specific regulations, standards and safety regulations.

2. General obligations

Legal Authorization: The AP or ATF+ needs to have all the necessary legal authorizations, including an environmental or environmental planning permit, required for the activities carried out by the AP or ATF+ in connection with hybrid or electric vehicles and EV-batteries.

Insurance: The AP or ATF+ needs to have insurance coverage for “damage” and “third-party liability” insurance for the operations relating to hybrid or electric vehicles and EV-batteries in the workplace. If the AP or ATF+ makes a diagnosis, then the AP or ATF+ needs to have the required permits and insurance coverage against risks associated with the carrying out of such operations.

Management: The AP or ATF+ draws up a plan for management of the EV-batteries. This plan contains at least the following elements:

- A risk analysis regarding the removal and storage of EV-batteries, including the intervention procedures, in accordance with the guidance on well-being in the workplace.
- Indication of the designated separate storage zones for EV-batteries that are able to be reused or recycled.
- An overview of who must have what certificate of training, in accordance with the manufacturers' recommendations, or according to standardized or sectoral training procedures¹ advocated by FEBELAUTO.

Removal of EV-batteries: The AP or ATF+ will only remove EV-batteries from hybrid or electric vehicles if:

- It has instructions from the manufacturer.
- It will be limited to removing EV-batteries from hybrid or electric vehicles, accepting EV-batteries, logistical processing for that purpose, and their packaging for transport.
- It has personal protective equipment and tools that comply with the IEC 60900 standard for the removal of EV-batteries from hybrid or electric vehicles and for their logistical processing and packaging for transport.
- Under no circumstances will it dismantle EV-batteries unless it has received explicit instructions from the manufacturer. In that case, the AP or ATF+ has received the necessary training and has the necessary equipment.

Usability: EV-Batteries that are no longer suitable for use in hybrid or electric vehicles (for example, due to degradation of the electrolyte or electrodes) may still be usable for other (stationary or non-stationary) applications. The diagnosis of EV-batteries with a view to their use in other applications requires specialist knowledge and appropriate equipment. These diagnostic treatments are not part of the FEBELAUTO-norm©, except as stated in chapter 3.4.

¹ Specifically for joint committees 112, 142.01, 149.02 and 149.04, for example, these training procedures were drawn up within the framework of the collective bargaining agreements of 11-12-2017.



2.1. Regulations and instructions which have priority over the FEBELAUTO-norm©

Any instruction from the manufacturer on the safety of EV-batteries (including safety, removal, transport, logistics operations) that is stricter than the FEBELAUTO-norm© must be respected as a matter of priority.

Regulations regarding the prevention and control of electrical and other risks always apply.

Any requirement of the fire brigade regarding the storage, logistical processing or transport of EV-batteries is to be respected and may be the subject of the audit verifying the application of the FEBELAUTO-norm©.

2.2 Audit

The AP and ATF+ have an audit carried out every two years by FEBELAUTO or a third party appointed by FEBELAUTO for the grant or retention of designation as AP and ATF+. The total of conditions and requirements can be assessed during the audit. The AP or ATF+ is in the position to document each answer.

The AP or ATF+ will designate a person responsible for the audit that verifies the application of the FEBELAUTO-norm©.

The AP designated by the producers follows the guidelines and audit instructions notified by the vehicle producers or manufacturers for the temporary storage of EV-batteries.

Upon receipt of the audit report, the AP or ATF+ informs FEBELAUTO of the result of the audit. The AP or ATF+ also provides FEBELAUTO with the auditor's final report for possible follow-up (e.g. adaptive measures, etc.).

Failure to comply with the FEBELAUTO-norm© may result in temporary or permanent withdrawal of the designation as AP or ATF+. Upon final revocation, the AP or ATF+ will immediately cease acting as AP and/or ATF+.



3. Administrative obligations

The AP or ATF+ will designate a person responsible for all administrative tasks and reporting in accordance with the environmental policy agreements.

The administrative obligations included in the FEBELAUTO-norm© apply in addition to the applicable official obligations such as keeping a waste materials register.

3.1. Information and registration system

The AP or ATF+ uses the information and registration system developed by FEBELAUTO to register and monitor the accepted, stored and to-be-disposed-of EV-batteries. The status of EV-batteries can be monitored at any time by the AP, ATF+ or the importer/manufacturer.

3.2. Reporting

For processing the aggregated data necessary for FEBELAUTO's annual reporting to the competent authorities, electronic reports will be sent annually to FEBELAUTO, by:

- the AP directly or through the producer;
- the ATF+ directly.

concerning the following data:

- Date of acceptance of EV-batteries.
- Chemical composition, weight (if EV-batteries are complete, the indication of the original weight at the time of placing on the market may take the place of the weight from a weighing procedure), the missing components and their number if the battery is incomplete and the model and identification number, if available.
- Date of transfer/disposal, stating the type of the destination at least per following category and with its name and address, to:
 - an external diagnostic center;
 - a diagnostic center of a producer under warranty;
 - an out-of-warranty diagnostic center of the producer;
 - a remanufacturing center of the producer;
 - a remanufacturing center, other than of the producer;
 - a user for the purpose of reuse in the vehicle;
 - a user for repurposing for another application;
 - a recycling company;
 - collection by FEBELAUTO.

If the AP or ATF+ disposes of the EV- battery itself, for processing and recycling, reuse or repurposing for another application, the AP or ATF+ must, in addition to the foregoing details, also report on:

- the facilities and the manner in which the collected EV-batteries were processed or prepared for reuse as EV-batteries or for repurposing for another application;
- the level of recycling achieved;
- the recycling rate calculated in accordance with Regulation 2023/1542 of the European Parliament and of the Council concerning batteries and waste batteries.



The documentation regarding the transfer/disposal to the possible destinations mentioned in the next chapter is kept by FEBELAUTO for a period of at least 20 years.

The AP or ATF+ explicitly states, in addition to the type and purpose, the identity of the legal or natural person for which the EV-battery is intended.

The AP or ATF+ will also keep all data about these EV-batteries and their destination for a period of 5 years.

3.3. Transfer/disposal of EV-batteries

Any AP or ATF+ wishing to do so may directly address the recycling market, the reuse market for an automotive or any other application, unless otherwise stipulated by the manufacturer under a specific agreement. If the AP or ATF+ itself makes arrangements for the destination, it is subject to the aforementioned administrative obligations.

For EV-batteries going to repurpose for another application, the AP or ATF+ concludes an agreement for the transfer of management responsibilities of the EV-batteries. The AP or ATF+ ensures that the legal or natural person that owns and assumes the producer responsibility for the EV-batteries signs the agreement.

The natural or legal person that places EV-batteries, or parts thereof, on the market for repurposing is considered the manufacturer/producer with full producer responsibility in accordance with the applicable regional, national and European legislation on batteries. They must thereby join an accredited body or conclude an individual scheme with the regions concerned.

3.4. Diagnosis

If the AP or ATF+ also serves as a diagnostic center and has been appointed for this purpose by a manufacturer, the AP or ATF+ records the diagnostic method, and the result of each diagnosis carried out.

The technical data from any diagnosis is important for potential repurposing of the EV-batteries for another application, and for their transport.

FEBELAUTO may request to receive the diagnostic result before any shipment of the EV-batteries for repurposing in another application or for recycling.

4. Operational obligations

4.1. General safety instructions

When “HIGH VOLTAGE” is indicated, the AP or ATF+ uses adapted equipment to eliminate electrical risks.

The AP or ATF+ performs each operation on EV-batteries with protection against short circuit, heat sources, water and moisture, the risk of mechanical damage (shocks, falls, compressions, crushing, etc.) and electrical, magnetic and chemical risks.

The AP or ATF+ must carry out each operation on EV-batteries with due observance of the following precautions:

- Always use individual protective equipment such as insulating gloves.
- Do not connect the positive and negative poles of the EV-batteries to conductive materials and do not bring the poles of the EV-batteries into contact with each other.
- Never dismantle or open the EV-batteries or components such as modules and cells without the explicit permission of the producer.
- Do not expose the EV-batteries to extreme mechanical stress, to risks of static electricity, to water or moisture, to heat or heat sources that produce more than 60°C.
- Do not expose the EV-batteries to sunlight.
- The EV-batteries have to be stored in a dry, cool place, ventilated and covered (see 4.3).
- Discarded EV-batteries have to be stored in accordance with the applicable legal provisions.
- A separate storage area has to be provided for EV-batteries, and it should be placed under supervision and only made accessible to the specially trained employee who has permission from the employer.

The AP or ATF+ takes the following precautions to exclude indirect risks:

- Check the protected electrical installations.
- Only use power tools in a good condition.
- Never pinch the power cables.
- Insulate the fixed equipment used in the processing of EV-batteries.
- Communicate the requirements for urgent interventions.

The AP or ATF+ needs to respect the following safety requirements when EV-batteries are offered up for transport:

- Pre-secure the electrical installation the employee is working on and clearly identify the working zone.
- Completely close the installation and provide the necessary insulation.
- Secure against renewed current.
- Check that the installation is not under high voltage.
- Earthing is provided to prevent short circuits.

- Take safety measures when operations are carried out at any locations in the vicinity that are under high voltage.

4.1.1. Safety instructions when handling EV-batteries

The AP or ATF+ always must follow the instructions of the producer.

The AP or ATF+ must take maximum account of the internal security system in EV-batteries, including the short-circuit system, cooling system and insulation, before proceeding with the removal, storage or logistical processing of EV-batteries.

The AP or ATF+ knows the characteristics of the EV- battery (chemical composition, presumed weight and dimensions) and its condition (used, damaged, defective, waste) before removal, storage and logistical processing.

The AP or ATF+ determines the correct packaging and transport method for further transport. EV-batteries are considered hazardous goods and are classified in class 9 according to the UN 3480 classification. They must be transported in compliance with the regulations regarding, *inter alia*, information, pictogram, packaging specifications and official declaration, determined according to the nature of EV-batteries.

The AP or ATF+ does not dismantle the removed EV-batteries unless specifically instructed and authorized to do so by the producer.

4.1.2. Safety equipment

It is requested that the AP or ATF+ have available at least the following safety equipment:

- bridge or scissor pallet trucks;
- when using a charging arm or charging kit for EV-batteries, this has to be CE marked, insulated and protected against shocks;
- handling equipment to move and store the EV-batteries;
- voltage detection appliance;
- secured sealing plugs for EV-batteries or any other equivalent device intended for insulating the battery connectors;
- adequate tools, such as insulating blanket, face protection, gloves, safety helmets, safety shoes, gloves with electrical insulation.

It is also recommended that the AP or ATF+ have available:

- Ideally, devices that enable the detection or analysis of risks, such as "insulation-control-device current clamps", equipment for detecting leaks (heat, humidity, chemical leaks).
- Apart from the minimum intervention equipment (mobile fire extinguishers, etc.) required for safety checks, spare equipment that can be used by the internal intervention team, designated by the employer.



4.2. Acceptance conditions

The AP or ATF+ that also functions as AP and has been designated by the producer or FEBELAUTO, accepts free of charge complete EV-batteries from the last holder according to the terms and conditions stated in the applicable environmental policy agreements.

The AP or ATF+ that also functions as AP and has been designated by the producer or FEBELAUTO must accept separately supplied modules, stacks or cells free of charge if they were separately marketed by a producer according to the terms and conditions stated in the applicable environmental policy agreements.

The AP or ATF+ report the discarded EV-batteries and modules to be collected in the application provided by FEBELAUTO, called ELV, at: <https://portal.febelauto.be>.

4.3. Storage conditions

The AP or ATF+ provides separate storage zones for EV-batteries that are eligible for reuse, repurposing or recycling.

Discarded EV-batteries are stored in covered locations with liquid-tight floors or in weatherproof covered and acid-resistant containers.

The EV-batteries are stored in a dry place (humidity below 50%, to avoid the possibility of condensation), cool (according to the regulations determined and communicated by the producer: temperature below 70°C), ventilated and covered, in a concrete construction (or similar) equipped with a liquid collection system (see recommendations in appendix).

The storage of discarded EV-batteries must not pose a risk to the storage, logistical processing and possible reuse or recycling of other waste materials present. The logistical processing with a view to transporting EV-batteries to the next destination takes place in a secured zone specifically for batteries for electric vehicles in accordance with the environmental or environmental planning permit and guarantees that no mixing with other waste streams will take place during management of the EV-batteries.

The depollution, dismantling and destruction of end-of-life vehicles and storage of waste or materials resulting from the depollution and dismantling of end-of-life vehicles takes place in a zone closed off from the storage zones where the EV-batteries are stored. EV-Batteries are disconnected as soon as possible upon arrival of the end-of-life hybrid or electric vehicle on site in order to limit the risks of accidents. End-of-life hybrid or electric vehicles that have not yet been disconnected are stored in a specially dedicated area to avoid any contact with any other end-of-life vehicle or other combustible or flammable waste. The storage zone for end-of-life hybrid or electric vehicles where the EV-batteries have not yet been disconnected, as well as the storage zones for EV-batteries are clearly indicated on site. The storage area for defective and/or damaged EV-batteries is closed (controlled and regulated access within the company, as stated in the work plan) according to the regulations indicated in the FEBELAUTO-norm© or in the fire brigade regulations. In the latter case, they will be notified to FEBELAUTO.

4.4. Packaging and transport requirements

The AP or ATF+ must always comply with the applicable regulations on the transport of EV-batteries in accordance with the applicable UN transport legislation, as well as the legal provisions for the transport of waste applicable in the respective regions and Belgium.

The AP or ATF+ is responsible for the information provided to the collector about the EV-batteries to be collected and handled, in accordance with ADR regulations.

The AP or ATF+ only allows discarded EV-batteries to be collected by a waste collector, dealer or broker (IHM) registered for EV-batteries. Exports of discarded EV-batteries to another Member State or outside Europe are subject to possession of a notification approved by all Member States concerned in accordance with European Regulation 1013/2006 on shipments of waste, unless the competent authorities do not require a notification for the relevant type of EV-batteries.

The packaging of the EV-batteries that are to be transported provides, if necessary, protection against short circuit by protecting the poles, and against contact of batteries/cells using non-conductive materials.

The AP or ATF+ will provide the necessary information on the status for the transport of the EV-batteries in FEBELAUTO's ELV application.

Specifically, as the shipper, they will determine whether the EV-batteries should be shipped as waste or as a product in accordance with the view expressed by the OVAM, unless:

- The recipient itself decides that the EV-batteries are to be transported and received as waste. In that case, the AP or ATF+, organizing the transport, or FEBELAUTO where so requested by the AP or ATF+, will check in advance the permit of the receiver for the acceptance of discarded EV-batteries.
- Unless explicitly stipulated otherwise by FEBELAUTO or by the regional authorities, EV-batteries originating from the ATF+ will always be considered as waste.

EV-Batteries that have the following characteristics are certainly to be considered as defective or damaged EV-batteries:

- rapid rise in temperature;
- production of flame, emission of gas, steam, or toxic, flammable or corrosive liquids;
- heat, humidity, moisture or chemical leaks;
- clear deformation of the EV-battery or of the cells, modules or stacks.

If EV-batteries show any of these defects, the EV-battery is considered hazardous waste according to the regulations of the competent regional authorities and the relevant associated obligations must be adhered to.

The defective or damaged EV-batteries must be packaged in accordance with the relevant ADR guidelines.

5. Training requirements

The objectives of the training are:

1. Recognition of the types of EV-batteries including general characteristics and possible risks.
2. Provision of knowledge so that the various operational tasks in the AP or ATF+ can be carried out safely by people trained in hybrid and electric vehicles.
3. Further training to impart adequate knowledge about the acceptance or removal of EV-batteries, concerning the management and control of the work procedures to be carried out, and concerning the implementation of safety procedures.

Based on the training and prior to any hybrid or electric vehicle operation, the AP or ATF+ will appoint an operator person (or authorized employee) skilled in hybrid and electric vehicles responsible for:

- Supervising the acceptance and handling of EV-batteries.
- Drawing up, respecting and, if necessary, adapting the safety regulations with regard to the logistical processing of EV-batteries.

The AP or ATF+ will issue written authorization to operators trained in hybrid and electric vehicles to be able to work on hybrid and electric vehicles. This authorization will be issued by the employer after completion of a training course on the safety regulations and technical skills for working on hybrid and electric vehicles, but it will not relieve the employer of its responsibility. The authorization will be drawn up based on the type of work to be carried out and on the basis of the competences of the operators trained in hybrid and electric vehicles.

In addition, the AP or ATF+ will appoint an operator skilled in hybrid and electric vehicles to be the contact person for site safety. This operator will have followed the training and/or accreditation modules recommended by the producer, or, as the case may be, by FEBELAUTO.

Any significant change to the working conditions such as a change of position, skills, the nature and cause of the danger/risk level, technological changes, will be the subject of a follow-up of the required competences.

6. Urgent interventions

The AP or ATF+ draws up an intervention plan to be followed in the event of an accident caused by the use, storage or logistical processing of EV-batteries. That intervention plan must be approved by the fire brigade. In the event of a change, a new plan will be submitted for approval by the fire brigade.

In case the contents of EV-batteries are accidentally released in the absence of fire, the following points for attention are important:

- Release of the electrolyte can result in the development of potentially irritating acids.

- Use individual protective material, ventilate the storage areas, avoid any contact with the skin and eyes.
- Protect respiratory tract, hands, eyes and skin.
- Inform the emergency services and keep the safety data sheets of the EV-batteries available to the emergency services.

In case of fire, the following points for attention are important:

- In the case of a small fire, apply dry material such as vermiculite, sand, foam or sodium bicarbonate to the source of the fire.
- In the event of a major fire, use large amounts of water as a coolant to prevent that heat can spread to other EV-batteries. Protect the respiratory tract to prevent the impact of toxic materials from flammable by-products.

In case of exposure to high voltage, the following points for attention are important:

- High voltage can cause electric shock and electrocution.
- Use insulated gloves and, if possible, turn off the power source and remove the victim using a non-conductive object.
- Contact the emergency services after checking for the first signs of life. Avoid shocks and keep available the safety data sheets of the relevant EV-batteries.
- Consult a doctor after an electric shock to determine any internal injuries to the victim.
- Protect the environment by:
 - Taking measures to avoid the leakage of material or liquid substances into the subsoil, sewers or watercourses.
 - Using inert absorbent material such as sand and sawdust.
 - Informing the authorities competent for the protection of the environment.

The AP or ATF+ must at all times keep the standard on the control of risks in the intervention of hybrid or electric vehicles (NBN R 03-001:2021) available to the employees authorized to work on batteries for electric vehicles and hybrid or electric vehicles.

7. Interesting websites and information

FEBELAUTO: www.febelauto.be:

- Environmental Policy Agreement (MBO, Milieubeleidsovereenkomst in Dutch) on batteries for electric vehicles for the propulsion of Hybrid and Electric Vehicles for the Flemish, Walloon and Brussels-Capital Regions.
- Information about batteries.
- Link to FEBELAUTO ELV application.
- Legislation.

Federal Public Service for Employment, Labour and Social Dialogue:

www.werk.belgie.be:

- Guidance on well-being in the workplace.

ADR information and transport of hazardous substances by road: www.gevaarlijke-stoffen.be:

Flemish Region: www.ovam.be:

VLAREMA (Flemish Regulations for the Sustainable Management of Material Cycles and Waste Materials).

- Overview of registered collectors, waste traders and brokers (IHMs).
- Transborder movement of waste.

Brussels-Capital Region: www.leefmilieu.brussels/themas/afval-grondstof/afvalbeheer:

- Brudalex (Order of the Government of the Brussels-Capital Region on the management of waste).
- Recognised or registered professionals in the waste sector.

Walloon Region: environnement.wallonie.be

- Order of 23 September 2010 of the Walloon Government introducing a take-back obligation for certain waste.
- Decision of the Walloon Government of 27 February 2003 laying down the sectoral conditions for installations for the collection and sorting of recyclable metallic waste, for installations for the collection, sorting or recovery of components of end-of-life vehicles, dismantling and cleaning centres for end-of-life vehicles and centres for the destruction of end-of-life vehicles and the treatment of ferrous and non-ferrous metals.
- Car batteries.
- End-of-life vehicles.



APPENDIX 1: Recommendations for safely storing lithium-ion batteries

The purpose of this appendix is to provide recommendations for management of the storage space for lithium-ion batteries. The fire brigade's advice always prevails over these recommendations.

1. Always ask the local fire brigade and intervention services for written advice on the storage conditions for lithium-ion batteries. That advice always prevails.
2. Lithium-ion batteries are to be stored in a dry, orderly, cool and sufficiently ventilated place. Ideally, this should be a building with walls and Rf door rated to «1h min», or a container with the same level of protection (see below). The necessary signage must be provided and included in the company's overall intervention plan. The building/container is limited in area and, ideally, compartmentalized, thus limiting the spread of fire caused by the batteries (see below).
3. The ideal storage temperature for lithium-ion batteries is approximately 10 to 15°C. A storage temperature of maximum 70°C must be ensured due to the fact that:
 - At a higher storage temperature, a battery discharges faster. In and of itself, this is not a problem for storage, as long as the charge status (State of Charge – SoC) is in the correct state.
 - Temperatures below freezing cannot damage good batteries if the temperature is limited to –10°C. To avoid damage, such batteries must again be brought back to a temperature above freezing point (> 0C°) before recharging or use.
4. Ideally, the humidity level should not exceed 50% (for undamaged batteries).
 - If the humidity level is too high, condensation problems can be triggered on connectors (terminals), thus increasing the risk of short circuit, temperature rise and spontaneous explosion (thermal runaway).
 - To mitigate these risks of condensation, it is strongly recommended protecting the connectors.

Ideally, these storage areas should be placed under negative pressure.

5. Battery state of charge (SoC).
 - Gradual self-discharge is a normal phenomenon. A lithium-ion battery discharges an average of 5% in the first 24 hours after charging. After that, the battery discharges an average of 3 to 5% per month (for undamaged batteries).
 - Immediate use of a lithium-ion battery generally requires an SoC of +/- 40 to 50%.
 - Too low or too high a voltage in the Cells can damage the battery components and, consequently, normal operation of the battery.
 - The battery voltage check is best performed under the following conditions:
 - Battery has not recently been charging or discharging quickly.
 - At room temperature (see above).
 - In a 'vibration-free' environment.

6. The storage and packaging conditions must comply with the regulations and provisions for lithium-ion batteries included in the ADR regulations (original packaging or equivalent, or special packaging). In particular, the damaged or unstable batteries must be stored in complete safety in specially designed containers (monitoring system, fire extinguishing equipment, fire and isolation compartment). This container is to be located in a secluded (quarantine) zone.

It is not permitted to stack pallets with batteries. For safety, batteries are best stored in the original packaging or equivalent packaging. However, they can be stored bound tightly on a pallet to avoid falling and shifting.

7. When lithium-ion batteries burn, various toxic fumes are released (hydrogen fluoride, for instance). The intervention team, the company personnel and the surrounding neighbourhood can be exposed to these toxic or corrosive fumes as well as to the consequences of extinguishing them, such as contaminated water. This must be included in the intervention plan.
8. Lithium-ion batteries are to be handled with care. The occurrence of a fire can be initiated by:
 - Mechanical shock (fall, push, etc.).
 - Short circuit (humidity, etc.).
 - Overload or total discharge.
 - An external fire that spreads towards batteries (temperature, etc.).

Note:

All conditions that may have affected the lithium-ion battery during its storage period are to be recorded and handed over when transport is requested by the AP or ATF+. This information determines whether or not the battery to be collected is 'safe for transport'.

If these recommendations are not followed and there is doubt about the condition of the battery, then batteries for electric vehicles will be considered critical during the further course of the process (transport, recycling, etc.).

9. Equipment
 - Storage of small quantities and modules (size and weight limited to "portable"): This storage (max. 5 to 6 units) can be done in drums (metal/plastic) that are ADR compliant and firmly bound. The vessels are filled with insulation material (vermiculite, etc.), upper and lower insulation layer of at least 10 cm and against the walls of the storage vessel of at least 5 cm. Approved flame retardant bags can also be used. The number of vessels must be limited (see permit). UN-approved packaging is necessary (the approval code is visible on the drum).
 - For the storage of larger quantities, a fire-resistant storage space is to be deployed (see applicable standards). Ideally, this storage space is equipped with:
 - An alarm system.
 - A CO- and smoke detection system.

- A venting system for flue and combustion gases (non-combustible materials, preventing the build-up of explosive gases).
- A fire detection system (smoke detector or thermal detection cable) and, if necessary, automatic extinguishing system.
- "Spark-free" interior lighting.
- A larger-scale storage space (> 20 pallets or > 100 units) next to the above facilities, compartmentalization of the storage space with limited height and ideally equipped with a fire and emergency door.

Note:

A collection system for extinguishing water must be provided in the storage area.

