

Fire suppression system in accordance with R107

Fogmaker approved in accordance with new international standard for fire suppression systems in buses. Fogmaker became the first manufacturer to implement the official tests with successful results in October 2016.

Fogmaker has also made the first fire suppression system available that has type approval – UNECE Regulation No.107 Cert. No. 06001 (2017-01-18). Fire testing procedure follows four tests from SP method 4912, see results below:

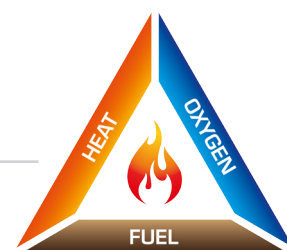
Tests	Air flow (m ³ /s)	Fogmaker's results:
High fire intensity	0	Approved *
Low fire intensity	1.5	Approved
High fire intensity with fan	1.5	Approved
Reignition	0	Approved

* Test was performed with the suppression system container cooled to -30°C

Specifics for the Fogmaker system for the R107 fire test¹:

- Gross volume "engine compartment": 4m³
- Extinguishant volume: 6.1 litres
- Number of spray nozzles: 11
- Type of nozzle: "Hollow cone nozzle" 1.2 l/min
- Distance most remote nozzle: 8 m

Minimum requirements. Risk assessment of engine compartment can result in an increase of extinguishant volume and number of nozzles.



“Up and down” scaling (Sx) depending on volume of the engine compartment:

Minimum volume of extinguishant is equal to:

- If your engine compartment (x) > 4 m³: $S_x = ([0,1 * X] + 0,6) * 6.1$
- If your engine compartment (x) < 4 m³: $S_x = ([0,15 * X] + 0,4) * 6.1$

Minimum number of nozzles is equal to:

- If your engine compartment (x) > 4 m³: $S_x = ([0.1 * X] + 0.6) * 11$
- If your engine compartment (x) < 4 m³: $S_x = ([0.15 * X] + 0.4) * 11$

For example, your engine compartment is 3 m³ then your min volume of extinguishant is =
= $([0.15 * 3] + 0.4) * 6.1 = 5.19$ litres.

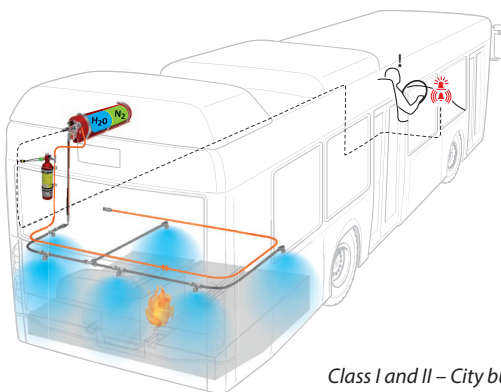
The minimum quantity of nozzles for that system is =
= $([0.15 * 3] + 0.4) * 11 = 9$ nozzles.

Compartment volume [m ³]	Minimum PA size	Minimum no of nozzles
0.0-0.8	3.3L	6
0.8-1.3	4.0L	7
1.3-2.4	6.0L	8
2.4-3.0	6.0L	9
3.0-3.6	6.0L	10
3.6-4.4	6.5L	11
4.4-5.3	7.5L	12
5.3-6.2	7.5L	13

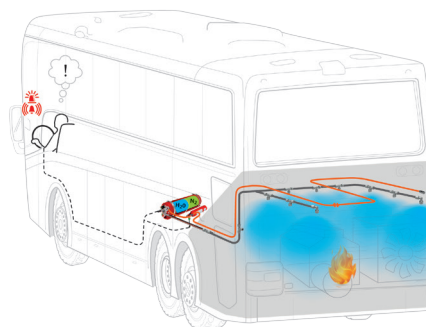
More information about UNECE Regulation 107:

- Legislation towards improved fire safety in buses and coaches in Europe
- (47 contracting parties applying)
- Fixed installed FSS (Fire suppression system) will be a part of the bus manufacture’s vehicle approval
- The requirement of installation of FSS applies to the vehicle FSS systems can be approved as a “component” by test in a defined test rig or installed in a specific engine compartment
- R107 covers the following vehicles exceeding 22 passengers:
 - Class I (standing passengers)
 - Class II (seated and standing passengers. City buses)
 - Class III (seated passengers. Coaches)
- Time frame of implementation:

Vehicle class	FSS according to R107 becomes compulsory	Vehicle types	Final date
Class III	11th of July 2018	New vehicle types	11 th of July 2019
Class I and II	1st of September 2020	New vehicle types	1 st of September 2021



Class I and II – City buses



Class III – Coaches

