

# ПРЕДИСЛОВИЕ

Вашему вниманию предлагается пособие для неязыковых ссузов строительных специальностей, которое также может быть использовано в высших профессиональных учебных заведениях строительных специальностей. Пособие соответствует требованиям программы по английскому языку для учебных заведений данного профиля и рассчитано на обучаемых, имеющих начальную языковую подготовку.

В число учебных целей пособия входят формирование умений беседовать на профессиональную тематику и развитие умения читать специальную литературу средней трудности и извлекать из нее нужную информацию.

Специальный раздел пособия посвящен повторению и тренировке грамматических явлений и синтаксических структур, типичных для современной литературы в области строительных и отделочных работ. Грамматика, предлагаемая в данном учебном пособии, повторяет и закрепляет курс школьной программы. Задания по грамматике позволяют преподавателю проконтролировать, усвоено ли определенное грамматическое правило/конструкция учащимися или необходимы дополнительные объяснения и упражнения для закрепления знаний.

Материалы, составляющие пособие, отобраны из оригинальной и переводной литературы по данной отрасли. Последовательность текстовых материалов пособия имеет логическую направленность, соответствующую логике структуры данной специальности, а именно: от описаний отдельных инструментов и элементов оборудования к описанию различных действий, направленных на подготовку помещений к различной отделке, а также последовательность отделки, разнообразие строительных материалов, их свойства и функции.

Пособие состоит из десяти частей, каждая из которых включает в себя несколько разделов, которые содержат текст и упражнения на отработку лексических, грамматических навыков, а также на понимание и умение работать с текстом (Vocabulary exercises, Grammar exercises, Exercises on the text).

Цель данных разделов — формирование у обучаемых навыков устной речи по профессиональной тематике. Этим определяется подбор учебных материалов и их расположение. Реализована полная, от раздела к разделу, преемственность слов и их многократная повторяемость в разных контекстах. Число новых слов в разделах строго дозировано и определено закономерностями памяти человека. Формируемый на этой основе словарный запас используется для достижения главной учебной цели — развития умения устного общения. Кроме того, он помогает и в создании потенциального словаря. Лексический минимум является основой чтения и активного обсуждения материалов, представленных не только основными текстами в каждом из разделов, но также дополнительными текстами пособия.

В разделе Extra tasks включены упражнения, основанные на методах и приемах корпусной лингвистики, позволяющих исследовать языковые явления на основе предложенных текстов.

Кроме чтения и перевода текстовых материалов разной понятийной и языковой сложности в число задач каждого раздела входит развитие и углубление навыков устной речи по темам специальности. Для этого предлагаются вопросно-ответные задания и их последующее обсуждение. Данные задания направлены на активизацию мыслительной деятельности учащихся.

## WARM-UP EXERCISES

### 1. Read the text, please, and do the tasks after it:

#### *What does the finisher do?*

What interesting is in this man – the finisher? What does he do, what knowledge and education does he have? On the construction enterprises to the finisher usually impose the following requirements:

- to be able to perform works of different complexity for the painting, papering and repairs to various building surfaces;
- to plaster qualitatively any surface and be able to repair plaster;
- have the skills of veneer tile;
- to comply with the regulations that most directly relate to his activities in the enterprise;
- to fulfil the strict requirements on labour protection and safety, as decorating can be quite dangerous [1].

**2. Find English equivalents from the text among the underlined ones for the following Russian words. Use the dictionary, if it necessary:** отделочник, строительные предприятия, знания, выполнять работы, образование, разная/различная сложность, плиточная облицовка/облицовка плиткой, поклейка обоев, покраска, охрана труда, техника безопасности, строгие требования, строительные поверхности, штукатурить, соблюдать, отделочные работы.

### **3. Find in the text the context synonym for the verb ‘to comply with’.**

**4. Name using the text the building materials that may be placed on the wall for decoration/re-decoration of a building.**

### **5. Translate the text in writing.**

# CHAPTER I

## BASICS OF CONSTRUCTION WORKS

### Unit 1

**Read the text, please, and do the tasks after it:**

#### ***Classification of buildings***

A building is a ground structure, having rooms for different kinds of people's activities: work, school, leisure, etc. Buildings are said to be shops, theatres, schools, houses, industrial buildings, etc. Such buildings for technical purposes, as bridges, masts, dams and other similar structures are named constructions.

A building must have:

- functional orientation, i. e. to reflect the appropriate placement of premises depending on the purpose of a building;
- strength, i. e. the ability to perceive acting loads as well as forces arising in structures;
- stability, i. e. the ability to resist overturning or shift;
- solidity, which is characterized by degrees of durability and fire resistance of the main building elements;
- architectural expressiveness, i. e. appearance of a building due to the correct and appropriate choice of building materials, high quality construction work should be in harmony with the environment.

Buildings are classified:

- on appointment: civil (houses, schools, lyceums, hospitals, polyclinics, shops, theaters, etc.), industrial (factories, workshops, factories, garages, etc.) and agricultural (farms, greenhouses, poultry houses, granaries etc.);
- number of storeys – low-rise (under 5 storeys) mid-rise (5–12 floors), increased number of storeys (12–20 floors), high-rise (over 20 floors);
- wall material: wooden, brick, stone, reinforced concrete, etc.;
- constructive solutions: fragmented (spread from small materials – brick, small blocks etc.), large-block (mounted from large industrial blocks of factory production), large-panel (mounted from industrial panels of factory production), monolithic (made of monolithic reinforced concrete), combined (different combination of all previously listed constructive solution);
- durability and degree of fire resistance (Fig. 1) [1: 6–7].

Degree	Durability	Degree of inflammability
I	a service life of at least 100 years	fireproof
II	a service life of at least 50 years	nonflammable
III	a service life of at least 20 years	combustible
IV	a service life less than 20 years	not standardized
V	the same	the same

**Fig. 1**  
Degrees of fire resistance

## Vocabulary exercises

**I. Read and memorize the following words and word combinations. Translate the sentences given as examples:**

1) people's activities — виды деятельности людей

*People's everyday activities are affected by population changes.*

2) for technical purposes — (для) технического назначения (целей)

*The sugaring in cranberries was different from sugar used for technical purposes.*

3) to perceive — воспринимать

*Our brain is trying to perceive images into objects rather than seeing what's there.*

4) to resist — сопротивляться (выдерживать)

*This insulation shall be strong enough to resist impacts and vibration.*

5) solidity — прочность, капитальность

*Rock gave the world ... solidity.*

**II. Try to memorize the following word-combinations in the text. Use the dictionary if it's necessary:**

high quality, wall material, reinforced concrete, constructive solution, fragmented, a service life.

**III. Choose the proper definition for each of three words:**

*coating – facing – tiling*

a) an outer layer covering the surface of a wall;

b) a thin layer or covering of something;

c) a surface covered by tiles.

**IV. Fill all the sentences below with the words 'coating', 'facing' or 'tiling': guess what word it must be. Translate the sentences into Russian:**

1. The kitchen has smart black ..., worksurfaces and cupboards.

2. There is a ... of green paint on this wall.

3. They live in a brick building with a marble ... .

## Grammar exercises

**I. Make up and write down common and special questions to these sentences:**

1. A building is a ground structure, having rooms for different kinds of people's activities.

2. Buildings are said to be shops, theatres, schools, houses, industrial buildings.

**II. Make up Comparative and Superlative Degrees of these adjectives and use the proper degrees in the sentences below:**

*high, fast, durable, low*

1. Cottages are much ... than blocks of flats nowadays.

2. Skyscraper is the ... type of buildings today.

3. Concrete M1000 is the ... material for building.

4. The frame technology is one of the ... in the world to build a house.

**III. Write and memorize the three forms of the following irregular verbs:**

– to bring to get to keep to take;

– to build to make to rise to understand.

## Exercises on the text

### I. Answer the following questions, based on the text:

1. What is a building?
2. What buildings are named constructions?
3. What must a building have?
4. What is the classification of buildings?

**II. Find in the text all nouns standing for different buildings. Translate them into Russian (Use your dictionary if it's necessary).**

**III. Find in the text all nouns standing for different materials. Translate them into Russian (Use your dictionary if it's necessary).**

**IV. Put down from the text English equivalents for the Russian words/word combinations:** наземный, подобный, помещения, назначение зданий, действующие нагрузки, устойчивость, архитектурная выразительность, этажи, возгораемость (огнестойкость).

**V. Find in the text English equivalent for the following word combination:** degree of fire resistance.

**VI. Translate the second passage from the text starting with the words "A building must have..." up to the words "... in harmony with the environment" into Russian in writing.**

**VII. Make a short plan of this text using key words.**

## Unit 2

**Read the text, please, and do the tasks after it:**

### *Main parts of a building*

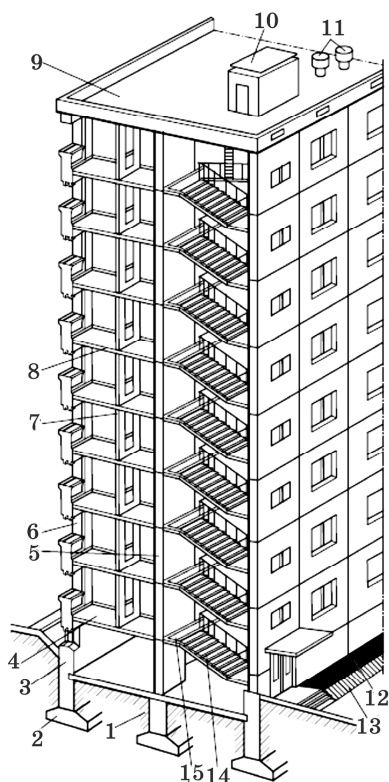
Any building consists of a certain number of structural elements, which are interconnected among themselves. Depending on how the design perceives different loads acting on them, they may be load-bearing, fencing and combining both functions.

*Load-bearing* structures are structures that perceive loads, acting on them from the outside (the gravity of the structural building elements, installed equipment, furniture, people etc.).

*Fencing* ones are of a design that protects the premises of buildings from the environment or separating one from another.

There are main constructive elements of a multistorey building (Fig. 2).

Walls may be load-bearing, self-supporting and non-bearing. Load-bearing walls take the load from their own masses and masses of other structural elements of a building and pass it on a foundation. Self-supporting walls are not supported with other elements of the building, such as ceilings/floors, so they transmit load on the foundation – the load only from its own weight – and wind load. Non-load-bearing walls only protect the rooms of a building from the effects of the environment and do not bear any loads [1: 8–10].



**Fig. 2**

Main parts of a building:

1 – building base; 2 – foot; 3 – foundation; 4 – overbasement floor; 5 – bearing walls; 6 – window openings; 7 – partition-walls; 8 – inserted floors; 9 – roofing; 10 – air ducts; 11 – internal drains; 12 – soacle; 13 – blind area; 14 – flight of stairs; 15 – stair landing.

## Vocabulary exercises

**I. Read and memorize the following words and word-combinations. Find their meanings using your dictionary:**

- |                            |                        |
|----------------------------|------------------------|
| 1) a structural element;   | 6) overbasement floor; |
| 2) load-bearing;           | 7) a bearing wall;     |
| 3) to perceive loads;      | 8) a window opening;   |
| 4) installed equipment;    | 9) a partition-wall;   |
| 5) premises of a building; | 10) an air duct.       |

**II. Read, translate and memorize the words and their derivatives given below:**

- 1) to build – a builder – building;
- 2) to found – founded – a founder – foundation.

**III. Match the words opposite in meaning from the left column with the words from the right column:**

- 1) internal a. high;
- 2) low b. uninstall;

- 3) load c. external;
- 4) install d. bad;
- 5) good e. unload.

## Grammar exercises

### I. Complete the sentences using the correct form of the adjectives. Mind Degrees of Comparison.

1. A building is a structure with a roof and walls standing ... (much) or ... (little) permanently in one place, such as a house or factory. 2. Such building materials as concrete and wood are ... (available) nowadays than some years ago. 3. To ... (good) understand the term *building* you need to compare the list of nonbuilding structures. 4. The ... (early) users of concrete technology were the ancient Romans.

### II. Substitute the infinitive by the proper form of the verb in Present Simple Tense (Active Voice):

1. A building (to consist) of a certain number of structural elements. 2. The building design (to perceive) different loads acting on it. 3. As a verb, building (to be) the act of construction. 4. Buildings (to serve) lot of societal needs. 5. Buildings (to come) in a variety of sizes, shapes, and functions.

### III. Make up and write down all types of questions to these sentences:

1. Portland cement is the most common type of cement in general usage.
2. A house is a building that functions as a home.

## Exercises on the text

**I. Find in the text the equivalents for the following words and word combinations:** многоэтажное здание, самонесущий, несущий, передавать на фундамент нагрузку, защищать помещения здания, воздействия окружающей среды.

### II. Write complete answers to the questions:

1. What does a building consist of?
2. What are load-bearing structures?
3. What are fencing structures?
4. What are main elements of a multi storey building?
5. What do non-load-bearing walls protect?

### III. Translate the first two passages into Russian in writing.

### IV. Make a short plan of this text using key words and sentences.

## Unit 3

**Read the text, study the tables, please, and do the tasks:**

### *Types and sequence of building works execution*

Construction of buildings and structures is carried out in a certain technological sequence of carrying out various building works. All construction works are divided into civil and erection works (Fig. 3), finishing works (Fig. 4) and special ones (Fig. 5) [1: 10–12].



<b>Types of work</b>	<b>The scope of work</b>
Ground	Development of pits, trenches for foundations of buildings, site planning, transportation, backfilling and compaction
Pile	The piling and construction of pile foundations
Stone	Erection of walls, pillars and other structural elements of buildings made of bricks, artificial and natural stones, small blocks and other stone materials
Concrete and ferroconcrete	Installation of reinforcement cages, preparation, transportation, laying and compaction of the concrete mass in the prepared formwork
Erecting	Lifting, installation, alignment and fastening of prefabricated structures and parts from which the main elements of buildings and structures are assembled in a certain sequence
Carpentry	Installation of window, door blocks in the wall openings, the arrangement of pitched roofs, the assembly of the formwork, laying of boarded floors
Roofing	Laying of coverings from steel or asbestos-cement sheets, rolled and other roofing materials

**Fig. 3**  
Types of work

<b>Types of work</b>	<b>The scope of work</b>
Plastering	Covering of structural elements with a levelling layer of cement, lime and other solutions or finishing of walls' internal surfaces with gypsum card-board sheets
Facing	Coating the surface of walls, partitions and other structural elements of natural stone products, ceramic tiles, synthetic materials, etc.
Glass	Filling of translucent fencings with usual or special glass
Joiner's	Production and adjustment of shutters of window covers, door cloths, installation of built-in cases, cabinet partitions
Floor arrangement	The laying of block and panel board parquet, parquet boards, concrete, ceramic and other tiles, coating roll, mosaic, mastic and other coatings
Painting	Colouring of surfaces with varnish and paint materials, covering the interior surfaces of the walls with wallpaper

**Fig. 4**  
Types of work

<b>Types of work</b>	<b>The scope of work</b>
Sanitary-engineering	Installation of systems of heating, ventilation, gas supply, water supply, sewerage, etc.
Dampproof	Protection of structures from groundwater and aggressive environmental influences, laying waterproof material in floors in rooms with high moisture content (baths, saunas, baths, showers, etc.).)
Electrotechnical	Installation of lighting, power and low-current devices
Elevators' installation	Installation of passenger and freight elevators

**Fig. 5**  
Special types of work

## Vocabulary exercises

**I. Give Russian equivalents to the following words. You may use a dictionary:**

- 1) a trench;
- 2) a pile;

- 3) ferroconcrete;
- 4) a levelling layer;
- 5) groundwater;
- 6) a surface;
- 7) a low-current device;
- 8) an elevator.

**II. Try to guess the meaning of the following international words without using a dictionary:** electrotechnical, installation, interior, special, material.

**III. Read and translate the following words and their derivatives:**

- 1) to protect – protecting – a protection – protective;
- 2) to product – production – producing – productive.

## Grammar exercises

**I. Translate the following sentences. Mind the function of Participle I and Participle II:**

1. Concrete is a composite material composed of fine and coarse aggregate bonded together with a fluid cement (cement paste) that hardens over time. 2. The word concrete comes from the Latin word '*concretus*' meaning 'compact' or 'condensed'. 3. Many types of concrete are available, distinguished by the proportions of the main ingredients below. 4. Concrete is weak in tension as the cement holding the aggregate in place can crack, allowing the structure to fail.

**II. Form Participle I from the following verbs:** plan, install, heat, arrange, cover, colour, paint.

**III. Translate the following word-combinations.**

**Pay attention to Participle I:** architects planning how to build a house; installing new equipment; workers painting the walls; designers arranging their working day; a building covering the most part of the area.

**IV. Form Participle II from the following regular verbs and try to translate them into Russian:** offer, need, paint, use, develop, transform, design, allow.

**V. Analyze the sentences. Make up one wh-question to each sentence:**

1. Any building requires a certain amount of internal infrastructure to function, which includes such elements like heating/cooling, power and telecommunications, water and wastewater etc. 2. Hydration involves many different reactions, often occurring at the same time.

## Exercises on the text

**I. Give Russian equivalents:** plastering, Joiner's, sanitary-engineering, artificial, adjustment, wallpaper, systems of heating, glass.

**II. Find English equivalents in the text:** арматурные каркасы, опалубка, скатные крыши, дощатые полы, рулонные материалы, кровельные материалы, выравнивающий слой, гипсокартонные листы, перегородки, светопрозрачные ограждения, встроенные шкафы, шкафные перегородки, щитовой паркет, мастичные покрытия, канализация.

**III. Write complete answers:**

1. What type of work includes installation of door blocks?

2. What type of work includes installation of lighting?
3. What are all construction works divided into?
4. What is a plastering type of work?

**IV. Make up your own plan to the information in the tables, using key words and word combinations.**

# CHAPTER II

## CLASSIFICATION AND TYPES OF FINISHING WORKS

### Unit 1

**Read the text, please, and do the tasks after it:**

#### ***Purpose and types of plastering works***

Finishing works complete the construction of a building, give it a finished look, protect it from environmental influences, increase its service life, provide architectural individuality of its interior and exterior.

Finishing processes are diverse, their implementation requires strict adherence to technological processes, the correct use of appropriate materials, the ability to use tools and equipment.

The main finishing works include plastering, facing and painting.

Plaster works are used to create flat, smooth or specially treated surfaces of building structures. Plaster protects the structure from moisture, weathering, fire, improves sound and thermal insulation properties of the surface. Plaster is classified by the method of monolithic (wet) and dry (made of gypsum plasterboards) applying.

Monolithic plaster is a finishing layer of deposited hardened and processed mortar on a surface of a building construction. Depending on compositions of the applied mortars and types of surface processing monolithic plaster can be ordinary, decorative textured and special (Fig. 6).

Ordinary plaster is applied to finish facades and interiors of buildings. Depending on the requirements ordinary plaster is divided into simple, improved and high-quality.

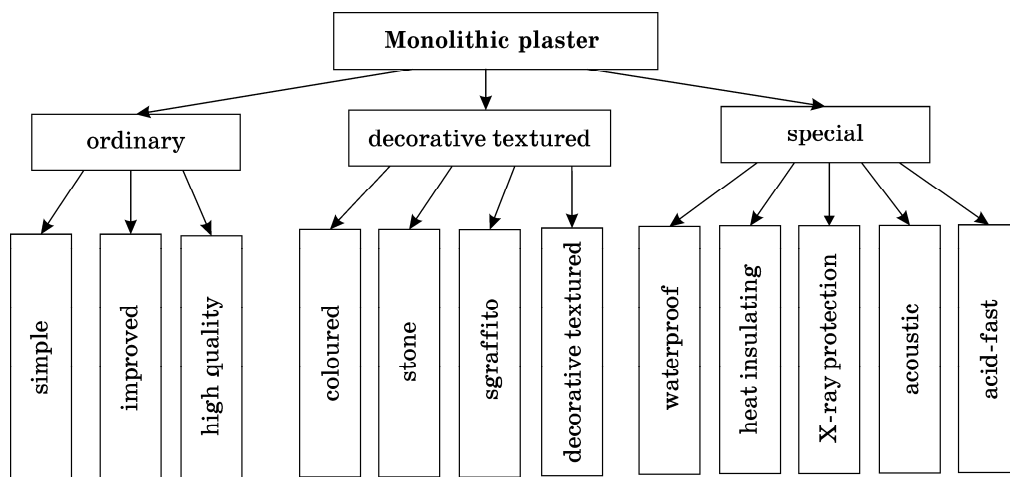
Simple plaster is applied at plastering of auxiliary, warehouse, cellar rooms, temporary and some industrial buildings. The improved plaster is applied at plastering of inhabited, industrial and public buildings, and also subsidiary premises of buildings of the first class. High quality plaster is used for plastering of residential and public buildings and constructions with high requirements to finish.

Decorative plaster is different from usual color and texture. It does not require further cladding or painting. It is mainly used in decoration of facades.

Special plaster is used in cases where the design must be given special qualities (x-ray, heat, sound insulation, etc.) or qualities that protect it from harmful external influences (moisture, acids, etc.). In this case, plastering mortars are used with special additives.

Dry plaster is presented with plasterboard sheets for internal surfaces of walls, partitions and ceilings. Application of dry plaster allows to reduce labor input and terms of finishing works performance in 2.5–3 times and provides:

- the maximum decrease in the volume of the works connected with performance of «wet» processes;
- ensuring high quality of finishing [1: 13–14].



**Fig. 6**  
Classification of monolithic plastering

## Vocabulary exercises

### I. Read and try to memorize the following word-combinations:

- 1) finishing works — отделочные работы;
- 2) a construction of a building — строительство здания;
- 3) a finished look — законченный вид;
- 4) to protect — предохранять;
- 5) environmental influences — воздействия окружающей среды;
- 6) diverse — многообразный;
- 7) implementation — выполнение;
- 8) adherence — неукоснительное соблюдение;
- 9) plastering — штукатурный;
- 10) facing — облицовочный;
- 11) painting — малярный.

### II. Complete the following sentences using the words from Exercise I:

1. Special solutions ... metals from rust.
2. To build a house a close ... to a plan is the best idea.
3. A ... of a building demands a great amount of time and finances.
4. City building sare ... and creative.
5. An ... is a realization of atechanical specification.
6. ... is a covering in front, for ornament or other purpose.

## Grammar exercises

### I. Use the correct forms of the verbs:

1. Ever since the first cave paintings, buildings (to become) objects or canvasses of much artistic expression.
2. A building (to represent) a physical division of the human habitat.
3. A brick (to be) building material used to make walls, pavements and other elements in construction.
4. Residential buildings (to have) different names for their use.

5. Any building (to require) a certain amount of internal infrastructure to function.
6. Air-dried bricks (to have) a history older than fired bricks.
7. A bigger brick (to make) for a thicker wall.

## **II. Make up all possible questions to these sentences:**

1. Some brick makers create innovative sizes and shapes for bricks used for plastering.
2. Blocks have a much greater range of sizes.
3. Concrete bricks are available in many colours.

## **Exercises on the text**

**I. Find English equivalents in the text:** ровные, гладкие или специально обработанные поверхности; штукатурка; защищает конструкцию от влаги, выветривания; улучшает звуко- и теплоизоляционные свойства поверхности; отделочный слой; нанесенный отвердевший и обработанный строительный раствор; внутренние помещения зданий; вспомогательные, складские, подвальные помещения, временные и некоторые промышленные здания; с повышенными требованиями к отделке; облицовка или окраска; специальные качества; вредные внешние воздействия; специальные добавки; гипсокартонные листы; объем работ; обеспечение высокого качества отделки.

## **II. Using the words given below, complete the following sentences:**

*plaster, clay, strong, dry, gypsum, lime, sand*

1. ... plaster is a mixture of clay, sand and water with the addition of plant fibers.
2. Clay ... has been used since antiquity.
3. The plaster is manufactured as a ... powder.
4. Plaster is not a ... material.
5. In art, ... plaster is the traditional matrix for fresco painting.
6. Plasterers often use ... to simulate the appearance of surfaces of wood, stone, or metal, on movie and theatrical sets for example.
7. Lime plaster is a mixture of calcium hydroxide and ...

## **III. Write complete answers to these questions:**

1. What do finishing works do?
2. What do finishing processes require?
3. What are plaster works used for?
4. What is monolithic plaster?
5. What is ordinary plaster applied at?
6. Where is special plaster used?
7. What is dry plaster presented with

## **IV. Write a summary of the text, using key sentences (5 or 6 sentences).**

## **Unit 2**

### **Read the text, please, and do the tasks after it:**

#### ***Purpose of tiling works and types of tiles***

The front cover of tile products, which is attached to the surface elements of buildings or structures, is called tiling. Tiling works carry protective, sanitary and decorative functions of structural elements of buildings and structures. The protective function of the tiling helps to protect the surface from environmental influences (moisture, action of temperature difference, mechanical damages, action of open flame or chemicals). Sanitary-hygienic functions of the tiling are to have easy disin-

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