

Safe storage of lithium ion batteries

Fire protection stores
Safety cabinets



Approval



NATIONAL TECHNICAL APPROVAL
DIBt German Centre of Competence in Civil Engineering, Berlin

App. No. Z-38.5-289

NEW!



LI storage



Applications for lithium ion batteries

Lithium ion batteries play an increasingly important role in our everyday lives. They are extremely powerful and often the number one choice not only for compact, slim mobile phones and e-bikes but also – in a much larger variety – in industrial equipment, vehicles and machinery. Not only their performance is impressive, however; the hazards associated with lithium ion batteries are also considerable. Damaged or improperly handled batteries can easily have dramatic consequences.

Batteries which ignite owing to a technical defect or mechanical effects (impact, fall) are a typical example here. Ignition induced by damage can likewise occur as a result of incorrect charging. Since batteries are not normally kept under constant observation, fire can spread rapidly and unnoticed.

If lithium ion batteries are damaged, the expanding gases which are released and the explosive flame which darts up can pose a real threat. The highest level of safety is thus just as essential when these batteries are stored.

No regulations currently exist under public law regarding the storage and availability of LI batteries. Nevertheless, there are a number of aspects which should be taken into account when storing hazardous substances – and that includes LI batteries – in order to comply with insurance and legal requirements.

The temperature of the batteries is a key factor when it comes to storage. Although not critical for safety, it influences their state of charge. The official recommendation is that lithium ion batteries

should be stored at 40% of their charging capacity to prevent complete discharge and damage. You should additionally be careful to ensure the correct room temperature.

We recommend:

- F90 fire protection store / F90 container
- Sump in conformity with the German Federal Water Act (WHG)
- Explosion-proof / ATEX-compliant technical ventilation
- Equipotential bonding
- Pressure relief vent
- Fire detector
- Gas detection system
- Climate control

No suitable extinguishing media exist; however, water can be used for cooling.



Two typical applications for lithium ion batteries are e-bikes ...



... and electric cars



F90 fire protection stores, walk-in

F90 fire protection stores with DIBt approval System: Fire protection store, steel, F90

Basic principles

- Tested in a fire chamber according to European standards
- Approved by the German Centre of Competence in Civil Engineering (DIBt)
- Tested by an accredited German institute
- Fire resistance class F90, more than 90 minutes on the inside and outside

Benefits

- Available in various sizes
- Largest product portfolio for fire protection stores
- Practical solutions for storing batteries of different sizes
- Choice of standard systems or customised solutions
- Suitable for indoor or outdoor installation irrespective of the location
- Delivered ready to use
- Many optional features

F90 fire protection stores, walk-in

PROTECTO's standard and DIBt-approved BLS fire protection stores are based on the know-how accumulated from several hundred hazardous substance stores manufactured according to individual customer specifications. Our BLS stores are fire-resistant for 90 minutes on the inside and outside. They are designed with an integral sump and are suitable for both indoor and outdoor installation. Every

F90 fire protection cells

Our BLS storage cells are fire-resistant for 90 minutes on the inside and outside.

Optimal storage of lithium ion batteries in conformity with regulations.

Tip: Suitable as a separate fire-protected storeroom directly in the production area or for installation outdoors.



Illustration: BLS DIBt Art.-Nr. 247030 (BLS 2960 DIBt)

BLS store forms a self-contained fire compartment.

Design

- F90 fire resistance on the inside and outside
- Stable, welded design
- Thermo-insulated with a high thermal insulation value
- Integral sump
- Storage levels with removable gratings
- Automatically closing doors with anti-panic function
- Door optionally on the long or narrow side
- Low threshold, 165 mm
- High-quality anti-corrosion paint, RAL 9002 grey white



BLS Z fire protection cell with optional climate control

Safety cabinets, type 90

For storage and operation of lithium ion batteries



Lithium batteries are an increasingly popular choice – in many areas of daily life as well as in industrial applications – owing to their high performance.

Tip: Fireproof safety cabinets allow you to store lithium batteries safely in accordance with insurance industry recommendations.

- GS and CE marks
- Fire resistance: 90 minutes
- Made from limited combustibility material (A2)
- Chemically resistant interior and exterior surfaces
- Grey body, similar to RAL 7035 light grey micro pearl, with contrasting edges
- Lockable doors
- Stainless steel hinges, metal handle
- Earthed to prevent ignition by electrostatic discharge
- Adjustable feet for easy positioning and levelling
- Base with removable panel for pallet truck access
- Inlet and exhaust ventilation on top of the cabinet (exhaust air outlet DN 100), automatic closing system thermally triggered
- Tray shelves height-adjustable in 32 mm steps



SST-LI 12/20

Designation	External dim. (l x w x h) mm	Internal dim. (l x w x h) mm	No. of storage levels	Compartment load kg	Weight approx. kg	Order no.
Safety cabinet SST-LI 12/20 Type 90	1200 x 595 x 1960	1115 x 480 x 1600	4	75	600	19339



Make sure of your copy of our catalogue: Just send an email with the subject line "Request for catalogue" and stating the required quantity to info@protecto.de

