MINISTRY OF CONSTRUCTION	**SOCIALIST REPUBLIC OF VIETNAM**
--------	**Independence - Freedom - Happiness**

No.: 12/2012/TT-BXD	*Hanoi, December 28, 2012*

CIRCULAR

ISSUING THE NATIONAL TECHNICAL REGULATION ON RULES OF CLASSIFICATIONS AND GRADING OF CIVIL AND INDUSTRIAL BUILDINGS AND URBAN INFRASTRUCTURES

Pursuant to Decree No. 17/2008/ND-CP dated February 04, 2008 of the Government stipulating functions, tasks, powers and organizational structure of the Ministry of Construction;

Pursuant to Decree No. 127/2007/ND-CP dated August 01, 2007 of the Government detailing the implementation of some articles of the Law on Standards and Technical Regulations;

At the proposal of Director of Department of Science, Technology and Environment,

Minister of Construction issues Circular on National Technical Regulation on Rules of Classifications and Grading of Civil and Industrial Buildings and Urban Infrastructures, code QCVN 03:2012/BXD.

Article 1. Issuing with this Circular the National Technical Regulation on "Rules of Classifications and Grading of Civil and Industrial Buildings and Urban Infrastructures", code QCVN 03:2012/BXD.

Article 2. This Circular takes effect on February 15, 2013 and replaces Circular No. 33/2009/TT-BXD dated September 30, 2009 on promulgating the National Technical Regulation on Classifications and Grading of Civil and Industrial Buildings and Urban Infrastructures, code QCVN 03:2012/BXD.

Article 3. Ministers, heads of ministerial-level agencies, government-attached agencies, Chairman of People's Committees of provinces and centrally-affiliated cities, organizations and individuals concerned are liable to execute this Circular. /.

FOR THE MINISTER
DEPUTY MINISTER

Nguyen Thanh Nghi

QCVN 03:2012/BXD

NATIONAL TECHNICAL REGULATION

On National Technical Regulation on Rules of Classifications and Grading of Civil and Industrial Buildings and Urban Infrastructures

TABLE OF CONTENT

Introduction

QCVN 03:2012/BXD was written by the Institute of Architecture, Urban and Rural Planning and submitted for approval by Department of Science, Technology and Environment, appraised by the Ministry of Science and Technology and issued by the Ministry of Construction together with Circular No.12/2012/TT-BXD dated December 28, 2012 of the Minister of Construction.

QCVN 03:2012/BXD shall supersede QCVN 03:2009/BXD issued under Circular No. 33/2009/TT-BXD dated September 30, 2009 of the Ministry of Construction.

NATIONAL TECHNICAL REGULATION

on Rules of Classifications and Grading of Civil and Industrial Buildings and Urban Infrastructures

1. GENERAL REGULATION

1.1. Scope of adjustment

This Regulation prescribes general principles for the classification and grading and determination of civil and industrial building grade and urban infrastructures (referred to as building classification and grading) to serve as a basis for determining the technical and economic solutions when formulating and approving investment projects, building design and construction.

1.2. Subjects of application

This regulation applies to all organizations and individuals involved in the construction investment activities of civil and industrial building and urban infrastructures.

1.3. Determination of building grade

The building grade or building items in the investment project of new construction or renewal determined by the investor and approved by the person who makes investment decision.

1.4. Cited documents

Documents cited in this Regulation are:

QCVN 02:2009/BXD, national technical Regulation on data of natural condition used in construction.

QCXDVN 05:2008/BXD, Vietnam construction Regulation – Residential house and public building - Safety of lives and health.

QCVN 06:2010/BXD, national technical Regulation on fire safety for house and building.

NOTE: In case the documents cited in this regulation are modified, supplemented or superseded, the latest version shall apply.

1.5. Explanation of terms

In this Regulation, the terms below are construed as follows:

1.5.1 Building

The product made by human labor, with construction materials and equipment installed in the building, linked and fixed with land, including parts below and above the ground, above the ground, the parts below and above the water is built according to the design.

1.5.2 House (Building)

The building whose main function is to protect and shield people or things inside, normally with a covered portion or the whole and is built in a fixed position.

1.5.3 Civil building

Building consists of types of residential house, house and public building.

1.5.4 Types of building

The building is classified according to the purpose of use of house and building (residential house, school, hospital, cement or water factory ...). An investment project may have many types of building.

1.5.5 Building grade

The concept shows the social and economic importance of building and the level of safety for people and property during the operation and use of building;

1.5.6 Individual residential house

Constructed within the land area under the right of use of family household and individual as prescribed by law, including the case where the building is constructed on the plot of land of residential project.

1.5.7 Villa

Individual house with garden (tree, lawn, garden ...), fence and separate entrance.

1.5.8 Apartment building

Residential house with two stories or more, aisle, stair and infrastructures system used for many household and individual apartments.

1.5.9 Multipurpose building (Multipurpose combination)

The building is located in the same building block with groups of room or story having different purposes of use (offices, audience halls, catering and commercial services, residential rooms and rooms with other purposes.

1.5.10 House height

The height from land level of building under the approved planning to the highest point of the building, including its rooftop or steep roof. For building with different land levels, the height shall be the lowest land level under the approved planning.

NOTE: The technical equipment on the roof: antenna mast, lightning rod, solar-energy devices, water metal tank ... shall not be included in the house height.

1.5.11 Number of house floor

The number of house floor is all floors above the ground (including technical floor, attic and rooftop) and semi-basement;

NOTE: The number of house floor excludes the basements.

1.5.12 Ground floor

The floor whose ground level is higher or equal to the land level of building under the approved planning.

1.5.13 Basement

Floor whose over half of its height is below the land level of building under the approved planning.

1.5.14 Semi-basement

The floor whose half of its height is above or equal to the land level of building under the approved planning.

1.5.15 Technical floor

The floor is equipped with technical equipment of the building. The technical floor may be the basement, semi-basement, attic or floor of the middle building.

1.5.16 Attic

The floor inside the space of steep roof and the portion or whole of its elevation is formed by the façade of tilting roof or folding roof and the vertical wall (if any) is not higher than 1.5 m of the floor surface.

1.5.17 Urban technical infrastructures building

The urban technical infrastructures building includes water supply and drainage, electricity supply, lighting, petroleum and gas supply, communications, system for collection and disposal of solid waste, cemetery and urban transport projects.

1.5.18 Sustainability

General characteristics of durability and stability of house and buildings during operation and use.

1.5.19 Fire resistance level

The features of fire resistance of house and building under the standard defined by the fire resistance limit of main constructional structures.

1.5.20 Fire resistance limit

Time (in hours or minutes) from the start of the fire resistance test under the standard heat mode of samples until the appearance of one of limit state of the structure and components as follows:

- Loss of bearing capacity;

- Loss of integrity;

- Loss of insulation.

1.5.21 Service life of building

The capacity of building must ensure the mechanical properties and other properties set in the design and ensures the normal use conditions during its operation.

2. TECHNICAL REGULATION

2.1. Classification of civil and industrial buildings and urban technical infrastructures

2.1.1 General principle

2.1.1.1 Classification of civil and industrial buildings and urban technical infrastructures is defined according to their purpose of use.

2.1.1.2 In each group of classificaton including the building with their specific names (See Annex A).

2.1.1.3 For civil and industrial buildings and urban technical infrastructures which are not mentioned in this Regulation, the classification of building shall be prescribed by the Ministries managing the specialized building construction.

2.1.2 Classification of residential house

2.1.2.1 Residential house is classified into 02 types as follows:

- Apartment building;

- Individual house;

2.1.2.2 Depending on room structure in apartment, the apartment building is divided into:

- Apartment building with self-contained and independent apartment;

- Hostel (dormitory).

2.1.3 Classification of house and public building

2.1.3.1 Depending on the utility and special purpose of use, house and public building are classified as follows:

- Educational building;

- Medical building;

- Sports building;

- Cultural building;

- Commercial and service building;

- Communication and telecommunication building;

- Railway station;

- Public service building;

- Office and agency head office;

- Other public buildings.

2.1.3.2 Building with multi-purpose use (multipurpose building) must be classified separately for each item of that building.

2.1.4 Classification of industrial building

2.1.4.1 Industrial building is the place where there are processes of industrial production and production service, located in plants, factories, industrial parks including production workshop, production operating building and production serving building (health, catering, living activities, resting, entertainment, learning, culture, services, warehouse, transport…) and technical building (electricity, water supply and drainage, ventilation, waste treatment, fire prevention and fighting…)

2.1.4.2 Industrial building is classified under production sector including the following lines:

- Constructional material production building;

- Coal and ore extraction building;

- Oil and gas extraction and processing building;
- Heavy industry production building;
- Light industry production building;
- Seafood processing building;
- Other industrial buildings.

2.1.5 Classification of urban technical infrastructure building

2.1.5.1 The urban technical infrastructure building is classified as follows:

- System of urban water supply buildings
- System of urban water drainage buildings
- System of urban electricity supply buildings
- System of urban lighting buildings
- System of urban oil and gas supply buildings
- System of urban communication buildings
- System of solid waste collection and treatment;
- Urban funeral parlour and cemetery;
- System of urban traffic buildings

2.1.5.2 For system of urban traffic buildings, in addition to classification of utility function, the traffic nature should be taken into account.

2.2. Classification of civil and industrial buildings and urban technical infrastructure buildings

2.2.1 General principle

2.2.1.1 Each type of building is divided into five levels including special level, level I, level II, level III and level IV.

2.2.1.2 Building grade is defined by each type of building, depending on the importance, scale, constructional technical requirements, service life of building and safety level for people and property in that building. The building grade is defined for each building (or each building items) of a constructional project

2.2.1.3 The importance of building is defined on the basis of the impact of such building on humans, property or the community upon occurrence of incident, or the impact of such building in social and economic development on the given territory. When the level of constructional building is defined by many different criteria, it shall be determined according to the criteria of the highest level.

2.2.1.4 In a constructional project, the buildings with different functions shall have different building grades, but the building grade at high level must be given priority for main building block.

2.2.1.5 Building grade defined must be based on the following requirements:

- Safety level for people and property;

- Durability and service life of building during its use life, withstanding any adverse impacts of climatic conditions, the physical, chemical and biological impacts;

- The fire safety within the permitted fire resistance limit.

2.2.1.6 The determination of civil building grade (including residential house, house and public building) must be based on the concentration of people and the fire resistance level requirements of house and building specified in QCVN 06: 2010/BXD.

2.2.1.7 The safety and sustainability of the building must be determined on the basis of the safety requirements of its bearing capacity (foundation, structure); safe use, operation of the building; safe fire prevention and fighting and fire (the fire resistance level of the main parts of the building such as columns, walls, floors, roof).

2.2.1.8 The sustainability of the building is divided into 4 levels as follows:

- Level I: Use life over 10 years;

- Level II: Use life from 50 to 100 years;

- Level III: Use life from 20 to less than 59 years;

- Level IV: Use life of less than 20 years.

2.2.1.9 The sustainability of the building must ensure stability without crack, subsidence and deformation beyond the permitted limit to affect its service life and neighboring buildings during the time of construction and putting into operation.

2.2.1.10 The structure of building and foundation must be calculated with the most adverse load and load combination impacting on them, including loads causing damage over time. The load related to natural conditions must be in accordance with QCVN 02:2009/BXD.

2.2.1.11 The stability of the building must be calculated in accordance with all the factors impacting on them as wind load, flooding due to storms, sea level rise, landslide, earthquake, erosion, lightning and thunderstorm and other adverse factors.

2.2.1.12 Materials used must ensure durability, meeting utility requirements without deformation, in accordance with the local climatic conditions and ensure the health safety requirements as prescribed in QCXDVN 05:2008 / BXD.

2.2.1.13 The fire resistance level of the building and consists of 5 levels, as determined by the fire resistance limit of constructional components as specified in Table 1.

Table 1 – Fire resistance level of house and building

Fire resistance level	**Fire resistance limit of constructional components, not less than**						
	Bearing parts of house	non-load-bearing exterior walls	Floor between storeys (including attic floor and basement floor)	Roof without attic		Staircase	
				Roof shingle (including one with heat insulation	Truss, beams, purlins	House staircase wall	Stair slab and landing

I	R 150	E 30	REI 60	RE 30	R 30	REI 150	R 60
II	R 120	E 15	REI 45	RE 15	R 15	REI 120	R 60
III	R 90	E 15	REI 45	RE 15	R 15	REI 90	R 60
IV	R 30	E 15	REI 15	RE 15	R 15	REI 30	R 15
V	No specification						

NOTE:

1. Fire resistance limit of constructional components is denoted by REI, EI, RE or R together with corresponding indexes about the time of being affected by fire in minute (min), in which:

- R- Bearing capacity of components;

- E- Integrity of components;

- I - Insulating capacity of components

2. One constructional component may maintain one, two or all three bearing capacity, integrity and insulation at the same time in the period affected by the fire.

2.2.1.14 The building grade must be consistent with the requirements for the sustainability and fire resistance level of house and building as specified in Table 2

The buildings of network of water supply and drainage pipe, absorbing well, motorway and urban railway must be consistent with the sustainability as specified in Table 2.

Table 2 – Building grade according to sustainability and fire resistance level of house and building

Building grade	**Quality of building construction**	
	Sustainability	**Fire resistance level**
Special	Level I: Use life of more than 100 years	Level I
I		
II	Level II: Use life from 50 to 100 years	Level II
III	Level III: Use life from 20 to less than 50 years	Level III, Level IV
IV	Level IV: Use life of less than 50 years	Level IV

NOTE: For buildings at special grade (higher than level 1), in addition to requirements specified in this Table, the other special technical requirements must be added (load and impact, fire and explosion safety ...)

2.2.1.15 Based on the building grade, the design solutions must meet the requirements of each type and grade of building.

2.2.2 Requirements upon grading of civil and industrial buildings and urban infrastructures

2.2.2.1 Residential house

2.2.2.1.1 When grading residential house, the level of risk for the safety of people and escape ability upon incidents

2.2.2.1.2 Apartment building is classified in the group of fire risk F1.3 and individual house in the group of fire risk F1.4. The requirements for the fire risk based on purpose of use are specified in QCVN 06:2010/BXD.

NOTE: F – symbol of house grouping based on risk of fire according to purpose of use.

2.2.2.1.3 For apartment buildings up to 25 storeys, they must be built with building grade of not less than level II. Apartment buildings of more than 25 storeys (over 75 m) must be built with building grade of not less than level I and the fire resistance level of main parts of the building must not be lower than the following values:

- Bearing parts of house: R 180

- Non-load-bearing exterior walls: E 60;

- Floor between storeys (including attic floor and basement floor) : REI 90;

- House staircase wall: REI 180;

- Stair slab and landing: R 90

NOTE: This regulation also applies for house and public building.

2.2.2.1.4 For individual house, the building grade of residential house from 03 storeys or more must not be less than level III.

2.2.2.2 Residential house and public building

2.2.2.2.1 For historical buildings, museums and archive buildings, when determining the building grade, the safety level of rare property preserved and kept in the building must be taken into account.

2.2.2.2.2 The following houses and public buildings must have building grade from level I or more:

- Houses and buildings with international or national scale, the buildings with special meaning for security, national defense and diplomacy;

- Buildings that are offices of the Party, National Assembly and state administrative agencies at level of Central, provinces or centrally affiliated cities;

- Buildings directly serving the rescue, salvage and first aid in case of natural disaster, fire and epidemics.

2.2.2.3 Industrial building

2.2.2.3.1 Industrial buildings of main production technological line must be graded for the safety requirements of people and technological equipment, toxic level for environment, the level of risk, fire and explosion as specified in QCVN 06 : 2010/BXD.

2.2.2.3.2 Industrial buildings with high level of risk, significantly affecting people, property or community must have building grade of not less than level I upon occurrence of incident ; the buildings using or storing radioactive materials, the building manufacturing or storing hazardous chemicals and explosives.

2.2.2.3.3 In case other buildings are under investment project of industrial building construction but not in the main production line such as operating and administrative house, canteen... when determining the building grade, it is required to follow the regulations as for public buildings.

2.2.2.3.4 For technical infrastructure (water supply, wastewater treatment, urban traffic infrastructure, technical tunnel, ...) under construction project of technical building, when determining the building grade, it is required to follow the regulations as for urban technical infrastructures.

2.2.2.4 Urban technical infrastructures

2.2.2.4.1 The civil buildings under the construction project of urban technical infrastructures are graded on the basis of corresponding civil building grade.

2.2.2.4.2 The industrial buildings under the construction project of urban technical infrastructures are graded on the basis of corresponding industrial building grade.

2.2.2.4.3 In addition to the compliance with provisions in 2.2.1 for the grading of system of urban traffic buildings, the following requirements must be taken into account :

- Design speed or average traffic flow design for day and night (converted cars / day and night).

- Safe transportation capacity

2.2.2.4.4 For waterway buildings such as cargo or passenger terminal, wharf and boat lifting-lowering building, shipyard, port protection, bank and lock consolidation building, when determining the building grade, it is required to take into account the height of the building.

NOTE :

1. The building height is from the height of wharf top to the bottom height of the building.

2. The temporary buildings are classified as level III.

3. The buildings are increased with one level upon classification in the following cases:

- Buildings with special significance

- Built in adverse natural conditions.

- First application of new constructional technology and structure;

2.2.2.4.5 Grading of airport building must be in accordance with regulations of International Civil Aviation Organization (ICAO).

3. IMPLEMENTATION ORGANIZATION

3.1. When preparing project of building construction investment, the investor has the right to consider and select the building grade which shall be approved by the person making the investment.

3.2. The State construction management agency is responsible for guidance, inspection and monitoring of the implementation of this Regulation during the preparation and approval of investment project, licensing, construction and acceptance of building and putting into operation.

3.3. The Ministries managing the specialized building construction in collaboration with the Ministry of Construction on classification and grading of specialized building construction.

3.4. The classification and grading of civil and industrial buildings and urban technical infrastructures in construction investment projects approved shall apply in accordance with current regulations until this Regulation is officially valid.

ANNEX A

(Regulation)

Classification of civil and industrial buildings and urban technical infrastructures

A.1. Classification of house

A.1.1. Apartment building

- High-rise apartment building;
- Multi-storeyed apartment building;
- Low-rise apartment building;
- Mini apartment building;
- Complex apartment building (living function combined with office and other public services).

A.1.2. Individual house

- Villa: Detached villa, semi-detached villa, deluxe villa and resort villa;
- Terraced house: Townhouse, terraced house with garden
- Traditional rural house.

A.2. Classification of house and public building

A.2.1. Educational building

- Preschool (nursery and kindergarten);
- High school (primary school, junior high school, senior high school and multi-level high school)
- College, university and institute
- Professional secondary schools;
- Vocational school (vocational college, vocational intermediate school and vocational center)
- Other types of school

A.2.2. Medical building

- General hospital;
- Specialized hospital;
- General clinic, area specialized clinic;
- Health station and maternity hospital;
- Nursing Homes;

- Rehabilitation orthopedy center;

- Old people’s home;

- Center for Disease Control and Prevention

- Centre for Preventive Medicine;

- Center for Reproductive Health;

- Social Disease Center;

- Center for drug, vaccine, cosmetics and food testing;

- Raising area of experimental animals;

- Other medical facilities;

A.2.3. Sports buildings

- Stadium;

- Sports court (with stand and no stand): Sports court for each subject; Sports court for many subjects;

- Sports building (practice and competition): General sports building for many subjects, sports building for each subject;

- Swimming pool (practice and competition) for water sports such as diving, swimming, diving, water polo and synchronized swimming;

- Sports palace;

- Sports and fitness center;

- Race and shooting course;

A.2.4. Cultural house

- Conference center, theatre, cultural house, club, cinema, circus, television studio and radio studio with audiences;

- Museums, libraries, exhibitions, galleries and other buildings;

- Historical and cultural building;

- Recreation and entertainment building;

- Cultural Park

- Monument.

A.2.5. Commercial and service building

- Commercial center;

- Supermarket;

- Market;

- Retail shop;

- Restaurant...;

- Logistic center.

A.2.6. Communication and telecommunication building

- Communications, radio and television receiving and broadcasting tower;

- Communication service building (post office, communications equipment installation building and air control tower);

- Microwave station;

- Earth satellite station;

- Communication and telecommunication building directly serving Party, Government and State agencies;

- Communication building for natural disaster prevention, rescue and salvage.

A.2.7. Station

- Air terminal

- Waterway wharf;

- Railway station;

- Carport

A.2.8. Public service building

- Hotel;

- Guest House;

- Motel, inn

- Bank.

A.2.9. Office and head office

- State administrative agencies at all levels: Ministries and ministerial-level agencies, government-attached agencies, People's Committees and People's Councils of provinces and centrally-affiliated cities, People's Committee- People’s Council of districts, towns and cities under provinces, People's Committee and People's Council of communes, wards and towns;

- Offices of the National Assembly, the Government and the State President;

- Research institutes and research centers;

- Work building of the specialized agencies, enterprises, social and political organizations and other organizations.

A.2.10. Other public buildings

- Religious building: churches, pagodas and monasteries;

- Surveillance building: prisons, detention camps and re-education camps;

- Buildings used for archive and storage;

A.3. Classification of house and industrial buildings

A.3.1. Constructional material production building

-Cement plant
- Tile production plant (ceramic tile, granite tile)
- Baked clay brick and tile production plant
- Sanitary ware production plant;
- Glass production plant;
- Concrete mixture and concrete component production plant;
- Stone quarrying mine

A.3.2. Coal and ore extraction building

- Pit coal mine ;
- Open coal mine
- Coal selecting and washing plant;.
- Pit ore mine;
- Open ore mine;

A.3.3. Oil and gas building

- Offshore exploration and extraction rig;
- Onshore exploration and extraction rig;
- Petrochemical refinery plant;
- Gas processing plant ;
- Petroleum storage;
- LPG Storage;
- Oil and gas pipeline ;
- Natural gas production plant;
- Gas distribution and filling station and center

A.3.4. Heavy industrial production building

a) Metal fabrication and metallurgy plant

- Nonferrous metallurgy plant
- Ferrous metallurgy plant;
- selecting and beneficiation;
- Alumina production plant
- Steel making and rolling plant;
- Mechanical Plant fabricating power machine and machine tool of all kinds;
- Plant fabricating industrial equipment and complete equipment
- Automobile assembly plant;
- Motorcycle assembly plant ;

b) Energy building

- Thermal power plant (center);
- Hydro power plant;
- Nuclear power plant;
- Wind power plant
- Transmission lines and substation

c) Informatic, electronic industrial building

- Factory assembling electronics (televisions, computers, and similar products), refrigeration

(air conditioners, refrigerators and similar products);

- Factory fabricating accessories, informatic and electronic spare parts (electronic printed circuit, IC and similar products).

d) Chemical production building

- **Fertilizers and plant protection chemicals**

- Complex Urea, DAP, MPA, SA, NPK production plant;

- Phosphate fertilizer production plant of various types (super phosphate, fused calcium magnesium phosphate *(*FMP*)*
- Mixed NPK and microbial fertilizer production plant;
- Plant protection chemical products

- **Basic chemical products**

● Factory producing ammonia, acid, caustic, chlorine of various types;
● Soda production factory;
● Inorganic salt, inorganic oxide producing factory
● Crystalline and pure chemical producing factory

- **Producing rubber and cleaning products**

● Automobile and tractor tire production factory (tire standard 900-20);
● Motocycle and bicycle tire production factory;
● Conveyor production factory;
● Technical rubber production factory;
● Factory producing cleaning products (washing cream, laundry detergent, shampoo, cleaning water, soap ...).

- **Electrochemical products, paints, mining chemical materials**

● Cell production factory;
● Battery production factory;
● Factory producing paint of various types, alkyd, acrylic materials
● Factory producing mining chemical raw materials (appetite ore selection)

- **Petrochemical products and other chemicals**

● Petrochemical production plant (PP, PE, PVC, PS, PET, SV, fiber, DOP, polystyrene, LAB, synthetic rubber);

● Industrial gas production plant

● Welding rod, tire-hoop and steel wire production plant
● Pharmaceutical chemistry and drug production factory
● Chemical and explosive production factory;
● Cosmetic chemistry production factory

- **Chemical storage**

A.3.5. Light industry production building

a) Food

- Milk factory;
- Confectionary and instant noodle production factory;

- Cold storage;
- Cooking oil and flavouring production factory
- Alcohol, beer and soft drink production factory;
- Canned meat and fruit production factory
- Cigarette factory;

b) *Remaining buildings*

- Fiber factory
- Textile factory
- Dying textile factory;
- Finished dying factory;
- Garment production factory;
- Tanning and leather product factory;
- Plastic product factory ;
- Crockery and glassware production factory;
- Pulp and paper plant

A.3.6. Seafood processing building

- Seafood processing factory

A.3.7 .Other industrial buildings

- Industrial solid waste collection and treatment building;
- Shipbuilding and maritime building;
- Forestry exploitation and processing building;
- Wagon and locomotive factory;
- Airplane repair and maintenance factory;
- Warehouse;
- Storage;
- Logistic building.

A.4. Urban technical infrastructures

A.4.1. System of urban water supply buildings

- Extraction of raw water building: surface water and groundwater;;
- Pumping station;
- Water treatment plant: the sedimentation tanks, filtration tanks, reservoirs and water towers;
- Water supply network: water pipe.

A.4.2. System of urban water drainage buildings

- Pipeline network (collection and transport): rainwater, sewage and waste water;
- Pumping station: drainage of rainwater and wastewater;
- Types of absorbing well, inspection drop manhole and rainwater collection wells;

- Urban sewage treatment building (urban, regional or local) sedimentation tank, filtration tanks, biological tank, septic tanks, sludge treatment building;

- Other buildings: regulating lakes, wastewater reservoirs, sewage, treated wastewater outlet to the receiving source.

A.4.3. System of urban water supply buildings

- Substations;

- Low voltage network (power supply for subload): line

NOTE: More details in A.3.4, Clause b of this Regulation.

A.4.4. System of urban lighting buildings

- Urban traffic ighting: roads, intersections, bridges and tunnels in urban areas;

- Urban public space lighting: squares, gardens, public recreation areas, public parking lots, outdoor sports buildings;

- Decorative lighting, advertising and other forms.

A.4.5. System of urban petroleum and gas supply buildings

- Petroleum station: house of gas stations, storage tanks, pipelines;

- Urban gas station: LPG station and natural gas station.

NOTE: More details in A.3.3 of this Regulation.

A.4.6. System of urban communication systems

More details in A.2.6 of this Regulation.

A.4.7. System of solid waste collection and treatment

- Transhipment terminal;

- Solid waste treatment building: processing complex, treatment and processing plants into compost, landfill, incinerator

A.4.8. Urban funeral parlour and cemetery

- Cemetery: national and people

- Funeral parlour;

- Incinerator;

A.4.9. System of urban traffic buildings

A.4.9.1. Urban roads

- Urban highways;

- Urban main road and arterial road

- Inter-area road and area road

- Internal street: walkways, bike way;

- Parking lot: on the ground, below ground

- Bus station;

- Toll and repair station

A.4.9.2. Railway

- Subway

- Overhead railway

- Urban railway

A.4.9.3. Urban bridge

- Road bridges (motorways and railways);

- Pedestrian bridge;

- Bridges for urban infrastructure pipe.

A.4.9.4. Urban traffic tunnel

- Motorway tunnel;

- Railway tunnel;

- Pedestrian tunnel.

A.4.9.5. Urban waterway

- Wharves, seaport boat lifting-lowering buildings;

- Ports, wharves and shipyards;

- Boat locks;

- Port protection, bank consolidation buildings ;

A.4.9.6. Airway

- Airfield

A.4.10. Other buildings

A.4.10.1. Technical tunnels

- Tunnel containing electrical cable, communication cable, water supply pipes…

A.4.10.2. Fire fighting stations

NOTE:

All of the contents of the national technical Regulation (QCVN 03:2012/BXD), rules of classification and grading of civil and industrial buildings and urban technical infrastructures are posted on the website of the Ministry of Construction at: www.moc.gov.vn from its signing date.

clause 2, article 14 of the Law on Intellectual Property. ***LawSoft*** *always welcome your comments*