

EVS Draft-GTR –Venting/Gas Emissions



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Interpretation of R100.02 from various certified EU testing bodies



Testing body A

Tests	thermal shock, vibration, external short circuit, overcharge/overdischarge, overtemperature	mechanical shock, mechanical integrity, fire resistance
Venting	Not expected the batteries run into the specified working parameters (normal use)	May occur (foreseeable misuse will be tested)
If the battery vents under these tests	FAIL. Battery should be protected enough by electronics and mechanical design to withstand the requirements without any problems	PASS unless flammability level is reached, which might lead to FIRE/EXPLOSION, then it would be a FAIL
Means of detection	<ul style="list-style-type: none"> • IR camera • High speed camera • Temperature measurement • Source of ignition is present to evaluate the FIRE/EXPLOSION requirement 	
Concerns raised by the Testing body	<ul style="list-style-type: none"> • Venting should be defined and it should be clearly specified whether it should be allowed or not during the course of each test. 	

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Testing body B	
Venting	To allow the generic battery function "venting, the effect of venting shall not lead in general to failure of the test.
If the battery vents under these tests	FAIL: If the venting leaking gas does include liquid or solid parts of electrolyte.* PASS: If the venting leaking gas does not include liquid or solid parts of electrolyte.*
Means of detection	High speed camera

* Waiting for further clarification

Interpretation of R100.02 from various certified EU testing bodies



Testing body C

Tests	NORMAL: thermal shock, vibration, Overcharge/overdischarge, overtemperature	ABNORMAL: mechanical shock, mechanical integrity, short circuit, fire resistance
Venting	As such, venting itself would not constitute failure, unless it would also classify as "Rupture" or "Explosion". If the vent remains open once activated, this would presumably be considered a failure mode.	
If the battery vents under these tests	PASS: If the safety vent closes back FAIL: If the safety vent remains open	PASS

Different testing bodies have different interpretation
Should be avoided for GTR
Informal Group to decide how to treat venting



Extract from proposal transmitted by the experts from Japan

This requirement is deemed to be satisfied if the vehicle is designed as to prevent such gases from being emitted directly into the passenger compartment and the luggage compartment. In this case, the compliance is verified by visual inspection and/or drawing analysis of the REESS installation.

Evaluation of vehicle design against immersive gases:

Here we cannot follow the statements of the Japanese proposal. **It is practical impossible to do an serious construction review for this issue only by visual inspection and / or drawing.**

How do you check minimal gaps in reason of production tolerances, minimal assembly mistakes etc.?

This has to be tested in the end application, but unfortunately we also have no real idea how this could be tested there.