BEM Micro-credential

Training and Methodical Center of Vocational Education and Training in Donetsk Region

BEM content (for all partners)	Title / name of the credential	**Insulation of facades using mineral wool.**		
	Function of the micro-credentials / purpose	Development and deepening of professional competences and practical skills in facade insulation in various ways using mineral wool.		
	Possible target groups	Employees of construction companies, graduates and students of vocational education, socially vulnerable groups, the unemployed, and adults.		
	Branch / sector of application	Construction industry / installer of insulation systems.		
	Fields of application / work environment	Private and industrial construction.		
	Typical work / professional tasks	Performing bonded thermal insulation of facades with mineral wool. Repair of facade insulation systems using the bonded mineral wool insulation method.		
	Learning outcomes (personal and job related)	**Knowledge** - basics of energy efficiency and energy-saving technologies; - organisational and technical measures to create safe working conditions at height; - basics of using material selection programmes and automated calculation software; - types and types of facade insulation systems; - requirements for the quality of work performed; - schemes for the placement of fixing dowels; - technological sequence of fixing insulation boards to external wall structures with	**Skills** - read and use regulatory and technical documentation; - use material selection programs and automated programs to perform calculations; - mark holes for the first row of fixing dowels according to the scheme; - drill holes for dowels; - clean the holes with a vacuum cleaner from dust generated during drilling; - install the dowels in the holes; - screw in the fixing rods; - hammer in the spacer (pin) until it stops;	**Competences (autonomy / responsibility)** - calculates the area and the required amount of materials; - drills holes for fixing dowels, depending on the material of the external wall structure; - installs dowels in the holes using fastening sheared and spacers; - controls the quality of work performed; - fix corner profiles to the corners of the building at the ends of the insulation; - fixes corner profiles on the slopes of window and door openings; - Controls the quality of work performed;

		dowels; - modern tools and devices for marking$ - the procedure for installing support and safety ropes; - regulatory and permitting documentation for working at height; - types of angles and profiles for strengthening building corners; - technological sequence of strengthening building corners, window and door openings, expansion joints with perforated metal angles; - rules for safe work performance; - technical properties of glass mesh - types of adhesive mortar mixtures; - the technological sequence of the main reinforced waterproofing layer; - rules for safe work performance; - types of sealed materials for sealing the joints of window and door balcony blocks; - the technological sequence of work on the insulation of the seams of window and door balcony blocks; - a diagram of the installation seam to create a vapour barrier; - rules for safe work performance; - technologies for additional reinforcement of the waterproof layer of	- calculate the area and the required amount of materials; - prepare the adhesive mortar mixture depending on the material of the insulation boards; - fasten corner profiles; - use corner profiles made of plastic; - use corner profiles with a steeple on the upper window slopes; - cut fiberglass mesh from rolls to specified section sizes; - Prepare adhesive mortar mixtures for polystyrene/mineral wool boards; - apply the mortar mixture with a steel grater (half grater); - lay the fiberglass mesh on the levelled mortar and sink it into the layer; - duplicate the protective additional layer of fiberglass mesh on the walls of the first floor; - determine the basic horizontal and vertical lines of the mounted unit; - prepare the opening; - remove excess foam from the seams of the built-in unit; - apply a layer of acrylic sealant; - Prepare adhesive mortar mixtures for polystyrene/mineral wool boards; - apply and level the mortar mixture with	- Apply the mortar mixture to the surface of the building; - Lays the glass mesh on the levelled mortar; - Controls the quality of the work performed; - prepares the surface for sealed materials; - forms a protective film of acrylic sealant over the insulation layer; - controls the quality of the work performed; - Fills expansion joints using polyethylene jute of round cross-section; - reinforces the corners of the expansion joint with metal corners and a layer of glass mesh; - controls the quality of the work performed; - assesses the condition of the insulation system; - detects defects in the thermal insulation; - eliminates defects in thermal insulation; - Controls the quality of the work performed.

		the corners of window and door openings with glass mesh reinforcing elements; - technologies for strengthening the walls of the first floor with an additional protective mesh layer; - the purpose of expansion joints and their dimensions; - rules for safe work performance; - technical parameters and optimal operating conditions of building insulation; - causes of destruction of the thermal insulation system; - main types of thermal insulation defects and ways to eliminate them; - conditions for ensuring the rational operation of facilities with external bonded thermal insulation; - stages of inspection of the technical condition of the thermal insulation system; - materials for repairing or replacing damaged and destroyed building elements.	a steel grater (half-grater); - form and strengthen the corners of the expansion joint with metal corners and a layer of glass mesh; - install an elastic sealing gasket made of polyethylene foam; - apply a layer of elastic sealant; - conduct a phased inspection of the technical condition of the thermal insulation system; - test the system and its individual layers using non-destructive testing methods; - timely eliminate defects arising during the operation of the thermal insulation system.	
	Validation	**Criteria**		**Procedures**
		Conformity; Flexibility and target orientation; Reliability		Creation of an examination commission (EC); The student performs the exam task; Decision of the EC; Delivery of a certificate or digital badge

	Recognised / accepted (documented by MoU)	Documented by MoU: Limited Liability Company "Construction Enterprise "VIX".
	Provider(s)	Kurakhovo Professional Lyceum. Vocational education institutions, and enterprises, private and public sector.
Additional information (if needed)	Entry level / prerequisites	Duration of study in weeks 4 weeks / 150 hours / 5 ECTS.
	Possible duration (recommendation)	
Specific content (national)	Position in the chain of educational programmes	Technology of operation of the building insulation system. Labour protection in the organisation of climbing operations. Basics of materials science, basics of electrical engineering. Industrial sanitation and hygiene. Airless spray painting units.
	Reference to NQF	
	Credits	