



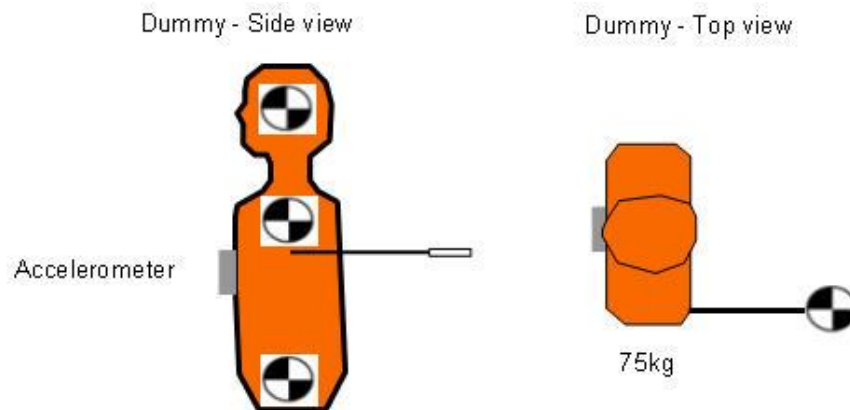
APPENDIX B 2016 FIM CCP Recommendations for APDs and Test Procedures

Laboratory:

The laboratory should be rented for a 1-day contract (without limitation of the number of tests).

The laboratory must provide sufficient equipment and all certifications required by the procedure:

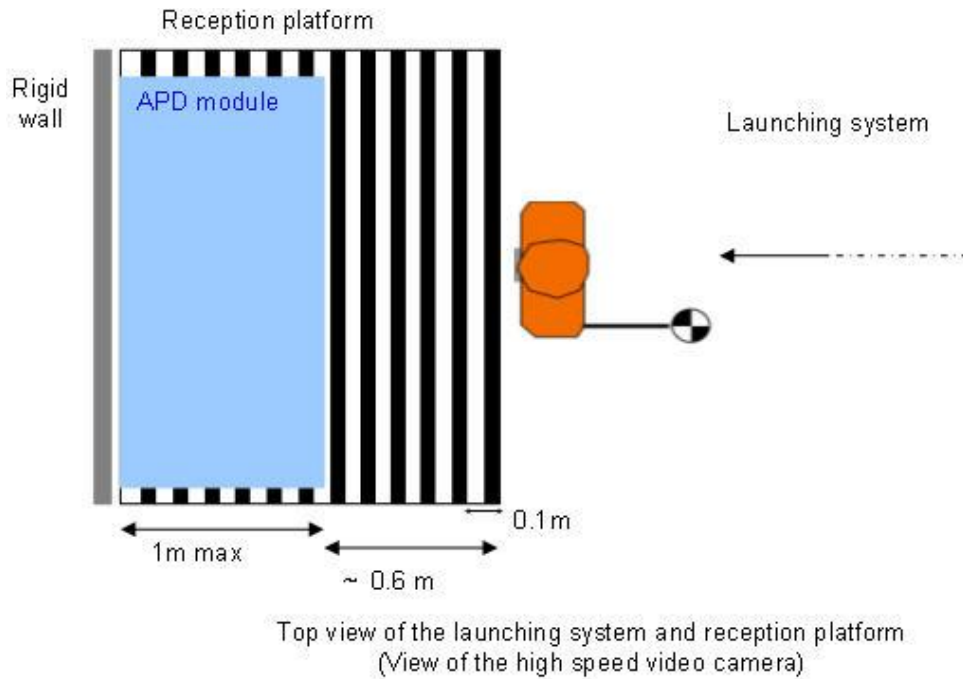
- a launching system that controls the speed
- a crash test dummy (75kg± 1kg) and scales. A marker must be placed on the head, the shoulder and on the lower part of the crash test dummy. A fourth marker must be placed on a horizontal position according to the drawing.



Drawing N.1 Crash test dummy characteristics



The fixed accelerometer must be placed as close as possible to the centre of gravity of the crash test dummy.



Drawing N.2 Crash test

- Video cameras (including a high speed camera) for a side view and top view.



- Speed control (RADAR)
- Photo cameras



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- All necessary approved devices such as: soundmeter, accelerationmeter, ruler, chronometer, thermometer and atmospheric barometer and barometer for measuring the ADP pressure.

- Rigid wall to support the module



- ISO 17025 Certificate of the laboratory
- Certificate for the calibration of the instruments

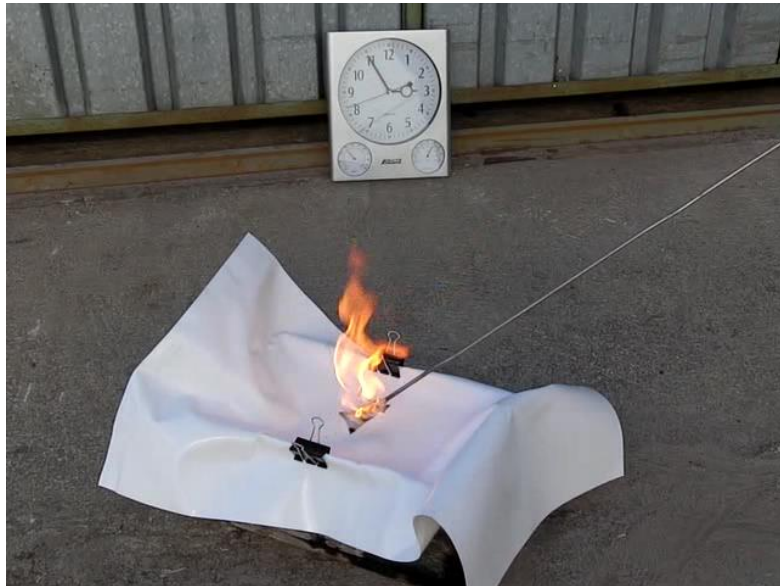
- The laboratory must provide all electronic data including all the parameters (acceleration, energy absorption...) and the time the crash test dummy stays in the fence section during the shock. (Airbag Parameter)





-A fire test with alcohol must be done on all materials used for the construction.

A piece of 60*30 cm of each material is tested with 200 ml of pure methanol. A stopwatch must be clearly shown on the video.



Manufacturer:

The manufacturer must send:

- The certificates of the various materials used (to the FIM Secretariat)
- The APD sections including the triangle section (to the laboratory)
- The drawings and photos of the various sections including the triangle section prior to the test procedure (to the FIM Secretariat)

APD types and dimensions:

The APDs are divided into 3 types:

- Lock modules (air)
- Connected modules with air tubes
- Foam modules

The maximum width of a module shall be 1.0m

The minimum height of a module shall be 1.2m

The lower part of each speedway barrier must be equipped with a kick board with appropriate mechanical properties, minimum 30 cm high.



Triangle section: a minimum 1.5-metre long Triangle fence section (foam) must be provided



Recommendation of the FIM for the APDs:

The FIM recommends the use of:

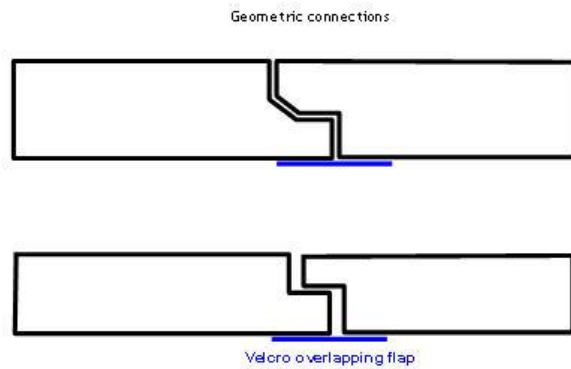
- Manometer or pressure gauge in order to check the pressure of the modules during the race.



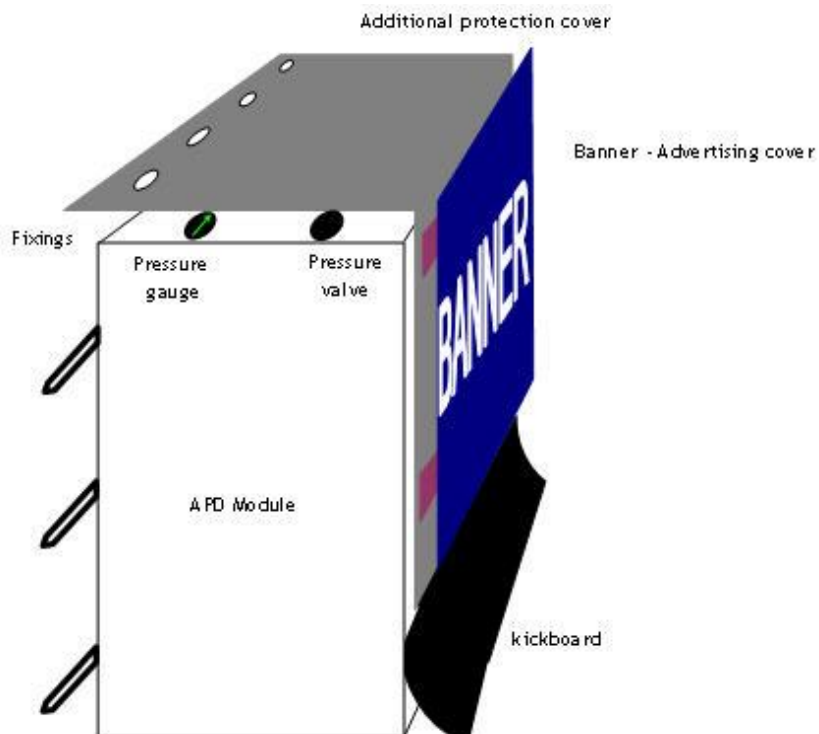
- Fire resistant materials (Kevlar that is strong and fire-proof (on the front side, the advertising and the lower part)

Moreover

- The fence should be able to be fixed to the ground by its base
- The connection between the modules should have a geometric form and should be covered by a large Velcro flap.



Drawing N.3 Geometric connection and overlapping flap



Drawing N.4 APD characteristics



The procedure requirements

The test will be done by the laboratory and supervised by the FIM inspector. All the optional devices would be tested.

- For the APDs made of connected modules with air tubes, a minimum of 15 metres of sections connected together (15 metres to 35 metres) must be tested. The engine for the electric fans should have a control button in order to regulate the pressure in the segments.



- For the other types of APD, the test would be done on 2 modules only (middle of a section and connection point)
- A homologated APD must be able to withstand 5 consecutive shocks without modification of its geometry, its aspect or its properties.
- The penetration of the crash test dummy in the fence is restricted to 75 % for Type A + B certification and 90% for Type A”plus+” certification.
- A test would be done at the connection point
- A measure of the sound level of the running APD system could be done (db).
- A measure of the pressure, the accelerations, the speed, the time, the rebound, energies, penetration of the crash test dummy... and a control of the internal and external structure would be done after each test.

Results and certificates:

No homologation would be finalized until the FIM Secretariat receives the results, the photos, the videos and the certificates. The laboratory must send all the necessary documents (in English) to the FIM Secretariat within 2 weeks of the tests.



Example of the results provided by the laboratory:

In addition to the usual diagrams, the results must also be resumed as follows:

- **Atmospheric conditions:** 22 C / 1.013 Pa
- **Modules:** The modules can be connected in 3m or 6m sections.

The modules were tested in race conditions with the protection cover fixed by a large Velcro flap.

All the tests were done within the speed limits. The fixings, the kickboard and the dimension of the APD comply with the FIM requirements.

Test	Pressure mmH2O of the module	Dimension OK / Not OK	Connected or Independent modules (m)	Additional remarks (db)	Acceleration peak (g)	Construction	Time the dummy stays in the APD (sec)	Test
N.1 (example)	55	OK	Connected 6+6+6	Test done with all the optional zippers opened	15.26	No deterioration of the inner and outside.	0.200	OK for Type A homologation