

NATIONAL STANDARD OF UKRAINE BUSES

SPECIALISED FOR THE TRANSPORT OF SCHOOLCHILDREN
Technical requirements

BUSES SPECIALISED FOR TRANSPORTING SCHOOLCHILDREN
Technical requirements

SPECIAL BUSES FOR CARRYING SCHOOLCHILDREN
Technical requirements

Valid from _____
year-month-day

1 SCOPE

1.1 This standard applies to specialised buses (hereinafter referred to as buses) intended for the carriage of seated schoolchildren, including those with reduced mobility, and persons accompanying schoolchildren. This standard does not apply to buses intended for the carriage of students with reduced mobility directly in wheelchairs.

1.2 Buses are intended for operation on motorways (including gravel and dirt roads) of the general transport network of Ukraine.

2 REGULATORY REFERENCES

This standard contains references to the following normative documents:

Traffic rules of Ukraine. Approved by the Resolution of the Cabinet of Ministers of Ukraine No. 1306 dated 10.10.2001

DSTU UN/ECE R 14-03-2002 Uniform technical prescriptions for the approval of road vehicles with regard to seat belt anchorage devices (UN ECE Regulation No. 14-03:1992, ITD)

DSTU UN/ECE R 16-04-2002 Uniform technical requirements for the approval of:

- I Seat belts and restraint systems for drivers and passengers of road vehicles;
- II Road vehicles equipped with seat belts (UN ECE Regulation No. 16-04:2000, ITD)

DSTU UN/ECE R 25-03-2002 Uniform technical requirements for the approval of head restraints fitted or not fitted to the seats of motor vehicles (UN ECE Regulation No. 25-03:1990, ITD)

DSTU UN/ECE R 28-00:2004 Uniform technical requirements for the approval of audible signalling devices and vehicles with regard to their audible signalling (UN/ECE R 28-00:1972, ITD)

DSTU UN/ECE R 36-03:2005 Uniform technical requirements for the approval of heavy-duty passenger road vehicles with regard to their general construction (UN/ECE R 36-03:2002, ITD)

DSTU UN/ECE R 52-01:2005 Uniform technical requirements for the approval of small road vehicles of categories M2 and M3 with regard to their overall structure (UN/ECE R 52-01:2003, ITD)

DSTU UN/ECE R 66-00-2002 Uniform technical requirements for the approval of heavy passenger road vehicles with regard to the strength of the upper part of their structure (UN ECE Regulation No. 66-00:1987, ITD)

DSTU UN/ECE R 80-00-2002 Uniform technical requirements for the approval of seats for heavy passenger road vehicles and for the approval of these vehicles with regard to the strength of the seats and their anchorages (UN ECE Regulation No. 80-00:1989, ITD)

DSTU 2610-94 Passenger road transport. Terms and definitions

DSTU 2984-95 Road transport vehicles. Types. Terms and definitions

DSTU 4155:2003 (IMO-RES.A. 471(XII), NEQ) Fire protection. Textile materials. Methods of flammability tests

DSTU B B.1.1-10-2004 Fire protection. Construction materials. Test method for flame spread on vertical surfaces in the horizontal direction

DSTU B B.2.7-70-98 Building materials. Methods of testing for flame spread

DSTU GOST 30478: 2006 Buses for the transport of disabled persons. General technical requirements (DSTU 30478-96, IDT)

GOST 12.1.044-89 (ISO 4589-84) SSBT Fire and explosion hazard of substances and materials. Nomenclature of indicators and methods of their determination (SSBT Fire and explosion hazard of substances and materials. Nomenclature of indicators and methods of their determination)

GOST 12.2.037-78 SSBT Fire-fighting equipment. Safety requirements (SSBT Fire-fighting equipment. Safety requirements)

GOST 30475-96 (ISO 6444-85) Wheelchairs. Terms and definitions (Wheelchairs. Terms and definitions).

3 TERMS AND DEFINITIONS

This standard uses the terms defined in DSTU 2610: passenger capacity; in DSTU 2984: bus, specialised bus, passengers.

The following are the terms additionally used in this standard and the definitions of the concepts indicated by them.

3.1 specialised bus for the transportation of schoolchildren

A bus that is adapted by its design and equipment for the carriage of schoolchildren

3.2 schoolchildren

Children of school age from 6 years to 17 years inclusive

3.3 Primary school students

Students from the first to the fourth grade inclusive

3.4 Middle and high school students

Students from the fifth to the twelfth grade inclusive

3.5 Specialised bus version 1 for the carriage of schoolchildren (bus version 1)

A specialised bus designed to transport junior schoolchildren

3.6 Specialised bus version 2 for the carriage of schoolchildren (bus version 2)

Specialised bus designed to transport middle and high school students

3.7 Specialised bus version 3 for the transport of schoolchildren (bus version 3)

Specialised	specialised bus,	designed	for
	transporting	schoolchildren	primary,
middle and high school students			

3.8 Specialised bus version 4 for the transport of schoolchildren (bus version 4)

A specialised bus designed to transport students with reduced mobility

3.9 aisle

A space that provides passengers with access from any seat or row of seats to any other seat or row of seats or to any entrance aisle or any service door (DSTU UN/ECE R 36-03)

3.10 integrated head restraint

The upper part of the seat backrest or removable or separate head restraints that can be detached from the seat or vehicle structure only with the use of tools or after partial or complete dismantling of the seat (UN/ECE R 25-03)

3.11 service door

Doors used by passengers during normal operation when the driver is in his seat (DSTU UN/ECE R 36-03)

3.12 wheelchair

A vehicle designed for the disabled and sick, which is driven by the muscular strength of the user or an attendant, by an electric or mixed motor (GOST 30475)

3.13 emergency door

Doors installed in addition to the service doors and intended for use by passengers to exit only in case of danger.

4 TECHNICAL REQUIREMENTS

4.1 Buses specialised for the carriage of schoolchildren, depending on the version, must meet the requirements of DSTU UN/ECE R 52-01 for class B buses, DSTU UN/ECE R 36-03 for class III buses, except for the requirements given in this standard and the requirements of this standard.

Note. Hereinafter, DSTU UN/ECE R 52-01 applies to buses designed to carry no more than 22 passengers, and DSTU UN/ECE R 36-03 applies to buses designed to carry more than 22 passengers.

4.2 The bus body must have a layout with a distance from the front wheel axle to a vertical plane perpendicular to the longitudinal axis of the bus and tangent to the outer surface of the front bumper of at least 80 cm.

4.3 The distance between the vertical planes perpendicular to the longitudinal axis of the bus and tangent to the outer surface of the front bumper and the front points of the seat cushions of the front row of students must be at least 150 cm.

4.4 Buses must be equipped with autonomous closed cabin heating systems that ensure that the temperature at a height of 60 cm from the floor is maintained at a minimum of plus 15° C at an outside temperature of minus 25° C. These conditions must be achieved no later than 30 minutes after the heating system is started.

The cabin ventilation system must ensure

- air movement in the passenger compartment at a speed of 0.5 m/s to 1.5 m/s in the area from 50 cm to 125 cm above the floor;
- the difference in temperature between the outside air and the air in the cabin at an outside temperature of plus 25° C is not more than 3° C in the zone from 70 cm to 125 cm above the floor.

Note. The effectiveness of the ventilation system is checked when the bus is travelling at a speed of 30 km/h.

4.5 Natural ventilation vents should be located in the upper part of the side windows, the height of the vents should not exceed 25% of the total window height.

4.6 Buses must be equipped with internal loudspeakers available for use by both the driver and persons accompanying students.

4.7 Buses must be equipped with electrically heated exterior rear-view mirrors on both sides. The right-hand mirror must provide the driver with the ability to visually monitor the process of entering and exiting the school from his/her workplace at least from the road level to the surface of the steps.

4.8 The bus must be equipped with one or more internal mirrors for passenger observation, which provide visibility of the cabin for both the driver and (if necessary) persons accompanying students.

4.9 Mass indicators

4.9.1 The mass indicators of buses must meet the requirements of DSTU UN/ECE R 52-01 or DSTU UN/ECE R 36-03.

4.9.2 The technically permissible maximum mass of a bus shall be determined under the following conditions:

- The average estimated weight of a primary school student is 25 kg;
- the average estimated weight of a student of middle and high school is 53 kg;
- weight of an adult passenger accompanying children - 71 kg;
- driver's weight - 75 kg;
- weight of hand luggage - 5 kg per 1 student;
- weight of additional baggage - 5 kg per 1 student;
- weight of the wheelchair - 20 kg.

4.10 Body strength

4.10.1 The body strength of buses designed to carry no more than 22 passengers must meet the requirements of DSTU UN/ECE R 52-01 for class B buses, and DSTU UN/ECE R 66-00 for buses designed to carry more than 22 passengers.

4.11 Salon layout

4.11.1 The layout of the bus interior must be designed to carry only seated passengers.

4.11.2 The driver's workplace must be separated from the passenger compartment:

- behind the driver's seat - by a stationary partition that does not restrict the driver's view of the cabin;

– to the right of the driver's seat (if there is a direct connection between the driver's workplace and the passage in the passenger compartment) - by an opening fence, the upper edge of which in the closed state is not lower than 65 cm from the passenger compartment floor.

4.11.3 The floor of the bus must be flat, without seat bases and steps in the aisle between the seats.

4.11.4 The aisles must be covered with anti-slip material.

4.11.5 Seats for schoolchildren in a bus must be installed so that the schoolchildren are seated facing the direction of the bus's forward movement, and the common average vertical plane of the seat cushion and backrest is parallel to the longitudinal axis of the bus.

4.11.6 Buses designed to carry up to 22 passengers must have at least one seat, and buses designed to carry more than 22 passengers must have at least two seats for adult passengers accompanying schoolchildren. If there are two seats for the above-mentioned persons, one of them must be located in the front of the passenger compartment, and the other in the rear.

The arrangement of the seats must allow the accompanying persons to supervise the students while the bus is in motion.

4.11.7 Under the seat cushions for schoolchildren, luggage racks for school bags (satchels, backpacks, etc.) should be provided, with sufficient space for passengers' legs.

The design of the luggage rack must ensure that the briefcase (backpack) can be loaded from the front side of the seat cushion and that it cannot fall out while the bus is moving.

It is prohibited to install luggage racks above the passenger seats in the bus interior.

4.11.8 Possible seating arrangements for schoolchildren in the bus are given in Appendix A.

4.11.9 In bus version 3, seats for primary school students are installed in front of the seats for middle and high school students (closer to the windscreen). It is not allowed to transport middle and high school students on seats for junior high school students.

4.11.10 There must be instructions on the bus: "Instructions on fire safety and evacuation", "Rules for transporting schoolchildren by specialised buses", "Rules of behaviour on the bus" and "Rules for using the stairs and elevator (lifting device)", if necessary. The bus interior must be equipped with means for holding copies of the instructions.

4.11.11 At the driver's workplace and near one of the seats of accompanying persons, places for a first aid kit and a fire extinguisher must be provided. The places for installing a first aid kit and a fire extinguisher shall be located in such a way as to

- provide easy access to fire extinguishers and first aid kits;
- prevent direct sunlight and direct heat flow from the heating systems of the passenger compartment and the driver's workplace;
- the fire extinguisher installed in the place of fastening does not create obstacles for passengers and the driver during transportation, as well as during evacuation.

The dimensions of the places for the installation of a first aid kit and a fire extinguisher must comply with the requirements of DSTU UN/ECE R 52-01 or DSTU UN/ECE R 36-03

Note. The bus must be equipped with at least two first aid kits and two fire extinguishers in accordance with clause 5.7.10 of this standard.

4.12 Aisles in the bus interior

4.12.1 In the interior of buses of versions 1, 2 and 3, the passageways must meet the requirements of DSTU UN/ECE R 52-01 for Class B buses or DSTU UN/ECE R 36-03 for Class III buses.

4.12.2 In the bus interior, version 4 aisles shall comply with requirement 4.14.4 of this standard for width.

4.13 Seats (see Annex B)

4.13.1 Passenger seats for schoolchildren and space for schoolchildren seated in buses of version 1

4.13.1.1 The distance (***H***) between the front surface of the seat backrest and the rear surface of the seat backrest of the seat in front, measured horizontally between a horizontal plane tangent to the surface of the seat cushion and a horizontal plane 55 cm above the floor area for the feet of the seated pupil, shall be not less than 60 cm.

4.13.1.2 The width of the cushion and backrest of a single seat (***2F***) shall be at least 34 cm.

4.13.1.3 The width of the free space (***G***) of a single seat to each side of the centre vertical plane of the seat horizontally along the seat back, at a height of 20 cm to 60 cm above the uncompressed seat cushion, shall be at least 20 cm.

4.13.1.4 The cushion width of two- and multi-seaters shall be determined by taking into account the values ***F*** and ***G*** specified in 4.13.1.2. and 4.13.1.3.

4.13.1.5 The depth of the seat cushion (***K***) shall not be less than 35 cm.

4.13.1.6 The uncompressed height of the seat cushion relative to the floor level (***I***) on which the student's feet are placed shall be such that the height of the horizontal plane tangent to the surface of the seat cushion above this area is between 35 cm and 40 cm.

4.13.1.7 Other requirements for seats are in accordance with DSTU UN/ECE R 52-01 for Class B buses or DSTU UN/ECE R 36-03 for Class I buses.

4.13.2 The dimensions of passenger seats for schoolchildren and the space for schoolchildren sitting in buses of version 2 must meet the requirements of

DSTU UN/ECE R 52-01 for Class B buses or DSTU UN/ECE R 36-03 for Class I buses.

4.13.3 The dimensions of passenger seats for schoolchildren and the space for schoolchildren seated in buses of version 3 shall be in accordance with 4.13.1 (for primary schoolchildren) and 4.13.2 (for middle and high schoolchildren).

4.13.4 Passenger seats and space for persons accompanying schoolchildren must meet the requirements of DSTU UN/ECE R 36-03 for Class I buses.

4.13.5 All passenger seats must be equipped with integrated head restraints in accordance with DSTU UN/ECE R 25-03.

4.13.6 On the aisle side, the seats must have armrests (can be folding) at a height *B* of 16 cm to 20 cm from the seat cushion.

4.13.7 All passenger seats must be equipped with lap belts in accordance with the requirements of DSTU UN/ECE R 16-04 and their anchorage points in accordance with the requirements of DSTU UN/ECE R 14-03.

4.13.8 Regardless of the passenger capacity of the bus and its design, the strength of all seats and their fasteners must meet the requirements of DSTU UN/ECE R 80-00 to which it applies.

4.14 Technical requirements for buses of version 4 in accordance with DSTU GOST 30478 and additional requirements of this standard.

4.14.1 It is not allowed to transport students with reduced mobility in wheelchairs in specialised buses.

4.14.2 The bus interior must provide space for wheelchairs (unfolded and/or folded) with dimensions of at least 120 cm × 70 cm per wheelchair, as well as devices for fixing them, which make it impossible to move them horizontally and vertically.

4.14.3 The doors through which pupils with reduced mobility in wheelchairs enter the bus must be located on the right side wall of the bus body in the base or rear overhang or in the rear wall of the bus body.

4.14.4 The width of the doors (service and emergency) and aisles in the bus intended for wheelchairs must be at least 90 cm.

4.14.5 Doors through which pupils with reduced mobility in wheelchairs enter the bus must be designed to ensure the stability of the width of the passage in the doorway specified in 4.14.4 during operation.

4.14.6 Doors through which wheelchair users enter the bus shall be marked with an appropriate sign or icon. The inscriptions or pictograms must be at least 25 mm high and applied

- outside the bus directly on the doors or on the exterior cladding panels in the area up to 300 mm from the edges of the doorway at a height of 70 cm to 150 cm from the road surface;

- inside the bus on the interior upholstery panels above the doorway.

4.14.7 In the bus interior, opposite the door intended for students with disabilities to enter the bus for wheelchairs, a free area (rotation circle) with a diameter of at least

140 cm in diameter. The centre of the circle of rotation should be located at the intersection of the axes of the passenger compartment aisle and the doorway.

4.14.8 Requirements for passenger seats for students with reduced mobility in accordance with DSTU GOST 30478.

4.14.9 Buses of version 4 must be equipped with devices (gangway, lift, etc.) for unimpeded movement of the wheelchair and/or its loading and unloading.

4.14.9.1 *Gangway.*

4.14.9.1.1 The width of the ramp must be at least 80 cm.

4.14.9.1.2 The slope or rise of the ramp in the direction of wheelchair movement, to or from the bus, must not exceed 12% relative to the horizontal plane.

The slope of the ramp across the wheelchair or to or from the bus must not exceed 3 % relative to the horizontal plane.

4.14.9.1.3 The design of the ramp must allow a wheelchair with a student with reduced mobility to easily enter and exit the ramp.

4.14.9.1.4 The surface of the ramp must be covered with a material that prevents slipping.

4.14.9.1.5 The ramp must have a side flange with a height of at least 5 cm, which prevents lateral displacement of the wheelchair during its movement, as well as locking devices that ensure the immobility and stability of the ramp when a wheelchair with a student with reduced mobility is moving along it.

4.14.9.1.6 The design of the ramp must be able to withstand a load of up to 350 kg.

4.14.9.1.7 The design and weight of the ramp must allow one person to install and remove it. The force required to raise (lower) the ladder should not exceed 400 N.

4.14.9.1.8 The bus must be equipped with a mechanism that makes it impossible to start moving if the ramp is not in the transport position and the bus doors are not closed.

The driver's workplace must be equipped with a light signalling the position of the ramp.

4.14.9.2 *A lift or a device for lifting a pupil with reduced mobility in a wheelchair (lifting device).*

4.14.9.2.1 The dimensions of the platform of the lifting device must be

- length - not less than 130 cm;
- width - not less than 80 cm.

4.14.9.2.2 The lifting capacity of the lifting device shall be at least 350 kg.

4.14.9.2.3 The lifting (lowering) speed of the platform of the lifting device shall be from 0.10 m/s to 0.15 m/s.

4.14.9.2.4 The lifting (lowering) of the platform of the lifting device with a wheelchair with a pupil with reduced mobility must be carried out smoothly without jerking.

4.14.9.2.5 The design of the platform of the lifting device must allow easy entry and exit of a wheelchair with a student with reduced mobility.

4.14.9.2.6 The gap between the edge of the platform of the lifting device and the floor of the passenger compartment should be no more than 3 cm. The height difference between the upper edge of the bus floor in the doorway and the upper edge of the platform of the lifting device in the raised position must not exceed 3 cm.

4.14.9.2.7 The design of the platform of the lifting device must not allow the wheelchair to roll off it arbitrarily during lifting or lowering.

The inclination of the surface of the platform of the lifting device from the horizontal plane in extreme positions and during lifting (lowering) shall not exceed

- in the direction of movement of the wheelchair, to or from the bus 8% ;
- across the wheelchair movement, to or from the bus 3%.

4.14.9.2.8 The platform of the lifting device shall be fitted with handrails or a guardrail on both sides. The handrails or fence must be located at a height of 75 cm to 90 cm from the platform of the lifting device and be of such a design that allows children sitting in a wheelchair to hold onto it when lifting (lowering). The length of any handrail or guardrail that a child can hold onto must be at least 30 cm, and any cross-sectional dimension must be at least 2 cm and not more than 3.5 cm.

4.14.9.2.9 The lifting device shall be controlled only from the control panel located near the lifting device.

4.14.9.2.10 The bus must be equipped with a mechanism that makes it impossible to start moving if the lifting device is not in the transport position and the bus doors are not closed.

The driver's workplace must be equipped with a light signalling the position of the lifting device.

4.14.9.2.11 The controls located on the control panel of the lift device must be equipped and located in such a way that, if necessary, they can be operated by a student with reduced mobility in a wheelchair mounted on the platform of the lift device.

In addition, in the event of an emergency, any other person must be able to stop the lifting or lowering process.

4.14.9.2.12 If the hands are removed from the controls, the movement of the lifting device platform must stop immediately.

4.14.9.2.13 The drive of the lifting device must be equipped with limit switches that disconnect it in the extreme positions of the platform.

4.14.9.2.14 The drive of the lifting device shall provide for the possibility of manual lifting (lowering) of the platform of the lifting device in case of failure of the main drive.

The force on the handle of the manual drive of the lifting device shall not exceed 100 N.

4.14.10 Signal buttons shall be provided in places intended for seating pupils with reduced mobility: "Please stop". The height of the buttons should be from 80 cm to 120 cm from the floor level.

4.14.11 At the request of the customer, version 4 may be combined with other versions.

The design of the bus must provide conditions under which wheelchairs and means of loading and transporting them will not impair the safety of transportation of students and will comply with the requirements of 4.14.

In this case, seats specially designed for pupils with reduced mobility must be marked with a symbol or inscription not less than 25 mm high: "disabled seat" and placed in the part of the bus that is most suitable for seating. These seats must be designed to provide sufficient space, have handrails conveniently designed and placed to enable easy getting on and off the seat and to ensure communication between the seated passenger and the driver if necessary.

4.14.12 The interior of the bus must be equipped with signs with symbols informing about the wheelchair routes and wheelchair spaces. There should be clear instructions on how to use the wheelchair locking devices near the wheelchair transport locations.

4.14.13 The number of seats for pupils with reduced mobility, the method of loading and unloading wheelchairs, the number of seats for persons accompanying pupils, as well as pupils with reduced mobility, and the requirements for the interior layout should be determined by the customer and should not contradict the technical capabilities of the bus.

4.15 Service doors

4.15.1 Number and dimensions of service doors and emergency exits in accordance with UN/ECE R 52-01, UN/ECE R 36-03

4.15.2 The service door shall be located in the right side wall of the bus body. Doors for loading and unloading wheelchairs, which the driver performs while standing directly next to them, may be located in the rear wall of the bus.

4.15.3 The bus shall be equipped with a lamp(s) to illuminate the steps of the service door and the boarding area. the said device shall automatically switch on when the door is opened, when the parking lights are switched on.

The incandescent illumination of all steps and the boarding platform, the length of which is equal to the width of the first step and the width is 40 cm and which is located close to the horizontal projection of the edge of the first step on the road surface, should be not less than 10 lux.

4.15.4 Service doors must be equipped with a remote door opener operated from the driver's seat and a device that prevents passengers from being trapped in the door. This device is not required for manual door openers.

4.16 Steps

4.16.1 The height of the first step of the service door shall not exceed 30 cm, the rest of the step dimensions shall be in accordance with DSTU UN/ECE R 52-01 for Class A buses or DSTU UN/ECE R 36-03 for Class I buses.

Note. To ensure compliance with the requirements of this paragraph, devices (systems) can be used to reduce the height of the fixed first step of the service door when passengers enter and exit.

4.17 Handrails

4.17.1 Requirements for handrails, handholds and guardrails for passageways to service doors and passageways providing access to emergency doors and windows in accordance with DSTU UN/ECE R 52-01, DSTU UN/ECE R 36-03

4.17.1 Handrail gripping points near service doors should be located at a height of 60 cm to 90 cm in the vertical direction from the ground surface or from the surface of each step, and in the horizontal direction:

- for a person standing on the ground, they should not be recessed inwards by more than 30 cm with respect to the edge of the first step;
- for a person standing on any step, they must not protrude outwards further than the edge of the next step or be recessed inwards by more than 40 cm in relation to that edge.

4.18 Requirements for the dimensions of emergency windows, doors and emergency hatches and access to them in accordance with UN/ECE R 52-01, UN/ECE R 36-03.

5 SAFETY REQUIREMENTS

5.1 Buses must be equipped with a speed limiting device that does not exceed 70 km/h. This device must not affect the crankshaft speed of the bus engine at a speed of less than 70 km/h.

5.2 The driver's workplace must be equipped with a tachograph, sound (buzzer) and light signalling of exceeding the speed of 70 km/h and activation of the speed limiter.

5.3 The driver's workplace must be equipped with an audible alarm (buzzer): "Please stop!". The buttons for switching it on must be evenly spaced along the left and right walls of the bus interior under the windows. The number of buttons should be at least three on each side of the bus. At least one of these buttons must be located next to the seat of the person accompanying the students.

5.4 The bus body must be painted yellow. The front and rear of the bus body must be marked with the following identification marks:

"Children";

"Maximum speed limit" with a digital value of the maximum speed limit - 70.

The content, size and location of the identification signs must meet the requirements of the Traffic Rules of Ukraine.

5.5 Two orange flashing beacons must be installed on the front and rear of the bus roof.

The beacons must be switched on

- automatically when any bus door is opened (except for the driver's door);
- regardless of engine operation or the state (open or closed) of the doors;
- by a separate switch located on the driver's dashboard, if necessary.

5.6 Buses must be equipped with an audible warning alarm (intermittent signal with a maximum interval of 1 s) that informs pedestrians of the danger and is switched on together with the reversing light (tail light). The sound pressure level shall not be less than 70 dB(A) and not more than 90 dB(A). The sound spectrum and test method shall comply with the requirements of DSTU UN/ECE R 28-00.

5.7 Fire safety requirements

5.7.1 The electrical equipment and wiring of buses must comply with the requirements of DSTU UN/ECE R 52-01 or DSTU UN/ECE R 36-03.

5.7.2 Non-metallic cable ducts and pipelines in which electrical wires are laid shall be made of non-combustible or hard-to-combustible materials in accordance with the requirements of GOST 12.1.044.

5.7.3. The frames and bases of passenger and driver seats, handrails and partitions of the bus interior, battery compartments, battery trays and cases of their elements shall be made of non-combustible or hard-to-combustible materials in accordance with the requirements of DSTU 12.1.044.

5.7.4 Body thermal and noise insulation materials, decorative and finishing materials, as well as painted or varnished materials used for the interior surfaces of the passenger compartment and driver's compartment (ceilings, side walls, partitions, doors, control panels) must be such that they slowly spread the flame over the surface and comply with group RPv3 in accordance with the requirements of DSTU B B.1.1-10.

5.7.5 The floor covering shall be securely fastened to the floor and correspond to the flame spread group not lower than RP2 in accordance with the requirements of DSTU B V.2.7-70.

5.7.6 The materials (combinations of materials) used to cover the passenger and driver seats shall be non-combustible in accordance with the requirements of [1].

5.7.7 The materials specified in 5.7.2 to 5.7.6 shall comply with the requirements of GOST 12.1.044:

- to low-hazard class or moderately hazardous according to by the toxicity of combustion products;
- to the group of of materials with low or moderate smoke-forming capacity.

5.7.8 Y passenger passenger compartment it is forbidden use Curtains made of flammable textile materials in accordance with the requirements of DSTU 4155, including those subject to fire protection.

5.7.8 Fire hazard warnings must be provided

- through internal loudspeakers (4.6). The power of the loudspeaker, the number of speakers and their location must ensure the required audibility in any place of the bus interior;

- through the sound alarm (buzzer) activation buttons to the driver: "Please stop!" (5.3).

5.7.9 Evacuation in case of fire should be carried out through service, emergency and emergency exits. The number, location, designation and instructions for use of service, emergency and emergency exits shall be in accordance with DSTU UN/ECE R 52-01 or DSTU UN/ECE R 36-03.

5.7.10 Buses must be equipped with at least two powder fire extinguishers certified in Ukraine with an extinguishing agent charge of at least 5 kg each. One of the fire extinguishers must be located in the driver's compartment.

5.7.11 Fire extinguishers and their mounting design must comply with the requirements of GOST 12.2.037.

5.8 Other safety requirements for buses in accordance with UN/ECE R 52-01 or UN/ECE R 36-03.

APPENDIX A

(mandatory)

ПОСИБЛЕ VARIANTS OF THE SEAT ARRANGEMENT

(одоб'язковий)

Варіанти розміщення сидінь.

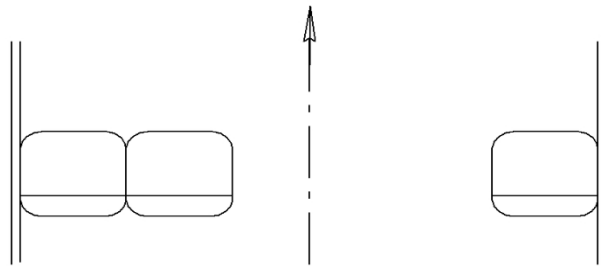


Figure A.1 - Fragment of the schemes layout passenger cabin with three seats in a row *при*

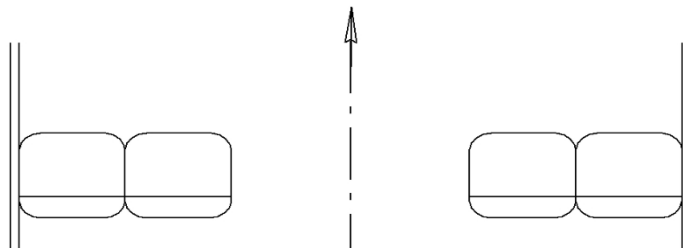


Figure A.2 - A fragment of the passenger compartment layout with four seats in a row *при*

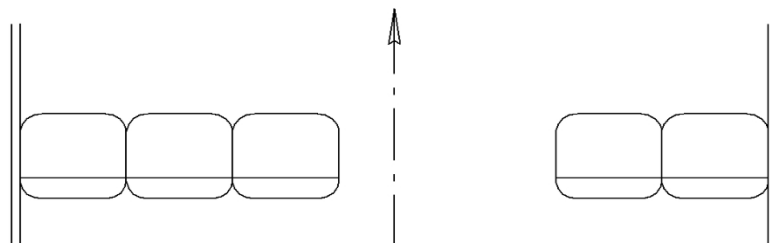


Figure A.3 - Fragment of the of the scheme layout passenger cabin with five seats in a row

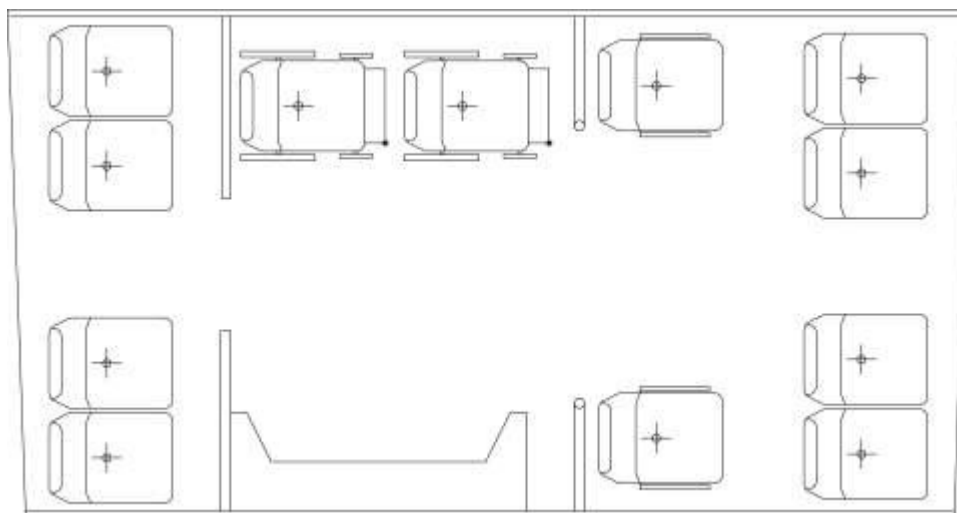


Figure A.4 - A fragment of the passenger compartment layout with seats for students with reduced mobility on both sides of the aisle

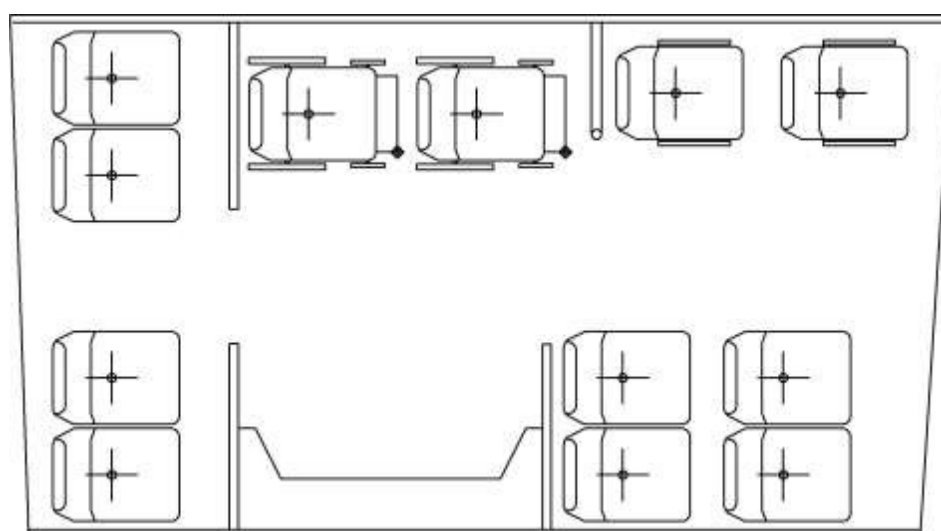


Figure A.5 - Excerpt of the passenger compartment layout with seats for students with reduced mobility on one side of the aisle

APPENDIX B

(mandatory)

Додаток Б
SEATS FOR SCHOOLCHILDREN

(довідковий)

Сидіння для школярів.

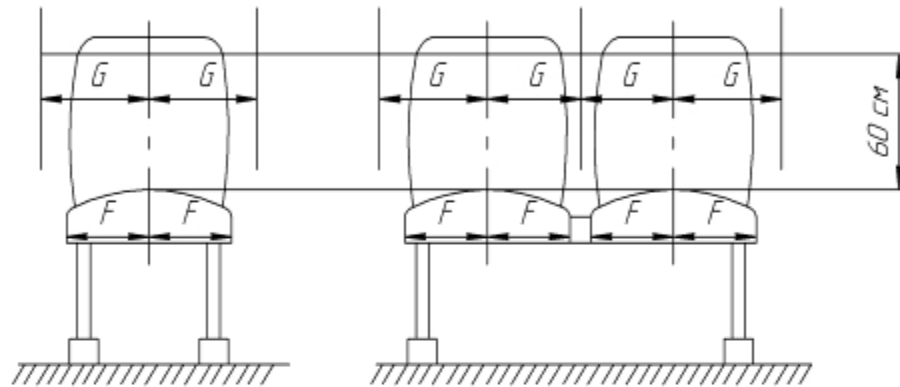


Figure B.1 - Dimensions of seats

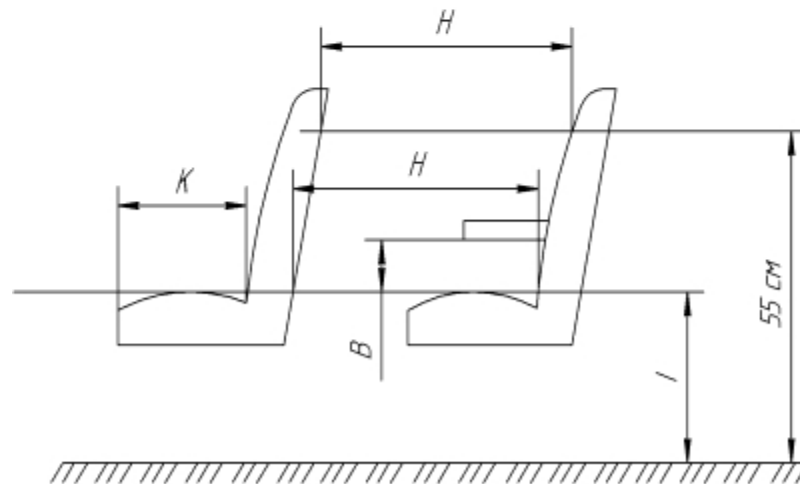


Figure B.2 - Seating arrangement

APPENDIX B
(for reference)

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1 GOST 3-88-211-99 Furniture. Assessment of the ignition of furniture for sitting and lying down. Source of ignition: match flame and burning cigarette

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