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OCCUPATIONAL STANDARD

1. Title and code of the occupational standard

GLASS GRINDER / CUTTER

Klasius-P

Glass and porcelain production (5434)

2. Title and code of the occupation

3. Difficulty level

(IV) Difficulty of work

4. Vocational competences

Candidates will be able to:

- accept and review technical documentation and plan work accordingly
- use actual standards
- use specific application software for preparing production documentation, designs and samples of products
- prepare the workplace and necessary production documentation
- master basic technologies and follow the technological discipline
- assess the suitability and rightness of the application of operational processes, used materials, aids and equipment
- work with tools, operate machines and equipment and perform their basic maintenance
- both separately and in a team perform the given tasks in accordance with technological procedures
- cut and saw glass in accordance with technical documentation so as to achieve maximum yield
- perform basic finishing of glass using various machines and instruments, taking into account aesthetic elements
- drill holes through glass in marked spots using a glass drilling machine
- grind simple elements in accordance with technical documentation, taking into account aesthetic elements
- ensure the quality of their work and products while observing the principles of rational use of energy, time and material
- work in such a way as not to endanger themselves or others in their working environment or pollute the environment, and adjust their activity to the tasks at hand
- communicate with different stakeholders in the work process

5. Description of the occupational standard

Field of work	Key activities	Skills and knowledge
Analysis, planning and organisation of work	accept and review technical documentation and plan work accordingly	• study technical documentation (workshop and assembly drawings) • demonstrate understanding of work instructions and work process monitoring • plan work according to a timetable and by phases of work and demonstrate mastery of the sequence of work • study and anticipate safety at work measures • observe work standards and norms
Preparation of work/workplace	prepare themselves, materials and tools and organise their workplace	• prepare the tools and materials they are going to need in their work • prepare a base for depositing glass • demonstrate knowledge of grinding machines and grinding materials
Operations	cut and saw glass in accordance with technical documentation so as to achieve maximum yield	• calculate the surface area of the glass so as to achieve maximum yield when cutting • measure and mark the required dimensions and draw the measurements onto the workpiece • produce a technical drawing • prepare tools and instruments for cutting and sawing • cut and saw glass of various thicknesses using various tools in order to ensure minimum wastage • cut off glass caps using cutting wheels • use suitable cutting wheels depending on the thickness of the product, the properties of the glass and the kind of cuts • use machines and tools efficiently and in accordance with the manufacturer's instructions and rules for safe operation • correctly dispose of waste glass • correctly store and dispose sewage and sludges • demonstrate knowledge of types of glass and glass products • demonstrate knowledge of the chemical and physical properties of individual types of glass and production methods for individual types

		of glass

	perform basic finishing of glass using various machines and instruments, taking into account aesthetic elements	• sort glass and products and reject those that are unsuitable in terms of quality class, other criteria or defects in the glass
		• prepare a grinding machine and mount a diamond wheel
		• prepare a cutting wheel – i.e. installing on the machine, material quality inspection and wheel preparation
		• true a grinding wheel as appropriate
		• dress a grinding wheel using a tool for diamond wheel dressing or work a corundum grinding wheel manually
		• demonstrate mastery of the correct method of work with a particular product so that the latter is not damaged and that no work accident occurs
		• roughly grind upper and internal edges using various machines
		• finely grind and mechanically polish products using mechanical polishing machines
		• melt the edges of a product at the right temperature to prevent product deformation
		• grind a product in individual finishing phases:
		  ○ pre-grinding and smoothing of the bottom,
		  ○ pre-grinding and smoothing of the top,
		  ○ internal and external edging,
		  ○ edging of the bottom,
		  ○ polishing and buffing of the bottom,
		  ○ polishing and buffing of the top
		  ○ mechanically repair defects in glass using grinding and polishing tools
		  ○
		• grind and polish straight and rounded edges using a single or double-sided machine for grinding and a belt grinding and polishing machine
		• facet straight edges and edges on round and oval-shaped table plates on a machine
		• set a faceting machine to the correct width
		• clean products using appropriate cleaning agents and with mechanical wiping and brushing

		• demonstrate knowledge of types of glass and glass products • demonstrate knowledge of the chemical and physical properties of individual types of glass and production methods for individual types of glass • demonstrate knowledge of various kinds of cuts • demonstrate awareness of the importance of cleaning glass from the hygienic and aesthetic points of view • grind a product in accordance with technical documentation and a pattern • work on horizontal, vertical and planar grinding machines
	drill holes through glass in marked spots using a glass drilling machine	• mark a spot in accordance with technical documentation • set a suitable drilling speed on the machine and make a drill hole • eliminate defects by polishing and cleaning the glass • demonstrate mastery of various drilling techniques
	grind simple elements in accordance with technical documentation and observe aesthetic elements	• mark a product in accordance with technical documentation • copy a sketch and transfer it to a product • select grinding wheels and tools depending on the element to be produced • grind individual elements (beads, grains, semi-grains, squares, lines, leaves, shallow and deep grooves, meshes, stars; clean elements using grinding belts and give a matte finish to simple elements) using appropriate grinding wheels • carry out surface cleaning of a product using grinding belts • combine individual elements into patterns and transfer them onto paper • adjust the pattern to the size of the product as appropriate • grind a product in accordance with a pattern • mechanically polish and buff products on a polishing wheel

		• demonstrate knowledge of chemical polishing – suitable glass type, principle, composition of the polishing bath, process • use appropriate means for marking and marking methods • demonstrate knowledge of types of grinding machines and sorts of cutting wheels • demonstrate knowledge of the basics of artistic composition • demonstrate a mastery of the basics of technical drawing
Commercial tasks	advise during purchasing and sales, advise customers	• participate in ordering the necessary raw materials and materials • make arrangements with customers regarding orders • demonstrate knowledge of the elements necessary for calculating the price of a product • demonstrate knowledge of techniques for the marketing of services • demonstrate knowledge of purchasing and sales techniques
Administrative tasks	keep records of work, raw materials processing and work processes	• produce documentation for the operational preparation, monitoring and analysis of individual work assignments • use computer tools when working with documentation • keep records of work done
Quality assurance	ensure the quality of work and products	• determine the appropriate procedure for achieving the best quality • control quality and other parameters of product manufacture • control the results of own work and the work of a group • ensure economical use of materials and equipment • use machines and equipment efficiently and in accordance with the manufacturer's instructions • demonstrate familiarity with quality standards

Maintenance and repairs	take responsibility for the maintenance of tools and equipment	• participate in the preparation of a regular maintenance plan for tools and equipment • demonstrate knowledge of the maintenance requirements of machinery and equipment
Communication	communicate with different stakeholders in the work process	• apply the basics of communication and use technical terminology • communicate with superiors, co-workers and others • work in various teams in the working environment • use modern means of communication • demonstrate a mastery of technical terminology in one foreign language
protect health and the environment	work in such a way as not to endanger themselves or others in their working environment or pollute the environment	• use protective devices and equipment in accordance with regulations on health and safety at work, environmental protection and fire safety • observe instructions and standards for safe work • collect waste materials separately, sort them and dispose of them appropriately • demonstrate knowledge of potential injuries resulting from inappropriate use of equipment • demonstrate knowledge of providing first aid for injuries

6. Working group for the preparation of the occupational standard

- Alojz Juhart, Steklarna Rogaška
- Marinka Anžlovar, Steklarna Hrastnik
- Janko Štefančič, Steklarska šola Rogaška Slatina
- **Coordinator:** Barbara Kunčič, CPI
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7. Occupational standard review group:

- Klemen Žibret, Steklarna Rogaška, d.d.
- Hans Wudy, Glasfachschule Zwiesel , DE
- Mgr. Miroslav Šeps, Novy Bor, CZ
- Andrea Guerra, Progetto Mosaico Piu, IT