

DIN EN 1789:2024-07 (E)

Medical vehicles and their equipment - Road ambulances (includes Amendment:2023)

Contents	Page
European foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	9
4 Requirements.....	10
4.1 General requirements.....	10
4.2 Electrical requirements.....	10
4.2.1 General.....	10
4.2.2 Electromagnetic compatibility (EMC).....	11
4.2.3 Battery and alternator	11
4.2.4 Electrical installation.....	12
4.2.5 Visual warning system and audible warning system (siren)	13
4.2.6 Reversing systems	13
4.2.7 Exterior illumination lights.....	13
4.3 Vehicle body.....	14
4.3.1 Fire safety.....	14
4.3.2 Driver's seat configuration.....	14
4.3.3 Minimum passenger capacity	14
4.3.4 Bulkhead	15
4.3.5 Openings (doors, windows, emergency exits).....	15
4.3.6 Loading area.....	16
4.4 Patient's compartment.....	18
4.4.1 General.....	18
4.4.2 Safety	18
4.4.3 Hygiene	18
4.4.4 Patient's compartment dimensions	19
4.4.5 Patient and crew seating	24
4.4.6 Ventilation and anaesthetic gas scavenging systems.....	25
4.4.7 Temperature control system	25
4.4.8 Interior lighting	26
4.4.9 Interior noise level	26
4.4.10 Holding system for infusion	26
4.4.11 Retention, fixation and restraint systems.....	27
4.4.12 Mass reserve	27
5 Testing.....	27
5.1 General.....	27
5.2 Testing of the interior noise level	27
5.2.1 Specific measurement conditions	27
5.2.2 Measurements.....	28
5.3 Testing of retention systems and fixation of the equipment in the patient's compartment.....	28
5.3.1 General.....	28
5.3.2 Testing of the stretcher fixation on the vehicle floor	30

5.3.3	Testing of the medical devices fixation.....	30
5.3.4	Testing of furniture.....	30
5.3.5	Test procedure	31
5.4	Testing of rounded edges and radius inside the patient's compartment.....	32
5.4.1	Testing of rounded edges.....	32
5.4.2	Testing of radius inside the patient's compartment.....	33
5.5	Procedure to verify the patient's compartment specifications	33
5.6	Procedure to verify the loading area specifications	33
5.6.1	General	33
5.6.2	Procedure to verify the loading angle of 16°	33
5.7	Procedure to verify the dimensions of the patient's compartment	35
5.7.1	Type A and B road ambulances.....	35
5.7.2	Type C road ambulances	35
5.8	Procedure to verify the seats dimensions of the patient's compartment.....	36
5.9	Testing of the ventilation system.....	36
5.10	Testing of the heating system.....	37
5.11	Testing of the cooling system	37
5.11.1	Test procedure	37
5.11.2	Testing of independent air conditioning system	38
5.12	Testing of interior lighting.....	38
5.13	Testing of infusion holding system	38
6	Equipment and medical devices.....	39
6.1	Provision of medical devices	39
6.2	Medical devices storage.....	39
6.3	Requirements for medical devices.....	39
6.3.1	General	39
6.3.2	Temperature	39
6.3.3	Humidity and ingress of liquids	39
6.3.4	Mechanical strength	39
6.3.5	Fixation of devices.....	40
6.3.6	Electrical safety	40
6.3.7	User interface.....	40
6.3.8	Gas installation.....	40
6.3.9	Marking and instructions	42
6.3.10	Maintenance	42
6.4	List of equipment.....	42
Annex A (informative)	Test summary	52
Annex B (informative)	Recognition.....	53
B.1	Recognition and visibility of ambulances	53
B.2	Recognition of crew	53
Annex C (informative)	Hygiene.....	54
Annex D (informative)	A-deviations	55
D.1	Deviation in Spain.....	55
[A]	Annex E (normative) Electric propelled vehicles	56
Annex ZA (informative)	Relationship between this European Standard and the essential requirements of Directive 93/42/EEC [OJ L 169] aimed to be covered.....	57
Bibliography	58