Co-funded by the European Union

SMARTGROWTH COUNTRY REPORT LITHUANIA

Intellectual output 1

Implementation: 01.02.2022-31.05.2022

Responsible partner for activity: LINPRA, contribute VJDRMC.

Erasmus+ program Cooperation Partnerships in VET project “Baltic VET competition for smart growth”, project No. 2021-1-LV01-KA220-VET-000025155.

Content

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I. Overview of the deliverable

The objective of the country report is to make an analysis of good practices of sectoral professional mastery competitions in VET in Lithuania. The results of the analysis will be used for the next deliverables of the project – preparation of practical and theoretical task at least 3 qualifications at least 30 theoretical tasks at least 6 practical tasks per qualification. The results of this deliverable also will be useful for establishment of regulations for competition organizing regulations and assessments methodology linked with practical and theoretical tasks.

The main target groups within the project are:

1. Vocational education and training (VET) school students;
2. Educators of VET schools;
3. Learners, educators in other education levels. Parents;
4. Sector business representatives Associations acting as representative of the industry and link between sector business representatives and educational institutions.

LINPRA is responsible for preparation of the country report with support of VJDRMC. The country report will include such topics:

- Good practices of sectoral VET competitions;
- Requirements of Euroskills & Wordskills;
- Requirements of qualification exams;
- Analyses of requirements for metalworking sector VET students proposals for common tasks of skills competitions.

II. Good practices of sectoral VET competitions

It has already become common for students of Lithuanian vocational education institutions to compete for the title of the best future specialist every year - national competitions for professional mastery of various professions are held. In them, students have to perform various team and individual tasks using theoretical knowledge and practical skills, and their work is appreciated by recognized craftsmen.

Students are waiting for the competitions organized every year, they are carefully preparing for them. Usually, the first stage of the competition takes place in the educational institution itself, where they have to beat their peers, then peers studying the same profession in other vocational education institutions in the region, and only then the national competition opens to the winners in competitions for professional excellence.

National competitions for professional mastery, in which students studying hairdressers, florists, masseurs, make-up artists, builders, mechatronics and other professions in Lithuanian vocational education institutions compete, have been held in one or another format since the restoration of Lithuania's independence. Some of them, like this year's competitions for bakers' confectioners and car mechanics, last year's make-up artists and hairdressers, take place in international exhibition spaces (Study, Resta, Cinderella), but most of them are held in modern vocational training bases.

The main goal of professional competitions is to reveal the attractiveness of modern vocational training and to popularize vocational training and demanded specialties. Another aim of these competitions is to motivate young learners to reach professional heights, to reveal career opportunities for students, and to help them and future employers of young professionals find each other.

Such competitions have multiple benefits. During the preparation stage, students try to acquire additional knowledge, learn many new things. and those new things are not what they taught in school. students know that to become the best, knowledge acquired in school and through practice alone is not enough. the tasks that students have to perform in the national competition require not only good professional preparation but also exceptional personal abilities. Another advantage for students - by participating in the competition, they have the opportunity to test their strength with their peers from other vocational training institutions in the country, they learn to work in a team. Leadership development is another benefit of professional excellence competitions.

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students gain more self-confidence, because there are also more complex situations where non-standard decisions need to be made.

Participating in professional competitions is also beneficial for students because their work is valued by professionals - recognized craftsmen, closely monitored by companies, so students have a unique opportunity to demonstrate their skills, knowledge and abilities to employers and be invited to do internships and sometimes even secure workplace. Employers not only come to see what future specialists are capable of, but increasingly become sponsors of the competition, and the winners are awarded valuable prizes. Among them are invitations to international exhibitions, and the opportunity to learn and improve knowledge and capabilities.

Professional excellence competitions are a kind of fair where representatives of a certain specialty meet - both employers and teachers, who care about having high-level professionals who know their craft in Lithuania. For teachers who accompany their students to the competition, it is a space for collaboration, they share success stories with their colleagues, discuss current affairs and agree on new activities. For employers, it is a place where they can see what those who will come to them tomorrow looking for work are already capable of today. It is here that teachers and employers can sit down at the same table and discuss together what skills future employees lack and how to better prepare them for the labor market.

Professional excellence competitions in the field of welding and metalworking are held in Lithuania every year. The problem is that the organization of the competitions is not very centralized and also the competitions are organized by different institutions. In 2018 the competition was organized by VJDRMC, in previous year by Alytus vocational training center and by Lithuanian welders association. Professional excellence competitions are supported by the Ministry of Education and Science.

II.1 Welding competition VJDRMC

2018 May 9-10, the VJDRMC itself organized a competition for the professional skills of welders - National Professional Competition for Welders 2018. The event was attended by young people aged 18-25 from different vocational training institutions in the country, aiming to become professionals in their field. The competitive task, which had to be completed in two days, did not prove easy for many - they had to weld a steel structure with six technologically complex seams in three different ways. 18 contestants took part in the competition and one of VJDRMC won.

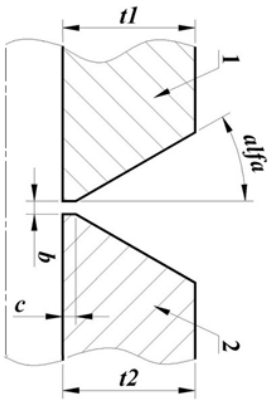
Participants needed between two and five hours to complete the competitive task. Some of whom already have considerable practical work experience in companies.

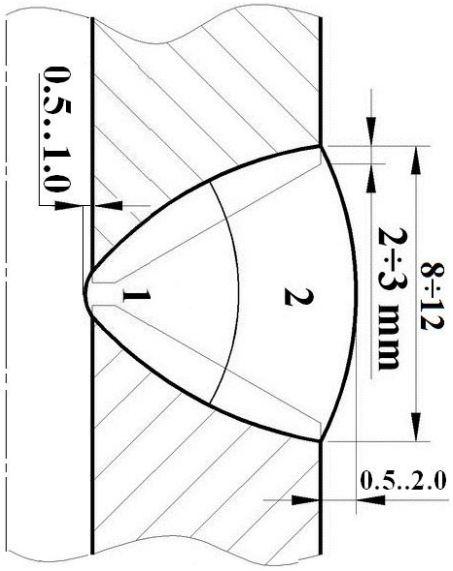
Such a competition was held for the first time in VJDRMC, so it was very necessary to prepare responsibly. Business representatives were consulted when creating the technical terms of reference for the tender as well as companies certifying welders. It was noted that interest in the welding profession and personal growth in it has been increasing in recent years in the country, at least a few persons a month appear who want to learn these professions.

An example of the task of the competition

Join the product parts (preparations) in the order specified in the welding procedure descriptions.

The first task. Manually arc weld the pipe to the pipe in the PC position in two or three passes.

<table>
<tr><td colspan="3">DESCRIPTION OF WELDING PROCEDURES
LST EN ISO 15609 - 1</td></tr>
<tr><td>1. 2.13.3/111 PC</td><td>2. Prepared: VšĮ VJDRMC</td><td>3. Customer: VšĮ VJDRMC</td></tr>
<tr><td colspan="3">4. Name of devices (elements): irresponsible constructions.</td></tr>
<tr><td colspan="3">5. Element materials: Steel: S235.</td></tr>
<tr><td colspan="3">6. Dimensions of the elements: Pipe t_1=t_2=6, D=76</td></tr>
<tr><td colspan="2">7. Welding method: MMA, 111.</td><td>8. Connection type: butt joint, butt joint.</td></tr>
<tr><td colspan="2">9. Welding position: PC.</td><td>10. Preparation of edges: mechanically, using a lathe.</td></tr>
<tr><td colspan="2">11.
 

<table>
<tr><td>alfa°</td><td>b</td><td>c</td></tr>
<tr><td>30</td><td>2±0,5</td><td>1±0,5</td></tr>
</table>
Prieš suvirinimą ne mažiau 20 mm. atstumu nuo elementų briaunų kraštų nušlifuoti iki metalinio blizgesio, nuvalyti nuo nešvarumų.</td><td>12. View of the seam (section).
 
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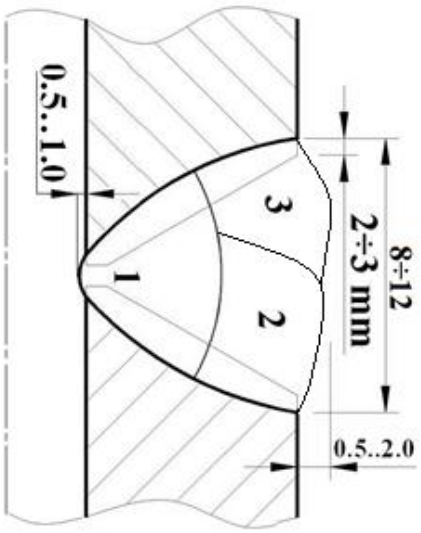


Walk No.	13. Welding materials.			14. Welding current.			Note
	Marking (LST EN ISO 2560)	Diameter, mm	Shielding gas	Type, polarit	Voltage, A	Voltage, V	
1.	E 46 2 B 12 H5	2	–	DC(-)	55 - 65	–	
2.	E 42 5 B 42 H5	2,5	–	AC DC(+-)	70 - 80	–	

15. Preparation of welding materials: the electrodes are heated for 2 hours. 350-400º C, store in a dry place at the workplace.

16. Ambient temperature: not less than 0ºC.

17. Heating device: -

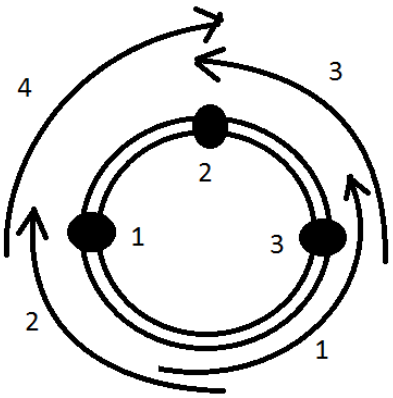
18. Heating temperature: -

19. Temperature measuring instrument: -

20. Additional procedures are recommended: if the pipes were cut with a gas cutter, mechanically grind a layer of 2-5 mm, depending on the quality of the cut.

21. Welding procedure:

• pipes are connected in 3 places, the order of connection and welding is shown in the drawing.
• Grind the couplings before welding.
• Light the arc in the area of the future seam or on the welded metal.
• It is forbidden to ignite the arc on the base metal.
• The beginning and end of the passages must overlap by 10 - 15 mm.
• After boiling, grind the beginning and end of the step, clean the slag and splashes.
• The beginning and end of the passages must overlap by 10 - 15 mm.



22. Method of heat treatment: not performed.

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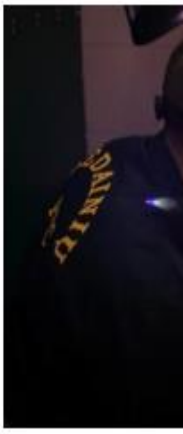
Photos from National Professional Competition for Welders 2018



II.2 Welding competition APRC

More experience in such kind of competitions has Alytus Vocational Training Center (APRC). In 2015, the Alytus Vocational Training Center hosted a national contest of professional excellence for welders. 28 students from 10 vocational schools demonstrated their abilities in the competition. During the competition, the participants performed 3 practical tasks, and the prize-

winners of each task were chosen by a committee made up of representatives of business companies.

On May 26-27, 2022, the national welding professional excellence competition “Welder – 2021” was held at the Alytus Vocational Training Center. Students of vocational schools of the Republic of Lithuania, who are studying or have completed the Welder's modular vocational training program in the current year, were invited to participate in this competition. Students from thirteen schools participated in the competition. During the competition, the participants had to perform a practical task prepared by representatives of Balticskills project partners from Tartu Kutsehariduskeskus (Estonia), Jelgavas Tehnikums (Latvia), Liepaja Tehnikums (Latvia) and Alytus Vocational Training Center (Lithuania). The students received tasks to weld steel pipes using three welding processes and following the technologies set by the organizers. The students' abilities were assessed by welding specialists from Vilnius Gediminas Technical University and manufacturing companies. During the competition, the accompanying teachers participated in a seminar on the latest welding technologies.

Photos from National welding competition Welder 2021

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II.3 Welding competition in other vocational schools

In Lithuania, other vocational training schools also organize welding competitions. The National Welder 2017 professional excellence competition of the welder training program held at the *Mechanics Department of the Šiauliai Vocational Training Center* invited the best students of the country learning the welding profession. Pupils from Alytus, Kaunas, Kėdainiai vocational training centers, Klaipėda Shipbuilding and Repair School, Mažeikiai Polytechnic School, Plungė and Kretinga Technology and Business Schools, Vilnius Railway Transport and Business Services School, Vilnius Municipal Services School came to Šiauliai.

Such a competition was held for the first time in the Mechanics Department of Šiauliai PRC, welders learning the profession had the opportunity to test their professional skills in the newly installed sectoral practical training center, where the most modern gas, electric and semi-automatic welding equipment was installed.

Another competition was also held in 2019 at the *Šiauliai vocational training center* "The best young welder of northern Lithuania 2019". The students had to perform two practical tasks - to

weld metal plates in two passes with an MMA process with a corner seam in a horizontal position and a butt seam in a vertical position from the bottom to the top with soldered electrodes using the MMA process. During the students' competition, the representatives of the Finnish company “KEMPI” in Lithuania JSC “Vingis” presented welding powder wires to the teachers of the profession during a theoretical seminar. After the competition, during a practical seminar, vocational teachers and contestants could test the newest welding equipment of the company “KEMPI”.

Aukštadvaris Agricultural School traditionally organizes professional excellence competitions for students of various specialties in the spring. On March 29, 2017, a professional excellence competition was held in accordance with the formal vocational education programs implemented at the school. The purpose of the competition is to develop students' professional excellence, encouraging students to apply theoretical knowledge in practice and improve acquired practical skills. During the competition, the "Coolest businessman", "Coolest blacksmith" and "Coolest welder" were selected. The competition consisted of two parts: theoretical and practical. The students were faced with serious challenges in solving the theory tests, which were prepared according to the relevant formal vocational training program. After completing the theoretical part of the test, students performed practical tasks. The students of the specialties of technical locksmith repairman and technical maintenance business worker manufactured blacksmith products and performed welding works according to the drawings provided.

In 2022 March 2 The "Best Welder 2022" contest for the professional excellence of a welder was held at the *Vilnius School of Communal Services*. Nine students of the Vilnius School of Communal Services, studying according to the modular programs of the initial and continuing professional training of welders, competed in the competition. The works of the contestants were evaluated according to the assessment competencies specified in the tasks.

II.4 Metalworking competitions

Marijampole vocational training center has experience in organizing competitions of professional excellence in metal technology works. In 2019, there was a competition for mastery of metal technology works of the 1st year students of the car mechanic, reclamation worker and technical maintenance business worker training programs. Students of the Marijampole Vocational Training Center Construction and Mechanics, Vilkaviskis and Kudirkas Naumiescio departments competed in the competition. The competition took place in two stages - the theoretical part was

followed by the practical part. The students tried to perform locksmithing and welding work as accurately as possible. Marking, drilling, measuring, and welding works were applied during the production of the part.

The same *Marijampole VET center* in 2022 was organized national competition of professional excellence in metalworking. Pupils from Marijampole Vocational Training Center Kudirkas Naumiestis, Vilkaviskis and Marijampole departments, Kursenai Polytechnic School, Kaunas Technical Vocational Training Center and Kedainiai Vocational Training Center participated in the competition.

Fierce competitions between future representatives of the profession took place at the Marijampole vocational training center - theoretical knowledge and practical skills were assessed during the competition. For the assessment of practical skills, students had to make a part according to the provided drawing. The mastery competition was not only a great opportunity for students to test their professional knowledge, but also to improve their competences in performing complex tasks.

Photos from National competition of professional excellence in metalworking 2022

The National Professional Excellence Competition "Metalworking Machinist 2017" was held at the *Vilnius Technology and Business Vocational Training Center* for the second year in a row. Future metalworking machinists from vocational schools throughout the country were invited to participate in the competition.

Six Lithuanian vocational training institutions have the right to train one of the most sought-after specialists in the field of engineering - metalworking machinists. However, only four of them trained future specialists in this direction. Despite the fact that training centers are equipped with modern, European-level practical training bases, and manufacturing companies lack metal workers of various profiles, young people choose engineering specialties reluctantly. The national competition of professional excellence is one of the opportunities to popularize the profession of metalworking machines, to encourage young people to be interested in engineering technologies. In the competition, the most important stage was the test of practical abilities, in which, using the provided drawing, the participants had to make a part with universal milling and turning machines.

In 2022 May 12 The National Mechatronics Professional Excellence Competition was organized by the Lithuanian Engineering and Technology Industry Association LINPRA and the *Visaginas Technology and Business Vocational Training Center*. Teams from seven Lithuanian educational institutions participated in the competition. This year, Kaunas Technical Vocational Training Center, Marijampole Vocational Training Center, and Mazeikiai Polytechnic School participated in the competition of this level for the first time.

The competition is organized according to the methodology of the National competition procedure for professions in the engineering industry sector. The participants had to complete three tasks from pneumatics, electropneumatic and control technologies and programming of controls.

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The tasks that the students had to complete corresponded to real work situations that mechatronics professionals face at work every day. The third task, which consisted of construction, electropneumatic and programming parts, was the most challenging. The functions of executors and evaluators were assigned to the team leaders - teachers and lecturers, and the chief judge of the competition was Egidijus Guoba, technical manager of JSC "Visagino linija".

The unique highlight of this competition is that another competition of professional excellence in mechatronics was held at the same time in the *Visaginas Technology and Business Vocational Training Center*. Students of Visaginas TVPMC, studying in the form of an apprenticeship, competed in it. Apprentices represented the companies they work for. The contestants performed one complex task consisting of assembling an electrical panel and a pneumatic system, combining both of these systems into one automatic control device.

Photos from National mechatronics competition 2022

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II.5 Similar competitions

Not only professional training schools, but also other structures in Lithuania organize various competitions for students. Lithuanian engineering and technologies industries association LINPRA has experience in organization of competitions for pupils with aim to make engineering specialities more attractive among school children and society in general. In 2020, LINPRA has organized competition for pupils during exhibition „Studies 2020“. The pupils of 10-12th grade were invited to take part in technical competition and test their strengths at one of the 4 (or all) engineering "stops". They were able to test their technological hobbies and talents – to check if this might be their direction of future studies and learning. One of the tasks was welding. Welding of two parts with a welding simulator. The quality of the seam was evaluated according to the simulator and other parameters.

In 2017-2018 LINPRA has initiated and organized ARTech competitions - modern vocational training competitions, designed to introduce the world of engineering to young people and encourage them to choose the specialties that the country's engineering industry needs.

III. Requirements of Euroskills & Wordskills

The EuroSkills international competition for young professionals takes place every 2 years and is held in a different country each time. Since the first competition held in 2008, Lithuania has

also participated in it. The main purpose of professional excellence competitions is to reveal the attractiveness of modern vocational training, to popularize vocational training, to motivate young learners to achieve professional heights, to reveal career opportunities to students, to help them and future employers of young professionals find each other. International mastery competitions provide an opportunity to compare the competences of students with the competences of students from other countries.

EuroSkills is open to all young people in Lithuania between the ages of 17 and 25 seeking specialized professional knowledge, from builders and florists to website developers and clothing designers.

In 2018 September 21 The European Commission has appointed the representative of Lithuania, Gintautas Dervinas, as the ambassador of the European Vocational Skills Week. Gintautas Dervinis, vocational teacher expert of the Visaginas Technology and Business Vocational Training Center, head of the sectoral practical training center, 2017 Teacher of the Year. Since 2011 annually prepares mechatronics teams for national competitions. Students prepared by Gintautas Dervinis took first place in all competitions. He is a mechatronics expert at the EuroSkills International Professional Skills Competition.

In 2020 Vitalij Kabelis, a teacher at the Vilnius School of Automechanics and Business, won the Best Vocational Training Teacher category at the Mastery Awards of the European Vocational Skills Week. V. Kabelis is an expert vocational training teacher who has been inspiring his students to strive for excellence in the construction, diagnostics and repair of automotive electrical control systems for many years. He is also a judge and trainer of the EuroSkills international mechanics competition, which he creates e. learning tools and seminars for teachers, students and employees of Lithuanian and European professions. The experience gained also provides a good opportunity for the further development of specialties in Lithuanian vocational schools.

Every two years, Lithuania sends delegations consisting of specialists from various fields to the competition: mechatronics, auto mechanics, hairdressers, programmers, cook and welders each - winners of national professional excellence competitions.

WorldSkills Europe Members are organizations that represent a Vocational Education and Training (VET) system in a State's commerce, services, and industry and recognized as such by WorldSkills Europe. Lithuanian 's representative in the WorldSkills organization is the Ministry of Education and Science.

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Partners of WorldSkills Europe support efforts to promote skills excellence and help shape the current and future occupational standards needed by the European continent to compete in the global economy. A partner can represent a European sector or trade organization, a European knowledge institution, or any other institution with a focus on Vocational Education and Training (VET) and skills promotion and development in Europe.

IV. Requirements of qualification exams

The following qualifications are assigned to the production and repair sector of welded and soldered metal products (except machines and devices) and vehicles (except motor vehicles) and their equipment. Qualifications of the sub-sector of production and repair of welded and soldered metal products (except machines and devices):

1. contact welding machine operator;
2. contact welding master;
3. contact welding operator;
4. soldering iron with hard solders;
5. operator of mechanized, orbital and robotic welding equipment;
6. master of mechanized, orbital and robotic welding;
7. painter of industrial products;
8. assistant welding inspector;
9. welding inspector;
10. laser welding, cutting and surface treatment equipment operator;
11. master of laser welding, cutting and surface treatment;
12. welding master;
13. welder;
14. master welder;
15. plasma arc welder;
16. weld joint heat treatment plant operator.

Qualification title: contact welding operator, Lithuanian qualification level II

Qualification description: Object of activity: contact (resistance) spot welding of steel and other non-ferrous metals. Typical tools: contact spot welding tools, equipment and machines. Typical working conditions: working in the production facilities of industrial companies and outdoors.

Additional information: the contact welding operator performs activities according to instructions, monitoring the quality of the work he performs. Persons who have obtained the qualification and have the initial category of protection against electricity (PK) will be able to work in the engineering processing industry and metal processing factories, construction and installation facilities, machinery, lifting equipment manufacturing, energy, agriculture, service and other sectors of the economy.

Competences:

1.1. Ready to use spot welding equipment (Contact welding technologies. Spot welding process. Electrical engineering applied in contact welding. Control parameters of contact welding devices. Electrodes of contact welding devices. Basic and general requirements for contact welding operator activity, work risk assessment, worker safety and health and environmental protection, professional ethics. Safety and health briefings for employees. Accidents, their investigation and prevention. Norms of the Labor Code of the Republic of Lithuania and the Occupational Safety and Health Law of the Republic of Lithuania directly related to the interests of employees).

1.2. Prepare metal materials for welding by contact spot welding (Methods of preparing edges and surfaces of metal parts for contact welding. Initial assessment of the quality of materials and their preparation. Steel, types of steel: fine-grained unalloyed, low-alloyed, stainless, their weldability).

1.3. Set contact spot welding modes (Contact spot welding equipment and its adjustment. Contact spot welding of metal plates with a refined (cleaned) surface. Contact spot welding of non-ferrous metals and dissimilar metals. Contact point welding devices, their management).

1.4. Weld metal parts by contact spot welding (Contact spot welding in a straight line. Contact welding devices. Inspection of welding quality. Application and replacement of welding electrodes. Production drawing specifications, tests, tables of standard sizes).

Qualification title: contact welding equipment operator, LTKS III

Qualification description: Object of activity: contact (resistance) spot, thread or relief welding of steel, aluminum and its alloys, other non-ferrous metals, assembly and installation of products. Typical tools: contact spot welding tools, equipment and machines, contact thread welding equipment and machines, contact relief welding equipment and machines. Typical working conditions: working in the production facilities of industrial companies and outdoors.

Additional information: the operator of the contact welding device selects spot, thread or relief contact welding processes, their management methods, materials and tools, applies various well-known and tested solutions, materials, devices and tools, combines the welding work performed with other work, cooperates with higher qualified persons. Persons who have obtained the qualification and have the initial category of protection against electricity (PK) will be able to work in engineering processing industry and metal processing factories, construction and installation facilities, machinery, lifting equipment manufacturing, energy, agriculture, service and other economic sectors.

Competences:

1.1. Ready to use equipment for spot, seam and relief contact welding (Contact welding technologies. Spot, relief and thread contact welding processes. Electrical engineering is applied in contact welding. Control parameters of contact welding devices. Electrodes of contact welding devices. Basic and general requirements of the contact point, seam and relief welding operator profession, work risk assessment, worker safety and health and environmental protection, professional ethics. Safety and health briefings for employees. Accidents, their investigation and prevention).

1.2. Prepare metal materials for welding by contact point, thread and relief welding methods (Preparation of edges and surfaces of metal parts for contact welding, assessment of its quality. Possibilities of contact welding of metallic materials).

1.3. Set contact spot welding modes (Adjustment and recording of information on contact spot welding equipment. Contact spot welding of metal plates with a refined (cleaned) surface. Contact spot welding of non-ferrous metals and dissimilar metals. Control of contact spot welding. Contact point welding devices, their management. Contact spot welding electrodes).

1.4. Weld metal parts by contact spot welding (Contact spot welding in a straight line according to the specifications on the production drawing. Selection of welding electrodes. Switching on the contact welding machine and setting the welding parameters, based on test experience, tables of standard sizes. Measurement of welding parameters and inspection of welding quality).

1.5. Set contact relief welding modes (Adjustment, information recording and management of contact relief welding equipment. Contact relief welding of metal plates with a refined (cleaned) surface. Contact relief welding of non-ferrous metals and dissimilar metals. Control of contact relief welding. Contact relief welding electrodes).

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1.6. Weld metal parts by contact relief welding (Contact relief welding according to the specifications in the production drawing, adjusting the electrodes, determining the welding parameters of the contact welding machine, based on test experience, standard size tables. Measurement of welding parameters and inspection of welding quality).

1.7. Set contact welding modes (Adjustment, recording and management of contact welding equipment. Contact thread welding of metal plates with a refined (cleaned) surface. Contact thread welding of non-ferrous metals and dissimilar metals. Control of contact thread welding. Contact filament welding electrodes).

1.8. Weld metal parts by contact thread welding (Contact thread welding according to the specifications in the production drawing, electrode geometry determination, contact welding machine determination, based on test experience, standard size tables. Measurement of welding parameters and inspection of welding quality).

Title of qualification: contact welding master, LTKS V

Qualification description: Object of activity: contact (resistance) spot, thread and relief welding of steel, aluminum and its alloys, other non-ferrous metals, assembly and installation of products, training, instructing and guiding other employees. Typical working tools: contact spot welding tools, equipment and machines, contact thread welding equipment and machines, contact relief welding equipment and machines. Typical working conditions: working in the production facilities of industrial companies and outdoors. Additional information: the contact welding master selects spot, seam and relief contact welding processes, their management programs and methods, programming equipment, materials, tools and controls the quality of activities, applies various not always well-known and tested solutions, materials, devices and tools, supervises the activities of lower qualified employees, instructs and trains them, plans and organizes their own and the group's activities. Persons who have obtained the qualification and have the initial category of protection against electricity (PK) will be able to work in the engineering processing industry and metal processing factories, construction and installation facilities, machinery, lifting equipment manufacturing, energy, agriculture, service and other sectors of the economy.

Competences:

1.1. Preparation for contact welding by teaching others to do it (Be prepared to use spot, seam and relief contact welding equipment, perform work safely and qualitatively, instruct and train others; Prepare metal materials for welding by contact point, thread and relief welding methods; Design and analyze contact welding systems used in industry).

1.2. Contact spot welding and production organization (Operate contact spot welding equipment for metal parts and control the process; Weld metal parts by contact point welding, organize the production process).

1.3. Contact relief welding and production organization (Control the contact relief welding equipment of metal parts and control the process; Weld metal parts by contact relief welding, organize the production process).

1.4. Contact thread welding and production organization (To operate the welding equipment of contact thread metal parts and to control the process; Weld metal parts by contact thread welding, organize the production process).

1.5. Organization of contact welding works and ensuring workers' safety and health requirements (Organize contact welding work and lead a group of workers; verify compliance with worker safety and health requirements using contact point, seam and relief welding devices).

1.6. Application of engineering practice to contact welding (Apply welding engineering practices in contact welding and instruct and counsel others; Ensure the quality of contact welded joints by applying the basic principles of welding production engineering).

V. Analyses of requirements for metalworking sector VET students proposals for common tasks of skills competitions

Competitions of professional excellence are very useful for the entire ecosystem of Lithuania. Several advantages of such competitions can be distinguished:

1. The attractiveness of modern vocational training is revealed and vocational training and in-demand specialties are popularized.
2. Motivating young learners to achieve professional heights.
3. Disclosure of career opportunities.
4. The work of the contestants is evaluated by professionals - recognized masters of the craft, they are closely monitored by company representatives, so students have a unique opportunity to demonstrate their skills, knowledge and abilities to employers and receive an invitation to do an internship, and sometimes even secure a job.

5. Participation in the national competitions gives the opportunity to meet other students and possibility to participate in international competitions.

Taking into account the experience of Lithuanian vocational schools in organizing professional excellence competitions, several main aspects can be distinguished that must be paid attention to when organizing competitions in the future and even more so when preparing for participation and achieving a result at Euroskills and/or Worldskills international events:

1. In all the national competitions held so far, the participants only weld low-carbon steels, it is necessary to include stainless steel and aluminum welding with 141 and 131 processes in the competition task in order to develop and test the ability to weld non-ferrous steels
2. National competitions still require the participant to be a student in the curriculum, as a result of which schools often cannot send their best graduates, and only students who have started their studies are forced to participate. It is proposed to include only an age check in the requirements, e.g. up to 25 years. In this way, the best young people who already have work experience will participate in the competition. Attracting these participants would significantly increase the competitiveness of participants and the quality of tender results.
3. It is important to promote cooperation between schools and students in preparation for the competition, e.g. organize small (micro) competitions between the 3 winners of the last year so that they can share their skills with each other, organize competitions between several schools or at the level of individual districts.

Report is prepared within Erasmus+ programme Cooperation Partnerships in vocational education and training (VET) project **"**Baltic VET competition for smart growth" (SmartGrowth)**,** project No. 2021-1-LV01-KA220-VET-000025155.