

## Representation of the vocational education and training mason

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### 1. Job profile

The mason works particularly in companies of the building trade, e.g., at structural engineering company, concrete structure companies, reorganisation and modernisation companies or in the prefabricated house construction. He produces shell constructions for residential building and business premises. First he concretes the foundation, then he builds with mortar or concretes outer walls and inner walls as well as floor covers or mounts this of finished parts. For concrete works he manufactures formworks or mounts formwork systems. He uses armouring which he partly makes of concrete steel himself. He mixes concrete or processes ready delivered transport concrete. He tempers the fresh concrete in the formworks and compresses the concrete. Partial he also plasters walls, moves screeds or install insulating materials and lagging materials. In addition, he carries out demolition works and rebuilding works. At repair and reorganisation works he finds out construction damages and their causes and repairs this.

Duration of the vocational training: 3.5 years

### 2. Vocational framework

Contents of the vocational training:

Objects of the vocational training are at least the following skills and knowledge:

1. vocational training, labour legislation and collective bargaining law,
2. construction and organisation of the education company,
3. security and health protection at the work,
4. environment protection,
5. order adoption, activity recording, work schedule and procedure plan,
6. arrange, secure and clear the construction zones,
7. produce units of concrete and ferro-concrete,
8. produce construction bodies of stones,
9. install insulating materials for the heat insulation, protection against cold, sound insulation and fire prevention,
10. produce rendering,
11. renovate, repair and secure construction bodies,
12. quality-protecting measures and report system.

### 3. Apprenticeship certification examination

The apprenticeship certification examination applies to the performed skills and knowledge as well as to the teaching material provided in the vocational school lessons, as far as it is essential for the vocational training. The examination is separated in a written and practical part.

### Practical part

The examinee has to do in the practical part of the examination during at most 8 hours in total a practical assignment. Thereby the examinee should show that he or she plan the work routine independently, recognises working connections, checks the result of working as well as take measures for the security and for the health protection at the work and to the environment protection.

For the practical assignment are considered in particular:

1. produce a masonry body with rabbet and with openings or niches including a covering-over as a curve as well as with pillar or template with infill in the decorative bond,
2. produce a bivalve masonry with air layer and heat insulation or
3. produce a formwork including the armouring for a beam or a prop in connection with a masonry body.

### Written part

(1) The examinee should be checked in the written part of the examination in the exam areas construction body of stones, buildings in the structural engineering as well as economics and social studies. In the exam areas of construction bodies of stones and buildings in the structural engineering should show whether the examinee can solve practical cases in particular by linking from working-organizational, technological, mathematical and graphical contents. Besides, measures should be included for the security and for the health protection at the work, for the environment protection and quality-protecting measures. Assignments are considered in particular from the following areas:

1. In the exam area construction body of stones:

- a) mortar for stonework,
- b) bracing types for masonry,
- c) an single-leaf and bivalve masonry, pillar and templates,
- d) natural stone masonry,
- e) stairs,
- f) bordure and infill,
- g) shafts,
- h) openings and covering-over,
- i) chimneys.

2. In the exam area buildings in the structural engineering:

- a) heat insulation, protection against cold, sound insulation and fire prevention, warm insulating compound systems,
- b) produce concrete, concrete firmness classes,
- c) plank formworks, formwork panel, bonded panels and system formworks, formworks for exposed concrete,
- d) armouring,
- e) construction body of concrete and ferro-concrete,
- f) seal towards non-oppressive and oppressive water,
- g) renovate, repair and secure construction bodies,
- h) adjoining works in the fitout: units of wood, warm insulating- and special rendering, screeds,
- i) adjoining works in the civil engineering: Excavation pits and ditches, obstructing and open dewatering, plaster covers and floor paving, supply and disposal management systems;

3. In the exam area economics and social studies are considered in particular:

- general economic and social connections of the occupational world and professional life.

(2) The written part of the examination encloses the following times with weighting:

1. in the exam area construction body of stones 150 minutes (40%),
2. in the exam area buildings in the structural engineering 150 minutes (40%),
3. in the exam area economics and social studies 60 minutes (20%).

The written part of the examination is to be complemented at the request of the examinee or after judgement of the examination committee in single areas with an oral exam if this will support to pass of the examination. With the inquiry of the result for the orally checked exam areas the present result and the result of the oral supplement examination are comparatively to be weighted 2:1.

The examination is passed if in the practical and in the written part of the exam as well as within the written part of the exam in at least two exam areas at least sufficient performances are produced. If the performance is valued insufficiently in one of the exam areas, the examination is not passed. If the examination is not passed, the examinee can receive the certification as a construction finishing worker if he has fulfilled certain requirement during the examination.

#### **4. Inter-company instruction for vocational training**

The courses of the inter-company instruction for the vocational training of masons are taking place in the step education of the building industry. It encloses 32 weeks of inter-company education as well as the possibility to take part within the frame of the margin in 5 weeks of additional ÜLU.

In the 1st vocational training year a common basic education, the step education construction with common learning fields takes place for all construction occupations.

Learning fields in the 1st vocational training year:

- arranged a construction zone
- develop and establish a building
- single-leaf masonry of a building construction,
- produce a wooden construction
- coating and attiring of a unit

##### 2nd vocational training year

The framework curriculum intends, e.g., the subject natural stone masonry. By the end of the first vocational training year the technical training in the occupation as a mason begins. This closes with the intermediate examination or with the formal certification as a building trade worker for structural engineering, fitout or civil engineering by the end of the second vocational training year.

- single-leaf masonry of a wall
- masonry of a bivalve wall
- produce a straight and circular stair
- and others

##### 3rd vocational training year

- cover an opening in the ground
- produce to a natural stone wall
- masonry of special units
- repairing and redeveloping of units
- and others

The apprentices acquire the apprenticeship diploma after the 3rd vocational training year and a successful passing of the final examination.

The ÜLU guarantees with the growing specialisation of the crafts enterprises and with constantly progressive technological change for all apprentices in the construction occupations the intervention of a broadly invested basic education among others with activities in foreign crafts during the attendance of the different construction occupations.

### **Bibliography**

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