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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 38698.2-2023

**Recovery of traction battery used in electric vehicle -
Management specification - Part 2: Take-back service network**

车用动力电池回收利用 管理规范 第2部分：回收服务网点

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1 Scope

This document specifies the construction, the operation and the safety, environmental protection and emergency requirements for the take-back service networks of traction batteries used in vehicles.

It applies to the construction, the management and the operation of take-back service networks that recover waste and used traction battery packs, modules and cells. Take-back networks for other types of lithium-ion battery, such as those used in consumer products and in energy storage, may follow it by reference.

It does not apply to storage sites for vehicle lead-acid batteries.

2 Normative references

The contents of the following documents constitute indispensable provisions of this document through normative reference in the text. For dated references, only the edition corresponding to that date applies. For undated references, the latest edition, including all amendments, applies.

GB 2894-2008 Safety signs and guideline for the use · GB 15562.2 Environmental protection graphical signs - Storage and disposal site for solid waste · GB 18599 Standard for pollution control on the storage and disposal site for general industrial solid wastes · GB/T 19596 Terminology of electric vehicles · GB 22128 Technical specifications for

end-of-life vehicles recycling and dismantling enterprise · GB/T 26493 Code for storage and transportation of battery scrap · GB/T 26989 Automotive recycling - Terminology · GB/T 29639 Guidelines for enterprises to develop emergency response plans for work safety accidents · GB/T 33598.3 Recycling of traction battery used in electric vehicle - Part 3: Discharging specification · GB/T 38698.1 Recovery of traction battery used in electric vehicle - Management specification - Part 1: Packing and transporting · GB/T 39652.1 Emergency response guide for the transport of dangerous goods - Part 1: General provisions · GB 50016 Code for fire protection design of buildings · GB 50140 Code for design of extinguisher distribution in buildings · WB/T 1061 Management specification for waste battery recycling

3 Terms and definitions

For the purposes of this document the terms and definitions given in GB/T 19596 and GB/T 26989 apply, together with the following.

3.1 waste and used traction battery. Traction battery cells, modules and packs that have lost their original value in use, discarded during research and development, production, testing, storage, transport, use, maintenance, vehicle scrapping or echelon utilisation.

3.2 collect. The process of gathering waste and used traction batteries at a take-back service network. 3.3 classification. The process of sorting them by product type, material system and degree of hazard. 3.4 pretreatment. The physical operations of cleaning, insulating, leak prevention, flame retarding, heat insulation and discharging.

3.5 storage. The holding of batteries during take-back, echelon utilisation and recycling. 3.6 cut-off storage. Storage in the same non-open area, separated by an adequate distance. 3.7 segregated storage. Storage in the same non-open area, separated by fire-resisting partitions or walls in addition to the distance. 3.8 detached storage. Storage in a different space, or in an area outside all buildings.

3.12 safety case for waste and used traction battery. A container used to store and transport waste and used traction batteries and to reduce their hazard. 3.13 take-back service network. The place where batteries are held during collection, classification, storage and packing; by scale, facilities, storage time and management requirements it is either a collection network or a centralized storage network.

4 Construction requirements

4.1 Siting. A collection network should be sited at a repair service point, a battery swap station or an end-of-life vehicle dismantling enterprise. A centralized storage network shall meet GB 18599 and GB 50016 and shall keep a fire separation distance of at least 20 m from civil buildings.

4.2.1 The site shall reserve fire lanes and lanes for the vehicles that carry the batteries.

Storage, pretreatment and office areas are laid out separately, with clear boundaries and signs, and the office area is not in the same functional zone as storage or pretreatment. Floors are finished in epoxy or hardened, treated against corrosion, seepage and electrical conduction, with the safety signs of GB 2894-2008, the solid waste signs of GB 15562.2, yellow marking lines on the floor and no-covering labels on the working and firefighting equipment. The site should be on the ground floor; on the second floor or above the slab shall carry the load and a goods lift shall be provided. The area is ventilated and dry, away from damp, dust, high temperature and direct light, and the storage area is kept between -20 degrees Celsius and 40 degrees Celsius.

4.2.2 A collection network shall have a workshop of fire hazard class C or better and a fire resistance rating of grade 3 or better; its storage floor area shall be at least 10 square metres and the quantity of batteries held shall not exceed 5 t.

4.2.3 A centralized storage network shall be designed to GB 50016 for building class, fire resistance, evacuation and fire separation, with a workshop of class C or better, a fire resistance rating of grade 2 or better, solid walls separating it from the outside, and no storage in underground spaces. The relative humidity of the storage area shall not exceed 85 %, and the storage capacity shall be at least 30 t, with floor area and fire safety facilities matched to it.

4.3 Facilities. The network shall have safety assessment equipment, protective and rescue equipment and insulated tools in accordance with GB 22128, together with handling tools, storage racks, information collection tools, waste liquid collection equipment and temperature and humidity monitoring. Racks stand at least 0.3 m from the wall, are spaced more than the minimum turning radius of the handling equipment, and keep a safe distance from lights and hydrants. Waste liquid equipment is sealed and resistant to seepage and corrosion.

4.3.3 The network shall be able to discharge batteries chemically or physically, with a brine pool or tank or a discharge cabinet. The brine pool resists corrosion, immerses the battery completely and leaves a clearance of at least 150 mm in length and width; the solution may be sodium sulfate at a concentration of 3.5 %. A collection network that discharges through the on-board system shall have a safety case, and a centralized storage network shall have one in addition to the facilities above. The safety case is waterproof, fireproof, leak-proof and corrosion-proof, and should carry smoke or temperature monitoring.

5 Operation requirements

5.1 Collection. Collection follows WB/T 1061. Batteries whose casing is damaged and whose electrolyte is leaking are placed in containers that insulate and resist seepage and corrosion; a battery found to present a safety hazard is immediately immersed in the brine pool or placed in a safety case. Packing and transport during collection follow GB/T 38698.1. Where the network removes the traction battery before the dismantling enterprise

does, it shall issue a recovery certificate to the owner of the vehicle.

5.2 Classification. Batteries are classified into class A, class B and class C according to material category and degree of hazard, following GB/T 38698.1.

5.3 Discharging. Discharging follows GB/T 33598.3. Class B and class C batteries shall not be discharged through the on-board system.

5.4 Storage. Storage follows WB/T 1061 and GB/T 26493, with the method chosen according to the classification: cut-off storage between class A batteries and between class B batteries, segregated storage between class C batteries, and segregated storage between the three classes - or detached storage where segregation cannot ensure safety. Cells and modules are separated from one another by buffering insulating material. Batteries are stored on their own, never mixed with other goods or waste, never laid on their side, upside down or stacked directly. Class A batteries are cleaned of dust and stains; class B and class C batteries receive insulation, leak prevention, flame retarding and heat insulation treatment, and are then placed upright on the racks.

Table 1 gives the distances in metres: for cut-off storage the storage areas are at least 0.3 m apart, the aisle at least 1 m wide and the distance from the wall at least 0.3 m; for segregated storage, 0.5 m, 1 m and 0.3 m; for detached storage, 0.5 m, 5 m and 0.3 m.

5.4.3 Storage time depends on the class. A collection network holds class A batteries for no more than 30 days and class B and class C batteries for no more than 15 days. A centralized storage network holds class A batteries for no more than 90 days and at a state of charge no higher than 30 %, and class B and class C batteries for no more than 30 days.

5.5 Packing and transport to the comprehensive utilisation enterprise follow GB/T 38698.1, according to the classification and the characteristics of the batteries.

5.6 Information management. The network records the battery code, the battery type, the product type, the quantity, the source and the enterprise of destination. Records may be kept on paper or electronically and shall be retained for no less than three years.

6 Safety, environmental protection and emergency requirements

6.1 Safety. The network shall have ventilation and firefighting equipment - fire sand boxes, extinguishers, hydrants, sprinkler systems and smoke alarms - in the quantity and of the type required by GB 50140. A centralized storage network shall also have a safety monitoring system operating in real time 24 hours a day, and should include infrared thermal imaging.

The network draws up its own operating procedures and rules, with the process shown in Annex B. Operators work according to those documents and wear protective equipment for specialised tasks; those carrying out special operations hold the low-voltage electrician certificate or an equivalent qualification, take initial and periodic training and are assessed