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Context

Technology based industries, including mechanical engineering and metalworking industries, play a crucial role of European economy and in the Baltic countries as well. Mechanical engineering and metalworking industries are characterised by strong traditions as well as good preconditions for further growth. In Baltic countries mechanical engineering and metalworking industry is the third biggest industry. The main challenge the sector is facing lack of skilled specialists, especially for those with vocational education and training (VET) education and qualification in the sector.

High drop-out rates in VET approves that VET education should be more linked with metalworking companies, increasing attractiveness of metalworking thus promoting achievements and skills of VET students in mechanical engineering and metalworking industries. The promotion of VET students achievements and skills in metalworking sector in attractive way can be supported by organization of sectoral competitions for VET pupils, involving the business and companies in VET.

Need for raising attractiveness of VET, forces sector association - The Association of Mechanical Engineering and Metalworking Industries of Latvia (MASOC) and Tehnobuss Latvia to involve in education processes. Organizing national and international competitions about mechanical engineering and metalworking industry for VET students within Erasmus+ program Cooperation Partnerships in VET project “Baltic VET competition for smart growth” it is planned to promote VET students' achievements, knowledge and skills in mechanical engineering and metalworking industries thus increasing attractiveness of their choosed qualification and thus supporting sector with skilled workforce.

Professional competitions:

- ✓ Raises:
 - a) the prestige of vocational education institutions
 - b) the self-confidence, entrepreneurship and motivation of learners to better master the curriculum, to promote their employability and competitiveness in the transition to the labor market;
- ✓ establish close co-operation with experts in the field, developing the terms of reference for the professional mastery competition and the criteria for evaluating the performance thereof in professions, which would further promote the

compliance of the content of vocational education with the changing requirements of the labor market;

- ✓ promotes vocational education in society as a value for choosing a conscious career direction, motivates students of general education institutions to choose to acquire professional qualifications demanded in the labour market, including science- and technology-intensive professions, already after obtaining basic education.

Competitions for professional excellence are one of the most attractive and effective ways to popularize vocational training and education motivate young learners to excel in their professional growth and open career opportunities for students that eventually can even lead to job offers. Such competitions are also one of the best ways for students to compare their competences with other students, test their strengths, develop teamwork and leadership skills and practice unconventional problem and task solving. Different types of competitions for professional excellence of various professions are held in Latvia every year, most popular competition in Latvia is Skills Latvia where different kind of sectoral completion is held, inter alia welding competition.

In the report is included information about national Skills Latvia, Euroskills competition, proposed qualifications for sectoral completion within SmartGrowth project.

National competition “Skills Latvia”



SkillsLatvia is a national skills competition for vocational education and training (VET) students. It is the biggest vocational education and skills excellence event.

Successfully maintained the selection at national level, young professionals acquire possibility to represent Latvia at international level competitions *EuroSkills* and *WorldSkills*.

About *SkillsLatvia*:

- It is a national skills competition for students of vocational education programs;
- The competition takes place annually;

- It started from 2017;
- At the competition students of VET schools present the excellence of their skills by competing in 16 professions;
- Serves as a pre-selection competition for further participation of young professionals at the European and international level competitions *EuroSkills* and *WorldSkills* by representing the national team of Latvia on the international level there.

The national competition SkillsLatvia for young professionals takes place in two stages:

- 1) SkillsLatvia semi-finals - if 10 or more participants have applied for the skills competition;
- 2) competition SkillsLatvia and demonstrations of skills in different professions.

The SkillsLatvia competition takes place in 18 - 24 skills competitions in the second semester of the school year at a time and place determined by the organizers. In exceptional cases, skills competitions can also take place in vocational education institutions.

The National Young Professionals Skills Competition SkillsLatvia and its semi-finals are organized by the State Education Development Agency (VIAA) in cooperation with Latvian vocational education institutions and industry companies, industry professional associations and federations.

SkillsLatvia takes place for *two to three days* according to the specified number of hours for the task. The terms of reference of the skills competition, the description of the infrastructure and the list of materials required for their implementation, as well as the evaluation criteria are developed by experts - industry professionals.

The performance of SkillsLatvia competitors is evaluated by industry professionals in accordance with the competition evaluation guidelines.

Participants

Students from Latvian vocational education institutions under the age of 22 (inclusive) participate in the SkillsLatvia competition. The vocational education institution applies for the skills competition.

If the contestants have won a prize in one of the SkillsLatvia skills competitions (1st-3rd place), then the contestants cannot participate in the SkillsLatvia specific skills competition again.

Skills competition tasks

VIAA sends the general description of the work tasks developed by the experts, the skills and knowledge required for the performance, the task modules and the evaluation principles to the educational institutions that have applied for their participation in the competition. The detailed terms of reference are issued during the skills competition and are previously known only to experts.

The evaluation of the performance of the candidates' tasks is based on a similar principle as in the international skills competitions EuroSkills and WorldSkills. The evaluation provided by each industry expert is entered into the electronic evaluation system. The maximum number of points is 100.

Options at SkillsLatvia

The winners of the 1st - 3rd place in the SkillsLatvia competition in each nomination are awarded with medals, diplomas and prizes provided by sponsors. After the SkillsLatvia competition, participants can improve their professional skills and become potential candidates in the preparation for participation in the international competitions for young professionals EuroSkills and WorldSkills implemented by VIAA.

Financing

Competitions are funded by the European Social Fund project "Career Support in General and Vocational Education Institutions" and the State of Latvia.

SkillsLatvia 2022

From April 21st to 22nd the National Young Professionals Competition SkillsLatvia 2022 will gather around 134 competitors, who will showcase their talents and skills in 22 different skills competitions. During two days competitors will show their skills by performing tasks created by industry experts. Competition with motto "The doer wins!" will discover best new professional talents in Latvia for the fifth time.

Related to metalworking sector in Skills Latvia competition is in manufacturing and engineering Technology field:

1. Mobile robotics
2. Mechatronics

3. Welding

Winners of Skills Latvia 2022

Mehatronics

1st place	Evelīna Jergina Niks Lagzdīņš	Liepāja state technical school
2nd place	Vadims Zaharovs Ričards Zdanovskis	Riga Technical college
3rd place	Raivo Rosvalds Ruvims Ungeitis	Liepāja state technical school

Welding

1st place	Marks Barinovs	Riga vocational school No3
2nd place	Viktors Abarass	Daugavpils construction technical school
3rd place	Deniss Domarenko	Riga vocational school No3

Mobile robotics

1st place	Kristofers Jēkabs Rozevskis Melisa Mišina	Ventspils technical school
2nd place	Artūrs Smirnovs Mareks Oškalns	Riga Technical college
3rd place	Agate Katane Patriks Dāvis Freivalds	Valmiera technical school

Tasks for welders: Total length of task is 14 hours where 4 details have to be prepared.

Euroskills

EuroSkills is an international professional skills competition for young people where the representatives of more than 30 member countries present their professional skills and

competitiveness and compare them to those of young people from other countries. EuroSkills is an opportunity to achieve personal success, to present the quality of the vocational education of one's country, to compare professional competencies, to promote competitiveness and improve the recognition and attractiveness of the vocational education.

The international professional skills competition for young people *EuroSkills 2021* plans to take the place 2022 from September 22 to 26 in Graz, Austria. Candidates for the Latvian team are currently selected, but the professional development activities of the Latvian team members will be resumed when *EuroSkills 2021* organizers will deliver official confirmation by mid-June about the competition actually happening.

About 450 participants from 31 European countries plan to take part in the *EuroSkills 2021* competition. Participants will demonstrate their knowledge and abilities in 43 skills competitions. The competition aims to test the performance of competitors in seven professional categories such as construction and building, manufacturing and mechanical engineering, information and communication technologies, creative arts and fashion, services and transportation, logistics and presentation skills. Find out more on the international competition [website](#).

Latvia's participation in the *EuroSkills 2021* competition is ensured by VIAA by implementing the project “Career Support in General and Vocational Education Institutions”, which is financed by the European Social Fund and the Latvian state.

EuroSkills is more than just a skills competition; it is a spectacular promotion of professions for young people, showcasing and inspiring world-class excellence in skills and introducing youth to a variety of careers across Europe.

EuroSkills is the biggest vocational education and skills excellence event in Europe.

Held every two years and organised by WorldSkills Europe together with Member Countries, EuroSkills brings together hundreds of young people from 31 countries across Europe to compete for the chance to become the Best in Europe in their chosen skill or profession.

There are usually competitions and demonstrations in 45-50 skills which are grouped into six industry sectors: Construction and Building Technology, Creative Arts and Fashion, Information and Communication Technology, Manufacturing and Engineering Technology, Service Industry, and Transportation and Logistics.

EuroSkills competitors represent the best of their peers and are selected to compete at EuroSkills after taking part in national competitions held in WorldSkills Europe Member Countries.

At EuroSkills, competitors must demonstrate technical abilities both individually and collectively to execute specific tasks for the skills they are studying and will perform in the future.

EuroSkills takes place over a number of days, beginning with an Opening Ceremony, followed by three days of competitions, and concluding with a Closing Ceremony where awards including Gold, Silver, Bronze, and Best of Nation medals, and the prestigious Jos de Goey Best in Europe Award, are presented.

Visitors to EuroSkills Competitions have the opportunity to try hands-on job-related skills across a huge range of careers at the many ‘Try-a-Skill’ activities, and tens of thousands of school-aged young people who visit are encouraged to turn their passions into a profession.

Competitions in Manufacturing and Engineering Technology

This sector covers all the skilled areas related to industrial development and creation. This encompasses everything from the design, creation, and maintenance of anything involving electronics and machines.

1. CNC-Milling
2. Industrial Control
3. Mechanical Engineering Design - CAD
4. Mechatronics
5. Mobile Robotics
6. Welding

CNC milling

CNC milling machines are machine tools which are used for the shaping of metal and other solid materials. These machines exist in two basic forms: horizontal and vertical. This refers to the orientation of the cutting tool spindle. Early milling machines were manually or mechanically automated, but technological advances have led to the development of Computer Numerical Control, such as CNC machining centre. CNC refers to a computer (“control”) that reads and stores instructions. This numerical information generally “G and M” codes (a programming language) is then used to control and drives a machine tool, a powered mechanical

device (“machining centre”). A machining centre is used to fabricate components using cutting tools for removal of material.

CNC technology includes machining tools such as lathes, multi-axis spindles, wire electrical discharge machines and milling machines, where the functions formerly performed by human operators are now performed by a computer control module. The professionals associated with this skill use CNC machines (3-Axis, 4-5 Axis or Multi-Axis machines) to cut and shape precision products as mentioned above. To form the finished part, the cutting process can be started from a solid block, pre-machined part, casting or forgings. For those scenarios, the skill requires the CNC milling machinist to read and interpret complex technical drawings and specifications and work to a high degree of precision and detail; to be proficient at metal work skills and understand how metals react to various processes; to be a skilled computer operator in order to use industry specific software; to be highly skilled machine operator. A program is required to operate the machine tool, can be generated manually or using Computer Aided Design/Computer Aided Manufacture (CAD/CAM) software.

To achieve the finished part the CNC milling machinist professionals undertake a sequence of essential activities:

- Interpret engineering drawings and follow the specifications
- Generate a process and program (logical process plan) with a CAD/CAM system and/or G and M-codes
- Set up the tooling, work holding device and work piece on the CNC milling centre
- Manipulate cutting conditions, based on the properties of the material and tooling used
- Operate, inspect and maintain the accuracy of dimensions within the specified tolerances
- Optimize the process taking into account the production type: large quantities of one part, small batches or one-of-a-kind items.

Today a wide range of industries require CNC milling machinists professionals to program, operate and keep sophisticated machining centre’s running in an efficient and reliable way. Large enterprises such as automobile plants, medium sized enterprises such as mould making and small enterprises in the maintenance field are some of many examples of where the CNC milling machinist professional plays a key, integral role to the success of the metalwork industries.

Mechanical Engineering Design - CAD

Computer aided design is the use of computer systems to assist in the creation, modification, analysis or optimization of an engineering design.

CAD software is used to increase the productivity of the designer, improve the quality of design, improve communication through documentation and create a database for manufacturing. CAD output is often in the form of electronic files for print, manufacturing or other manufacturing processes. The technical and engineering drawings and images must convey information such as materials, processes, dimensions and tolerances according to application-specific conventions.

CAD may be used to design curves and figures in two-dimensional (2D) space or curves, surfaces and solids in three-dimensional (3D) space. CAD is also used to produce computer animation for the special effects used in, for example, advertising and technical manuals. CAD is an important industrial art and is the way projects come true. It is extensively used in many applications, including automotive, ship building and aerospace industries, and in industrial design.

The CAD process and outputs are essential to successful solutions for engineering and manufacturing problems. CAD software helps us explore ideas, visualize concepts through photorealistic renderings and movies and simulates how the design project will perform in the real world.

Welding

A welder prepares and joins a range of metals of various gauges using electrical and electrical/gas shielded processes. A welder needs to be able to interpret engineering working drawings, standards and symbols correctly translate these requirements into accurate structures and products.

Welders need to have a thorough knowledge and understanding of safe working procedures and personal protection equipment. They need to gain specific knowledge of a wide range of welding equipment and processes as well as a good working knowledge of metallurgy. They need to be familiar with electricity and electrical processes.

Welders join sections, pipe and plate and fabricate large and small pressure vessels. A welder prepares, assembles and joins a wide range of metals and metal alloys using various welding processes including MMAW (manual metal arc welding), MAGSW (metal arc gas shielded

welding), TAGSW (Tungsten arc gas shielded welding) gas welding and cutting. They use gas, electrical, and gas shielded electrical processes to join and cut a wide range of materials.

They must be able to choose and operate the correct equipment, process and methodology depending upon the material being joined. Welders may be engaged in using thermal cutting processes and should be able to identify and follow the correct preparation for joining as applied to the type, thickness and intended use of the joint. They use grinding and cutting equipment to prepare and finish welded joints. Modern methods of joining, as well as those noted above, include mechanized processes such as submerged arc, plasma arc, stud welding and laser welding.

A welder can work in a unit or factory which produces fabrications and/or structures for industries as diverse as civil engineering, mechanical engineering, transport, marine engineering, and construction, service and leisure industries. Welders also work on site preparation, construction, and the repair and maintenance of structures within the areas described above. A welder can work in many locations and situations, ranging from a bench in a factory, to shipyards, power stations and off-shore structures in order to inspect and repair gas or oil rig terminals. Welders also work in engineering, construction, power generating and petro-chemical plants. The working environment may include hazardous settings such as the open sea.

The modern welder may specialize in one or a number of welding processes and environments. He or she may also be asked to work in exotic alloys such as duplex stainless steels and cupronickels. The quality of the welding will vary according to cost and function, with the most skilled welders depended upon to carry out the finest work where faults and failure may have the most serious consequences in terms of cost, safety and environmental damage.

Mechatronics

Mechatronics technicians build automated systems for industry. Mechatronics involves mechanics, electronics, and pneumatics and computer technology. The computer technology element covers information technology applications, programmable machine control systems, and technology which enable communication between machines, equipment and people.

Mechatronics combines skills in mechanics, pneumatics, electronically controlled systems, programming, and robotics and systems development. Mechatronics technicians design, build, maintain and repair automated equipment, and also program equipment control systems.

Outstanding mechatronics technicians are able to meet a variety of needs within industry. They carry out mechanical maintenance and equipment building. They also deal with equipment for information gathering, components (sensors) and regulating units. Mechatronics technicians install, set-up, repair and adjust machine components and manage equipment control systems, including their programming.

Main conclusions: In Euroskills most related qualification to the metalworking and mechanical engineering is: CNC-Milling, mechanical Engineering Design – CAD (in Latvia mechanical engineering technician qualification, in Estonia and Lithuania – locksmith) and welding. Chosed qualifications for SmartGrowth completion have to be linked with Euroskills competition with aim to strengthen long term impact on skills improvement in the metalworking and mechanical engineering sector vocational education and capabilities to participate in international competitions.

Proposed qualifications for project SmartGrowth competition

Proposed qualifications are chosen according Skills Latvia, Euroskills competition field, vocational school coverage of each qualification, requirements set by SmartGrowth project proposal, consultations with State Education development agency specialists, vocational schools and sector companies.

1. Mechanical engineering technician (EQF 4, LKF 4)

Tasks of mechanical engineering technician: to read drawings, use technological documentation; to prepare drawings of details; to check the readiness of mechanical engineering and metalworking equipment for work; to organize the maintenance of equipment and facilities; to make the request for the necessary materials and tools; to manufacture parts by turning and milling, as well as on machine tools for program control metalworking; to perform welding, locksmith and mechanic work; to check the conformity of the product with the technical and technological documentation; to comply with electrical safety, fire safety and occupational safety regulations.

Task for competition could be to describe the sequence of technological processes and operations of manufacturing the product, according to the drawing.

Vocational education institutions in Latvia:

1. Riga State Technical School
2. Ventspils Vocational technical school
3. Kandava technical school
4. Daugavpils technical school
5. Saldus technical school
6. Daugavpils construction technical school

2. CNC setters (Metal Working Numerical Control Machine Setter) (EDF 4, LKF 4)

Tasks of CNC Setter: to use personal protective equipment, to ensure the set-up of the workplace in compliance with occupational safety requirements, to use harmless and safe working techniques to complete a work task, to sketch a simple part, to control the sequence of works for the creation of a metal or composite material part, in accordance with the conditions of the process chart, to use additional technological documentation, to set the parameters of a metalworking program and instruments, to create part machining programs, To choose the machining program for metal or composite material parts in compliance with the requirements specified in the process chart, to measure the dimensions and surface roughness of control parts.

Vocational education institutions in Latvia:

1. Vocational Education Competence Centre "Riga Technical College"
2. Jelgava Secondary School of Crafts
3. Valmiera Technical School
4. Liepaja technical school

3. Welder (EQF 3, LKF 3)

The hand arc welder (MMA), Arc Welder in Welding with Mechanical Machine in the Active Gas Environment (MAG), LKF3, performs pre-determined manual welding work using appropriate electric welding equipment. According to the technical documents, metal products and their constructions are manufactured, assembly and repair works are performed using appropriate electric welding equipment, materials and technological techniques, welds of welds and visual quality inspection are performed.

Arc welder in Welding with Machine in the Inert Gas Environment (MIG), LKF3, a welder performs welding of alloy and non-alloy steel, non-ferrous metal joints and their alloy parts, assemblies and structures. Prepares parts and structures for welding.

The gas welder (OAW), LKF3 performs manual welding work using an oxygen-fuel gas mixture, manufactures metal products and their constructions in accordance with the technical regulations. Prepares parts and structures for welding.

Tasks of the welder: To read the technical work documentation; To understand the specification of welding process (WPS – Welding Process Specification) and other type of technical documentation; To use the information necessary for carrying out the task, to make a decision and provide information about the process of implementation, problems and the possible solutions; To specify the necessary equipment for carrying out the task; To prepare the welding machine for work, to assess the technical condition of the welding machine and equipment; To select appropriate electrodes for the work and prepare them for the work; To select an appropriate sequence of works for seam welding works; To select and carry out the straightening, installing and fastening of the details before the welding; To carry out the necessary scribing for the work implementation according to the work drawing; To cut and grind the preparations and seams according to the technological requirements by using hand-held power tools and stationary equipment; To weld one layer and multilayer seams and butt welds of sheet constructions according to the requirements set in the standards and other related documents; To visually assess the welded seams; To meet the requirements of the labour protection legislation especially when working in extreme working conditions, assess and use personal protective equipment and collective working protective equipment; To follow the rules of electrical safety and fire protection.

Vocational education institutions in Latvia:

	MAG	MIG	TIG	MMA
1. Jelgava Secondary School of Crafts	X	-	-	-
2. Liepaja technical school	X	-	-	-
3. Daugavpils Technical School of Construction	X	-	X	-
4. Ventspils technical school	X	-	-	X
5. Aizkraukle Vocational Secondary School	X	X	-	-
6. Riga Vocational School No 3	X	-	X	X

Taking into account school welding technology available – MAG is recommended for SmartGrowth technology.

Sectoral competitions in metalworking

At this moment we didn't find any information on regular sectoral professional mastery competitions in metalworking with long traditions.

Ventspils Technical School is planning to organize the first Latvian professional skills competition "Mechanical engineering technician 2022" in December 2022 where all vocational educational institutions that train future mechanical engineering technicians are invited to participate in the competition.

The purpose of the competition is to give the participants the opportunity to demonstrate their knowledge, skills and abilities in the chosen profession, to popularize the professions of metalworking, mechanical engineering and mechanical engineering (including mechanics). Teachers of professional subjects would have the opportunity to share their experience, improve their professional competence in the industry.

The Association of Mechanical Engineering and Metalworking Industries of Latvia (MASOC) as an important cooperation partner of Ventspils Technical School supports competition with member companies' prizes.

Proposals for competitions

1. The purpose of the competition have to be to promote the development of students' theoretical knowledge and professional skills in metalworking and mechanical engineering industry professions, in cooperation with industry companies.
2. Within competitions such skills have to be strengthened:
 - 2.1. the ability to cooperate with the company in the development of tender work;
 - 2.2. ability to demonstrate their skills, knowledge and achievements;
 - 2.3. correct understanding and accurate implementation of the drawing and the written information attached to it,
 - 2.4. planning the optimal sequence of work operations, choosing and using appropriate work techniques, materials and tools,
 - 2.5. effective planning of one's working time,
 - 2.6. ability to work individually and in a team,
 - 2.7. ability to observe work safety and protection in the execution of work and during the competition;
 - 2.8. creativity and the ability to apply it during the competition.
3. A team could consist of 3-4 students from the same qualification. Teams of the same qualifications could compete with other the same qualification teams.
4. Qualifications advised: mechanical engineering technician (locksmith), CNC setter or welder.
5. Each educational institution can organize one or two teams from each qualification in the competition.
6. The competition will take place between students of the same qualification.
7. Competition has to include practical skills demonstrations.

Sources

1. <https://www.viaa.gov.lv/en/skillslatvia-2022>
2. <https://worldskills.org/skills/id/222/>
3. <https://worldskillseurope.org/index.php/what-we-do/skills-competitions-euroskills-event>
4. <https://www.latvijaskvalifikacijas.lv/kvalifikacija/diploms-par-profesionalo-videjo-izglitibu-ar-profesionalo-kvalifikaciju-masinbuves-tehnikis/>

Annex 1. National welding competition organized in SkillsLatvia 2022

1. The general purpose of organizing the competition

Certify the professional skills and knowledge of students of Latvian vocational education institutions, promote the attractiveness of vocational education in society and improve cooperation between employers and educational institutions, identify candidates for possible participation in the international mastery competitions for young professionals EuroSkills and WorldSkills.

2. Age and level of competence of the competitor

Students of vocational education institutions who are studying 2nd or 3rd qualification level training programs (in accordance with the Technical Specification) and who are not older than 22 years of age in the year of the competition (born no earlier than January 1, 2000) can participate in the competition nomination.

3. Fulfilment of the competition task

Individual

4. Total length of task is 14 hours (average 2- 5 hours per detail) where 4 details have to be prepared.

5. General principles of task evaluation:

- a) Visual inspection according to EN ISO 17637 standard;
- b) Break test according to EN ISO 9017;
- c) "B" quality level for defects according to EN ISO 5817.

6. For each assignment technical parameters are described (welding process, welding current type and polarity, metal gear type, product type (plate or tube), Seam Type, Type of edge preparation, basic material group / subgroup, Material thickness t , [mm], Seam metal thickness s , [mm], Nominal thickness of corner seam a , [mm], Pipe outer diameter D , [mm], Filler material group, Additive material designation, Additive material brand, Designation of shielding gases / fluxes, Welding position, Ambient temperature / Preheating temperature, Intermediate heating temperature, Seam elements, Single-pass seam / multi-pass seam, Welding elements: number of strokes, amperage, voltage, welding speed, heat input according to welding procedure specification.

7. Description of skills required by the competitor

The professional knowledge and skills, individual characteristics necessary for the contestant to be able to fulfill the task of the competition in the relevant nomination are described in the

profession standards: Professional standard of arc welder in welding with mechanized equipment in an active gas environment (MAG), adopted on 02.07.2019.

Professional knowledge and skills, individual characteristics necessary for the contestant to be able to fulfill the task of the competition in the relevant nomination.

8. Description of the competition workshop

The competition workshop consists of an individual work area for contestants, a shared work area for contestants (if necessary, an expert area, a storage/changing area. Each zone is described assuming that the competition area will be built in empty space.

The area of each zone, specific requirements (lighting, flooring, aspiration systems, etc.), necessary communications (electrical connections, water and sewerage, Internet connections, etc.) and equipment must be indicated. As well Equipment, work tools, aids, including computers, software.

9. Materials and aids necessary for the performance of the task defining name, composition. Parameters, Quantity, Sample/reference to internet resource.

10. Work tools/instruments and materials to be taken by the contestant for the performance of the competition task. Contestants are allowed to bring the following work tools and aids, excluding welding equipment: grinding goggles/mask, welder's helmet, ear protection devices, safety shoes with toe protection, fireproof clothing, hand-held angle grinder with guard, cutting/grinding wheels, splitting hammer (slag hammer), pickaxe, marker, steel wire brush, hammer, welding templates (for corner seams), measuring tapes, chalk/soapstone/marker, stands for fixing samples, leveling aids for assembling control samples (remove before welding), wire wheels for grinding the surface, claws.

List and indicate whether the contestants have to do any 'homework' in order to be able to complete the task. Portable tools, e.g. hand-held electric eccentric sander; Hand electric milling machine.

11. Contestant's work clothes and personal protective equipment

Contestants are allowed to bring work clothes and personal protective equipment (grinding glasses, welder's helmet, ear protection device, special welder's shoes) that meet the safety and protection requirements stipulated in the laws and regulations of the Republic of Latvia.

According to nomination requirements (clothing, shoes, headgear, etc.)

12. Recommended informational/learning resources for educators and contestants in preparation for the competition task

Educators and contestants can use all available literature and materials on welding when preparing for the competition task: textbooks, manuals, technical publications / catalogs of

manufacturers of welding equipment and welding materials, regulatory documents, standards, etc.

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