

Occupational standard

Pyrotechnician, level 4

The occupational standard is a document, that describes the job and competence requirements, i.e. a set of skills, knowledge and attitudes required for successful job performance in a particular occupation.

Application areas of the occupational standard

- 1) Drafting of curricula and training programmes meeting the requirements of labour market.
- 2) Evaluation of competence of the people, incl self-evaluation and conformity evaluation upon awarding an occupational qualification.
- 3) Description and introduction of occupational qualifications.
- 4) Career planning and creation of a basis for lifelong learning.
- 5) Identification of personnel training needs and planning of training.
- 6) Drafting of job descriptions and recruitment of employees.
- 7) Comparison of occupational and educational qualifications.

Occupational qualification title	Estonian qualifications framework (EstQF) level
<i>Pyrotechnician, level 4</i>	<i>4</i>

Part A

JOB DESCRIPTION

A.1 Job description

The job of a pyrotechnician is organizing fireworks displays. A fireworks display is a spectacle with a larger audience. Every mistake while acting can prove to be extremely dangerous. A pyrotechnician must possess enough knowledge to assure the safeness of the fireworks display. A pyrotechnician is fully responsible for the safeness of the fireworks display. A pyrotechnician is aware of and takes into account the effect of surrounding environment and weather on the fireworks display; also the impact of effects and explosions of firework display on surrounding objects and environment.

Pyrotechnician, level 4 works independently, is capable of putting together a project of fireworks display and can be an individual responsible for the fireworks display.

A.2 Units

Obligatory units

A.2.1 Planning the handling of pyrotechnic articles:

- 1) charting the situation;
- 2) planning activities and organizing tasks;

A.2.2 Transporting pyrotechnic articles:

- 1) importing and exporting pyrotechnic articles;
- 2) preparing pyrotechnic articles for transportation;

A.2.3 Storing and destroying of pyrotechnic articles;

- 1) storing pyrotechnic articles;
- 2) organizing stock documentation and records;
- 3) organizing waste handling;

A.2.4 Dispossessing pyrotechnic articles:

- 1) organizing sales;
- 2) organizing the training of salespersons;

A.2.5 Mapping the zone of fireworks display and compiling the organization records:

- 1) assessing the location of fireworks display and charting safety zones;
- 2) planning the fireworks display in the blasting zone;
- 3) putting together an ignition plan and order for pyrotechnic articles;
- 4) formalizing the project of fireworks display;
- 2) applying for a fireworks license;

A.2.6 Preparation of pyrotechnic articles:

- 1) picking out and packaging pyrotechnic articles and effects;
- 2) preparing auxiliary materials required for organizing the fireworks display;
- 3) transporting pyrotechnic articles;

A.2.7 Preparation of fireworks in the zone of the display:

- 1) limiting the safety area of fireworks display;
- 2) taking into account the impact of surrounding environment;
- 3) placing pyrotechnic articles in the blasting zone;
- 4) introducing the safety precautions of the fireworks display;

A.2.8 Organizing a fireworks display:

- 1) pre-inspecting the fireworks display;
- 2) igniting the fireworks display;

3) supervising the fireworks display.

A.2.9 Inspecting the zone of fireworks display after the event:

- 1) inspecting pyrotechnic articles and blasting zone;
- 2) removing pyrotechnic misfires;
- 3) cleaning the location of fireworks display.

A.2.10 Inspecting and testing of pyrotechnic articles:

- 1) inspecting articles;
- 2) testing pyrotechnic articles.

A.2.11 Managing a working group:

- 1) guiding worker(s) and organizing the work;
- 2) practical guidance.

Optional units

A.2.12 Organizing an indoor fireworks display:

- 1) preparing an indoor fireworks display;
- 2) preparing an indoor fireworks display in the blasting zone;
- 3) supervising the safety of indoor fireworks display.

A.2.13 Organizing an outdoor fireworks display:

- 1) preparing an outdoor fireworks display;
- 2) preparing an outdoor fireworks display in the blasting zone;
- 3) supervising the safeness of outdoor fireworks display.

A.2.14 Destroying pyrotechnic articles:

- 1) sorting out products that need to be destroyed;
- 2) choosing the method and location of destruction;
- 3) checking the location of destruction after detonation;
- 4) composing an instrument on destruction.

A.3 Working environment and specific aspects of work

A pyrotechnician mainly works in outdoor conditions. Work environment is potentially dangerous, possible hazards are danger of explosion and poisoning. Job requires knowledge of safe working methods of blasting, complete compliance with occupational safety requirements, use of pyrotechnics for specific purposes and use of personal protective equipment (protective gloves, helmet, ear defenders, protective glasses etc.).

A.4 Tools

Tools of a pyrotechnician are ignition devices, communications equipment, measurement equipment for checking the proper functioning of power network, cutting tools, pliers, flashlight, watch and other tools necessary for performing their tasks.

A.5 Personal characteristics necessary for this job: abilities and personality traits

Personal characteristics necessary for this job are accountability, precision and carefulness, preparedness for independent- and teamwork. Necessary traits are discernment, staidness and adaptability. A pyrotechnician is expected to have a good sense of space and time, logical thinking, quick reaction abilities and an ability to focus.

This occupation expects the existence of bill of health.

A.6 Occupational training

The occupational qualification of a pyrotechnician can be acquired on a professional training course. Prerequisites for working as a pyrotechnician are - completed secondary education, at least 19-years of age and completion of specialty training and an occupational qualification exam.

By law, age, health, occupational and law-abiding requirements have been laid down for those applying for the occupational qualification certificate of a pyrotechnician.



Euroopa Liit
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Eesti tuleviku heaks



SIHTASUTUS
Kutsekoda

ESF programm „Kutsete süsteemi arendamine“

A.7 Possible job titles
Pyrotechnician, indoor fireworks pyrotechnician, outdoor fireworks pyrotechnician.
A.8 Regulations
According to the Explosives Act, a pyrotechnician must own an occupational qualification certificate.

Part B

COMPETENCE REQUIREMENTS

B.1. The structure of the occupational qualification

When applying for an occupational qualification of a pyrotechnician, level 4 certification of all obligatory competences (B.2.1 – B.2.11), transversal competence (B.2.13) and at least one optional competence (B.2.12 - B.2.14) is required. For organising outdoor fireworks displays (B.2.13), an additional competence B.2.14 (Destroying pyrotechnic articles) must also be certified.

B.2 Competences

Obligatory competences

B.2.1 Planning the handling of pyrotechnic articles

EstQF level 4

Performance indicators:

- 1) charts the activities of the company (pyrotechnic articles, storage, sales, use) according to relevant legislation and the specific nature of products;
- 2) plans and organizes the storage, sale and use of pyrotechnic articles according to relevant legislation and internal procedure rules of the company;
- 3) if necessary, works out internal procedure rules of the company, according to the specifics of the company and relevant legislation.

Assessment method(s): Oral exam.

B.2.2 Transporting pyrotechnic articles

EstQF level 4

Performance indicators:

- 1) organizes the import and export of pyrotechnic articles, according to warehouse capacity and relevant legislation;
- 2) formalizes required documentation according to relevant legislation;
- 3) formalizes required documentation according to relevant legislation and packages articles according to their hazard divisions.

Assessment method(s): Oral exam.

B.2.3 Storing and destroying of pyrotechnic articles

EstQF level 4

Performance indicators:

- 1) partakes in storing of pyrotechnic articles, according to warehouse capacity and by considering hazard divisions and relevant legislation;
- 2) partakes in formalizing and organizing of storage documentation according to relevant legislation and internal procedure rules of the company;
- 3) monitors the storage capacity, calculation per piece, accounting of chemicals and other norms arising from law;
- 4) co-ordinates the organization of standard waste handling of used pyrotechnic articles and their packaging;
- 5) formalizes required documentation (incl. reporting) according to relevant legislation (incl. local government) and internal procedure rules of the company.

Assessment method(s): Oral exam.

B.2.4 Dispossessing pyrotechnic articles	EstQF level 4
<p><u>Performance indicators:</u></p> <ol style="list-style-type: none">1) co-ordinates the conformity of sold products and accountancy with sales requirements arising from relevant legislation;2) follows the requirements of the point of sale for sold products;3) organizes training of employees according to internal procedure rules of the company and legislation.	
<p><u>Supporting knowledge:</u></p> <ol style="list-style-type: none">1) legislation concerning the occupation;2) Advertising Act;3) Chemicals Act;4) waste handling;5) first aid.	
<p><u>Assessment method(s):</u> Oral exam.</p>	

B.2.5 Mapping the zone of fireworks display and compiling the organization records	EstQF level 4
<p><u>Performance indicators:</u></p> <ol style="list-style-type: none">1) assesses the location of fireworks display by taking into account the location of the audience and/or event and the movement patterns of participants, also possible hazards and objects in the danger zone (flammable materials and items, ceiling constructions, dust, buildings, trees, objects protected under heritage conservation; highly flammable items, special features of the ground etc.), the possibility of planned fireworks display in the co-ordinated location (agreements with performers concerning their movement patterns, event scenario, materials used in decorations etc);2) charts the safety zone by assessing in which extent it is possible to restrict access to the hazard area (closing roads, land included in the hazard zone, water bodies, flight corridors and buildings etc.) and assesses the size of the hazard area according planned effects and caliber of the fireworks display;3) takes into account the special properties of the blasting area and effects (long-lasting effect, very loud effects etc.) and the possibility of fireworks display on the agreed blasting site when putting together the project of fireworks display;4) analyzes the number of pyrotechnicians needed for the project, effects used, ignition methods in conformance with requirements, the positioning of articles on the blasting site, the amount of pyrotechnic articles, environmental effects etc;5) plans the placement of articles according to their properties and the nature of the fireworks display;6) puts together the project of fireworks display by taking into account the amount of pyrotechnic articles and the special properties of the blasting site and effects;7) carries out the project of the fireworks display according to agreed procedures;8) compiles an application for a fireworks license according to relevant requirements;9) applies for the license from a local government and notifies relevant institutions of the fireworks display;10) if necessary, co-ordinates planned activities with agencies concerned (e.g. Border Guard Administration, Estonian Maritime Administration, Estonian Civil Aviation Administration, captain of the floating vessel etc.).	
<p><u>Assessment method(s):</u> Oral exam.</p>	

B.2.6 Preparing pyrotechnic articles	EstQF level 4
<p><u>Performance indicators:</u></p> <ol style="list-style-type: none">1) picks out pyrotechnic articles according to the project of fireworks display;2) prepares pyrotechnic articles according to requirements of the manufacturer and/or their ignition methods;3) sorts and packages pyrotechnic articles according to their categories and ADR regulations and safest ways of placement on the blasting site;4) inspects the functioning and presence of pyrotechnic articles and auxiliary materials necessary for placing them throughout the full duration of the project;5) places pyrotechnic articles and auxiliary materials into transportation vehicles in a manner that would help to keep them from damaging and would assure optimal safety and practicality when they are being unloaded on the blasting site;6) follows ADR regulations during the transportation of products (including the limit value of hazardous loads).	
<p><u>Assessment method(s):</u> Oral exam.</p>	

B.2.7 Preparing fireworks in the zone of the display	EstQF level 4
<p><u>Performance indicators:</u></p> <ol style="list-style-type: none">1) restricts the preparation area of the fireworks display (e.g. with safety tape) prior to the installation of fireworks articles by taking account the safety requirements and, if necessary, places down information signs;2) increases the safety area prior to the beginning of fireworks display according to the nature of articles, its calibers and effects;3) assures that the hazard area of fireworks is properly restricted, by taking into account the weather (wind direction, dry and flammable forest etc.), size of the audience, placement of guards etc.;4) takes into account environmental impact (rainfall, wind direction and strength, soil condition, special characteristics of the ground, snow conditions etc.) when planning the fireworks display;5) takes into account the effect of fireworks display on the environment (smoke created by the fireworks display, burning parts falling down, noise level etc.);6) places pyrotechnic articles by taking into account the characteristics of the blasting area, program and safeness of the fireworks display (location of audience, movement patterns of performers, ignition methods etc.);7) assesses possible hazards and based on the evaluation will give tips to guards and other persons concerned (how to react when third persons or animals run into the hazard zone, movement in the proximity of articles during the fireworks display etc.).	
<p><u>Assessment method(s):</u> Oral exam.</p>	

B.2.8 Organizing the fireworks display	EstQF level 4
<p><u>Performance indicators:</u></p> <ol style="list-style-type: none">1) checks the conformance of pyrotechnic articles with project requirements and takes into account the environment where the fireworks display will be taking place;2) a pyrotechnician ignites the fireworks display after they have assured its safeness;3) a pyrotechnician builds the firework display so that it can be stopped in case of danger (misfire or danger to third parties or property);4) in co-operation with an assistant pyrotechnician, security guards and guards of the hazard area,	

the pyrotechnician will observe the hazard zone of the fireworks display (uninvolved persons walking into the hazard area, effects falling outside of the hazard area etc.) and assures that the effects work as planned;

5) a pyrotechnician, as the person in charge for the fireworks display, will observe the hazard area of the fireworks display and assures that the effects work as planned.

Assessment method(s): Oral exam.

B.2.9 Inspecting the zone of fireworks display after the event

EstQF level 4

Performance indicators:

- 1) begins the inspection of pyrotechnic articles after the event with a permission of the person responsible.
- 2) removes misfires after assuring their safeness;
- 3) if necessary, souses the misfire with water or extinguishes it in another manner, then removes it and places it to a safe location separate from pyrotechnic articles;
- 4) after the event, cleans the area used for the fireworks display and special effects according to the nature of materials used;
- 5) visually checks the absence of misfires in the hazard area and its surroundings.

Assessment method(s): Oral exam.

B.2.10 Inspecting and testing of pyrotechnic articles

EstQF level 4

Performance indicators:

- 1) visually checks pyrotechnical articles for humidity, bruisedness, assembly quality and other possible damages;
- 2) applies the product in a designated manner;
- 3) assesses visually and by smelling the odor, oxygen balance and color of gases emitted as a result of the burning of pyrotechnic articles.

Assessment method(s): Oral exam.

B.2.11 Managing a working group

EstQF level 4

Performance indicators:

- 1) organizes the activity of pyrotechnician(s): hands out work tasks, assures the safety of team members;
- 2) based on the situation or necessity on the launching site, communicates with third parties and suggests solutions.

Assessment method(s): According to documentation.

Optional competences

B.2.12 Organizing an indoor fireworks display

EstQF level 4

Performance indicators:

- 1) reads the project of a fireworks display and, when organizing the fireworks display, takes into account the location of audience and/or the event, the movement patterns of participants, possible dangers and objects within the hazard area (flammable materials and items, ceiling constructions, dust, etc.), the possibility of planned fireworks display in a location agreed with the organizer (agreements with performers concerning their movement patterns, event scenario, materials used in decorations etc.);
- 2) prepares pyrotechnic articles according to requirements of the manufacturer;

- 3) formalizes the fireworks license according to effective form and co-ordinates with the manager of the building and a competent authority;
- 4) tags the hazard zone of fireworks display with boundary tape or other band;
- 5) notifies performers that will be in the close proximity of the fireworks display about possible dangers and agrees on their stage (or other) movement;
- 6) in case of an outdoor display, takes into account the weather conditions (wind direction, flammable items and materials etc.), audience numbers, placement of guards etc. when restraining the hazard zone;
- 7) takes into account the environmental impact when preparing indoor fireworks (air humidity, ventilation, surrounding environment, weather conditions, etc.);
- 8) takes into account the effect of fireworks display on the environment (smoke created by the fireworks display, noise level etc.);
- 9) places pyrotechnic articles by taking into account the characteristics of the launching area, program and safeness of the fireworks display (location of audience, movement patterns of performers);
- 10) assesses possible hazards and based on the evaluation will give tips to guards and other persons concerned;
- 11) follows the safety-, environmental protection and waste handling requirements concerning the working environment of an indoor fireworks display (how to react when third persons or animals run into the hazard zone, movement in the proximity of articles during the fireworks display, behavior in case of a misfire, etc.).

Supporting knowledge:

- 1) basic principles of indoor fireworks;
- 2) indoor fireworks effects and ignition methods;
- 3) distance between articles, safety and auxiliary devices;
- 4) indoor safety.

Assessment method(s): Integrated with assessment of other units.

B.2.13 Organizing an outdoor fireworks display

EstQF level 4

Performance indicators:

- 1) reads the project of fireworks display and, when organizing the fireworks display, takes into account the location of audience and/or the event, the possibility of planned fireworks display in a location agreed with the organizer;
- 2) prepares pyrotechnic articles according to ignition requirements (e.g. fuses, caps, delays, etc.);
- 3) follows the safety-, environmental protection and waste handling requirements concerning the working environment of an outdoor fireworks display in order to assure the safety of surrounding people and property;
- 4) formalizes the project of the fireworks display according to specific task and format of the event;
- 5) restricts the preparation area of the fireworks display (e.g. with safety tape) prior to the installation of fireworks articles by taking account the safety requirements and, if necessary, places down information signs;
- 6) increases the safety area prior to the beginning of fireworks display according to the nature of articles, its calibers and effects;
- 7) assures that the hazard area of fireworks is properly restricted, by taking into account the weather (wind direction, dry and flammable forest etc.), size of the audience, placement of guards etc.;
- 8) takes into account environmental impact (rainfall, wind direction and strength, soil condition, special characteristics of the ground, snow conditions etc.) when planning the fireworks display;

<p>9) takes into account the effect of fireworks display on the environment (smoke created by the fireworks display, burning parts falling down, noise level etc.).</p> <p>10) places pyrotechnic articles by taking into account the characteristics of the blasting area, program and safety of the fireworks display (location of audience, movement patterns of performers, ignition methods etc.);</p> <p>11) follows the requirements for work safety, environmental protection and waste handling in order to assure the preservation of property;</p> <p>12) if necessary, inspects the launching area of fireworks display in the next day in light conditions.</p>
<p><u>Supporting knowledge:</u></p> <p>1) basic principles of outdoor fireworks;</p> <p>2) distance between separate pyrotechnic articles and separation zone;</p> <p>3) ignition methods;</p> <p>4) devices for large fireworks and their characteristics;</p> <p>5) safety of outdoor fireworks.</p>
<p><u>Assessment method(s):</u> Integrated with assessment of other units.</p>

B.2.14 Destroying pyrotechnic articles	EstQF level 4
<p><u>Performance indicators:</u></p> <p>1) isolates the misfired pyrotechnic product and directs it to be destroyed;</p> <p>2) visually or by testing assesses the conformance of articles to specific requirements and if necessary, directs it to be destroyed by marking it or isolating it from other articles;</p> <p>3) chooses the method of destruction (soaking, burning or other methods) by taking into account the hazardousness of articles, their amount and extent of damage;</p> <p>4) chooses the location and method of destruction based on the safety area required, hazardousness and amount of products to be destroyed;</p> <p>5) visually checks the place of destruction and its surroundings for fire and undestroyed products;</p> <p>6) compiles an instrument of destruction including a list of products, amounts, location, time and method of destruction.</p>	
<p><u>Assessment method(s):</u> oral exam.</p>	

Transversal competences

B.2.15 Pyrotechnician, level 4 transversal competence	EstQF level 4
<p><u>Performance indicators:</u></p> <p>12) The fireworks display will be managed by a responsible pyrotechnician who will guide and advise people under their supervision;</p> <p>13) assists the responsible pyrotechnician in using and destroying of pyrotechnic articles; checks pyrotechnic articles prior to use; uses personal protective equipment;</p> <p>14) assesses the situation at the event location by taking into account their personal safety and safety of the injured party and possible causes of the accident; visually, manually and/or verbally assesses the condition of the injured party in order to find out the type of first aid needed; provides first aid according to their competences and notifies authorities of the accident;</p> <p>15) follows the occupational ethics of pyrotechnicians in their activities, keeps in mind the safety of their own, bystanders and environment, follows occupational safety and internal work procedure rules;</p> <p>16) is familiar with law amendments and new pyrotechnic articles;</p> <p>17) participates in after-event analysis, verbalizes and expresses their understanding of the events, formalizes the principles of their activities and connects them with events, gives suggestions</p>	

for making changes in their or their team’s activities, gives suggestions for further implementation of experience gained;

18) is capable of using computers in their activities on following competence level: Module 1 – General concepts of information technology and information society, Module 2 – Computer usage and file management, Module 3 – Text processing, Module 7 – Information and communication (see Annex 1 „Computer skills“);

19) uses Estonian language in their work on proficiency level B2, and two foreign languages on proficiency level A2 (see Annex 2 „Language proficiency levels“).

Supporting knowledge:

- 1) environmental protection;
- 2) professional terminology;
- 3) pyrotechnic substances and products;
- 4) concept and essence of explosion;
- 5) labelling of pyrotechnic articles and sales requirements;
- 6) categorization of fireworks and explosive substances;
- 7) pyrotechnic compositions;
- 8) safety techniques; occupational health and safety; labor laws;
- 9) chemical compounds in pyrotechnic devices;
- 10) first aid;
- 11) basics of communication; basics of administration;
- 12) laws concerning the professional field;
- 13) fire safety;
- 14) waste handling;
- 15) electrical safety;

Assessment method(s):

Integrated with assessment of other competences specified in the occupational standard.

Part C

GENERAL INFORMATION AND ANNEXES

C.1 Information on the preparation and approval of the occupational standard, on the body awarding occupational qualifications, and reference to the location of the occupational standard in classifications	
1. Designation of the occupational standard in the register of occupational qualifications	14-02012014-2.2/6k
2. The occupational standard is compiled by:	Kaimar Eilo , <i>Technical Regulatory Authority</i> Ivo Melder , <i>Estonian Association of Pyrotechnicians</i> Merike Ring , <i>Technical Regulatory Authority</i> Vambola Saks , <i>Estonian Association of Pyrotechnicians</i> Steven Vaarmann , <i>Estonian Association of Pyrotechnicians</i>
3. The occupational standard is approved by	Äriteeninduse ja Muu Äritegevuse Kutsenõukogu
4. No. of the decision of the Sectoral Council	15
5. Date of the decision of the Sectoral Council	02.01.2014
6. The occupational standard is valid until (date)	01.01.2019
7. Occupational standard version No.	6
8. Reference to the Classification of Occupations (ISCO 08)	3435 Other artistic and cultural associate professionals
9. Reference to the level in the European Qualifications Framework (EQF)	4
C.2 Title of occupational qualification in foreign languages	
In Estonian - Pürotehnik	
C.3 Annexes	
Annex 1 Computer skills	
Annex 2 Language proficiency levels	