Draft Competition Sport Class proposal. 26/11/2025

Problem to solve

There is a growing demand on Sport Class competition and/or Sport Class ranking in competition or WPRS. However, the current system is based on the criteria to have an EN-A, B or C certification. EN certification is not designed as a Class for competition. Many tests are not clear, checkable or applicable, so they don't really work for a fair and straight competition between designs. Also, EN certification alone is not a guarantee for wing accessibility.

Cost of inaction

If the Sport Class becomes part of higher level competition, it is clear for most manufacturers that the design of some wing certified EN C could evolve in a direction not suitable for average pilots normally flying EN C wings. Also the WG6 made a letter to CIVL delegates clearly stating that competition classes should not be based on EN categories because of possible future bad implications for the EN norm. WG6 letters to CIVL.pdf

First Bullet points of the CIVL Sport Class definition

Goal: A dedicated wing class for competition, adapted to average level pilot skills, fun, affordable, safe, competitive, design competition proof and practical for on-site checking.

- *A simple standalone class, simplified EN C, with 66 cells maximum as primary limitation, which is expected to keep the class optimum design at a reasonable Flat Aspect Ratio somewhere between 6.0 and 6.7, Canopy Weight (< 0.065% of MTOW) and Flat Aspect Ratio (<6.8) as additional safe-guard limitations.*

  The fact that CSC doesn't refer to any other class allows faster evolution than in the EN environment for more safety, usability and performance. Also, if EN C evolves with some undesirable changes for the competition, like forbidding collapse lines (which is a real risk on the next revision), the competition could remain unaffected.

  A simpler certification process could allow more brands in the race, and more sizes developed. The geometric limitation is aimed at keeping the manufacturing cost reasonable and guaranteeing an acceptable level of safety in the design competition between brands. Despite the additional limitations, thanks to removing limits not affecting safety, it is anticipated that CSC models will be competitive with current EN C models. Also, EN C wings within the additional limitations, even the ones already certified, could become CSC. For the other EN C already certified and not complying with the additional limitations, they could still compete for a long enough period.

- Certification done by independent test houses for all sizes. A manufacturer doing EN C certification could have CSC with only some more paper work, no additional extra physical test.

- Maximum allowed number of cells = 66. A cell delimitation is counted when internal structure panels meet with upper panels along a chordwise line representing more than 25% of the local chord. 66 minirib on TE or LE allowed. This limitation serves multiple purposes: Affordable equipment AND indirect aspect ratio limitation, Easy to check, without distortion risk, and not affecting most of the design parameter equilibrium. History of development has shown that a wing with high aspect ratio and low number of cells is not competitive for various reasons, or for a given number of cells, there is an optimum Aspect Ratio for maximizing global xc performance, which for 66 cells has proven to be, with current paraglider construction, somewhere below 6.7 and above 6.0. Also, for the same aspect ratio, a wing with fewer cells is generally having a tamer behavior (all other things equal). On this graph from past wings, we can see that 66 cells have been used for models with Flat Aspect Ratio from 6 to 7. However, the models made with Aspect Ratio close to 7 were not showing a global performance advantage, other than canopy mass.

- The wing's weight fraction should not exceed 6.5%. Wing weight fraction = 100 * wing mass / total weight in Flight. Example: a wing with MTOW of 100kg should not weigh more than 6.5kg. This rule is used as a safeguard against solutions using more rigid structural elements to try to bypass the cell limitation rule. Note that the wing weight rule alone could be enough to define what a paraglider is, as no other cross country aircraft has ever matched (by far) this low weight fraction if not using the structural principle of what we call a paraglider, and if one ever does, it would probably deserve class inclusion anyway.

- The Flat Aspect Ratio should not exceed 6.8. This is checked on the same principle as the already proven CCC method of 3 measurement points. This safe-guard is not expected to need more complexity (more measurements or arc measurements) as optimum CSC models are not expected to stick to this limit.

- No trimmers allowed. Copy/paste the CCC definition. This rule is for simplicity and safety. This is an additional limitation upon EN C, which can allow trimmers.

- Limiter strap mandatory in production, without length limitation but corresponding to the flight tested value. So the limiter strap length will vary depending on the model and how fast it could be flight tested without failing. An absolute speed limitation would be a more reliable definition but while there is no realistic solution for it yet, it is recommended to the organisers using this class to adapt the scoring software to put less emphasis on final glide terminal speed when arriving with excess altitude. CESS with a slope of 4:1, altitude bonus on ESS with 0.3s/m, more leading bonus points or other sorts of bonus points. There are many solutions, some already available. This scoring adaptation would orient the manufacturers toward more important criteria than top speed when it comes to optimisation and also reduce the equipment-oriented protest during competitions.
  Note: A limiter strap length limitation (like the 14cm on CCC) would degrade the safety of the optimum design for the class, as it would encourage a profile with lower Cm which would be faster at full speed. That's the same mechanism as observed in CCC and explained here: CCC 2026 update

- The certification procedure is lighter and cheaper for manufacturers focusing solely on CSC, as it requires no additional flight tests beyond those for EN certification and removes many non-essential flight tests. Flight tests are done only at maximum weight. By default: minimum weight (kg) = max weight - 15. If a manufacturer wants a smaller min weight, he would have to do the whole flight test for it. Some unimportant flight tests are skipped. Some tests are more permissive without damaging safety. For example, after a frontal collapse it would be allowed to reopen big ears by pilot action (in the current EN it is not allowed after a frontal collapse BUT it is allowed if not after a frontal collapse, which does not make sense).

- The pitch stability test is done with 12.5% brake instead of 25% and is more accurately written. This should favor wings with higher Cm. It also becomes a more objective test to check as the collapses are better differentiated from unclear chord deformation.

- The manufacturer must check for each size of a CSC model that a production sample, trimmed to the manual values and without collapse lines, does not fail the pitch stability test.

- Load Test and line calculation is based on EN rules but simplified. It is allowed to have optimized line diameter on smaller sizes than 100kg (which the EN does not allow yet) without requiring an extra physical load test. This allows improving the performance of smaller sizes without extra development cost.

- Proposed **timing**: CSC adopted in spring 2026. CSC certifications are allowed in mid-2026 for immediate use in competition. For Cat1 competition and other competitions wanting to apply this rule, EN C models certified prior to mid-2026 are allowed in competition until 2029. Previously certified EN C models can be converted to CSC if the extra limitations are fulfilled (paper work only). EN C wings certified after mid-2026 needs to be also CSC to be accepted in Cat1 competition.

A chapter of the CSC definition will be a description of R&D for future rules. Not yet applied but published as being tested. Current rules under R&D are:

- Absolute IAS speed limitation.
- One or several rules to objectively test canopy solidity to turbulence or low AoA. The current EN norm does mostly emphasise the behavior after collapse while the safety equation is also about collapse resistance in a given real situation.
- If a practical solidity test at full speed is implemented, it could be paired with removing some collapse test at full speed.

Concerns:
Having a class removes some design freedom. However, these restrictions are the best compromise we could find for keeping some degree of freedom and orienting it in directions which we think are good for the activity.

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Annex, graphs from current wings spec data:

Number of cell distribution (histogram)

Scatter plot of glider model nb of cell vs aspect ratio

Wing weight fraction(in % : Glider weight / Takeoff_weight * 100)

BONUS : Maximum flat aspect ratio found for glider model below a given number of cells

Glider Specs Compiled

Database extract from:

- https://gliderbase.com/
- Para2000 (web archive)
- ParaBible
- + original manufacturer websites