2013 CIVL PLENARY – ANNEX 19C
CIVL – PMA COMPETITION CLASS REGULATION

Excerpt from CIVL Section 7b 12.1:
From January 1st, 2014, paragliders permitted to fly in FAI Category 1 championships must have the characteristics defined in the CIVL-PMA Competition Class Regulation.
All paraglider models must be commercially available 90 days prior to the start of the championship.

1. Paragliders characteristics

Competition Class paragliders are defined to have the following characteristics.

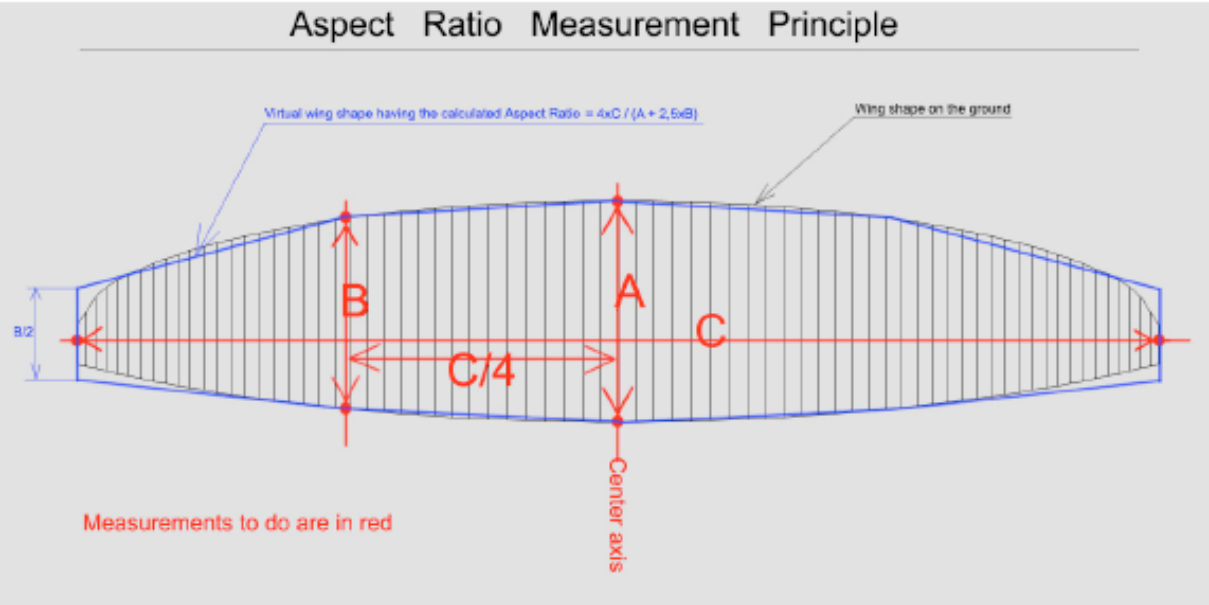
1.1 A maximum top speed of 65km/h TAS at 1000m.

1.2 A flat aspect ratio limitation of 7.0 or less.

The aspect ratio is determined according to the following formula and figure:

$$Aspect\ Ratio = \frac{4C}{A + 2\frac{1}{2}B}$$

where C is flat span measured from wingtip to wingtip, A is the centre chord as found when the wing is folded wingtip-towingtip to find the middle, and B is the chord at one quarter of the span, again found by folding the wing one more time.
No leading edge or trailing edge concave sections within the centre half of the wing are allowed. The wingtips are free to be designed at the manufacturer's discretion.



1.3 Load limitation
A load of 23 G calculated strength for new lines in each level of lines, with minimum strength for each individual line of 40 daN.

The structural strength of uncertified gliders will be confirmed by requiring them to pass the following 4 tests:
According to EN926-1:
1) Shock load test to 800kg.
2) Sustained load test to 800kg.
Plus:
3) Line set strength test using load calculation of the line sets of 23G with new, sewn and/or spliced lines.
4) Individual line strength tests of all lines to 40daN minimum with new, sewn and/or spliced lines.

Shock & Sustained Load Tests
Physical shock load and sustained load tests shall be undertaken for each different type or model of glider required to be entered as a Competition Class glider. A medium size of each model shall be load tested using the standard procedures specified by EN 926-1. (A medium size (100kg take off weight, roughly) is the size that is most used in competitions.)
Except: As long as the number of line attachment points from one generation of glider to the next generation of glider of a certain manufacturer stays the same or more, no new load test should be required.
After successful shock load and sustained load tests the lines and loops of the glider have to be controlled and compared against the line scheme and the line sample sheet. After this the glider does not have to be stored.

Line Tests
The load calculation for testing the breaking strength of the line sets shall be applied to each size of the glider, at the maximum flying weight of that glider size.
The line breaking strengths for the load calculation will be based on the tests of an independent testing laboratory.
The paraglider manufacturer will provide samples of the lines to the testing laboratory with the sewn and/or spliced terminations.
The testing laboratory shall test at least 3 samples of each type of line and will take the average load achieved from those 3 samples.
The load calculation shall be based on a load of 23 x the maximum flying weight of the glider. This factor is to be applied to the lower lines of the glider. At each level above, every cascade of lines the calculated total strength has to be the same (within 5%) or stronger than the level below it. If one level is weaker (max. 5%), the next level refers to the stronger one below. After calculation is done (with existing line-models) it is permitted to use stronger lines in production. In this case the manufacturer has to note both line-models on the line scheme: The one for the calculation and the stronger one for production.
It is permitted only to increase the strength of the lines compared to the shock and sustained load tests in order to satisfy the line load calculation.
The manufacturer will decide the load distribution between the different lines according to their own calculation. The line load calculation (23G) will be applied to all load bearing lines of the glider. This includes the stabilo, but not the brake lines. The manufacturer makes a line scheme with calculations. The individual line strength tests of all lines, including the brake lines, shall be 40daN minimum.

2. Registration procedures

Paragliders, for any new model or new size, must be checked by one of the CIVL-recognized test laboratory and registered according to the following procedures.

The manufacturer must produce to the test laboratory two sets of documentation including maximum speed, aspect ratio, line scheme and line sample sheet with loops.
After checking conformity, the two sets of documentation must be signed by the test laboratory and the manufacturers, stamped, dated and archived by the test laboratory and the manufacturer. On request, the test laboratory and the manufacturer must make this documentation available to CIVL.
The test laboratory must then issue a dated test certificate that will be sent as soon as possible to the manufacturer and to CIVL.
CIVL will archive the test certificates and publish the list of the tested gliders, along with the date of their certificate, on a dedicated page of its website. The list will be updated as necessary.

3. Comprehensive manual

A comprehensive manual must be incorporated with each new paraglider. It includes:
- all canopy dimensions;
- line plan;
- length and thickness of all lines;
- positions of the attachment points and 3 profiles (at 10%, 30% and 50% of the flat span);
- … (TO BE DEVELOPPED)

4. Revision

These characteristics and procedures will be revised every 2 years (the 2015 CIVL plenary will examine them, for an implementation on January 1st, 2016).