

CONSTRUCTION NORMS OF THE KYRGYZ REPUBLIC

System of normative documents in construction

APARTMENT BUILDINGS

Multicompartment residential buildings

Date of introduction _____

1 Area of application

1.1 These norms and regulations apply to the design and construction of newly constructed and reconstructed apartment buildings up to 75 m in height (here and throughout the text adopted in accordance with CN-KR 21-01:2018), dormitories of apartment type, as well as residential premises that are part of the premises of buildings of other functional purpose. The norms and regulations do not apply to the design of objects of re-profiling, redevelopment and reconstruction of buildings of the existing development.

1.2 The standards and regulations do not apply to: block-type dwellings in which rooms belonging to different apartments are not located above each other and only the walls between adjacent blocks are common, as well as to mobile dwellings.

2. Normative references

Regulatory documents referred to in the text of these standards are given in Annex A.

In the case of deletions from the current normative documents referred to in these norms, the norms introduced to replace those deleted should be applied.

¹⁾ The building height is determined by the difference between the surface elevations of the driveway for fire engines and the lower boundary of the opening (window) in the exterior wall of the upper floor, including the attic. The upper technical floor shall not be taken into account.

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The standards and regulations do not apply to: block-type and single-family dwellings, according to CN KR 31-09:2018.

3. Terms and definitions

This document uses the terms as defined in Appendix B and other terms as defined in the regulations listed in Appendix A.

4. General provisions

4.1 Construction of residential buildings should be carried out according to the design in accordance with the requirements of these building codes, and other normative documents establishing the rules of design and construction, on the basis of a building permit. The rules for determining the building area and number of floors in the design are given in Appendix B.

The building may include built-in, built-in and attached common use premises, public facilities and car parks, for which the location, production technology and mode of operation comply with the safety requirements for residents when operating an apartment building and adjacent areas according to [1], [2], [5].

The placement of industrial production facilities in multi-family residential buildings is not allowed [8].

4.2 Location of residential buildings, distances from them to other buildings and structures, the size of land plots adjacent to the house are set in accordance with the requirements of CN KR 30-01:2020 (Urban Planning. Planning and development of urban and rural settlements).

When designing public spaces located as part of an apartment building, a separate entrance (entrances) should be provided for them from the adjacent territory and be guided by CN KR 31.04:2018 (Public Buildings and Structures).

The number of floors and the length of buildings shall be determined by the development project. When determining both the number of floors and the length of residential buildings in seismic areas the requirements of CNKR 20-02:2018 (Seismic resistant construction) and CNKR 30-01:2020 should be followed.

4.3 When designing and constructing a residential building, conditions shall be provided for life activities of people with low mobility, accessibility of the site, building and apartments for disabled people using wheelchairs, if the placement of apartments for families with disabled people in this residential building is established in the design assignment.

Apartment buildings for the elderly should be designed no higher than nine floors, for families with disabilities no higher than five. In other types of residential buildings, apartments for families with disabled persons should be located on the ground floors.

In residential buildings of state and municipal housing funds, the percentage of apartments for families with disabled persons using wheelchairs is established in the design assignment by the local authorities. Specific requirements for the provision of life-support facilities for disabled persons and other groups of persons with low mobility should be stipulated taking into account local conditions and the requirements of CN KR 35-01:2018 (Design of the living environment to meet the needs of persons with disabilities).

4.4 According to the Customer's design assignment, the project is accompanied by an instruction manual for the apartments and public areas of the building.

The operating instructions for apartments and building premises shall contain data necessary for tenants (owners) of apartments and built-in public spaces and for operating organizations to ensure safety during operation, including: information on main structures and engineering systems, layouts of hidden elements and assemblies of the frame, hidden wiring and engineering networks, and limit values of loads on elements of building structures and on its electrical network. These data may be provided in the form of copies of executive documentation. In addition, the instruction shall include rules for the maintenance and maintenance of fire protection systems and an evacuation plan in case of fire.

4.5 In residential buildings it is necessary to provide: domestic and drinking, fire and hot water supply, sewerage and drains, heating, ventilation, smoke protection, smoke removal, automatic fire extinguishing - in accordance with the current regulatory documents.

4.6 Electric lighting, power electric equipment, telephony, radio broadcasting(?), television antennas and bell alarms as well as automatic fire alarms, fire notification and evacuation control systems, elevators for transportation of fire units and means of rescue of people in accordance with the requirements of regulatory documents should be provided in residential buildings.

4.7 Roofs of residential buildings should be used for installation of collective reception antennas and racks of wired radio broadcasting networks. Installation of radio relay masts and towers is prohibited.

4.8 Elevators should be provided in residential buildings where the floor level of the upper residential floor exceeds the floor level of the ground floor by 11.2 m.

In residential buildings in climatic sub-areas IA, IB, IY, ID and IVA elevators should be provided in buildings with the floor level of the upper floor above the floor level of the ground floor by 9.0 m.

The minimum number of passenger lifts that residential buildings of different floors must be equipped with is given in Annex D.

It is allowed, when justified, not to provide lifts when adding one storey to an existing 5-storey residential building. In buildings equipped with an elevator, it is permissible not to provide for an elevator stop in the superstructure floor.

Residential buildings with apartments on the floors above the first floor for families with disabled persons using wheelchairs for mobility shall be provided with passenger lifts or lifting platforms in accordance with the requirements of CN KR 35-01:2018 - Design of the living environment taking into account the needs of persons with disabilities and other applicable regulatory documents.

4.9 The width of the areas in front of the elevators shall allow the use of the elevator to transport the patient on an ambulance stretcher and shall be at least, m:

1,5 - in front of the lifts with load capacity of 630 kg and cabin width of 2100 mm;

2.1 - in front of elevators with a load capacity of 630 kg and a cabin depth of 2100 mm.

In case of double-row arrangement of elevators the width of the elevator hallway shall be at least, m:

1,8 - when installing lifts with cabin depth less than 2100 mm;

2.5 - when installing lifts with cabin depth of 2100 mm and more.

4.10 In the basement, first and second floors of a residential building (in large and major cities¹⁾ in the third floor) it is allowed to locate built-in and built-in public premises, except for facilities that have a harmful impact on people.

It is not permitted to place:

²specialised stores of chemical and other goods whose operation may lead to air pollution in residential areas; stores containing explosive substances and materials; stores selling synthetic carpets, car parts, tyres and motor oil; specialised fish stores,

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warehouses of any purpose, including wholesale (or small-scale wholesale) trade; all enterprises, and also stores with a mode of operation after 11 p.m.²⁾ .

Synthetic carpet shops shall be permitted to be located adjacent to blank walls of residential buildings with a fire resistance rating of REI 150.

4.11 The basement and basement of residential buildings shall not be used for the storage, processing and use in various installations and devices of flammable and combustible liquids and gases, explosives, combustible materials, rooms for children; cinemas, conference rooms and other auditoriums with more than 50 seats, as well as medical and health care facilities. When placing other rooms on these floors, the restrictions set out in 4.10 of this CN and in CN KR 31.04:2018 should also be taken into account.

4.12 Public space loading from the courtyard side of the residential building, where apartment windows and entrances to the residential part of the building are located, is not permitted.

Loading of public spaces built into residential buildings should be performed: from the ends of residential buildings without windows; from underground tunnels; from the side of highways (streets) if special loading facilities are available.

It is allowed not to provide the specified loading rooms at the area of built-in public premises up to 150 m² .

Entrances to built-in and built-up public premises should be located so as to enable access to them without crossing the courtyard area from the ground level of 0.0

4.13 Workshops for artists and architects as well as office space with a maximum of 5 employees can be placed on the top floor of residential buildings, and the requirements of 7.2.15 of this CN should be taken into account.

Office space in the attic story above ground may be located in buildings of no less than II fire resistance degree and no more than 28 m in height.

4.14 The residential floors are allowed to contain public spaces for individual activities (within the area of the apartments). Apartments with a two-way orientation are allowed to include additional rooms for a family garden for a group of not more

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than 10 people; reception rooms for one or two doctors (as agreed with the sanitary and epidemiological service); a massage room for one specialist.

A family day care center is allowed to be located in apartments with a two-way orientation, located no higher than the 2nd floor in buildings not lower than II degree of fire resistance, if these apartments are provided with an emergency exit according to 6.2.18 a) or b) CN-KR 21-01:2018 and if it is possible to arrange playgrounds in the adjoining territory.

4.15 The requirements of CN KR 31-12:2018 should be observed when parking spaces are arranged in residential buildings, built-ins or built-ins. Residential floors and floors with rooms for pre-school facilities and health care facilities must be separated from the parking lot by a technical floor.

4.16 In apartment buildings in the first, ground or basement floors, a cleaning equipment storage room equipped with a sink should be provided.

4.17 The need for garbage chutes in residential buildings is determined by local authorities depending on the waste disposal system adopted.

4.18 Placement of sites for various purposes on operable roofs is allowed with regard to the safety requirements of SNiP II-26-76 with the provision of safe use, fencing and access control.

In the case of a maintained roof in an apartment building (except for a semi-detached one), in order to protect against noise, the design specification provides for an upper technical floor and/or noise protection measures.

4.19 At the arrangement of individual outdoor units of air conditioning system should be in accordance with GOST 34058 (Engineering networks of buildings and structures of internal) and provide places for their placement taking into account the need for maintenance and repair.

4.20 The design of 'green' multi-family residential buildings should be assessed against the criteria for sustainable (including green) development projects according to [8].

5. Requirements for buildings and premises

5.1 Flats in multi-family residential buildings should be designed for single family occupancy.

5.2 In public and municipal housing stock buildings, the minimum dimensions of apartments in terms of the number of rooms and their area (excluding the area of balconies, terraces, verandas, loggias, cold storerooms and vestibules) are

recommended to be taken according to Table 5.1. The number of rooms and the area of apartments for specific regions and cities shall be specified by the local administration taking into account demographic requirements, the achieved level of housing provision and the resource availability of housing construction.

In residential buildings of other forms of ownership the composition of the premises and the size of the apartments are set by the customer-developer in the design assignment.

Table 5.1

Number of living rooms	1	2	3	4	5	6
Recommended floor area m ²	28-38	44-53	56-65	70-77	84-96	103-109

5.3 In apartments provided to citizens taking into account the social norm of housing area, in buildings of state and municipal housing funds, living quarters (rooms) and utility rooms: kitchen (or niche kitchen), front room, bathroom (or shower room) and restroom (or combined bathroom), storage room (or a household built-in wardrobe) should be provided.

N o t e - In one-room flats it is allowed to design a niche kitchen instead of a kitchen for electric cooking.

Out-of-apartment residents' utility storerooms designed to store residents' household items (except for the storage of explosive substances and materials, flammable and combustible liquids, oils, cylinders with combustible gases, pressurized cylinders, car (motorcycle) tires (tires), fireworks) may be placed on the first non-residential, basement and basement floors of an apartment building subject to the requirements [2].

If the total area of the residents' out-of-apartment storage rooms is more than 250 m² they should be divided into blocks, observing fire safety requirements.

Blocks of out-of-dwelling residents' utility storerooms (per 5.13) should be separated from auxiliary rooms of other purposes, residential and technical rooms by fire barriers, and the fire hazard class of partitions between rooms within the block itself should be selected in accordance with the requirements of CN-KR 21-01:2018.

Fire resistance limit and fire hazard class for partitions between rooms of out-of-dwelling household storage rooms of tenants in the basement and basement floors are taken according to CN-KR 21-01:2018.

The number of people who can stay in out-of-doors storage rooms at one time is based on one person per storage room.

Outside residents' utility storerooms are not permitted to be equipped with socket outlets.

The design solutions for out-of-family residents' utility storage rooms shall provide for planning techniques and engineering means, including those given in CN-KR 21-01:2018 to ensure:

- excluding access by persons who do not live in the apartment building;
- Ability to visually control the inputs.

According to the design assignment, the ground floor of an apartment building may include a stroller room, a bicycle room (for storage of prams, wheelchairs for MSM, bicycles, scooters), a room for storage and charging of personal mobility equipment (PME) with an electric drive. Exit from such premises may be provided in the lobby.

5.4 A ventilated drying closet for outerwear and footwear is provided for residential buildings in climate sub-areas IA, IB, IY and IIA.

Loggias and balconies should be provided: in apartments of houses built in III and IV climatic regions, in apartments for families with disabled persons, in other types of apartments and other climatic regions - taking into account fire requirements and unfavorable conditions.

Unfavourable conditions for the design of balconies and non-glazed loggias:

- In I and II climatic regions - combination of average monthly air temperature and average monthly wind speed in July: 12-16 °C and more than 5 m/s; 8-12 °C and 4-5 m/s; 4-8 °C and 4 m/s; below 4 °C with any wind speed;
- noise from traffic arteries or industrial areas 75 dB or more at a distance of 2 m from the façade of a residential building (except for noise-protected residential buildings);
- airborne dust concentration of 1.5 mg/m³ or more for 15 days or more during the three summer months.

5.5 Accommodation in basement and ground floors of residential buildings is not allowed.

5.6 The size of living and auxiliary rooms of the apartment is determined according to the necessary set of furniture and equipment, placed taking into account the requirements of ergonomics.

5.7 The area of rooms in apartments specified in 5.3 must be at least one room in a one-room apartment - 14m^2 , common living space in apartments with two or more rooms - 16m^2 , a bedroom - 8m^2 (10m^2 - for two persons); kitchen 8m^2 ; kitchen area in kitchen-dining room - 6m^2 . In one-room flats, it is allowed to design kitchens or niche kitchens of at least 5m^2 .

A bedroom and kitchen area in a loft floor (or floor with sloping envelope) is allowed to be at least 7m^2 , provided that the common living space is at least 16m^2 .

5.8 The height (from floor to ceiling) of living quarters and kitchen (kitchen-dining room) in climatic areas IA, IB, IY, ID and IVA should be not less than 2.7 m, and in other climatic areas not less than 2.5 m.

The height of intra-apartment corridors, halls, fronts, mezzanines (and under them) is determined by the conditions of safe movement of people and should be at least 2.1 m.

In dwellings and kitchens of apartments located in attic floors (or upper floors with sloping building envelopes), a lower ceiling height relative to the norm on an area not exceeding 50% is permitted.

5.9 Common living quarters in 2-, 3- and 4-room apartments in the housing stock buildings listed in 5.3 and bedrooms in all apartments should be designed as non-passable.

5.10 Premises of the apartments specified in clause 5.3 shall be equipped with: a kitchen sink or a sink and a cooker for cooking; a bathroom - a bath (or shower) and a washbasin; a lavatory - a toilet with a flush tank; a combined bathroom - a bath (or shower), a washbasin and a toilet. In other apartments, the composition of the equipment of the rooms is set by the customer-developer.

Arrangement of a combined bathroom is allowed in one-room apartments in state and municipal housing stock buildings, in other apartments - by design assignment.

In apartments of public and municipal housing stock, space must be provided in the bathroom, bathroom (shower) or kitchen to accommodate a washing machine.

In apartments of private housing stock and housing stock of commercial use the composition of sanitary and technical equipment of apartments is set according to the design task.

5.11 For the coatings of apartment buildings up to two floors inclusive (at a height of not more than 7 m from the ground level to the eaves), it is allowed to provide a non-organized drain in the arrangement of canopies over entrances and balconies, the overhang of the eaves should be at least 0.6 m.

For the coverings of apartment buildings up to and including five stories (when the height from the ground planning level to the eaves is not more than 16 m), an external organized drain or internal one should be provided.

For the coverings of apartment buildings with six or more floors (where the height from the ground planning level to the eaves is more than 16 m), an internal drainage must be arranged.

To protect against precipitation over the entrance area, external staircases and ramps located along the façade, a canopy shall be provided. It must be designed for the CNow load corresponding to the CNow area of the construction ~~according to SP 20.13330~~, and have an organized or unorganized drainage.

6. Design requirements

6.1 The foundations and supporting structures of the building must be designed and constructed so that during its construction and under design operating conditions the possibility of

The building's structure has been destroyed or damaged so that the building's operation must be discontinued;

inadmissible deterioration of the performance properties of structures or the building as a whole, due to deformations or cracks.

6.2 The structures and foundations of the building must be designed to withstand the permanent loads from the own weight of the load-bearing and enclosing structures, temporary evenly distributed and concentrated loads on the floor, CNow and wind loads for the given construction area. The standard values of the loads listed above, the taken into account unfavorable combinations of loads or their respective forces, the limiting values of deflections and displacements of structures, as well as the values of load reliability factors must be adopted in accordance with the requirements of ~~SNiP 2.01.07~~ .(?) Loads and effects.

Additional requirements of the customer-developer specified in the design task must also be taken into account, such as the placement of fireplaces, heavy equipment of public spaces built into a residential building; the fixing of heavy interior equipment to walls and ceilings.

6.3 The calculation methods used in the design of structures for their load-bearing capacity and deformability shall meet the requirements of the applicable regulatory documents for structures made of the respective materials.

When locating buildings in the undermined area, on subsidence soils, in seismic areas, as well as in other complex geological conditions, additional requirements of relevant standards and regulations should be taken into account.

6.4 Foundations of the building should be designed taking into account physical and mechanical characteristics of soils, characteristics of the hydrogeological regime on the building site, as well as the degree of aggressiveness of soils and groundwater in relation to the foundation and underground utilities and should provide the necessary uniformity of foundation settlement under the building elements.

6.5 When calculating a building higher than 40 m for wind loads, in addition to the conditions of strength and stability of the building and its individual structural elements, limitations on the parameters of vibrations of the upper floors' ceilings must be ensured due to the requirements of the comfort of living.

6.6 In case additional loads and impacts on the remaining part of the residential building are encountered during reconstruction, its load-bearing and envelope structures as well as the foundation soils must be tested for these loads and impacts in accordance with the applicable regulations, regardless of the physical deterioration of the structures.

The actual load-bearing capacity of the foundation soils as a result of their change and the period of use, as well as the increase over time of the strength of concrete in concrete and reinforced concrete structures, must be taken into account.

6.7 When reconstructing a residential building, changes in its structural design arising during the use of that building (including the appearance of new openings additional to the original design solution, as well as the effect of structural repair or reinforcement carried out) should be taken into account.

6.8 When reconstructing residential buildings with changes in the location of sanitary and technical units, appropriate additional measures for hydro, noise and vibration insulation should be taken and, if necessary, reinforcement of ceilings where the equipment of these sanitary units will be installed.

7. Fire safety

7.1 Prevention of fire spread

7.1.1 The fire safety of the building should be ensured in accordance with the requirements of CN KR 21-01:2018 for buildings of functional fire hazard F1.3 and

the rules established in this document for specifically specified cases, and in operation - in accordance with the requirements of applicable regulations.

7.1.2 Allowable building height and floor area within a fire compartment are determined depending on the fire resistance rating and structural fire hazard class according to Table 7.1.

Table 7.1

Fire resistance rating of the building	Structural fire hazard class of the building	Maximum permissible building height, m	Maximum allowable floor area of fire compartment, m ²
I	C0	75	2500
II	C0	50	2500
	CI	28	2200
III	C0	28	1800
	CI	15	1800
IV	C0	5	1000
		3	1400
	CI	5	800
		3	1200
	C2	5	500
		3	900
V	Not regulated	5	500
		3	800

Note - The degree of fire resistance of a building with unheated extensions should be taken according to the degree of fire resistance of the heated part of the building.

7.1.3 Buildings of I, II and III fire resistance degrees are allowed to be superstructured with one attic floor with load-bearing elements having fire resistance limit not less than R 45 and fire hazard class K0, regardless of the building height, specified in Table 7.1, but located not higher than 75 m. The enclosing structures of this storey must meet the requirements for the structures of the building to be superstructured.

Where timber structures are used, structural fire protection should be provided to ensure that these requirements are met.

7.1.4 The fire resistance limit R for gallery structures in gallery buildings of I, II and III fire resistance degrees must comply with the values accepted for floors of buildings and have fire hazard class K. Gallery constructions in buildings of fire resistance degree IV shall have a fire resistance limit not less than R 15 and fire hazard class K0.

7.1.5 In buildings of fire resistance levels I, II and III, only structural fire protection should be applied to ensure the required fire resistance rating of the load-bearing elements of the building.

7.1.6 The load-bearing elements of two-storey buildings of fire resistance class IV shall have a fire resistance rating of at least R 30.

7.1.7 In buildings of fire resistance levels I, II and III, intersection walls and partitions, as well as walls and partitions separating outside corridors from other rooms, should have fire resistance rating not less than EI 45, in buildings of fire resistance level IV - not less than EI 15.

In buildings of I, II and III degrees of fire resistance, non-load-bearing walls and partitions should have fire resistance rating of at least EI 30 and class of fire hazard K0, in buildings of IV degree of fire resistance - fire resistance rating of at least EI 15 and class of fire hazard K1.

7.1.8 Fire hazard class and fire resistance limit of interior, including closet, collapsible, doorway and sliding partitions shall not be regulated.

7.1.9 Partition walls between storerooms in the basement and basement of buildings of II degree of fire resistance up to five floors in height, as well as in buildings of III and IV degree of fire resistance may be designed with a non-standardized fire resistance limit and fire hazard class. Partitions separating the technical corridor of the basement and ground floor from the rest of the premises shall be fireproof of type 1.

7.1.10 Technical, basement, ground floor and attic should be divided by fire partitions of type 1 into compartments of not more than 500 m² in non-sectional residential buildings, and in sectional residential buildings - by sections.

In technical floors and attic, if there are no combustible materials and structures in them, the fire resistance limit of doors in fire partitions is not regulated. They may be made of G1 and G2 combustibility group materials or in accordance with clause 7.20 of CN-KR 21-01:2018

7.1.11 The railings of loggias and balconies in buildings three floors and higher shall be made of non-combustible materials.

Non-combustible materials should also be used for exterior sun protection in buildings of I, II and III levels of fire resistance with a height of 5 floors or more.

7.1.12 The public premises should be separated from the residential premises by fire walls of type 1 and ceilings of type 3 without openings, in buildings of fire resistance degree I - by ceilings of type 2.

7.1.13 The waste disposal chamber shall have an independent entrance isolated from the entrance to the building by a blank wall and separated by fire partitions and flooring with a fire resistance rating of at least REI 60 and fire hazard class K0.

7.1.14 Roofing, rafters and purlins of attic shall be made of combustible materials. In buildings with attic (with the exception of buildings of fire resistance degree V), when making rafters and purlins of combustible materials, roofs of combustible materials shall not be used, and rafters and purlins shall be subjected to fire protection treatment. When these structures are structurally protected they must not contribute to the concealed spread of combustion.

7.1.15 The load-bearing structures of the roof of the built-up part must have a fire resistance rating of at least R 45 and fire hazard class K0. If there are windows in the residential building facing the built-in part of the building, the level of the roof and the abutments must not exceed the floor level above the living spaces of the main part of the building. Insulation in the roofing must be non-combustible.

7.2 Provision for evacuation

7.2.1 The greatest distances from apartment doors to stairwells or exits to the outside should be assumed according to Table 7.2.

In a section of a residential building, at the exit from the apartments to a corridor (hall) without a 1.2 m window opening² at the end, the distance from the door of the furthest apartment to the exit directly to the stairwell and to the tambour leading to the air zone of a non-smoke stairwell shall not exceed 12 m, in the presence of an opening or a smoke vent in the corridor (hall) this distance may be accepted according to Table 7.2 as for a dead-end corridor.

Table 7.2

Fire resistance rating of the building	Structural fire hazard class of the building	The longest distance from the apartment door to the exit, m	
		When located between stairwells or exterior entrances	When exiting to a dead-end corridor or gallery
I, II	C0	40	25
II	C1	30	20
III	C0	30	20
	C1	25	15
IV	C0	25	15

V	C1, C2	20	10
	Not regulated	20	10

7.2.2 The width of the corridor shall be at least 1.4 m if its length between the stairs or the end of the corridor and the staircase is up to 40 m, and 1.6 m if it is over 40 m, the width of the gallery is at least 1.2 m. Corridors should be divided by partitions with doors of fire resistance EI 30, equipped with closures and located at a distance of not more than 30 m from one another and from the ends of the corridor.

7.2.3 Glazed doors are permitted in stairwells and elevator lobbies, with reinforced glass in buildings of four or more floors.

7.2.4 The number of evacuation exits from the floor and type of stairwells should be taken according to CN-KR 21-01:2018

7.2.5 In residential buildings less than 28 m in height, designed to be located in the IV climatic region and IIIB climatic sub-region, instead of stairwells it is allowed to install outdoor open staircases of non-combustible materials with a fire resistance rating of at least R 60.

7.2.6 In residential buildings of corridor (gallery) type with the total floor area of apartments up to 500 m² it is allowed to provide exit to one staircase of H1 type if the building height is more than 28 m or L1 type if the building height is less than 28 m, provided that exits are provided at the corridors (galleries) ends to the external stairs of type 3 leading to the second floor floor level. If the specified stairwells are located at the end of the building, it is permitted to have one type 3 stairwell at the opposite end of the corridor (gallery).

7.2.7 When building up existing buildings up to 28 m in height by one storey it is allowed to keep the existing staircase of LI type, provided that the storey being adjusted is provided with emergency exit according to P. 6.2.18 CN-KR 21-01:2018

7.2.8 When the total area of apartments per floor, and for section type buildings - per section floor, is more than 500 m² evacuation must be carried out to at least two stairwells (regular or non-smoke).

In residential buildings with a total area of apartments on a section floor (floor of a corridor, gallery house) from 500 to 550 m² the arrangement of one evacuation exit from the apartments is allowed;

if the height of the upper floor is not more than 28 m - in a normal stairwell, provided that the front ones in the apartments are equipped with addressable fire alarm sensors;

if the height of the upper floor is more than 28 m - in one non-smoke stairwell, provided that all rooms of the apartments (except bathrooms, washrooms, shower rooms and laundry rooms) are equipped with addressable fire alarm sensors or automatic fire extinguishing system.

7.2.9 For a multi-level apartment, it is permitted not to provide an exit to the staircase from each floor, provided that the apartment rooms are not higher than 18 m and the apartment floor not having a direct exit to the staircase is provided with an emergency exit in accordance with the requirements of CN-KR 21-01:2018 par. 6.2.18 a), b) or c)

The staircase inside the apartment may be made of wood.

7.2.10 Access to the external air zone of stairwell type H1 is permitted through the lift hallway, with the lift shafts and doors to them being arranged in accordance with the requirements of P 7.22 CN-KR 21-01:2018.

7.2.11 In buildings up to 50 m high with the total area of apartments per section floor up to 500 m² it is allowed to provide the emergency exit to the staircase type H2 or H3 when one of the elevators, providing transportation of the fire units and meeting the requirements of the current regulatory documents, is installed in the building. Thus an exit on staircase H2 should be provided through a vestibule (or an elevator hall), and doors of a staircase, shafts of lifts, vestibule - locks and vestibules should be fireproof 2-th type.

7.2.12 In sectional buildings higher than 28 m, exit from the non-smoke stairwells (type H1) can be arranged outside through the vestibule (in the absence of exits from the parking and public premises), separated from the adjacent corridors by fire walls of type 1 with fire doors of type 2. In this case, communication of stairwell type H1 with the vestibule shall be arranged through the air zone. It is allowed to fill the opening of the air zone on the ground floor with a metal lattice. There shall be at least two (not counting the doors from the apartment) self-closing doors arranged in series on the way from the apartment to the H1 staircase.

7.2.13 In a building of three floors or more, exits from the basement, basement and technical basement shall be located at least 100 m apart and shall not communicate with the stairwells of the residential part of the building.

Exits from basements and ground floors may be arranged through the stairwell of the residential part in buildings up to 5 floors. These exits shall be separated within the first floor from the exit from the residential part by fire walls of type 1.

Exits from technical floors should be provided in accordance with Section 6.2.19 CN-KR 21-01:2018

Exits from technical floors located in the middle or upper part of the building are allowed through common stairwells, and in buildings with H1 stairwells - through the air zone.

7.2.14 When providing emergency exits from the attic floors to the roof according to 6.2.18 CN-KR 21-01:2018 it is necessary to provide platforms and transition bridges with fencing - according to GOST 25772 , leading to the stairs of type 3 and stairs P2.

7.2.15 Public spaces shall have entrances and evacuation exits isolated from the residential portion of the building.

When artists' and architects' workshops and office spaces are located on the upper floor, the stairwells of the residential part of the building may be used as the second means of egress, and communication between the floor and the stairwell should be provided via a vestibule with fire doors. The door in the vestibule, which exits to the stairwell, shall be opened only from the inside of the room.

It is allowed to have one evacuation exit from the premises of public institutions located in the first and basement floors when the total area is not more than 300 m² and the number of employees is not more than 15 people.

7.3 Fire safety requirements for building utilities and equipment

7.3.1 Smoke protection of buildings shall be performed in accordance with applicable regulations. Buildings over 28 m in height with non-smokable stairwells should be provided with smoke removal and floor corridors through special shafts with forced extraction and valves to be installed on each floor at the rate of one shaft per 30 m of corridor length. An autonomous fan should be provided for each exhaust shaft. Smoke exhaust shafts shall have a fire resistance rating of at least EI 60.

In elevator shafts in buildings higher than 28 m in case of fire, outside air supply should be provided in accordance with the applicable regulations.

7.3.2 Ventilation units for air supply and smoke exhaust shall be located in separate ventilation chambers separated by type 1 fire partitions. The opening of dampers and activation of fans should be automatic from sensors installed in apartment hallways, outside corridors or lobbies, in

The fire brigade can be installed in the janitor's room or remotely from buttons installed on each floor in the fire hydrant cabinets.

7.3.3 Protection of buildings by automatic fire alarm systems should be provided in accordance with applicable regulations. If there is an automatic fire alarm system in the building, smoke detectors shall be installed in the janitor's room, outside corridors and garbage chambers.

Heat detectors to be installed in hallways of apartments over 28 m high shall have an activation temperature not exceeding 52 °C.

Living quarters of apartments and dormitories (except bathrooms, bathrooms, showers, washrooms, saunas) should be equipped with autonomous smoke detectors in accordance with the requirements of applicable regulations.

7.3.4 The fire alarm system shall be performed in accordance with the requirements of applicable regulations.

The notification and control and evacuation system in case of fire in multi-family residential buildings should be designed in accordance with CN-KR 21-01:2018

Protection of multifamily residential buildings by fire alarm systems and automatic fire extinguishing installations should be provided in accordance with the requirements of [2], CN-KR 21-01:2018 Fire safety of gas supply systems in apartment buildings should be provided in accordance with CN-KR 21-01:2018.

The type of fire detectors to be installed in the premises of multi-family residential buildings shall be adopted in accordance with CN-KR 21-01:2018

7.3.5 Indoor and indoor electrical networks shall be equipped with residual current devices (RCDs) in accordance with the requirements of applicable regulations.

7.3.6 Gas-fired cooking stoves shall not be permitted in the kitchens of residential buildings of 25 floors or more.

7.3.7 If there is no possibility or expediency to connect new and reconstructed apartment buildings to a centralized or autonomous heating system, individual heating systems with natural gas heat generators with closed combustion chambers may be provided for apartments and public spaces, except for premises of child care and health care institutions.

For hot water supply systems it is allowed to use heat generators with an open combustion chamber in apartments of residential buildings of constructional fire hazard class CO, I, II and III levels of fire resistance and height not exceeding 5 floors.

It is allowed to provide individual heating systems with electric heat generators at the customer's request. In this case, electric boilers for heating systems and water heaters for hot water supply systems must be certified, factory fabricated, supplied complete with control panels and allowed for operation by Energosurveillance

7.3.8 Heat generators shall be located in a separate non-residential room, and the total heat capacity of the heat generators shall not exceed 100 kW. The installation of heat generators with a total heat capacity of up to 35 kW is allowed in kitchens.

The room for heat generators must not be placed in a basement. It must have a window with a glazing area of 0.03 m² per 1 m³ volume of the room, with a window vent or other special device for ventilation, located in the upper part of the window. The volume of the room is determined on the basis of the convenience of heat generators operation and installation work and must be at least 15 m³.

The height of the room should not be less than 2.2 m. The dimensions of the room shall provide for aisles of at least 0.7 m in width.

Heat generators should be installed:

- at walls or on walls made of non-combustible (NG) and non-combustible (G1) materials.

- at least 3 cm from walls made of combustible materials with non-combustible (NG) or non-combustible (G1) wall covering. The wall covering must protrude at least 10 cm beyond the dimensions of the casing of the heat generator.

The floor area under the floor heater must have a protective coating of non-combustible (NG) or non-combustible (G1) materials and protrude at least 10 cm beyond the dimensions of the casing of the heat generator. Windows with a vent are not required in the room for electric heat generators.

7.3.9 Apartment heat generators, cooking and heating furnaces operating on solid fuel are allowed to be provided in residential buildings up to two floors inclusive (not including the basement). Solid fuel storages should be located in outbuildings.

7.3.10 Heat generators, including solid fuel stoves and fireplaces, cooking stoves and chimneys shall be constructed in accordance with applicable regulations. Factory-made heat generators and cookers must also be installed in accordance with the safety requirements contained in the manufacturer's instructions.

7.3.11 The waste chamber shall be protected by sprinkler sprinklers over the entire area. The section of the distribution pipeline of sprinklers shall be circular, connected to the water supply network of the building and shall be thermally insulated with non-combustible materials. The chamber door shall be insulated.

7.3.12 In two-storey buildings of fire resistance class V with 4 or more apartments, a dry pipe should be provided in the staircase with its outlet to the attic.

A dry pipe must have external spigots equipped with valves and connection heads for connection of mobile fire-fighting equipment and a connection head in the attic for connection of a fire hose.

The installation of self-operating fire extinguishers shall be provided in the distribution (input) boards of these buildings.

7.4 Provision of fire extinguishing and rescue operations

7.4.1 Through passages in the buildings should be accepted with the clear width not less than 3.5 m height - not less than 4.5 m, for buildings up to 50 m height, and not less than 4.5 m - for buildings taller than 50 m. Passageways through stairwells of buildings should be located at a distance of not more than 100 m from each other.

It is allowed not to arrange through passageways through stairwells when installing water supply networks with fire hydrants on them from two opposite sides of the building.

7.4.2 In each compartment of the basement or ground floor, separated by fire barriers, at least two windows with dimensions of at least 0.9 x 1.2 m with cavities should be provided. The free area of these windows should be taken according to the calculation, but not less than 0.2% of the floor area of these premises. The size of the pit shall allow for the supply of extinguishing agent from the foam generator and smoke removal by the smoke evacuator (the distance from the building wall to the border of the pit shall be at least 0.7 m).

7.4.3 In transverse walls of basements and technical cellars of large-panel buildings it is allowed to install openings of 1.6 m in height. Moreover, the height of the threshold should not exceed 0.3 m.

7.4.4 The fire-fighting water supply system shall be performed in accordance with SNiP 2.04.01 and SNiP 2.04.02

In buildings up to 50 m high it is allowed instead of the internal fire water supply system to provide for the installation of dry pipes with nozzles with valves and connection heads for connecting fire-fighting vehicles taken outdoors. Connection heads must be placed on the facade in a place convenient for installation of at least two fire trucks at a height of 0.8 - 1.2 m.

7.4.5 A separate tap for connecting a hose equipped with a sprayer shall be provided on the drinking water supply network in each apartment to be used as a primary indoor fire extinguishing device for extinguishing a fire. The length of the hose must make it possible to supply water anywhere in the apartment.

7.4.6 In residential buildings over 50 m high, one of the elevators shall provide transportation of firefighting units and comply with the requirements of applicable regulations.

8. Safety in use

8.1 Residential buildings shall be designed, constructed and equipped so as to prevent the risk of injury to occupants when moving in and around the building, entering and exiting the building, and when using its elements and utilities.

8.2 Slope and width of staircases and ramps, height of steps, width of treads, width of stair landings, height of passages in staircases, basement, exploited attic, as well as dimensions of door openings shall provide convenience and safety of movement and possibility to move items of equipment of apartments and public premises embedded in the building.

Minimum width and maximum slope of staircases should be accepted according to Table 8.1.

Table 8.1

Name of march	Minimum width, m	Maximum slope
Staircases leading to the living floors of buildings:		
sectional;		
two stories;	1,05	1:1,5
three stories or more;	1,05	1:1,75
corridors;	1,2	1:1,75
Staircases to basement and ground floors as well as internal staircases	0,9	1:1,25
Note - The width of the march should be determined by the distance between the railings or between the wall and the railings		

The height of the differences in the floor levels of the different rooms and spaces in the building must be safe. Where necessary, handrails and ramps should be provided. The number of rises in one flight of stairs or level difference should be at least 3 and no more than 18. The use of staircases with different height and depth of steps is not allowed. In two-level apartments, the intra-apartment staircases are

allowed to be spiral or with offset steps, with the width of the tread in the middle being not less than 18 cm.

8.3 The height of fencing of stairs, balconies, loggias, terraces, roofs and in places of dangerous drops shall be at least 1.2 m. Staircases and platforms shall have guardrails with handrails.

The guardrails must be continuous, equipped with handrails and designed to withstand horizontal loads of at least 0.3 kN/m.

8.3.1 Design solutions should ensure safe operation and safe maintenance of panoramic glazing according to GOST R 56926, GOST 23166, as well as according to 6.4.13-6.4.15 prevention of its destruction under unintended impact of users.

Additional protective enclosure for panoramic glazing is permitted in the form of rigid or cable-stayed structures included in the panoramic glazing structures.

For standard operation conditions at installation of panoramic glazing without additional security enclosure for translucent filling it is necessary to assign the following protection classes (according to GOST 30826) and resistance to burglary (according to GOST 31462): for premises on the first and top floors - CM4, P2A, ПB2*; - for premises on the other floors - CM4.

When designing panoramic glazing without an additional protective barrier, wheelchair, equipment and furniture movement restrictions should be installed in front of it (for ground floors - also on the outside, if the bottom level of translucent filling is not more than 150 mm above the ground level at the facade and pavements or driveways in this case adjoin directly to the building facade).

8.4 Structural solutions of house elements (including the location of voids, methods of sealing pipelines through structures, ventilation openings, placement of thermal insulation, etc.) shall provide protection against penetration of rodents.

8.5 Engineering systems of the building shall be designed and installed taking into account the safety requirements contained in the regulatory documents of the state supervision authorities and instructions of equipment manufacturers.

8.6 Engineering equipment and instrumentation under possible seismic effects shall be securely fixed.

8.7 A fireplace may be designed in an apartment on the top floor of a residential building, on any level of a multi-level apartment placed last in height in the building.

8.8 Measures must be provided in the building and on the adjacent territory to reduce the risk of criminal activity and its consequences, to protect the occupants of the building and to minimize the potential damage if illegal activities occur. These

measures are established in the design task in accordance with the regulatory legal acts of the local authorities and may include the use of explosion-proof structures, the installation of intercoms, code locks, security alarm systems, protective structures of window openings in the ground, basement and upper floors, in basement vaults, as well as entrance doors leading to the basement, attic and, if necessary, to other rooms.

General security systems (television monitoring, burglar alarms, etc.) should ensure protection of fire-fighting equipment against unauthorized access and vandalism.

Measures aimed at reducing the risk of criminal activity should be complemented during the operational phase.

8.10. Lightning protection shall be designed in accordance with the requirements of applicable regulations.

8.11 The roofs of residential buildings (except residential buildings with public facilities on the upper floors), roofs of built-up public facilities, as well as the entrance area, summer out-of-dwelling spaces, connecting elements between residential buildings, including open non-residential floors (first and intermediate floors) used for sports grounds for adult residents of the building, areas for drying clothes and clothes cleaning or solarium, should be provided with the necessary safety measures (assurance of safety and security)

On the operated roofs of multi-apartment residential buildings it is necessary to ensure the safety of their use by arrangement of appropriate fences, protection of ventilation outlets and other engineering devices located on it, as well as the noise protection of the downstream premises, calculated according to ~~SP-51.13330~~. ?

8.12 The design of saunas in apartments should include

- the volume of the steam room - not more than 24 m³ ;
- A special factory-made heating furnace with automatic shutdown when the temperature reaches 130 °C and after 8 hours of continuous operation;
- placement of this stove at least 0.2 m away from the walls of the steam room;
- installation of a non-combustible heat insulation board over the furnace;
- Equipping the ventilation duct with a fire damper in accordance with current regulations.

8.13 Electric switchboard, rooms for head-end stations (HS), technical centers (TC), cable TV, sound transformer substations (3TP), as well as places for telephone

distribution cabinets (CDS) should not be located under the rooms with wet processes (bathrooms, toilets, etc.).

8.14. Premises of GS, TC, ZTP shall have entrances directly from the street, the room of electric switchboard (including for communication equipment of ACN) dispatching and television) shall have an entrance directly from the street or from the floor nonresidential corridor (hall); to the place of SRT installation the approach shall also be not specified in the corridor.

9. Ensuring sanitary and epidemiological requirements

9.1 In the design and construction of residential buildings in accordance with these standards and regulations, measures shall be provided to ensure that the sanitary-epidemiological and environmental requirements for the protection of human health and the natural environment are met.

9.2 The design air parameters in the rooms of the residential building should be taken according to the optimum standards of GOST 30494. The air exchange rate in the rooms should be taken in accordance with Table 9.1.

Table 9.1

Premises	Value of air exchange
Living rooms [bedroom, common room (or living room), children's room]	according to SP 60.13330
Pantry, linen closet, dressing room	-1 0,2 ч
Kitchen (kitchen niche, kitchen area in the kitchen-dining room) with electric stove (or electric hobs hob and oven)	3 60 m/h
Kitchen with gas stove (or gas hob and oven)	3 100 m/h
Kitchen-dining room with gas stove (or gas hob and oven)	by SP

	402.1325800
A room with a gas-fired heat generator or water heater, a gas convector with a total heating capacity of up to 50 kW and a height of less than 6 m:	
- open combustion chamber	3 100 m/h*
	subject to the requirements with regard to SP
- closed combustion chamber	402.1325800 1,0* **
Bathroom, shower room, combined bathroom	3 50 m/h
Bathroom, toilet, laundry room	3 25 m/h
Premises	Value of air exchange
Lift engine room	By calculation.
Waste chamber	1,0**

* When installed in a room other than the specified equipment:

- gas hob (or gas hob and oven) air exchange

3
should be increased by 100
m/h;

- electric hob (or electric hob and oven)

3 the air
exchange should be increased by 60 m/h.

** The air exchange rate should be assumed to be equal to the total volume of the room (apartment).

N o t e - The air exchange rate should be assigned in accordance with SP 60.13330, for the built in, attached or built in-attached public spaces - by SP 118.13330, for the premises of car parking - by SP 113.13330, for civil defense facilities - by SP 88.13330, as well as taking into account design codes corresponding to the functional purpose of the premises.

All ventilated rooms not shown in the table shall have an air exchange rate of at least 0.2 room volume per hour when not in use.

9.3 The temperature of internal air in heated rooms should be assumed to be not less than 20°C for the thermal design of residential building envelopes.

9.4 The heating and ventilation system of the building should be designed to ensure the indoor air temperature in the premises during the heating period within the optimal parameters established by GOST 30494? (Buildings residential and public. Parameters of microclimate in the premises), at the calculated parameters of the outside air for the relevant areas of construction.

When designing an air conditioning system, optimum parameters must also be ensured during the warm period of the year.

In buildings erected in areas with a calculated outdoor temperature of minus 40 ° C and below, should be provided with heating floors of living rooms and kitchens, as well as public spaces with permanent residence, located above the cold cellars, or should be provided with heat protection in accordance with the requirements of CN KR 23-01:2013 Thermal protection of buildings.

9.5 The ventilation system shall maintain the cleanliness (quality) of air in the premises and uniformity of its distribution.

Ventilation can be:

- with natural air inlet and outlet;
- with mechanical supply and exhaust air induction, including combination with air heating;
- combined with natural air inlet and exhaust with partial use of mechanical inducement.

9.6 In living spaces and kitchens, air supply is provided through adjustable window sashes, transoms, shutters, dampers or other devices, including self-contained wall-mounted air dampers with adjustable opening. If necessary, apartments designed for climatic regions III and IV should be additionally provided with through-ventilation or corner ventilation.

9.7 Ventilation should be provided from kitchens, lavatories, bathrooms and, if necessary, other rooms of the apartments, and adjustable ventilation grilles and valves should be installed in the exhaust ducts and ducts.

Air from rooms that may emit hazardous substances or unpleasant odours should be vented directly to the outside and not to other rooms in the building, including through ventilation ducts.

Combination of ventilation ducts from kitchens, washrooms, bathrooms (showers), combined toilets, food storage rooms with ventilation ducts from premises with gas-using equipment and parking lots is not allowed.

9.8 Ventilation of built-up public spaces other than those specified in 4.14 shall be self-contained.

9.9 In buildings with a warm attic, removal of air from the attic should be provided through one exhaust shaft per house section with a shaft height of at least 4.5 m from the ceiling above the top floor.

In multi-family residential buildings with a warm attic, attic air removal should be provided through one exhaust shaft for each section of a multi-family residential sectional building with the height of the shaft from the ceiling over the top floor to the top of the shaft, which is determined by the calculation of the ventilation system.

9.10 In the outer walls of basements, technical cellars and cold attic that do not have exhaust ventilation, it is necessary to provide openings with a total area of not less than 1/400 of the floor area of the technical cellar or basement, evenly spaced along the perimeter of the outer walls. The area of one air vent should not be less than 0,05 m² .

Ventilation openings (at least two in each section) should be located on the opposite walls for through ventilation and equipped with louvered grilles. Ventilation of the attic space should be provided by ridge and eaves openings, dormer windows, the area of which should be 1/300 of the horizontal projection of the roof.

It is not allowed to ventilate technical rooms (switchboards, low-voltage, pumping stations, heating units, etc.) with air from the technical floor or basement. These rooms should be provided with separate supply and exhaust ventilation systems.

9.11 The duration of insolation of apartments (rooms) of a residential building should be taken in accordance with the requirements of current regulatory documents.

The rated duration of insolation should be ensured: in one-, two- and three-room apartments - not less than in one living room; in four-room apartments and more - not less than in two living rooms.

9.12 Natural light shall be provided in living rooms and kitchens, public spaces built into residential buildings, except for spaces permitted in basement floors in accordance with SNiP KR 31-04:2018

9.13 The ratio of the area of light openings to the floor area of living spaces and kitchens should normally be not more than 1:5.5 and not less than 1:8; for upper floors with light openings in the plane of inclined enclosing structures, not less than 1:10, taking into account the lighting characteristic of windows and shading by opposing buildings.

It is allowed to take the minimum area of light apertures according to the calculation of the natural illumination coefficient.

9.14 Natural light shall not be provided for rooms located under mezzanine in double height rooms; laundry rooms, storage rooms, cloakrooms, bathrooms, restrooms, combined sanitary facilities; front and inside corridors, and hallways; apartment vestibules, floor-by-floor outside corridors, lobbies and halls.

9.15 The rated values of natural and artificial lighting in different rooms should be established in accordance with CNR KR 23-05:2019 Natural and artificial lighting.

Lighting at building entrances should be at least 6 lux for horizontal surfaces and at least 10 lux for vertical (up to 2 m) surfaces.

9.16 When lighting through light openings in the outer walls of common corridors, their length shall not exceed 24 m if there is a light opening in one end, in two ends - 48 m. If the length of corridors is greater, additional natural lighting shall be provided through light pockets. The distance between two pockets of light should not exceed 24 m, and between the pockets of light and the lighting aperture at the end of the corridor - not more than 30 m. The width of a light pocket that can serve as a stairwell should not be less than 1.5 m. It is allowed to illuminate corridors up to 12 m long located on both sides of one light pocket.

9.17 In buildings designed for construction in climatic region III, light openings in living rooms and kitchens, and in climatic sub-region IV also in loggias, shall be equipped with exterior adjustable sun protection within a 200-290° sector. In two-storey buildings, sun protection may be provided by means of landscaping.

9.18 Exterior building envelopes shall have thermal insulation, insulation against penetration of outside cold air and vapour barrier against diffusion of water vapour from rooms, ensuring

- the required temperature and non-condensation of moisture on the internal surfaces of indoor structures;
- prevention of excessive moisture accumulation in structures.

The temperature difference between inside air and outside wall structure surfaces at design temperature of inside air shall comply with the requirements of CN KR 23-01:2013 "Thermal Protection of Buildings".

9.19 In I - III climatic regions at all exterior entrances to residential buildings, vestibules of at least 1.5 m depth should be provided.

Double vestibules at the entrances to residential buildings should be designed depending on the number of floors of the buildings and their construction area according to Table 9.2

Table 9.2

Average temperature of the coldest five-day period, °C	Double vestibule in buildings with number of floors
Minus 20 and above	16 or more
Below minus 20 to minus 25 inclusive.	12 " "
" " 25 " " 35 "	10 " "
" " 35 " " 40 "	4 " "
" " 40	1 " "

Notes.

1 At the direct entrance to the apartment, a double vestibule should be designed in the unheated stairwell.

2 A veranda can be used as a vestibule

9.20 Premises of the building shall be protected against the penetration of rain, melt and ground water, and possible domestic water leakage from engineering systems by structural means and technical devices.

9.21 Roofs should be designed, as a rule, with organized drainage. It is allowed to provide unorganized drainage from the roofs of 2-storey buildings provided that the canopies over the entrances and the backsplash are arranged.

9.22 Placement of a lavatory (toilet), bathroom (shower room), combined bathroom above living rooms and kitchens (niche kitchens and kitchen-dining rooms) is not allowed.

N o t e - No washing machine or other equipment which requires connection to the water mains or which is a source of noise and vibration shall be placed above living rooms.

Placement of a lavatory (toilet) and bathroom (shower room) and a combined bathroom on the upper level above the kitchen, niche kitchen and kitchen-dining room is allowed in apartments located on two levels.

The location of a lavatory (toilet), bathroom (shower room) and combined WC is allowed above the auxiliary rooms, except for the kitchen, kitchen niche and kitchen area of the kitchen-dining room.

Placing a kitchen (kitchen niche and kitchen-dining area) above living rooms is not permitted.

9.23 When new materials and products are used in construction, they should have a hygienic conclusion issued by the authorities and institutions of the state sanitary and epidemiological service.

9.24 During the construction of the building on the sites where, according to the engineering and environmental surveys, there are releases of soil gases (radon, methane, etc.), the measures for isolation of floors and basement walls adjacent to the ground in order to prevent penetration of soil gas from the ground into the building and other measures to reduce its concentration in accordance with the requirements of relevant sanitary standards should be taken.

9.25 The sound insulation of external and internal building envelopes of residential premises shall provide sound pressure reduction from external noise sources as well as from impact and noise of equipment of engineering systems, air ducts and pipelines to a level not exceeding the one permitted by MSN 2.04-03-2005 (noise protection)

Inter-apartment walls and partitions must have an airborne noise insulation index of at least 50 dB.

When multi-family residential buildings are located in areas with elevated levels of traffic noise, residential noise should be mitigated by

- application of construction and technical noise protection means, including external enclosing structures and filling elements of windows and other apertures providing sound insulation according to SNIIP 23-03-2003;

- selection of space-planning solutions in terms of building configuration in the plan and on the number of floors, orientation of living rooms, reducing the direct impact of adverse factors.

9.26 Noise levels from utility equipment and other in-house noise sources should not exceed established allowable levels and not more than 2 dBA above the background values determined when the in-house noise source is not operating, both during the day and at night.

9.27 To ensure acceptable noise levels, sanitary appliances and piping may not be attached directly to the apartment walls and partitions enclosing living rooms, nor may the machine room and elevator shafts, refuse collection chamber, trash piping shaft and its cleaning and flushing device be located above, under or adjacent to living rooms.

Fastening of sanitary appliances and pipelines directly to inter-apartment walls and partitions (building structures) enclosing living rooms is allowed provided that the requirements for sound insulation are met when double walls with a soundproofing layer between them are constructed.

If this solution is not sufficient to ensure noise levels, one or a combination of methods should be provided in addition:

- additional soundproofing of walls (partitions);
- vibration and noise insulation of pipelines in places where they pass through the enclosing structures;
- vibration- and noise-insulation of places of fixing of pipelines to enclosures.

9.28 Potable water supply to the house should be provided from the centralized water supply network of the settlement. In areas without centralized engineering networks for one- and two-storey buildings it is allowed to provide individual and collective sources of water supply from groundwater aquifers or from water bodies at the rate of daily consumption of potable water not less than 60 liters per person. In areas with limited water resources, the estimated daily flow rate can be reduced by agreement with the local authorities of the Ministry of Health.

9.29 For sewage disposal there shall be a sewerage system - centralized or local in accordance with the rules established by SNiP 2.04.01 (Internal Water Supply and Sewerage of Buildings) Sewage shall be disposed without contamination of the territory and aquifers.

9.30 Facilities for the collection and disposal of municipal solid waste and waste from the operation of public accommodation built into residential buildings, including refuse chutes, must be made in accordance with the housing regulations adopted by the local authority.

When using engineered waste disposal systems (refuse chutes, including those providing for separate collection of waste, or other engineering and technical devices), the waste shall be removed from the apartment to the loading valves or other receiving devices of these systems.

9.31 The garbage chute shall be equipped with a device for periodic flushing, cleaning, disinfection and automatic fire extinguishing of the trunk in accordance with the requirements of current regulatory documents.

The trunk of the garbage chute must be airtight, soundproofed from building structures and must not be adjacent to living quarters.

In apartment buildings with conventional stairwells (type L1 and (or) L2) refuse chute loading valves may be located in stairwells, in separate rooms or areas located on the floors. In apartment buildings with unventilated stairwells, refuse chute dampers may only be located in separate rooms or areas (niches) located on the floors.

The waste disposal chamber shall be equipped with plumbing, sewerage, lighting, waste collection mechanization devices and exhaust ventilation. The container evacuation corridor (if any) shall be equipped with lighting and exhaust ventilation. According to the design assignment in the waste disposal chamber and corridor there shall be a place for placement and connection of equipment, including a device generating ozone (according to GOST 31829), according to SanPiN 1.2.3685 for

disinfection and deodorization of the chamber and corridor, and the trunk of the waste disposal pipeline by ozonation.

In order to locate a waste disposal chamber in an apartment building that is intended for temporary storage (collection) of MSW without a garbage chute, planning techniques and (or) engineering means that ensure safety and accessibility of these premises for residents, including MSW, as well as control of the entrance area according to the requirements for the design of engineering and technical support systems should be applied.

In case of separate accumulation (collection) of MSW it is necessary to provide the possibility of preparation (collection and sorting) of garbage by tenants in apartments for its removal to loading valves (receiving devices) of engineering systems of waste disposal, to a waste collection chamber or to the site for accumulation (collection) of MSW, in compliance with SanPiN 1.2.3685.

In apartment buildings in the first, basement or basement floors, a cleaning equipment storage room equipped with a sink should be provided.

The entrance to this room should be equipped with a self-closing entrance door with thermal insulation and a seal at the gates.

The entrance door to the waste room must be insulated and fitted with a locking device.

It is not allowed to place the waste chamber, the corridor for evacuating containers (if any), the trunk of the garbage chute and the device for its cleaning and flushing adjacent to the enclosing structures of living rooms and inside the enclosing structures of living rooms.

Requirements for devices for periodic cleaning and disinfection of refuse chutes are given in SanPiN 2.1.3684 and [20].

10. Durability and maintainability

When designing the built in, attached and built in-attached premises of public use it is necessary to follow the standard indicators of the living conditions in the residential premises provided by SanPiN 2.3/2.4.3590, GOST 30494, requirements of natural illumination and insolation - by SanPiN 1.2.3685, including the levels permitted in the residential premises and in the adjacent territory:

- noise during operation of ventilation equipment, engineering systems, as well as equipment of built-in institutions and enterprises;

- air pollution from utility systems, ventilation equipment and vehicles serving the built-up facilities and enterprises.

Should be carried out indoors and in adjoining areas:

- separation of traffic flows of residents and visitors and cargo deliveries;

- functional-planning zoning of the adjoining territory with the arrangement of driveways under the building, platforms, debarcadars and other facilities for unloading vehicles.

10.1 When complied with, the load-bearing structures of the building shall maintain their properties in accordance with the requirements of these codes for the anticipated service life as may be specified in the design brief.

10.2 The bearing structures of the building, which determine the strength and stability of the building and the service life of the building as a whole, must retain their properties within acceptable limits, in accordance with the requirements of CN-KR 21-01:2018 and building codes for building structures made of appropriate materials.

10.3 Elements, parts, equipment with service lives shorter than the anticipated service life of the building shall be replaced in accordance with the periods between repairs established in the design and taking into account the requirements of the design assignment. The decision to use less or more durable elements, materials or equipment with a corresponding increase or decrease in the periods between repairs is established by technical and economic calculations.

Materials, structures and construction techniques should be selected to ensure the lowest possible subsequent repair, maintenance and operating costs.

10.4 Structures and parts should be made of materials that are resistant to possible effects of moisture, low temperatures, aggressive environment, biological and other adverse factors according to SNiP 2.03.11-85 (protection of building structures against corrosion)

Where necessary, appropriate measures should be taken to prevent the penetration of rainwater, meltwater and groundwater into the building envelope and the formation of unacceptable amounts of condensation moisture in the external envelope structures by sufficiently sealing the structures or by providing ventilation of closed spaces and air bubbles. The necessary protective compositions and coatings must be applied in accordance with the requirements of the applicable regulations.

10.5 The joints of the precast elements and laminated structures should be designed to withstand the temperature and moisture deformations and forces arising

from uneven foundation settlement and other operational influences. The sealing and sealing materials used in the joints must retain their elastic and adhesive properties when exposed to sub-zero temperatures and moisture, as well as be resistant to ultraviolet rays. The sealing materials must be compatible with the materials of the protective and decorative coatings of the structures in the joints.

10.6 It shall be possible to access the equipment, fittings and appliances of the building engineering systems and their connections for inspection, maintenance, repair and replacement.

Equipment and pipelines must be fixed to the building structures in such a way that their function is not impaired by possible movements of the structures.

10.7 When constructing buildings in areas with complex geological conditions subject to seismic effects, undermining, subsidence and other ground movements, including frost heave, utility inlets should be performed taking into account the need to compensate for possible deformations of the foundation in accordance with the requirements set out in the regulatory documents for various utilities.

11. Energy saving

11.1 The building shall be designed and constructed so as to ensure efficient and economical use of energy resources in its operation while complying with the established requirements for indoor climate and other living conditions.

11.2 Compliance with the requirements of energy saving norms is assessed by the thermal technical characteristics of building envelopes and engineering systems or by a comprehensive indicator of the specific heat consumption for heating and ventilation of the building.

In order to control energy saving of an apartment building by normative indicators, the design documentation shall contain: a list of measures to comply with the established energy saving requirements, justification of selection of optimal architectural, structural and engineering solutions; list of energy saving requirements to be met by the apartment building upon commissioning.

11.3 When assessing the energy efficiency of a building by the thermal performance of its building structures and engineering systems, the requirements of these norms are considered to be met under the following conditions:

1) thermal resistance and air permeability of envelop structures shall not be lower than those required by SNiP KR 23-01:2013

2) Heating, ventilation, air conditioning and hot water systems have automatic or manual control;

3) engineering systems of the building are equipped with metering devices for heat energy, cold and hot water, electricity and gas in case of centralized supply.

11.4 When assessing the energy performance of a building by the complex indicator of specific energy consumption for heating and ventilation, the requirements of these standards are considered to be met if the calculated value of specific energy consumption to maintain the rated parameters of microclimate and air quality in the building does not exceed the maximum allowable standard value. In this case, the third condition 11.3 must be met.

11.5 In order to achieve optimal technical and economic performance of the building and further reduce specific energy consumption for heating, it is recommended that

- the most compact space-planning solution for the building;
- the orientation of the building and its premises in relation to the world, taking into account the prevailing directions of the cold wind and solar radiation fluxes;
- application of efficient engineering equipment of the relevant product range with increased efficiency;
- utilization of waste air and waste water heat, use of renewable energy sources (solar, wind, etc.).

If as a result of the above measures, conditions 11.4 are met with values of heat transfer resistance of building envelopes lower than those required by SNiP KR 23-01:2013, the values of heat transfer resistance of walls can be reduced in comparison with the established norms.

The thermal characteristics of the building and its energy efficiency class are entered in the energy certificate of the building and are subsequently specified based on the results of operation and taking into account the energy saving measures carried out.

11.6 In order to control the energy efficiency of the building according to the normative indicators, the design documentation shall contain a section "Energy Efficiency". This section should contain information on the assignment of the energy efficiency class of the building, a conclusion on the compliance of the building design with the requirements of these standards and recommendations to improve the energy efficiency if the project needs to be finalized (primary energy use assessment), completed by independent experts in the field of energy efficiency of buildings.

Annex A Normative references

- SNiP 2.01.07-85* Loads and impacts
- SNiP 2.02.01-85* Foundations of Buildings and Structures
- SNiP 2.02.03-85 Pile foundations
- SNiP 2.02.04-88 Grounds and foundations on permafrost
soils
- SNiP 2.03.11-85 Protection of building structures against corrosion
- SNiP 2.04.01-85* Internal water supply and sewerage
- SNiP 2.04.02-84* Water supply. Outdoor networks and facilities
- CN KR 30-01:2020 - Urban Planning. Planning and development of urban and rural settlements
- CN KR 31.04:2018 Public buildings and structures.
- CN KR 20-02:2018 - Earthquake engineering
- SNiP II-11-77* Civil defence protective structures
- MSN 2.04-03-2005 (Noise protection)
- CN-KR 21-01:2018 - Fire safety of buildings and structures
- CN KR 31-12:2018 - Parking lots
- SNiP KR 23-01:2013 - Thermal protection of buildings
- CN KR 23-05:2019 Natural and artificial lighting
- CN KR 35-01:2018 - Design of the living environment to meet the needs of persons with disabilities
- GOST 25772-83 Steel railings for stairs, balconies and roofs. General technical conditions

Annex B
Terms and definitions

The term	Definition
1 Building, site	
1.1 Multifamily residential building including:	A residential building in which the apartments share common non-residential facilities and utilities.
1.1a Sectional type residential building	A building consisting of one or more sections, separated from each other by walls without openings, with apartments in the same section having access to a single stairwell directly or through a corridor.
1.1b Residential building of gallery type	A building in which all apartments on a floor have exits through a common gallery by at least two staircases.
1.1c Corridor-type residential building	A building in which all apartments on a floor have exits through a common hallway to at least two staircases.
1.1d Blocked residential building	A building designed for low-rise development, having common utilities, in which each apartment has independent access to the apartment plot and/or the adjacent territory, and the premises of different apartments may be located on top of each other.
1.2 Apartment area	Land plot adjacent to a residential building (apartment) with direct access to it.
1.3 Residential Multi-Family Green Building	Multifamily residential building that meets the requirements for the level of comfort for residents, energy and resource efficiency, environmental safety and protection of the natural environment in accordance with the principles of sustainable development and decarbonization.
2 Floors	

2.1 Floors above ground	A floor with a floor mark of the rooms not lower than the ground plan level.
2.2 Floor underground	A storey with the floor level of the premises below the ground plan level for the entire height of the premises.
2.3 Floor one	Lower ground floor of the building.
2.4 Basement floor	A floor with a floor mark of the premises not lower than the ground planning mark of not more than half the height of the premises.
2.5 Basement floor	A storey with the floor elevation of the premises below the planning ground level of more than half the height of the premises or the first underground floor.
2.6 Dormer floor	A storey in an attic space whose façade is formed in whole or in part by the surface(s) of a sloping, broken or curved roof.
2.7 Technical floor	The floor for housing the building's engineering equipment and laying utilities may be located in the lower part of the building (technical basement), upper (technical attic) or between the above-ground floors. An interfloor space of 1.8 m in height or less, used only for laying utilities, is not a floor.
2.8 Land planning level	The geodetic mark of the ground surface level at the boundary with the building setback.
3 Premises, sites	
3.1 Shower room	A sanitary and hygienic room equipped with a shower (cabin) and a sink.
3.2 Room bathroom	Auxiliary sanitary-hygienic room equipped with a bath (shower cabin) and a sink (washbasin).
3.3 Toilet	Auxiliary sanitary-hygienic room equipped with a toilet with a flush tank.
3.4 Toilet in a residential apartment building	Auxiliary sanitary-hygienic room equipped with a toilet with a flush tank and a washbasin.
3.5 Panoramic glazing	Translucent structures with an overall overall overall height equal to the clear room height and an overall

	overall overall width equal to the room width, including projecting building support structures: pylons, beams or transoms under the ceiling or above the floor.
3.6 Underground	A clear space of less than 1.8 m between the first floor or basement floor slab and the surface of the ground, the floor on the ground or the foundation slab.
3.7 Underground technical basement	Basement where pipelines of engineering systems are placed and engineering communications are laid (without placement of equipment and premises).
3.8 Ventilated basement	The open space under the building between the ground surface and the lower floor slab of the first above-ground floor.
3.9 Built-in annex	A room located within the dimensions of a multi-family residential building and in volumes that extend beyond the outer contour of the residential building by more than 1.5 m.
3.10 Technical room	A room designed for the maintenance of in-house engineering systems, with access for specialists from maintenance services and security and rescue services in emergencies.
3.11 Staircase and lift unit	Premises of the stairwell with the shaft (shafts) of the elevator (elevators), allowed with placing of the elevator lobby (halls), fire-safe zone for MSH, garbage chute.
3.12 Apartment plot	A land plot adjacent to an apartment building (including a block building) with direct access to it from the apartment.
3.13 Technical loft	Attic, where pipelines of engineering systems are placed and engineering communications are laid (without placement of engineering equipment and premises).
3.14 Floors above ground in an apartment building	A floor with a floor elevation no lower than the lowest ground plan level.
3.15 Balcony	An enclosed area protruding from the plane of the façade wall. May be glazed.

3.16 Veranda	A glazed unheated space attached to or built into a building with no depth limitation.
3.17 Loggia	A built-in or attached room, open to the outside, enclosed on three sides by walls (two on the corner) with a depth limited by the requirements of natural light of the room to the outside wall of which it adjoins. It may be glazed.
3.18 Teppaca	A fenced outdoor area attached to a building or placed on the roof of a lower storey. May have a roof and access from adjoining rooms of the house.
3.19 Elevator lobby	The room in front of the elevator entrance.
3.20 The Tambour	A passageway between doors that serves as a protection against the penetration of cold air, smoke and odours at the entrance to a building, stairwell or other premises.
3.21 Light pocket	A room with natural light adjacent to the corridor for lighting. A stairwell separated from the corridor by a glazed door at least 1.2 m wide may serve as a light pocket.
3.22 Underground	The space between the ceiling of the ground floor or basement and the surface of the ground intended for the location of pipelines of engineering systems.
3.23 Ventilated basement	The open space under the building between the ground surface and the first above-ground floor slab.
3.24 Attic	The space between the upper floor slab, the building envelope (roof) and the exterior walls above the upper floor slab.
3.25 Utility pantry (outside the apartment)	A room designed for storing belongings, equipment, vegetables, etc., excluding explosive substances and materials, located in the first, basement or cellar floor of a residential building, by the occupants of the building outside the apartment.
3.26 Car park	A room located within a building, in an addition to it, or in a separate structure, designed for the storage or

	parking of motor vehicles, not equipped for their repair or maintenance.
3.27 Entresol	An area within a double-height room not exceeding 40% of the floor area of the double-height room or an interior floor area of an apartment located within an elevated floor having an area not exceeding 40% of the floor area of the room in which it is constructed.
3.28 Public buildings	In this document - the premises intended for servicing the residents of the building, residents of the adjacent residential area, and others permitted to be placed in residential buildings by the State Sanitary and Epidemiological Surveillance authorities.

Annex B

Rules for determining floor area, building area, building storey and building volume in design

B.1 The floor area of living rooms, ancillary rooms and other rooms in apartment buildings should be determined by their dimensions measured at zero to 1.10 metres above floor level (skirting boards, decorative elements, cable ducts, heating or air conditioning systems are not considered).

The area occupied by a stove, including a stove with a fireplace, which is part of the heating system of the building and is not decorative, is not included in the floor area.

N o t e r m a t i o n s

1. The area of the niche kitchen is calculated separately from the adjacent room.

2. In case of inward sloping walls the area shall be determined:

in case of sloping walls from the room, the area is determined at the floor level. The area under the stairway of an apartment staircase in the area with a height from the floor to the bottom of the protruding structures of the staircase of 1.6 m or less is not included in the area of the room in which the staircase is located.

The distances used to determine the area of the room are measured along the entire perimeter of the walls at a height of 1.1-1.3 m from the floor.

The distances used to determine the area of the attic floor room are measured at the height of the sloping ceiling (wall): 1.6 m - at a slope up to 45°; 1.9 m - at 45° or more.

For intermediate values, the height is determined by interpolation.

A room height of less than 2.5 m is permitted on no more than 50% of the area of such a room.

C.2 The area of open spaces (balconies, loggias, terraces) should be determined by their dimensions measured along the inner contour (between the wall of the building and the fence) of the open space without taking into account the area occupied by the fence.

B.3 The area of public accommodation in the volume of the dwelling shall be calculated in accordance with the rules laid down in

B.4 The building footprint of an apartment building is defined as the area of horizontal section along the outer contour of the building, at the ground plan level, including projecting parts (balconies, loggias, bay windows, canopies and canopies of entrance groups, entrance platforms and steps, verandas, terraces, pitches, basement entrances, galleries and transitions between buildings).

The area under an apartment building located on pillars, driveways under the building, as well as projecting parts of the building cantilevered beyond the wall plane at a height of less than 4.5 m, are included in the built-up area.

The built-up area additionally includes the area beyond the contour of the above-ground part of the building, which is defined as the area of the horizontal section along the outer contour of the underground envelope structures.

C.5 When determining the number of floors in a building, all above-ground floors, including technical floor, attic floor, as well as the basement floor shall be included if the top of its ceiling is at least 2 m above the average ground plan elevation.

The basement under the building regardless of its height, as well as the interfloor space with a height of less than 1.8 m is not included in the number of above-ground floors.

In case of different number of floors in different parts of building or in case of placement of building on sloping plot, when the number of floors is increased due to slope, the number of floors is determined separately for each part of building.

When determining the number of floors and number of floors, the following are not taken into account: basement, ventilated basement, technical basement, technical spaces, attic, technical attic, technical rooms located on the roof (roof boiler rooms, machine rooms of elevators, rooms of ventilation chambers and others).

Where an apartment building is located on a sloping plot, the first above ground floor shall be the floor with the floor elevation of the premises above the lowest ground plan level.

When an apartment building is located on a sloping site (or when the foundation is constructed with a level difference), the indicated grades are taken at the exterior wall in the place where their difference is maximal.

The number of floors is determined separately for each part (section) of the multi-apartment building: when the building is located on a sloping plot (when the number of floors changes due to the slope); when the number of floors in the parts (sections) of the building varies.

When determining the number of floors in an apartment building for calculating the number of lifts, the technical floor above the top floor shall not be taken into account.

B.6 The floor area of a building (floor area of an apartment building) is defined as the sum of the floor areas.

Areas of the basement, ventilated basement, technical basement, attic, technical attic, out-of-apartment utilities with vertical distribution (in ducts, shafts), technical spaces are not included in the building area.

The building footprint includes the areas of the operable roof and passageways between the buildings.

If there are passages between blocks of flats, they are divided equally between the blocks of flats they connect.

Floor area is measured between internal surfaces of exterior walls at a height of zero to 1.10 m from floor level, in case of sloping exterior walls - at floor level (excluding skirting boards).

The attic floor area of an apartment building is defined within the interior surfaces of the exterior walls and attic walls adjacent to the attic cavities, taking into account B.2.2.

The floor area includes the areas of balconies, loggias, galleries, terraces and verandas, internal partitions and walls, as well as staircases and steps, taking into account their area at the floor level.

The area of multi-floor rooms, space between stairways greater than the width of the stairway or 1.5 m, openings in ceilings as well as elevator and other shafts should be considered within one floor.

The area of an apartment building includes areas of niches of 2 m or more in height, archways of 2 m or more in width, the floor under the landing of an apartment staircase at a height of 1.6 m or more from the floor to the bottom of the projecting structures of the landing.

Floor area does not include: areas of vestibules, porticoes, porches, external open staircases and ramps, as well as the area occupied by projecting structural elements and heating stoves.

B.7 The area of glazed and unglazed balconies, loggias and terraces and mezzanines should be determined from their dimensions measured along the inner

contour (between the building wall and the fence or guardrail in front of panoramic glazing).

The area of a French balcony, including the lower edge of the opening on the outer side from the box of the balcony unit, formed within the thickness of the walls, is not considered as part of the area of the summer rooms.

The area of public premises within an apartment building shall be determined in accordance with CN KR 31.04:2018.

B.8 The building volume of an apartment building is defined as the sum of the building volume above grade 0.000 (above-ground) and below grade (below-ground).

The building volume is determined within the bounding exterior surfaces including enclosing structures, skylights and other superstructures, starting from the net floor mark of the above-ground and underground parts of the apartment building, excluding protruding architectural details and structural elements, canopies, porticoes, balconies, terraces, the volume of driveways and space under the building on supports (clear), the ventilated basement and sub-floor channels.

The structural volume of the underground part of an apartment building is determined to the net floor level of the lower underground floor, basement or technical basement.

B.9 Rules for determination of apartment area, total apartment area*

C.9.1 The area of apartments is defined as the sum of the areas of all heated rooms (living rooms and auxiliary rooms intended to satisfy domestic and other needs) and mezzanines in them (if any) excluding non-heated rooms (loggias, verandas, cold storerooms and vestibules), balconies, terraces.

B.9.2 The area under the stairway of an apartment staircase at a site with a floor to bottom height of the staircase projecting 1.6 m or less is not included in the area of the room in which the staircase is located.

The distances used to determine the area of the room are measured along the entire perimeter of the walls at a height of 1.1-1.3 m from the floor.

The distances used to determine the area of the attic floor room are measured at the height of the sloping ceiling (wall): 1.6 m - at a slope up to 45°; 1.9 m - at 45° or more.

For intermediate values, the height is determined by interpolation.

A room height of less than 2.5 m is permitted on no more than 50% of the area of such a room.

* Apartment area and other technical indicators calculated for statistical and technical inventory purposes shall be clarified upon completion of construction.

B.9.3 The total area of the apartment is the sum of areas of its heated living rooms and auxiliary rooms, built-in cupboards, mezzanine, as well as unheated rooms (loggias, verandas, cold storerooms and vestibules), balconies, terraces.

Annex D
Minimum number of passenger lifts

Building floor	Number of lifts	Carrying capacity, kg	Speed, m/s	Largest floor area of apartments, m ²
Up to 9.	1	630 or 1000	1,0	600
10-12	2	400 630 or 1000	1,0	600
13-17	2	400 630 or 1000	1,0	450
18-19	2	400 630 or 1000	1,6	450
20-25	3	400 630 or 1000 630 or 1000	1,6	350
20-25	4	400 400 630 or 1000 630 or 1000	1,6	450

Notes:

Lifts with load capacity of 630 or 1000 kg shall have cabin dimensions of at least 2100 x 1100 mm.

2. the table is made on the basis of: 18 m² of total floor area per person, floor height 2.8 m, lift interval 81-100 s.

3. In residential buildings where the values of floor area of apartments, floor height and total floor area per inhabitant differ from those specified in the table. The number, capacity and speed of passenger lifts shall be determined by calculation.

4. In residential buildings with multilevel apartments located on the upper floors it is allowed to provide a passenger elevator stop on one of the floors of the apartments. In this case the floor of the building for calculating the number of lifts is determined by the floor of the upper stop.

Abbreviations

The following abbreviations have been used in these construction standards:

MSG - low-mobile population; MSW - solid municipal waste.

UDC [69+728.1.011](083.74)

Key words: multi-family residential buildings, number of floors, passenger elevators, ground floor, basement, attic floor, fire safety
