**ALFAGEN - VEHICLE FOR COILS, spools AND ROLLS TRANSPORT**

Annex 3 of Tender Documentation – Technical Specification

AL INVEST Břidličná, a.s.

Bruntálská 167

793 51 Břidličná

An open above-threshold public contract for the supply in compliance with S. 56 of Act No. 134/2016 Coll., „Public Procurement Act“, as amended, (hereinafter also as the "**Act**" or "**ZZVZ**"

Procurement procedure

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1. General Information

Under these Technical Conditions, the Contracting Authority specifies the characteristics of the requested subject of fulfilment, i.e. the **minimum** technical requirements that the contractor’s subject of fulfilment needs to meet. If a contractor offers a subject of fulfilment that does not meet any of the technical conditions, it shall be excluded from the tender on account of not meeting the tender conditions.

* 1. Introduction

The company, ALINVEST Břidličná, a.s. (“ALINVEST”), with its 800 local employees is a leading European producer of packaging materials and rolled semi-finished aluminium products. Its origins date back to the year 1852, when the construction of the flax processing company was launched. ALINVEST is a member of the European Aluminium Foil Association (EAFA), Packaging Institute SYBA, Southern Bohemian Chamber of Commerce and Czech Testing Laboratories Association.

ALINVEST’s state-of-the-art research and development unit and certificates, ISO 9001:2008, ISO/TS 16 949:209, BRC/IOP, AD 2000 WO, and EN 15088, guarantee the quality and reliability of its products. The company also holds various packaging and automotive certificates, which are relevant for the present project.

ALINVEST belongs to the MTX Group a.s. an industrial business holding company based in Prague which mainly focuses on management, financing and coordination of manufacturing and trading member companies. In the Central European area, the company has its agencies in the Czech Republic, Germany, Austria and Poland. It primarily trades in metallurgical semi-finished products, production and the sale of fuel coke, aluminium and copper products.

MTX Group a.s. is a joint-stock company incorporated in the register of companies kept by the Municipal Court in Prague, Czech Republic, Section B, File 10649, as of the 31st March 2006. The company has its registered office at Štěpánská 621/34, 110 00 Prague 1.

MTX Group a.s. was founded by Petr Otava Sr. In 2015, he was succeeded by his son, Petr Otava Jr. The MTX Group has expanded remarkably abroad with manufacturing activities that affect a number of industrial branches such as parts for the automotive industry as well as metallurgy and food processing.

* 1. Place of business, Project site

The project will take place at ALINVEST’s registered office at Bruntálská 167, 793 51 Břidličná, Czech Republic. The entire affected area is the property of ALINVEST Břidličná a.s., making it the designated site for the operation of the new machine.

The Annex\_12\_vehicle route 1 provides detailed of the vehicle route in dwg file, allow to check dimensions of area around route. The Annex\_13\_roll lifting diagram shows drawing of manipulation and load of casting roll, The Annex\_14\_casting rolls dimensions provide dimensions of casting roll, The Annex\_15\_Spool stand show preliminary dimensions of basket with spools, The Annex\_16\_Doors cross section, picture provide cross section of new door with sloap and picture of VaZ door and route to the VaZ building, Annex\_17\_route\_2\_Drawings\_of\_rolls show cargo (variable rolls) dimensions for route 2. Annex\_18\_route\_2\_Expanded rolls vehicle path pictures show draft and pictures of the road, Old rolling mill building doors for route 2. Annex\_19\_route\_2\_Expanded rolls vehicle path show layout of the area for route 2. Annex\_20\_manipulation pliers drawing show drawings of manipulation pliers for coils. Annex\_21\_Manipulation pliers pictures provide photos of manipulation drawing. Annex\_22 Example of coil orientation on the truck bed show how coils has to be stored on truck.

* 1. Company’s approach to the environment

ALINVEST is committed to assume a part of responsibility for the conservation and protection of the environment within the region. In 2018, a voluntary agreement was signed with the Moravian-Silesian Regional Authority which governs the obligations of individual parties. The obligations deal with the reduction of dust nuisance, compilation of a power management study and a comprehensive power management conception, which would reduce the power demand of production and service operations. The agreement also covers the replacement of diesel forklift trucks with electric ones.

To guarantee the continuous quality of the final products and to achieve sustainable production growth, the most important strategic investments include not only the technology upgrades but also those of an environmental nature, which address environmental protection and air pollution control. These upgrades will put the company in compliance with the environmental management requirements as per ISO 14000, which will qualify it to acquire this certificate.

Considerable financial resources are expended every year for comprehensive solutions to improve the environment.

ALINVEST Břidličná a.s. is also a member of the EKO-KOM collective compliance system.

The company is a holder of the Integrated Pollution Prevention and Control (IPPC) permit, for which the compliance parameters are always verified on an annual basis.

* 1. Project purpose and objective

ALINVEST is considering buying 1 pcs of vehicle for transport of coils, casting rolls and baskets with spools. The main task is to transport manufactured coils of aluminum wound on a spool or casting rolls from new building TaO to old building VaZ and baskets with empty spools back. The machine must ensure efficient operation with an emphasis on reducing noise and air emissions, easy, fast manipulation with cargo and enhancing operator safety and comfort.

* 1. Other general requirements
     1. **Standards**

All equipment supplied, and related work (layout, installation, and operation) shall comply with all CE and EU-local applicable laws and regulations, including, but not limited to, those relating to environment, health and safety of workers.

Design must comply with standards. Documentation of compliance must be provided to the Customer. Any OEM components supplied, which are not a part of the overall assembly, must be CE marked. The following list of directives shall be reviewed for applicability to the equipment being produced. If the event that the Contractor´s standards are not present the following EU directives need to be applied for their products.

* Regulation (EU) 2023/988 - General product safety
* Directive 2006/42/EC – Machinery

The use of parts which are discontinued by manufactures is not allowed. Exceptions must be approved by Customer.

* + 1. **Accessibility and replaceability**

All working parts must be designed so as to ensure the easiness of maintenance, control, inspection, monitoring, lubrication and replacement during minimum down times, with the highest possible safety and ergonomics.

* + 1. **Safety**

All proposed equipment and tools must meet the highest industry standards for safety and comply with applicable EU safety regulations, including CE marking. The machine must be designed to ensure maximum operator and workplace safety during all operations, including driving, charging, and furnace tending.

The Contractor must include documentation of all implemented safety features and provide a detailed risk assessment as part of the technical documentation.

* 1. Scope of the Works – Major projected parts

The entire supply shall consist of the delivery of equipment (vehicle) that matches all technical criteria mentioned in this document. The scope of supply also includes the delivery of the equipment to the site (DDP), as well as the supervision of its installation, commissioning (cold, hot) and training operators. The vehicle will be designed to transport coils and casting rolls (cylinders) between two halls, the crossing will be on concrete and asphalt. For a certain time, the load will be exposed to the outside environment, therefore it must be protected against these influences.

The major work of scope includes the following: Design, purchase of materials, manufacturing, assembling, inspection, painting, packaging, transportation, erection supervision, cold commissioning by Contractor with respective equipment experts, hot commissioning by Customer with supervision of the Contractor and respective equipment experts, performance tests, performance guarantee, training and manuals.

The Contractor should carry out this project from design to the performance tests based on this purchase specification. As to possible modifications that may occur in the process of conducting the project, the Contractor shall discuss with and get a written approval from Customer.

* 1. Technical offer contents

Following documents shall be provided with transmittal of the offer:

* Detailed technical description of the entire machines (including description of individual sub-devices / equipment)
* In the scope of the offer, we require the delivery of drawings in (.DWG) format, where the machine is visible with:
  + All type of cargo
  + Weather protection cover
  + Stands for various cargo (Full design manufacture drawing, according to The Annex\_13\_roll lifting diagram ,The Annex\_14\_casting rolls dimensions, The Annex\_15\_Spool stand, Annex\_17\_route\_2\_Drawings\_of\_rolls)
* Other important information (accessories or production method) not specified above which the Contractor considers to be worth mentioning to the Customer in the technical offer to ensure safe and reliable functioning of the machines.
* Filled prefered equipment vendor list
* OPEX costs– split into:  
  - Energy costs  
  - Consumable costs  
  - Maintenance costs
* Start up spare parts
* Capital spares (part of commerical offer)
* Battery warranty (number of charging cycles)
* Two (2) years of operational spares itemized as per best practise of supplier
* Training of supervising operators on all operations for a perido 5 days (during day shift max number of participant will be 6)
* We require information about the nearest service center

1. Scope of supply
   1. Facility Introduction

The Alfagen Aluminium Alloy Casting Facility is a facility to replace the existing capacity of 70.000 tons/year (330 working days) facility with modern energy efficient and environmental friendly production facility capable to produce:

4 Strips casting lines:

* Estimated capacity of cast strip: 45 000 tons/year (330 working days)
* Estimated casting capacity: 1,5 – 2,2 tons/hour
* 4 x 25 MT melting furnaces
* 4 x 25 MT holding furnace
  1. Utilization
* Annual: 330 days
* Machine hours: 6000 hrs
* Daily: 24/7
* Maintenance requirement: max 4 hrs a week average
* Economical lifetime: 15 years minimum

The facility is looking for solutions that reduces emission both in sound and air quality while operations should be achieved with proven automation concepts. Systems that are semi automated while reducing the need of operators on the equipment are considered in this tender as long as it is proven technology.

* 1. Machine requirements

The operations will be as follows:

1. Route 1: using a crane, the load (coils/casting roll) will be loaded in TaO building, the vehicle will travel approximately 150 m (The Annex\_12\_vehicle route 1) and will be unloaded again in VaZ building (Grinding plant) by a crane. Potentially, a smaller load will be loaded in VaZ building (usually up to 10 tons - empty spools). The vehicle will then return another 150 m to TaO building. Cargo will be variable (aluminium coil, casting roll and potentially onreturn ride steel basket with empty spools or casting roll)

It is assumed that continuous operation is possible on an 8-hour shift (the operating time between charges and the duration of the charge must be defined), after weekend production, a larger amount of coils has to be transported (approx 35 coils waiting for transport).

Restricted dimensions - the doors of the halls between which the vehicle will be driven have dimensions of 5500 x 5500 mm and 4500 x 4500 mm.

1. Route 2: transport of various rolls (Annex\_17\_route\_2\_Drawings\_of\_rolls) for grinding in Old rolling mill building (ORMB), travel distance to ORMB is 750 m (Annex\_18\_route\_2\_Expanded rolls vehicle path and Annex\_19\_route\_2\_Expanded rolls vehicle path)

It will be ocasionall operation, vehicle has to be able to transport full load 750m to target and full load 750 m back to start point on one charge.

Restricted dimensions – the doors in ORMB has dimensions: 3250 mm width x 4000 mm height.

Other requirements:

* Vehicle must fit (cargo, cover of cargo and other equipment included)) maximum hight of 3800 mm and maximum width 3050 mm.
* The loading and unloading areas are spatially limited, the vehicle will not be able to turn and need for reverse ride will be necessary.
* Noise at 1 m from vehicle and in high 1,2 m above the ground (db) up to 82dB
* rear camera + ultrasonic or radar-based proximity sensors
* reversing beeper
* traffic lights
* reversing light
* Blue light at front and rear of the machine
* Designed for restricted turning space
* Negative breaking system
* Closed driver's cabin with air conditioning and heating
* Wireless connectivity port/module
* Maintenance service available in Czech republic
* Electric drivetrain with sufficient torque for heavy-duty transport
* Charging system: CCS2 or equivalent fast-charging compatibility
* Zero-emission operation, suitable for indoor or low-emission zones
* Charging station part of delivery.
* Warranty for battery (number of charging cycles)
* in case of vehicle which is only remote controlled – part of delivery must be 1 (one) additional spare remote controller
* Delivery of stands for all cargo type, easily manipulated, disassembled, assembled (all fixing elements for stands included in delivery).
  + 1. **Cargo and transportation specifications**

Payload capacity: minimum 35 tons (35000kg), only cargo - without stands, support etc.

Designed for transport of aluminium coils (two coils per one ride, 17 tons each), casting and other rolls and stands with empty spools (steel basket accordin to The Annex\_15\_Spool stand).

Carry dimensions:

Route 1:

* The coil has a maximum weight of 17 tons (17000 kg), dimensions of diameter up to 2500mm, width 1700mm. Two coils will be transported for one ride.
* The casting roll (cylinder) has a weight of 20t (20000kg), dimensions of 3739mm x 1120mm x 1160mm (The Annex\_14\_casting rolls dimensions), manipulation and load of casting roll see the Annex\_13\_roll lifting diagram.
* The basket with empty spools on return ride has weight up to 5 tons, estimated dimensions lenght 1860mm x width1620mm x height 1300mm (The Annex\_15\_Spool stand)

Route 2:

* Dimensions and weight in Annex\_17\_route\_2\_Drawings\_of\_rolls

The coils must be placed on the body with the spools in a transverse direction to the longitudinal axis of the truck (see Annex\_22 Example of coil orientation on the truck bed).

The coils are manipulated by crane, using Prestar manipulation pliers (see Annex\_20\_manipulation pliers drawing and Annex\_21\_Manipulation pliers pictures)

Cargo (coils, rolls, spool baskets) must be stored safely and secured against falling from vehicle. Stands for all cargo type part of delivery, easily manipulated, disassembled, assembled (all fixing elements for stands included in delivery), dimensions of cargo according to The Annex\_13\_roll lifting diagram, The Annex\_14\_casting rolls dimensions, The Annex\_15\_Spool stand, Annex\_17\_route\_2\_Drawings\_of\_rolls

Cargo must be fully protected from weather conditions:

* Enclosed cargo area, easily manipulated sliding tarpaulin systém, fast covering, automatic (manually option for case of automat failure) easy-to-apply cover, a sloping roof or arch to prevent water/snow accumulation

1. Training OF OPERATORS

Operators training will be carried out by the contractor as part of the delivery of the machines. The training will take place at the customer's premises in English and Czech. All training materials will be provided in DOC and PDF format and handed over in electronic form (USB or CD) in Czech and English versions. A detailed training schedule will be agreed on the appropriate date during the project implementation.