

EXPLANATION OF THE TENDER DOCUMENTATION N. 2

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Name of the Public Contract	ALFAGEN - EQUIPMENT FOR CASTING BILLETS FROM ALUMINIUM AND ITS ALLOYS

Overview of Explanations of the Tender Documentation		
Explanation No.	Date	Content
1	12.06.2024	Requests and Explanations No. 1 – 307
2	20.06.2024	Requests and Explanations No. 1 - 124

In accordance with Article 14 of the Tender Documentation the Contracting Authority hereby communicates the explanation of the Tender Documentation:

Request by the Participant for explanation of the Tender Documentation				Explanation of the Contracting Authority
No.	Reference to the Tender Documentation if any		Wording of the request	
	Document title + page	Relevant text of the document		
1	Annex_3_TD_Technical_specifications ; page 9	Documents, certificates, labeling of control switches, selectors, tables, tags, etc. in Czech	Manual in Czech language; all for CE in Czech language, other documents in English	Accepted, Operation / maintenance manuals needed for daily use has to be in Czech language.
2	Annex_3_TD_Technical_specifications ; page 11	The technical specification must define all the requirements for the line, such as: take over points, layout, building foundations (loads, pits, etc.), climatic conditions and requirements set out by the relevant occupational health and safety standards, so that the line is allowed to be put into operation.	Local conditions: please define HSE and local standards.	General requirement, defined more precisely below. In general, according to current EU standards.
3	Annex_3_TD_Technical_specifications ; page 26	- Starting heads with Bait Bar – Each size must have a compliment of starting heads.	Please explain; text is not clear.	Scope of Participant (hereinafter referred to also as the „Contractor“) supply should be at minimun two sets of starterbars heads for each diameter.
4	Annex_3_TD_Technical_specifications ; page 27	- There shall be no services fastened to or attached to the concrete flooring or inside the basement wall in the proximity of the launder, casting equipment or mold.	Clause not clear, please explain.	To be understood as general to ensure easy, fast access to the equipment for operation and maintenance as well as exchange of respective equipment if required.
5	Annex_3_TD_Technical_specifications ; page 27	- Structural channels to be positioned with flanges facing down so as not to collect dirt.	Delete clause.	To be understood as general: Wherever possible to avoid dust/dirt impact in case of necessary disconnection.
6	Annex_3_TD_Technical_specifications ; page 28-29	<ul style="list-style-type: none">• Pre-Assembly, Shop Testing and Inspection- Oil Flow Testing. Acceptance Testing- The oil system, shall be connected to the oil distribution system on one of the casting equipment-mold support plate. With the oil system active or on, a hose or clamped hose shall collect oil from each position, delivering the oil into an empty pre-weighed plastic bucket.- After allowing the oil system to actively deliver oil to each plastic bucket, for two hours, the buckes shall be weighed for comparison, position to position. The oil weights shall be	These details are not necessary to be specified, these are not matching the [REDACTED] system; [REDACTED] system is not so sensitive to these minor parameter changes; [REDACTED] system will produce billets according to contract.	<ul style="list-style-type: none">• Pre-Assembly, Shop Testing and Inspection: Description has to be understood as indicative. Contractor has to provide a clear defined procedure with required tools/provisions for full testing of core equipment with required parameters to before usage in hot operation.

		<p>tabulated, and an average weight calculated. Any position which is +/- more than 1.5% of the average must be corrected and this test repeated on each casting equipment-mold plate (3 if 3 sizes are purchased).</p> <ul style="list-style-type: none"> • System Performance and Product Acceptance Testing <ul style="list-style-type: none"> - Molten delta temperature in the casting equipment between middle and outer mold position shall not exceed more than 7 °C. Range between 5–7 °C shall be understood as normal condition. - Water Flow Testing Product Acceptance Testing (PAT). - The water system shall be tested for flow variability, mold to mold and the total flow variance, liters/minute shall be less than 5 % total flow, so +/- 2.5%. - This test is typically conducted by attaching a flexible rubber hose to the terminating end of the water header, with the distending end allowed to hang down into the casting pit. This hose is placed inside a series of containers which hold 10-12 minutes of water, at 60 % standard casting flow. If space does not allow a full compliment of mold positions to be tested, then an adjustment to the plan may be agreed on. - The test is best done with a waterproof video camera which gives visibility to all of the containers being used. The container has two holes, one 5 cm from the bottom, 2-3 mm diameter and one hole 5 cm from the top of the container. After conducting the test, time is recorded at each bucket-position starting with the lower hole and the final time, is noted when the water dribbles out of the top hole. Time is measured, averages calculated. - The process must be able to produce, the number of strands of the targeted diameters at a recovery rate, off the machine, for 4 consecutive hours, within one hour of cast start of 96 % recovery measured by calculating the good material produced from each strand divided by the attempted material. 		<p>Final arrangement as per Contractors equipment design.</p> <ul style="list-style-type: none"> • System Performance and Product Acceptance Testing <p>Description has to be understood as indicative. Contractor has to provide a clear defined procedure with the Tender (hereinafter referred to also as the „offer“).</p>
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		- Contractor is to certify that the machine is process capable for all diameters purchased, when casting EN AW 6110 with 40 ppm Boron addition rate of 5/1 grain refiner, added prior to the degasser.		
7	Annex_3_TD_Technical_specifications ; page 30	<p>- Water entering the Casting Pit Shall have the following chemical make-up:</p> <ul style="list-style-type: none"> - Calcium Hardness (as CaCO₃) = 160 – 200 ppm - Alkalinity = 160 – 200 ppm - Ph = 7.6 – 7.8 - Molybdate Corrosion Inhibitor = 3 - 5 ppm - Conductivity = 800 mmhos estimated - Iron Filtered = < 0.25 mm - Iron Total = < 1 mm - Corrosion Rates = 1.0 - 2.0 mpy mild steel / 0.2 – 0.5 mpy aluminum 6061 - Microbiological Count < 10,000/ml - Bromine Residual = 0.3 – 0.5 ppm - Turbidity (Oil Levels) = < 10 NTU - Suspended Solids < 10 ppm 	<p>water specification:</p> <p>Temperature 20–30 °C (Variation during casting +5 °C)</p> <p>Filter grade 0.25x0.25 mm</p> <p>Water Quality (to be ensured by End-User)</p> <p>pH 7.0 to 7.5</p> <p>Hardness < 8 dH</p> <p>Conductivity 100–700 µS/cm</p> <p>Chloride < 40 mg/l</p> <p>Sulfate < 300 mg/l</p> <p>Bacteria < 100 CFU/ml</p> <p>Iron < 0.3 ppm</p> <p>Alkalinity < 100 mg/l</p> <p>Total suspended solids < 7 ppm</p> <p>Greases and oils < 5 ppm</p> <p>Free halogen < 0.3 ppm</p> <p>Total halogen < 0.5 ppm</p>	Accepted.
8	Annex_3_TD_Technical_specifications ; page 30	- Water inlet Temperature range shall be $n \text{ } ^\circ\text{C} \pm 5^\circ\text{C}$. – Contractor to specify.	See above; T= 20-30 °C	Basically accepted – with the exception of starting production after longer stoppage = cooling water temperature out of specified range with a warm up time.
9	Annex_3_TD_Technical_specifications ; page 33	Data must be available by Customer with full access.	<p>Needed data has to be specified before conclusion of contract.</p> <p>MES interface and communication over OPC/UA protocols need to be clarified.</p>	<p>AIB (= Contracting Authority, hereinafter referred to also as AIB)</p> <p>„Sybass“ communicating via OPC protocol.</p> <p>Detail content of Contractor available data so far not communicated by the Contractor – to be defined during engineering phase.</p>

10	Annex_3_TD_Technical_specifications ; page 34	<ul style="list-style-type: none"> - Cycle for change of cutting insert position (4 positions before complete exchange of insert set) for respective diameter has to be demonstrated. - minimum 250 billet peeling for a insert position = 1000 billet peeling for complete exchange of peeling set. 	Can not be guaranteed !	Cutting inserts are a consumable = permanent operation costs. Base definition has to be part of Contractor scope.
11	Annex_3_TD_Technical_specifications ; page 35	<ul style="list-style-type: none"> - Other special tools shall be specified by the Contractor within detail engineering and handed over to Customer not later than 1 year before start of commissioning to ensure availability at site. 	Possible, but inconsistent in the above sections: ■ can deliver everything or drawings for additional tools. Please be consistent in descriptions of tender.	Special tools required for operation and maintenance of the Contractors scope AND not part of Contractors scope need to be defined and communicated on time to ensure availability during start of commissioning.
12	Annex_3_TD_Technical_specifications ; page 36	<ul style="list-style-type: none"> - Casting equipment Pre-Heating System – A hot air blower will help to minimize direct flame impingement refractory corrosion. – Equipment has to be in scope of Contractor. 	Do you mean Tundish preheatment device? Hot air blower, flameless but with NG can be included.	Yes – tundish preheating.
13	Annex_3_TD_Technical_specifications ; page 36	<ul style="list-style-type: none"> • The Contractor shall provide all revised or new drawings and documentation required for installation and maintaining the equipment in editable format. Where applicable, these shall include, but are not limited to, the following: Functional Description, Assembly and Disassembly Procedure Description, Process & Instrumentation Diagrams (P&I), General Arrangement & Equipment Layout Drawings, Assembly Drawings, Foundation Drawings, Structural Drawings, Piping Drawings, Plan, Section & Detail Drawings, Conduit and Cable Schedules, Single Line Drawings, Equipment Grounding Drawings, Exposed Raceway Drawings, Transition Drawings, Junction Box / Termination Panel Details, Interconnection Drawings, Control Drawings, Elementary Drawings, Communication & Interface Drawings, Level I & Level II Logic Documents, Operation & Maintenance Manuals, and Training Manuals & Visual Aids. 	Customer receives: Process & Instrumentation Diagrams (P&I), General Arrangement & Equipment Layout Drawings, Foundation Drawings, Single Line Drawings, Equipment Grounding Drawings, Junction Box / Termination Panel Details, Control Drawings, Communication & Interface list, Operation & Maintenance Manuals, Training Manuals & Visual Aids.	Accepted, but: Functional description, Assembly and Disassembly procedure description: Mandatory for erection of equipment Structural Drawings, Piping Drawings, Plan, Section & Detail Drawings, Conduit and Cable Schedules, Structural Drawings, Piping Drawings, Plan, Section & Detail Drawings, Conduit and Cable Schedules, Interconnection Drawings, Elementary Drawings: Not mandatory
14	Annex_3_TD_Technical_specifications ; page 36	<ul style="list-style-type: none"> • Basic list of alarms with a help instruction, 	No alarm list available, only in HMI. Delete.	Accepted. Text for alarms with help instruction at HMI have to be clear

				understandable to ensure fast / easy countermeasures.
15	Annex_3_TD_Technical_specifications ; page 37	<ul style="list-style-type: none"> • The Contractor shall provide, in one master document, a listing of all parameter settings for electrical, mechanical, and hydraulic equipment. 	Technically not meaningful, because it does not seem practicable, it is a lot of work.	This is usually part of operation/maintenance manual.
16	Annex_3_TD_Technical_specifications ; page 37	<ul style="list-style-type: none"> • The Contractor shall provide one editable copy of all computer-generated documents on CD or USB disk or external hard drive. • All documentation provided to Customer shall be in Czech and English • On the operational panel will be possible to choose a language Czech or English. • The Contractor shall provide Customer with a limited use Right to Copy said documentation for the explicit use by Customer in maintaining, training and operating the equipment. • The Contractor shall provide Customer with the Material Safety Data Sheets (MSDS) for any used chemical. • Instead of CD use external hard drive. • Technical documentation of the machine (layout of the system, sets of machining drawing, hydraulic schema, pneumatic schema, lubrication instruction), • All documentation is delivered in 3 copies in paper format and 1 copy on CD, USB disk (pdf format). The documentation documentation must be prepared in Czech form and English. 	Has to be revised and discussed. Most topics are mentioned several times in this section.	From AIBs point of view – redundant information are not problematic – the Contractor have to follow these instructions Mandatory
17	Annex_3_TD_Technical_specifications ; page 37	<p>2.3.2 Drawings</p> <ul style="list-style-type: none"> • All design drawings must be done in Metric Form in the latest AutoCad version and provided in addition in *.dwg and *.pdf format. Other preferred formats are *.step, *.igs, *.mi, *.pkg, *.dxf. • The design and installation drawings shall be submitted for Customer's review. To expedite Customer's review, drawings shall be transmitted electronically. • Comments on drawings by Customer do not relieve the Contractor of his responsibility for the system design, 	See above; text shall be clarified and revised. Redundant informations.	From AIBs point of view – redundant information are not problematic – the Contractor have to follow these instructions Mandatory


		<p>operation and safety. Drawings returned by Customer with comments, shall be resubmitted for record purposes.</p> <ul style="list-style-type: none"> • EPLAN is the preferred software for electrical documentation. • Manuals • Contractor shall provide a full and complete Bill of Material (BoM) for all delivered parts. Documentation in SAP Materials Management Module is preferred. • Operation and maintenance manuals shall be submitted in editable, electronic format 		
18	Annex_3_TD_Technical_specifications ; page 37	<ul style="list-style-type: none"> • All design drawings must be done in Metric Form in the latest AutoCad version and provided in addition in *.dwg and *.pdf format. Other preferred formats are *.step, *.igs, *.mi, *.pkg, *.dxf. 	See above.	From AIBs point of view – redundant information are not problematic – the Contractor have to follow these instructions Mandatory
19	Annex_3_TD_Technical_specifications ; page 39	<ul style="list-style-type: none"> • 3D model of the device for the possibility of creating an overall model in the hall and thereby eliminating the crossing of distribution lines 	File type needs to be clarified !	File type: STEP, Mandatory
20	Annex_3_TD_Technical_specifications ; page 40	<ul style="list-style-type: none"> • 3D model documents of the line, in STEP format – due date as per the Contractor's suggestion, however not later than 8 months since the order date 	3D model can be provided; but no STEP format due to technical reasons. Prefer navis works file !	We require a 3D model in STEP format. This is a standardized format for exchanging 3D models between different CAD. The navis works file format is not sufficient.
21	Annex_3_TD_Technical_specifications ; page 40	<ul style="list-style-type: none"> • All pipe threads (coupling nut) to be Metric ISO standard. 	Pipe threads and fittings are in whitworth.	Metric is preferred, please use metric if it is possible
22	Annex_3_TD_Technical_specifications ; page 40	<ul style="list-style-type: none"> • Structural supports, platforms, stairways, handrails, floor plate, etc. required for operation and on-line maintenance shall be provided by the Contractor. Dimple plate shall be provided on other than concrete walking surfaces. 	Not our standard; we use grids.	It is mandatory to use a dimple plates
23	Annex_3_TD_Technical_specifications ; page 41	<ul style="list-style-type: none"> • Customer is responsible for the first fill as per Contractor detail engineering specification 	All greasing points are greased customer is responsible to fill up the central lubrication before start up	Accepted. The contractor must specify in the maintenance manual.

24	Annex_3_TD_Technical_specifications ; page 41	<ul style="list-style-type: none"> • A means to lubricate all bearings shall be provided. All rolling contact bearings shall meet or exceed 44,000 hrs. of equipment operation. • As far as technically possible, maintenance/lubrication free equipment shall be used, based upon a minimum design life of 44,000 hr. of operation. 	Van not be guaranteed	We require. This is the usual lifetime of quality bearings from reputable brands.
25	Annex_3_TD_Technical_specifications ; page 41	<ul style="list-style-type: none"> • Customer is responsible for the first fill as per Contractor detail engineering specification 	Alinvest is responsible	Yes, specified in the text.
26	Annex_3_TD_Technical_specifications ; page 41	<ul style="list-style-type: none"> • Each hydraulic system shall be provided with electrical control panel. Audible and visible alarms shall be provided in the control panel as well as in HMI for indicating malfunctioning of any component. 	IS included in the main HMI, we will not install a HMI just for the hydraulic system	Local operation (locally close to) of hydraulic station is required for maintenance purpose.
27	Annex_3_TD_Technical_specifications ; page 41	<ul style="list-style-type: none"> • Supply of one (1) no. mobile filling pump-motor-filter unit complete with 15 m long suction and delivery hoses, electrical control cabinet, 15 m long cable and power plug. The filter will be of adequate capacity and 5 micron fineness for hydraulic systems for unloading fresh hydraulic oil from barrels/tanker to the tank of each hydraulic system. • Supply of one (1) no. mobile nitrogen booster complete with electric motor, control cabinet, 15 m long each suction and delivery hoses, 15 m long cable and power plug for initial charging of accumulators with nitrogen. 	Customer supply !	Accepted
28	Annex_3_TD_Technical_specifications ; page 42	<ul style="list-style-type: none"> • All hydraulic cylinders need to be equipped with 2 pressure transducer measurements for measuring A and B side of respective cylinder. Analog type with 4-20 mA signal to automation system with local display. 	Not for all hydraulic cylinders in our standard, on A and B we have at the valve minimess connections for connection of a measuring system	Minimess connection is for local offline maintenance = base standard. Online / continuous measurement (4-20 mA signal to control system) shall ensure full diagnostic.
29	Annex_3_TD_Technical_specifications ; page 42	<ul style="list-style-type: none"> • Hydraulic piping connections on cylinders, power units and valves shall be 4-bolt SAE flanges. 	The cylinders used in our machinery are not available be type 4-bolt SAE. Not feasible for our kind of cylinders, standard connections according to ISO 8434-1	Accepted.
30	Annex_3_TD_Technical_specifications ; page 42	<ul style="list-style-type: none"> • Cylinders shall be designed with an operating pressure of 100 bar and a Proof pressure of 200 bar. Cylinders shall be designed to withstand twice the operating pressure according to the relation of the cross sections. Cylinder 	Not possible	Accepted Cylinders shall be designed for a test pressure: twice the operating pressure.

		tubing to be seamless grade 55 steel tubing, piston rod plated with minimum 0.038 mm C45 hard chromium. Guide Bushings to be RG7 Red Brass, or equivalent. Connections to be SAE O-ring Flanges.		
31	Annex_3_TD_Technical_specifications ; page 42	Cylinder tubing to be seamless grade 55 steel tubing, piston rod plated with minimum 0.038 mm C45 hard chromium. Guide Bushings to be RG7 Red Brass, or equivalent. Connections to be SAE O-ring Flanges .	The cylinders used in our machinery are not available like this.	It should not be problematic to use hydraulic cylinders according this instructions, please specify and calculate with it in the offer
32	Annex_3_TD_Technical_specifications ; page 42	<ul style="list-style-type: none"> Hydraulic tubing, fittings and ports. 	?	Pipes, fittings and ports for hydraulic systems shall be used.
33	Annex_3_TD_Technical_specifications ; page 42	<ul style="list-style-type: none"> All hydraulic tubing to be Metric ISO standard. No alternative is allowed. (Usage: Tubing which may be bent or formed with hand tools or automatic tubing bender. Used for connections between valves, cylinders, etc that are within a machine, panel, HPU. 	ISO 8434-1	OK. Accepted.
34	Annex_3_TD_Technical_specifications ; page 42	Typically heavy gauge stainless steel.	Not our standard. Galvanized steel tubes	We prefer stainless steel. (Stainless steel to ensure long life (no corrosion).)
35	Annex_3_TD_Technical_specifications ; page 42	<ul style="list-style-type: none"> All hydraulic tube fittings must be approved by Customers Engineers. (Usage: Fittings used to connect SS tubing to other tubing or devices, these fittings rely on compression to form a seal between the tube and the fitting) 	We use the Walform Plus system	OK. Accepted.
36	Annex_3_TD_Technical_specifications ; page 42	<ul style="list-style-type: none"> All hydraulic hose fittings to be Metric ISO 24°. Exceptions must be approved by Customer's Engineers (Usage: Connection between tubing, pipe, or hydraulic device and a flexible hose). 	ISO 8434-1	OK. Accepted
37	Annex_3_TD_Technical_specifications ; page 43	<ul style="list-style-type: none"> On valves stands, tables function block diagram has to be mounted by using stainless steel plate - engraved. At all components (pumps, valves, instruments etc.) stainless steel plate (engraved) has to be mounted displaying reference code on respective installed steel frames, table, stands etc. 	Our standard is a description with the function and the electrical identification number, engraved plastic signs	Stainless steel plate (engraved) is mandatory.
38	Annex_3_TD_Technical_specifications ; page 43-44	2.4.4 Pneumatic tubing, hoses, fittings and ports 2.4.5 Piping	Please cover these topics in one chapter; most items are already covered above.	From AIBs point of view – redundant information are not problematic –

				the Contractor have to follow these instructions
39	Annex_3_TD_Technical_specifications ; page 44	2.4.6 Walkways, Platforms and Ladders	Please combine this section with the sections above; topic has been covered several times.	From AIBs point of view – redundant information are not problematic – the Contractor have to follow these instructions
40	Annex_3_TD_Technical_specifications ; page 61	<ul style="list-style-type: none"> PLC programming: Instruction List (IL) programming shall be avoided. Ladder programming is the preferred language, but programming may be done in CFC (Continuous Function Chart) or in FBD (Function Block Diagram) 	SCL will be used if necessary (e.g. operation with arrays).	Yes, it is possible, but most of the programming must be according to our requirement (CFC or FBD programming). Do not use Instruction List (IL) programming.
41	Annex_3_TD_Technical_specifications ; page 63	The Customer will hand over the system parameters - SW/HW configuration to the Contractor during the project	Not included: The effort involved cannot be estimated in this way. Charging according to actual costs	All required system and application software has to be handed over.
42	Annex_3_TD_Technical_specifications ; page 67	<ul style="list-style-type: none"> Engineering includes designing the devices, technological structures, electrical installation, instrumentation and automation, water supply system, utility lines, hydraulic, lubrication and pneumatic systems, auxiliary and ancillary equipment. 	Only water regulation	Yes. Equipment delivery starts from TOP to customer.
43	Annex_3_TD_Technical_specifications ; page 67	<ul style="list-style-type: none"> Engineering includes designing the devices, technological structures, electrical installation, instrumentation and automation, water supply system, utility lines, hydraulic, lubrication and pneumatic systems, auxiliary and ancillary equipment. 	Please define what are utility lines.	Utility lines: Argon, compressed air, ... whatever utility/media needed for the technology.
44	Annex_3_TD_Technical_specifications ; page 67	<ul style="list-style-type: none"> Engineering includes designing the devices, technological structures, electrical installation, instrumentation and automation, water supply system, utility lines, hydraulic, lubrication and pneumatic systems, auxiliary and ancillary equipment. 	<p>Precise definition needed.</p> <p>Equipment delivery starts from TOP to customer.</p>	<p>If the equipment supplied does not include auxiliary and supplementary equipment, ignore. If it does, specify in the offer.</p> <p>Yes. Equipment delivery starts from TOP to customer.</p>

45	Annex_3_TD_Technical_specifications ; page 67	..., pipeline arrangement drawings with supporting details, technological diagrams, pipeline and instrumentation diagrams	P&I diagram is delivered	Accepted.
46	Annex_3_TD_Technical_specifications ; page 67	... Drawings and documents must include the general arrangement, assembly, arrangement drawings, pipeline arrangement drawings with supporting details, technological diagrams, pipeline and instrumentation diagrams , one-line power-management diagram, block diagrams	Single line diagram is delivered; block diagram not.	Accepted.
47	Annex_3_TD_Technical_specifications ; page 67	... management philosophy, test certificates, technical and installation drawings	Not included.	Accepted.
48	Annex_3_TD_Technical_specifications ; page 67	... management philosophy, test certificates, technical and installation drawings	Not included.	Test certificates wherever applicable and required has to be delivered.
49	Annex_3_TD_Technical_specifications ; page 67	... management philosophy, test certificates, technical and installation drawings	Not needed and not supplied	Required for equipment erection (AIB scope).
50	Annex_3_TD_Technical_specifications ; page 67	• Providing the basic data / technical data for all the units/items not stated in this document however necessary for the completeness of the system is the basic responsibility of the Contractor.	Excluded!	This is information that we as the customer do not know, but the equipment contractor does. Please provide in the offer.
51	Annex_3_TD_Technical_specifications ; page 67	• In the course of designing the machinery within the competence of the Contractor, it is necessary to take account of the interface with the devices of other Contractors (such as furnace systems, power supply etc.) which are not within the scope of this specification.	Customer has to specify and take care of interfaces to suppliers.	These are subcontractors of the equipment contractor. The furnace systems was just an example. It can be e.g. packaging line, conveyor system etc.
52	Annex_3_TD_Technical_specifications ; page 68	3.3 Delivery The scope of the delivery includes: delivery of the entire line, technological structures, electrical installation, instrumentation and automation, water supply system , utility lines , hydraulic, lubrication and pneumatic systems, auxiliary and ancillary equipment within the premises of the Contractor.	Water supply system - Not included. Utility lines - Has to be defined Auxiliary and ancillary equipment - Has to be defined	Yes. Water supply system - Not included. Equipment delivery starts from TOP to customer. Utility lines - other utilities, e.g. communication networks, exhaust system, pneumatic system, etc.
53	Annex_3_TD_Technical_specifications ; page 68	• The Contractor will provide technical specification of the spare parts for their purchase in the future. Where applicable, detailed and production drawings must be	No drawings of ■ IP parts will be handed over.	Contractor has to provide a spare part list with specification of IP part or as per catalogue items of respective equipment manufacturer.

		prepared so that the Customer may produce/order from several sources/markets as needed		
54	Annex_3_TD_Technical_specifications ; page 69	... i.e. cables, pipes etc., which the Contractor has delivered, as well as those acquired/produced by any other parties based on the Contractor's drawings and specifications.	No test of third party testing. Testing of simple purchase parts is not meaningful. We should agree on performance test procedure.	Testing of electric installation, onboard piping etc. was well as material certificates are normal standard. Accordingly this certificates have to be provided to Customer.
55	Annex_3_TD_Technical_specifications ; page 69	<ul style="list-style-type: none"> • Within its bid, the Contractor is obliged to mention the following information concerning the equipment delivered. - Size of roofed area necessary for storage (in m2) - Size of free area necessary for storage (in m2) - Size of free area necessary for installation/production, outside the area intended for the machinery itself (in m2). 	Unclear: Details depend on the customer and can only be assessed jointly.	<p>This point means the area that the contractor needs to store his equipment, tools, etc.</p> <p>The customer must reserve and prepare these areas in advance with regard to the existing logistics of the site.</p> <p>The details will then be discussed at the Kickoff meetings.</p>
56	Annex_3_TD_Technical_specifications ; page 69	<ul style="list-style-type: none"> • Delivery of detailed technical drawings/documents for spare parts and wear parts is included in the scope of the Contractor's delivery. 	Not included: this is intellectual property of 	Contractor has to provide a spare part list with specification of IP part or as per catalogue items of respective equipment manufacturer
57	Annex_3_TD_Technical_specifications ; page 69	<ul style="list-style-type: none"> • Isometric drawings of pipelines, with indicated dimensions, must be submitted. 	To be clarified.	It can be part of a 3D model of the whole plant or it can be a separate 3D model of the pipeline.
58	Annex_3_TD_Technical_specifications ; page 70	<ul style="list-style-type: none"> • Contractor to submit recommended spares list based on mean time between failure information from Contractor's database 	Recommended spare part list yes: no mean time between failure information See above comments	Accepted – but: Contractor to specify recommendation (number) to ensure availability at Customer's site with estimate life-time.
59	Annex_3_TD_Technical_specifications ; page 70	<ul style="list-style-type: none"> • Spares will be ordered separately at Customer's discretion, after receipt of complete recommended spare parts list. Recommended spare parts lists, with prices, shall be submitted no later than 6 weeks after the completion of engineering. All parts shall be identified by original manufacturer's part number and full description. 	Possible, but 12 weeks after engineering. Parts are labeled, some not permanent.	Accepted, but the Contractor shall deliver the list of spare parts with a lead time of more than 12 months to the customer within 6 weeks after the completion of engineering.

60	Annex_3_TD_Technical_specifications ; page 72	4.5.2 Temperature in supply line: 10 - 25 °C	Water for casting at entry point to water regulation ■■■: 20-30 °C -> see ■■■ water specification.	Accepted. – with the exception of starting production after longer stoppage = cooling water temperature out of specified range with a warm up time.
61	Annex_3_TD_Technical_specifications ; page 72	4.5.2 Pressure in supply line: 0,59 – 0,70 MPa	0,5-0,6 MPa	Accepted. This is a parameter of the customer's primary water circuit. A secondary water circuit for the equipment will be prepared according to the parameters of the contractor.
62	Annex_3_TD_Technical_specifications ; page 72	4.5.2 Chemical composition: will be communicated during engineering	Only acceptable if it matches ■■■ cooling water standards: Temperature 20–30 °C (Variation during casting +5 °C) Filter grade 0.25x0.25 mm Water Quality (to be ensured by End-User) pH 7.0 to 7.5 Hardness < 8 dH Conductivity 100–700 µS/cm Chloride < 40 mg/l Sulfate < 300 mg/l Bacteria < 100 CFU/ml Iron < 0.3 ppm Alkalinity < 100 mg/l Total suspended solids < 7 ppm Greases and oils < 5 ppm Free halogen < 0.3 ppm Total halogen < 0.5 ppm	Accepted. This is a parameter of the customer's primary water circuit. A secondary water circuit will be prepared for the equipment according to the parameters of the equipment contractor.
63	Annex_3_TD_Technical_specifications ; page 72	4.5.2 pH value: 7,6 – 8,0	7,0-7,5 // higher pH can cause corrosion of moulds	Accepted. This is a parameter of the customer's primary water circuit. A secondary water circuit will be prepared for the equipment according to the

				parameters of the equipment contractor.
64	Annex_3_TD_Technical_specifications ; page 72	4.5.3 Quality class: 1 according to ISO 8573-1	Clarification: Is ISO 8573-1:2010 [1.1.1] achieved?	Yes. 1 - solids quality class 1 - residual moisture quality class 1 - residual oil quality class
65	Annex_3_TD_Technical_specifications ; page 73	As part of the CE certification the Contractor shall collaborate with Customers Personnel in executing a risk analysis.	The risk analysis is done internally by the supplier only.	Accepted, but the base is within the Contractor = Contractor must provide the risks for the Contractors scope to the Customer.
66	Annex_3_TD_Technical_specifications ; page 76	The bid will include a draft service level agreement covering the machinery. The Customer wishes the agreement to include annual service checks. If a higher frequency of these checks is necessary, the agreement should set out their interval.	It is more meaningful, that Alinvest will conclude service contracts with the respective companies. Therefore [REDACTED] will not provide an draft service contract with the bid.	Contractor shall transmit a service offer (scope / interval) within the bid as this equipment is totally new for the Customer.
67	Annex_3_TD_Technical_specifications ; page 76	• An asset care / maintenance program shall be provided. The preferable asset care strategy shall be condition based maintenance rather than time based maintenance.	Have a look to the above sections covering maintenance, this is not [REDACTED] standard.	Wherever applicable condition based maintenance is preferred.
68	Annex_3_TD_Technical_specifications ; page 77	• The equipment and components shall be selected to ensure the lowest life cycle cost and meet all energy efficiency requirements in the Břidličná facility.	Intention is clear, but it is not a precise statement. Has to be discussed.	Components shall be selected adequately for their purpose, but in considering the lowest life cycle cost = lowest energy costs / optimization as per use in operation.
69	Annex_3_TD_Technical_specifications ; page 77	• The Contractor will provide means to meter and to monitor each energy source (electricity, gas) and fluids (compressed air, nitrogen, argon, etc.) at each process unit and also for each significant single user (est. yearly cost > \$100K) with an accuracy of 0.5%.	Basic data will be provided. Calculation and assessment by customer.	Wherever measurement (for example electric consumption) is installed/available within Contractors scope energy monitoring is required.
70	Annex_3_TD_Technical_specifications ; page 77	• State of art high efficiency burners shall be selected based on a life cycle cost analysis. The combustion air temperature and furnace door opening time shall be monitored. The oxygen content in flue gas and furnace pressure control will be optimized to ensure the highest energy efficiency.	Does not cover scope, but furnace supplier.	Accepted

71	Annex_3_TD_Technical_specifications ; page 81	<ul style="list-style-type: none"> All chemical solvents and paints shall be used in accordance with manufacturer's instructions and Customer standard practices. 	Has to be defined.	Please follow the instructions in Annex_3_TD, if something is not specified it will be defined during engineering phase
72	Annex_3_TD_Technical_specifications ; page 81	<ul style="list-style-type: none"> All chemicals and paints shall be approved by submission of a Material Safety Data Sheet as well as any manufacturers supplied information and or instructions to the Customer project manager prior to delivery onto Customer site. 	Not feasible; SDS of fillings will be supplied; customer can specify type of paint before entering the contract.	Accepted. All hazardous chemicals must be approved by submitting a Material Safety Data Sheet to the customer's Project Manager prior to delivery to the customer's site.
73	Annex_5_TD_Technical_conditions ; page 2	Melt differential temp. at furnace TOP and at tundish is max. 20 °C	Definition not clear, difference outlet furnace to tundish is ok. Furnace top can also be the ceiling temperature.	TOP means take over point
74	Annex_5_TD_Technical_conditions ; page 2	Melt differential temp. in all locations in tundish is max 5°C	Problematic definition, +/-2.5°C between the strands in the tundish is ok, in the tundish there are higher differences. For example between the inlet and the connection to the nozzels, caused by the high conductivity of the metal and the cooling of the moulds,	Meaning is: Design shall ensure minimum temperature difference within the tundish between center to outer strands.
75	Annex_5_TD_Technical_conditions ; page 2	Velocity of melt in launder is within the range 7-9,8 m/min	Standard design is about 5m/min, less oxide generation on joints.	<p>This velocity, is an industry standard design, which has been introduced to help companies minimize the temperature losses, after the furnace to the casting machine. The value presented in our specification, is intended for steady state operation. We acknowledge that the start of the cast, the flow velocity is higher but the reduced Cross Section (CX) minimizes not only the temperature but also the flow needed during fill.</p> <p>If you desire to ignore this specification, please take exception of the point, then present real temperature data from your lower</p>

				<p>velocity trough, so that we may understand your thermal losses which we will have to overcome by burning more fossil fuels, generating more GHG.</p> <p>Perhaps your design has a filling velocity of 125 mm/sec, 7.5 meters per minute. Our focus, is on the steady state condition.</p> <p>When designing the trough, at steady state of 7.0-9.8 meters per minute, the flow remains in the laminar flow region.</p>
76	Annex_5_TD_Technical_conditions ; page 2	0,003 – 0,020 kg of HCL per ton of Al processed	<p>Giving a guarantee for this value without a corresponding refining target is not acceptable.</p> <p>How much HCL is created depends mainly on the chlorine % adding. How much CL2 needs to be added at the degasser depends on the metal cleanliness coming from upstream and final target levels. It can be adjusted to hit the requested removal target (which is not set yet) or adjusted to hit the max. HCL levels.</p> <p>We don't look for numbers above 0,02 kg/ton. But this is limiting the treatment by nature. Hitting both the same time doesn't work with the chemistry rules.</p> <p>As more chambers are existing as bigger is the window for leveling this - but this can't be in the interest to use a larger degasser for keeping HCL emissions under control. The upstream furnace treatment must be efficient enough to avoid to come into</p>	<p>As hydrogen is targeted, less so the alkali elements, we will ask for a solid reduction of 75% thru the degasser.</p>

			trouble at the degassing stage with adding so much chlorine that HCL limits are exceeded.	
77	Annex_5_TD_Technical_conditions ; page 2	Max. of 0,004 kg dust per ton of Al processed	Dust creation can't be guaranteed as this depends on the metal cleanliness coming from upstream. This is out of the control of the degassing unit. Which particle is finally ending as solid salt swimming on top and which is light enough to be transported by the vent can't be determined.	The chlorine level you propose, should not create harmful powders. This may be removed.
78	Annex_5_TD_Technical_conditions ; page 2	Possibility of using Chlorine instead of Argon	Pure chlorine is never used. It is a mix of Argon & Cl2 (typically 0.5-1 max.5% - %)	Accepted
79	Annex_5_TD_Technical_conditions ; page 2	Min. efficiency of hydrogen removal - 75% or absolute amount of 0,13 cm3/100 g Al	Seventy-Five (75%) percent efficiency down to a lower limit of: ≤ 0.13 cc/100 gr. for alloys contain $\leq 1\%$ Mg and ≤ 0.13 cc/100 gr. for alloys containing $> 1\%$ Mg	The expectation listed is consistent with your comment.
80	Annex_5_TD_Technical_conditions ; page 2	Temperature of liquid metal during the casting process 680–790°C (depending on the alloy)	With this requirement it is not possible to initialize a solidification.	Accepted – temperature range as per alloy.
81	Annex_5_TD_Technical_conditions ; page 3	100% inspection of surface and internal defects and dimensions	Some details have to be modified, because of physical restrictions. Details in other technical document	Noted
82	Annex_5_TD_Technical_conditions ; page 3	According to Annex_3_1_TS_guaranteed_parameters_of_billets	It is not possible to provide an all-encompassing warranty, as this depends on the customer's conditions; a refinement of the document is necessary.	Accepted – see below the parameters which are excluded from guarantee
83	Annex_5_TD_Technical_conditions ; page 3	Remote control	Not our standard; can be done - please advise what you have exactly in mind	Remote access to equipment for troubleshooting, software upgrades, data analysis, etc. Mandatory.
84	Annex_5_TD_Technical_conditions ; page 3	History of trends for a period of 3 months	Not our standard; can be included - cost impact	Please calculate with it in the offer
85	Annex_5_TD_Technical_conditions ; page 3	History of alarms for a period of 3 months	Not our standard; can be included - cost impact	Please calculate with it in the offer

86	Annex_5_TD_Technical_conditions ; page 3	Uniform graphical visualisation of all control panels	Not ■■■ standard; has high cost and time impact if needed	<p>We require a unified graphical visualization of all HMIs on all delivered equipment. – Simplify: Base for all HMIs delivered by the Contractor must have the same graphical visualisation – for example: Symbol of a motor or pump with respective colour change for different status.</p> <p>Background: Operation/maintenance team responsible for more equipment.</p>
87	Annex_5_TD_Technical_conditions ; page 3	Integration of furnaces	Topic relates to different supplier, so it is not included; likewise it is an open specification	<p>See definition in chapter 2.2.13 of document Technical specifications.</p> <p>There is not a specific section detailing the aspects of furnace integration. The primary points are addressed on an Ad Hoc basis, in the molten distribution section.</p> <p>In normal conditions, the furnace TOP is within 1 meter past the joint. Final dimension to be fixed within engineering phase.</p> <p>We expect the supplier of the treatment and casting side to work with the furnace supplier amicably.</p> <p>As the customer, we expect the furnace supplier to provide a hydraulic control signal, connecting the hydraulic control side with the casting automation so that during</p>

				<p>casting, the metal level is stable, and that when the casting process is interrupted, the furnace hydraulic tilting control is activated.</p> <p>We also expect the furnace supplier and the casting machine supplier use a common metal level sensor supplier and model.</p> <p>We also expect the furnace supplier to provide a secondary metal level signal, separate of the control system to hi light a Hi-Hi and a Low-Low level. This signal being generated by two electrical probes, at differing elevations continuously energized so that when the low-low electrode is in contact the metal conducts the electrical signal away from the Hi-Hi probe. Conversely, when the Lo-Lo probe is energized and the metal contacts the Hi-Hi probe, the electrical circuit is complete and the furnace tilts back outside the automation or control program.</p>
88	Annex_5_TD_Technical_conditions ; page 3	Compatibility with master systems and following technologies	<p>Unclear and open specification; a precise and narrow formulation is needed; generally over PN/PN coupling</p> <p>Master system and "following" technologies are undefined.</p>	<p>The supplied equipment and all related equipment from other suppliers must be equipped with a PN/PN coupler.</p> <p>See Figure 3 - SW/HW interface block diagram in the Annex_3_TD</p>
89	Annex_5_TD_Technical_conditions ; page 3	Number of casting line operators – max. 5 operators, including preparation of moulds	<p>Casting start& stop: 2 P</p> <p>Steady state casting: 1 P</p> <p>Peeling: 1P</p>	Number of operators during standard casting – max 5 including preparation of moulds

			US: 1P Packing: 1P Preparation mould: 1P (Day shift)	Number of operators during casting start and stop – max 6 including preparation of moulds
90	Annex_5_TD_Technical_conditions ; page 3	Time required for adjustment to another diameter max. 90 minutes	Casting stop to restart: Yes, if personell is well trained and casting set preparations are carried out in advance (mould maintenance and tundish pre-heatment); mouldshop and auxiliary equipment in place according [REDACTED] instruction	Yes, we agree. We expect staff will be very well trained by the Contractor
91	Annex_5_TD_Technical_conditions ; page 3	The total area of all the pieces of equipment complies with the space requirements – see Annex_3_CD_Technical_specifications.docx	Not possible with our solution; see layout and suggestions to layout	Space available is given due to enviornment condition of the overall plant.
92	Annex_5_TD_Technical_conditions ; page 4	The deadline for providing construction readiness documentation from the contract conclusion	After clarification of all technical topics and defined TOPs, we will allocate 2 months for the foundation plans and BSE information	As per project time line Annex 4.
93	Annex_5_TD_Technical_conditions ; page 4	The manufacturer guarantees technical support for discontinued components for at least (alternatives for obsolete components)	Wording "warranty"; more than 10 years support for mechanical and electrical components.	Accepted
94	Annex_5_TD_Technical_conditions ; page 4	The manufacturer guarantees availability of spare parts for all components for at least	Wording "warranty"; more than 10 years for mechanical and electrical components.	Accepted
95	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 1	FIELD OF APPLICATION	We have reviewed the specification document you provided and it appears to include requirements that pertain to your customer. Please note that [REDACTED] cannot be held responsible for these additional specifications. To ensure clarity and mutual understanding, we suggest modifying the document to cover only the topics that are relevant to the collaboration between [REDACTED] and Alinvest.	The Annex_3_1_TS is generall document describing parameters, quality and standards of the billets. See bellow the parameters which are exluded from guarantess
96	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 1	This technical specification is valid for all deliveries of aluminium peeled round billets ø40–ø1245 mm.	50-130 mm are possible	Accepted 44-126 mm peeled surface

97	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 1	<ul style="list-style-type: none"> The number of billets (chronological order according to production) 	Clarification needed: each billet shall be marked to be individually traceable? Do you have any requirements on this - Datamatrix, numbers and other information?	Yes, each billet must be marked to be individually traceable See Annex_3_1_TS_Guaranteed_parameters_of_billets in chapter DISPATCH, DELIVERY, MATERIAL IDENTIFICATION
98	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 1	<p>Each billet is identified by:</p> <ul style="list-style-type: none"> The diameter The alloy/temper The date of production Production time Strand number 	Has this information to be printed on the billet? Is Datamatrix possible?	Yes, this information has to be printed on each billet. Datamatrix is possible But general information – diameter, length, alloy, date of production, ID of the batch - must be also written by numbers and letters on the billet (to be readable for operators)
99	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 1	<ul style="list-style-type: none"> Production time 	Definition is necessary.	The exact time of casting (cutting time) each billet in format YYMMDDHHMM For example: 2406151330 means: 15 th June 2024 at half past one
100	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 1	The inspection and delivery of the billets have to be carried out for each batch ID separately.	This statement is not clear; what do you mean?	Not relevant for the tender: AIBs responsibility is to deliver billets to their customers in whole package (not individually)
101	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 2	TECHNICAL DEMANDS Chemical composition	Please note that the responsibility for these technical demands lies with the Alinvest operations team, not [REDACTED]	Chemical composition of each alloy is for information – to be sure that Contractor of casting equipment is informed about portfolio which will be produced Casting equipment must be capable to produce all of this alloys

102	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 2	<p>Table 2 Chemical composition of alloy 6110</p> <p>Ca: max. 0.0008 %</p>	<p>this is 8ppm in total</p> <p>It conflicts with the HCL request and can't be guaranteed that simple.</p> <p>Achieving optimal results relies heavily on effective pre-treatment upstream, such as using the HD-2000 with Flux or Cl2. Ideally, little to no Cl2 would be required during the degassing stage to meet the target.</p> <p>However, we currently lack data on the potential incoming levels and the typical starting points from Alinvest's furnaces, making it difficult to provide definitive assurances without specific numbers.</p> <p>Ultimately, the success of the process depends on a combination of factors, including the quality of the input material, furnace handling, alloying practices, furnace treatment, and refining at the degasser. Focusing solely on the degasser would be insufficient to address the complexities involved.</p> <p>From our modelling we can reduce Na and Ca from 8ppm/each to 4ppm/each = total 8ppm without exceeding the HCL levels. But how realistic is the case that the content of the metal is exactly to this numbers? So it is not really useful to set a Performance Guarantee this way.</p>	<p>Chemical composition of each alloy is for information – to be sure that Contractor of casting equipment is informed about portfolio which will be produced</p> <p>Casting equipment must be capable to produce all of this alloys</p> <p>For the Customer is important to follow the instruction in Annex_3_TD (chapter 2.2.7 Degassing)</p>
103	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 3	<ul style="list-style-type: none"> • Not exceeding a maximum of 120 µm; exception: no more than one single grain of less than 175 µm in analysed sample area. The analysed area of the sample is evaluated in the centre and at the edge of the billet. 	<p>Below 185 µm as average grain size (line intercept method for grain size determination); generally at approx. 130 µm</p>	<p>Acceptable:</p> <p>Grain size: as small as possible but not exceeding a maximum of 175 µm; exception: no more than one single grain of less than 275 µm across the bar diameter</p>

104	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 3	<ul style="list-style-type: none"> Not exceeding a maximum of 120 µm; exception: no more than one single grain of less than 175 µm in analysed sample area. The analysed area of the sample is evaluated in the centre and at the edge of the billet. 	<p>Contradiction to the previous statement; definition of the analyzed area is missing.</p> <p>Max. single grain size of analyzed area: ≤ 350 µm</p>	Acceptable: Grain size: as small as possible but not exceeding a maximum of 175 µm; exception: no more than one single grain of less than 275 µm across the bar diameter
105	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 3	<ul style="list-style-type: none"> Max. shell (peripheral) zone should not exceed 500 µm (not peeled). 	Suggestion, half peeling depth: < 1 mm	Accepted
106	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 3	Minimum inspection frequency: At least one sample from each strand per batch need to be analysed.	Task for QM of Alinvest; not XXXX scope	Accepted AIB just wanted to inform the Contractor
107	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 4	Surface appearance – examined by visual control and surface roughness measurement.	Can be done by QM Alinvest.	Accepted
108	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 4	Surface appearance – examined by visual control and surface roughness measurement.	Not available as scope of supply.	Accepted This measurements will be done by the Customer
109	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 4	<p>A smooth, uniform surface is required after peeling as defined by the following:</p> <ul style="list-style-type: none"> No remaining thick ribbed, serrated and / or sharp-edged contours. No remaining single spot defects and coherent zones of incomplete solidification No remaining irregular bandings or drags in billet casting direction (longitudinal) 	<p>For the acceptance test: Finished billets (passing the inspections) are without defects in accordance with the US and ET test. Visual impression may be different from the test procedure.</p>	Accepted
110	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 4	<ul style="list-style-type: none"> Not allowed after peeling: Inclusions, cold shuts, entrapped oxide skins, oxide releases with negative impact on the microstructure, shark bites, tears transverse to the billet length, surface cracks, blisters, any impurities or mechanical damage, grinding. 	See statement above. Managing the process correctly is essentially the responsibility of the operator and cannot be attributed to the system manufacturer.	During acceptance testing the moulds will be prepared under the supervision of the Contractor using Contractors manual/instruction, so the this is not point to negotiate
111	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 5	<ul style="list-style-type: none"> Standard length of billet: 4500–6000 mm +6/-0 mm 	See Annex 3; +/- 15 mm	Not accepted +6/-0 mm is mandatory

112	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 5	Table 7 Tolerances of billet diameter	For peeled billet	Yes, these values are for peeled billet
113	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 5	Max length of head (scrap) shall not be longer than 3 000 mm Max length of tail (scrap) shall not be longer than 3 000 mm	See comments in Annex 3	The heads/tails must not be longer than 3 000 mm.
114	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 5	According to DIN EN 754-3	Are you sure to use this standard, because it refers to cold drawn rod/bar; for cast bars EN604 is used.	EN604 is acceptable, but the max. deviation of the billet has to follow Annex_3_1 Max. deviation: 2mm/m Max. deviation on overall length: 12mm
115	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 5	Table 8 - Boundary conditions / validity ASTM B594-13 ---> Class AA Single Discontinuity ---> 1,2 mm Multiple Discontinuities <1 inch ---> 0,8 mm Multiple Discontinuities with 0.5 inch length ---> 0,8 mm	See Annex3 - slight revisions are necessary; Testing Class AA is not available due to process flow restrictions (more testing time would be needed) Suggestion for US testing description: Test task Ultrasonic Phased Array testing for inspection for internal defects (defects open to surface cannot reliably detected) Sensitivity FBH 2,0 mm with static calibration Min. FBH 1,2 mm under static conditions These test sensitivities are typical values which can be achieved for a sufficient signal-to-noise ratio (> 10 dB). The material properties (as acoustic properties, grain size, and surface condition) may have an impact on the final sensitivity. Additionally, the bar straightness and the guiding accuracy of the linear bar transport are important factors.	Class A is acceptable The rest according to ASTM B594 With eddy current has to be ensured 100% testing

			<p>Dynamic testing Based on ASTM B594 class A (table 1) for single discontinuities (dynamic test performance to be validated with reference bars with axially drilled holes).</p> <p>Dead zones 2,0 mm in volume</p> <p>Untested ends Ø 40–84: ≤ 20 mm Ø 84–130: ≤ 30 mm</p> <p>This specification is based on well known US suppliers.</p>	
116	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 6	Operation instructions describing the specific performance of the ultrasonic inspection procedure have to be available at the inspection location.	See annex 3: Information will be handed over; Alinvest to place instructions.	Accepted
117	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 7	<p>QUALITY MANAGEMENT</p> <p>Quality management system</p> <p>Round billets as specified will be processed to suspension parts for the automotive industry. Therefore, the quality management system of the supplier has to fulfil the demands of IATF 16949 related to round billets</p>	<p>The responsibility for this matter lies with Alinvest and is not within ■■■'s scope nor acceptable for acceptance testing.</p> <p>We should establish a common understanding of acceptance criteria.</p>	Accepted – will not be part of acceptance testing, but the equipment must not be in contrast with IATF 16949
118	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 8	<p>The delivery of billets has to be carried out separately according to batch identification.</p> <p>A certificate of conformity is issued for each batch.</p> <p>The correlation of the certificate and the corresponding batch has to be ensured; the batch ID on the certification and on the label must be identical. Additionally, a label showing at least the batch ID, the unit ID, the alloy and the diameter is attached to each packed unit.</p>	<p>The task cannot be undertaken by ■■■. It falls under the responsibility of Quality Management at Alinvest.</p>	Accepted – will not be part of acceptance testing, but it is mandatory to have measurement certificate (ultrasonic + eddy current) for every single billet. This certificate must be available for the Customer
119	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 9	Fig. 2 examples of not allowed defects after peeling	Please refer to the previous message. The criteria for assessment is based on passing the inspection, not visual appearance.	Accepted
120	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 10	SAF Packaging instructions	Please define and hand over.	See Annex_3_2_TS
121	Annex_3_1_TS_Guarantee d_parameters_of_billets ; page 10	EN ISO 6506 Metallic materials – Brinell hardness test	Not part of scope	Accepted – will not be part of acceptance testing

122	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 10	EN ISO 6892 Metallic materials – Tensile testing	Not part of scope	Accepted – will not be part of acceptance testing
123	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 10	IATF 16949 Quality management system requirements for automotive production and relevant service parts organisations	Not part of scope	Accepted – will not be part of acceptance testing
124	Annex_3_1_TS_Guaranteed_parameters_of_billets ; page 10	DIN 20125 Testing of metallic materials – Tensile test pieces	Not part of scope	Accepted – will not be part of acceptance testing

As an annex to this Explanation of the Tender Documentation No. 2, the Contracting Authority additionally provides a document entitled Guidelines for handling molten aluminium, which was erroneously referred to as being within document Explanation of the Tender Documentation No. 1 dated 12 June 2024 (Request and Explanation No. 3).

The Contracting Authority hereby changes the deadline for submission of Tenders. The deadline for submission of Tenders is now set at 04 July 2024 until 10:00 a.m.

In _____ Břidličná _____ on _____ 20 June 2024

Annexes:

- Guidelines for handling molten aluminium