



Paul Worsley  
Battery Homologation Officer  
23, Prince Rupert Road  
Stourport on Severn  
Worcestershire  
DY13 0AS  
UK.  
paul.g.worsley@gmail.com

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## **HOMOLOGATION OF BATTERIES, FOR USE AT 2025 BRCA SANCTIONED EVENTS.**

The procedures detailed in this document comply with current BRCA rules. Any changes to rules or procedures that are accepted at the 2024 BRCA AGM (27<sup>th</sup>. Oct. 2024), that impact on rules for batteries used in 2025 sanctioned events may take precedence. This document will be re-issued if any changes are accepted.

The scope of this document covers the homologation of the following battery technologies that are allowed for BRCA sanctioned events in 2025:-

- Lithium Based Batteries, with a nominal voltage not exceeding 3.80v (1S), in 'Stick' format.
- Lithium Based Batteries, with a nominal voltage not exceeding 7.60v (2S), in 'Stick' and 'Saddle Pack' format.
- Lithium Based Batteries, with a nominal voltage not exceeding 15.20v (4S), in 'Stick' format.

Previously approved batteries remain on the approved products list for their lifespan, or until the BRCA Electric Board deem they are no longer applicable.

### **Lithium Based Batteries (1S, 2S, 4S) -- Approval requirements for use at 2025 BRCA events :-**

1. A minimum of one (1) battery must be sent **at no cost to the recipient**, to the Homologation Officer at the address above. Any sample batteries arriving that require payment in any way for: Shipment, Delivery, Taxes etc. **WILL BE REFUSED** and the date (if this occurs) will not be recorded or considered as an 'arrival date'.

The sample battery(s): **MUST ARRIVE from 14<sup>th</sup>. Oct. - BUT NO LATER THAN - 1st. Dec. 2024.**

Batteries arriving after 1<sup>st</sup>. Dec. 2024 will not be considered for approval.

**Shipping documents should state: 'samples for destructive testing with zero value'.**

**Please email details of carrier and consignment tracking details to -- [paul.g.worsley@gmail.com](mailto:paul.g.worsley@gmail.com)**

All samples received (inc. late submissions) will be retained by the BRCA and will not be returned to the supplier.

**NOTE:** For 2025, any 1S battery submitted, that is available for UK retail sale no later than 1<sup>st</sup>. Jan 2025 may be added to the Homologation List and be used at BRCA 1/12 National events from the time the list is published.

**Manufacturers to advise when the 1S batteries will be available in UK.**

2. Any battery that has gained approval in previous years, that has been changed in order to comply with any current technical requirements, will be treated as a new version of battery that will require re-approval. Batteries in this category are required to show a distinct visual difference to previous versions with a different Part #, so they can be easily identified.
3. Each individual type of battery submitted for approval must be accompanied by :-
  - A safety test certification in accordance with:-  
UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.8, Part 3, Sub-Section 38.3, Tests T1 to T8.  
(NOTE: Rev.7/Amend.1 is acceptable for 2024 submissions).
  - A data sheet giving:- recommended charging safety criteria with **maximum recommended charging amps and voltage**. This sheet must also include safe disposal procedures.
  - A technical data sheet for each Battery Part #, giving specifications of :- sizes and **weight with tolerances**.
  - Details of :-case material, nominal thickness of case sides and sealing method (eg. Cyno, Sonic Weld etc.)
  - Name and contact details of the nominated distributor in the UK.
  - Confirmation that the battery submitted:-  
If a new production version, that it will be widely available within UK before 1<sup>st</sup>. March 2025. (1S see above).  
If already in production, approx. number that have already been supplied to UK.
  - A declaration stating that the submitted battery is not in any violation of existing World Wide patents.  
The above information to be supplied by an authorised representative of the manufacturer or OEM supplier.



4. All batteries must conform with the technical details in the rules (below), and any EU regulations regarding Health & Safety or Disposal instructions that are current at the time when cells are supplied to UK.
5. The weights of batteries will be shown on the BRCA homologation list. Samples should closely resemble the weight range stated on the data sheet. Weights do not include detachable wires or connectors.  
Maximum weight tolerance is +/- 4%
6. If approval is granted, there must be no changes to the technical specification (outside allowed tolerances) or the visual appearance of the battery (including label details), from the samples submitted. Any changes will require re-approval. Failure to do this may invalidate the original approval.
7. There will be an homologation fee for each type of battery submitted. This is individual to each type (Part #) or labeled version. The fee is £40.00 (40 GBP) for each battery type (Part #).  
Payment can be in equivalent Euro or US\$. BRCA will invoice accordingly. **Please supply details for invoicing.**  
It is recommended that batteries submitted for approval should originate from the original cell manufacturer or the OEM supplier whose name or trade-mark is depicted on the battery label.
8. Batteries gaining BRCA approval, will be published on the BRCA homologation list(s) in:-  
Jan. 2025 for 2S & 4S, (see above for 1S). These lists can be found on the BRCA website – [www.brca.org](http://www.brca.org)
9. Approval does not engage the BRCA towards any guarantees or responsibilities. The submitter will defend, indemnify and hold the BRCA harmless from and against any and all liabilities, damages, losses, claims, fines, penalties, assessments, demands, actions, suits and judgments, including all fees, costs and expenses incidental thereto, that may be charged to, asserted against or incurred by the BRCA by reason of any loss, damage or injury of any kind or nature whatsoever in any manner or to any extent resulting from or arising out of the articles or services approved by the BRCA for use during BRCA events except to the extent resulting solely and directly from the BRCA's gross negligence or wilful misconduct.
10. The BRCA require that a copy of this document is returned when batteries are submitted, signed by an authorised representative of the manufacturer (or OEM supplier) showing agreement to the procedures and rules detailed.  
**(Disclaimer on page 3).**
11. BRCA reserve the right to remove any battery from the Homologation List(s) if homologation fees are not paid or if the battery approved is not freely available on sale in the UK during the Racing Season for which it is intended.
12. The BRCA Electric Board will not approve any Lithium battery for use at BRCA sanctioned events that exceeds the energy capacity allowed on passenger airline travel (currently 100Wh. without special airline approval). This maximum capacity is subject to any change by the airline industry.

### **BRCA Technical Rule 3. --- Lithium Based Batteries.**

Lithium Based (LiPo/LiFe) Batteries can be approved, but must conform to the following :-

- 3.1. Lithium Based (LiPo/LiFe) battery packs must have a hard, protective case that completely envelops the cell(s). The case should be made from ABS or a similar material. The two halves of the case must be factory sealed in a way that any attempt to open the case will destroy the case. The only opening in the case that is allowed, is for the exit of wires or pin type connections.
- 3.2. All Lithium based (LiPo/LiFe) batteries must comply with the weights specified on the BRCA homologation list, The maximum tolerance for manufacturers is +/- 4%.

Maximum case sizes, including any manufacturer incorporated plugs or connections are as follows: -

#### **4S Batteries - (Stick):**

Length: 139.0mm.

Width: 47.0mm. (The max. width includes any side exit only wires).

Height: 48.2mm. (Chassis location features additional to this dimension are allowed).

#### **2S Batteries - (Stick & Saddle):**

Length: 139.0mm.

Width: 47.0mm. (The max. width includes any side exit only wires).

Height: 25.1mm. (Chassis location features additional to this dimension are allowed)

Saddle-Pack batteries are allowed, but must comply with the above dimensions. Saddle-Pack cells must have a combined dimension of 139.0mm max. when placed end to end.

#### **1S Batteries - (Stick):**

Length: 93.0mm.

Width: 47.0mm. (Side exit wires are allowed outside this dimension).

Height: 18.5mm. (Chassis location features additional to this dimension are allowed).



3.3 Individual cells used in the construction of the battery pack shall be rated with a nominal voltage of no more than (LiPo 3.8v/ LiFe 3,3v). Individual cells may be wired in parallel.

For 4S Batteries: The maximum connection 'In Series' is four, to give a Final pack nominal voltage of no more than (LiPo 15.2v/LiFe 13.2v).

For 2S Batteries: The maximum connection 'In Series' is two, to give a Final pack nominal voltage of no more than (LiPo 7.6v/LiFe 6.6v).

For 1S Batteries: Cells can only be connected in parallel, to give a Final pack nominal voltage of no more than (LiPo 3.8v/LiFe 3.3v).

**The maximum charging cut-off will remain at 4.20v per. cell for all sizes of batteries.**

3.4 The battery pack shall have leads extending from the case for the positive and negative electrical connections using wire of adequate size to handle discharge rates acceptable to racing applications. Alternatively, the case shall have internal connection points for these wires clearly marked positive and negative so the user can apply the lead wires. Any type of metal connections that are incorporated in the battery pack must be substantially below the major surface of the plastic casing, to prevent any 'short circuit' if placed on a conductive surface. It is strongly advised that the link wire for Saddle Pack cells utilises a plug which will separate with any undue force.

3.5 The case must have the original suppliers label intact, stating:-  
The unique Part # of the pack, the rated nominal voltage, the chemistry (LiPo/LiFe), the rated energy capacity of the pack in Wh. and the 'C' rating of the pack. The brand name/logo shall be easily readable.

**NOTE: The Battery Pack Part # (SKU) should be a unique number and not a multi-digit description of the battery properties. Including letter abbreviations for manufacturer are acceptable.**

**NOTE: For 2017 onwards, Saddle Pack batteries supplied as two individual batteries (not hard-wired together), must show the nominal battery voltage for each single battery on the labels, not the combined voltage of the two batteries.**

**DISCLAIMER:-**

I, \_\_\_\_\_ (Name).

On behalf of : \_\_\_\_\_ (Company name)

Agree with procedures and rules contained within pages one to three of this document.

\_\_\_\_\_ (Signature)

**Documents to be provided:-**

1. Copy of UN Test Certificate (as detailed above).
2. Data sheet giving recommended charging safety criteria and recommended maximum charging amps and voltage, including safe disposal procedures.
3. Technical data sheet for each Battery Part # giving specifications of :- sizes and weight with tolerances.
4. Details of Case Material, case nominal thickness and sealing process.
5. Name & contact details of the nominated UK distributor.
6. Details of production supply dates or numbers already shipped.
7. Declaration that the battery submitted for approval does not violate any existing World Wide patents.
8. Invoicing details for homologation fee.