

Short description of the subject matter of the contract

“Purchase and installation of the 9-roller vertical straightener at HSM in Dąbrowa Górnicza.”

concerns the project entitled “Reliable and durable in operation, modern railway rails with a length of 120 m, characterized by high mechanical properties, high resistance to cracking and a modified microstructure of the material due to the modernization of the cooling process after rolling”. (project no. POIR.01.01.01-00-0438/17), co-financed from the funds of the European Regional Development Fund and as part of the Smart Growth Operational Program 2014-2020, sub-measure 1.1.1 “Industrial research and development work carried out by enterprises”.

This specification is attached as appendix No. 6 to the request for quotation no
1/0784/2021 of 10.03.2021

Index

1. GENERAL INTRODUCTION	3
2. The data for the designing and developing technical offer.....	4
2.1 TOPs and utilities parameters	4
2.2. Description of the current state.....	4
2.3. Project assumptions	4
2.4. Expected way of operation of new system	5
3. Bidders' scope of work.....	5
3.1. The scope of work and deliveries should include the following elements	5
3.2. Plan of handover and tests.....	7
4. Time of work completion.....	9
5. Guarantee and warranty of delivery and execution quality	9
6. Quality, workmanship, tests and control	11
7. Safety of work and installation executed based on the scope	11
8. Price	11
9. Contact data	12

1. GENERAL INTRODUCTION

ArcelorMittal Poland S.A. has operations in different units in Poland with primary steel production facilities in Krakow and Dąbrowa Górnicza and in Chorzów, Sosnowiec, Zdzieszowice which are responsible for production of different graded products in Poland.

These requirements refer to the project that aim is to design, deliver, assemble and commissioning of the new vertical straightener at HSM in Dąbrowa Górnicza concerning:

- Demoting of old straightener and other related to the project machines
 - Designing of the new vertical straightener and other related to the project machines
 - Project execution (schedule, deliveries, resources)
- Manufacturing and delivery of the new straightener and related to the project machines according to DDP INCOTERMS 2020
 - Installation and assembling of new straightener and related to the project machines
- Commissioning and ramp up
- Training for AMP personnel
- Supervision of the project in quality and quantity aspects and supervision over construction works related to project
- Elaboration of documentation (BE, DE, as-built doc.)

Bidder is requested to provide technical offer in Polish and English.

Visit and survey at the location of the project is required prior to developing the technical offer.

The package of design should be complete in every scope and all the works and necessary materials for the proper performance of the work (according to the contract) must be included by the Bidder in his offer.

The Bidder will check the content of the technical specification and the requirements contained in this document and will take the full responsibility for the level of functioning the installations made in accordance with the technical arrangements, scope. Documentation and equipment provided by Bidder must be in line to the logic of the correctness of calculations made and functionality consistent with good practices engineering and latest technology.

The Bidder / Contractor is required to become familiar with and apply the Investor's Standards, in particular regarding Health and Safety regulations and performance (Investor's standards are available on the website www.arcelormittal.com/poland in the "CONTRACTOR'S ZONE" tab). In addition, the Investor's Standards form is an attachment to the Company's Safety Book and will be forwarded by the Investment Purchase Office to the Investment Contractor. In each case, the Contractor will be obligated to comply with them and apply them in every stages of work.

Contractor is obliged to respect and follow them at all times on a regular basis at all stages of the investment:

- ST 000 H&S Policy
- ST 001 Insulation
- ST 002 CONFINE SPACE
- ST 003 WORK AT HEIGHT
- ST 005 Audits
- ST 006 VEHICLES AND ROAD TRAFFIC
- ST 007 OVERHEAD CRANES AND LIFING EQUIPMENT
- ST 008 Contractor
- ST 009 Alarm
- ST 010 Safety indicators
- ST 011 Incident/Accident investigation
- ST 014 HIRA (ang. Hazard Identification and Risk Assessment)
- ST 015 Golden Rules
- ST 018 Loading protection
- ST 201 H&S specification
- ST 301 Mobile phones

ATTENTION: In the case of different requirements in subsequent standards and / or standards, consistent with those mentioned above, more stringent standards and / or standards should be applied (more restrictive)!

2. The data for the designing and developing technical offer

2.1 TOPs and utilities parameters

TOPs and utilities parameters are provided in the documents attached to the RFQ. If TOPs are not defined at this stage, they will be defined during tender negotiations.

2.2. Description of the current state

At present there is a 7-roller vertical straightener in the rolling line, located between the cooling beds and the horizontal straightener. The current straightener is moveable, and depending on the rolling campaign it can be positioned in offline or working position. When in offline position, the gap is filled in with the rolling tables so the rolling process can be continued straight to the horizontal straightener omitting the vertical straightener.

2.3. Project assumptions

Delivery of the new 9-roller vertical straightener fitted into existing Heavy Section Mill layout, ideally using the same tracks, so the construction work is not required or its minimize. The assumptions of the project are described in detail in the Inquiry and the Technical Specification constituting Appendix No. 7 to the RFQ No. 1/0784/2021

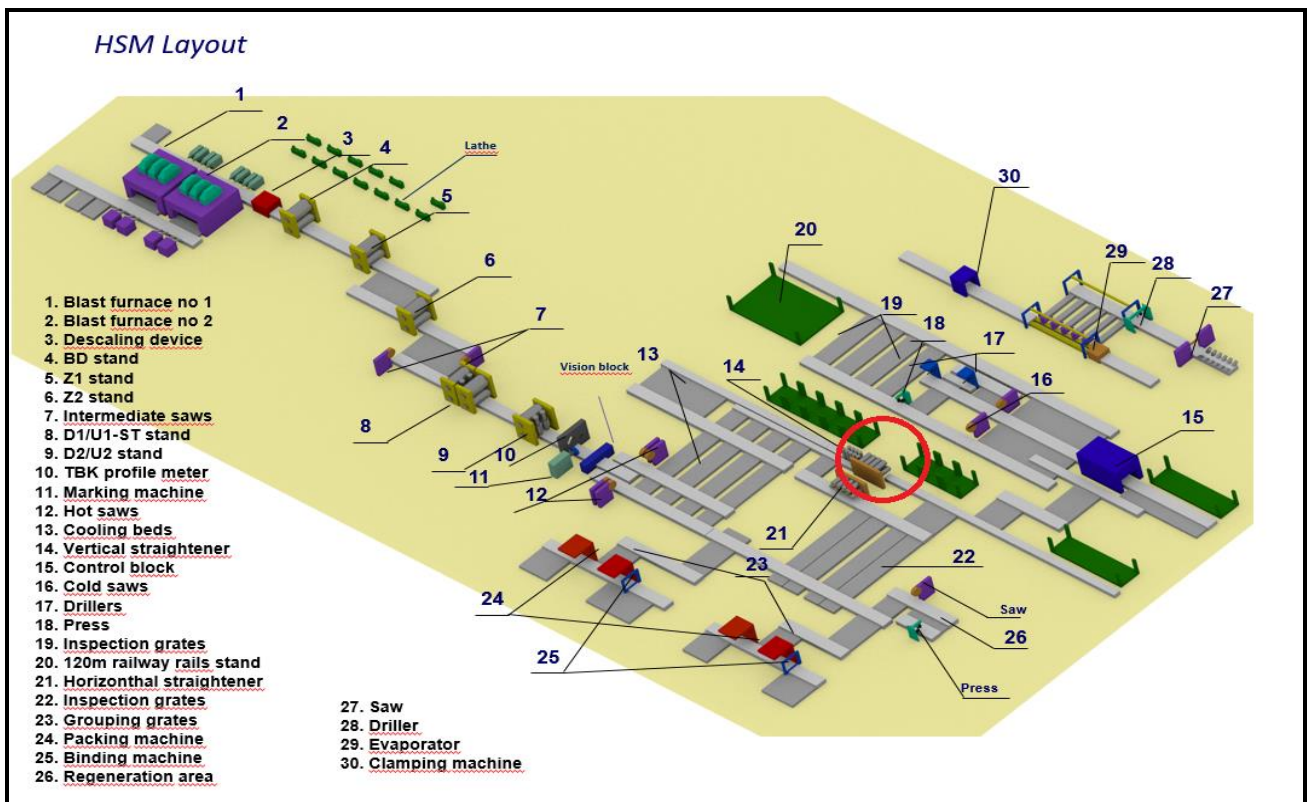


Figure 1:: HSM Layout – area of investment is marked by the red circle

2.4. Expected way of operation of new system

New vertical 9-roller straightener must be fully automated with additional media parameters measurement. Any deviation in input parameters or system failure which don't allow to start straightener or have a negative influence on the production must be well communicated to an operator through the proposed control and visualization system. The control system of the new straightener has to be designed so there is possibility to set up straightener parameters (roller sizes, size and grade of the material etc.) offline for the upcoming campaign – this will enable the production process to be smoother and will reduce the set up time.

3. Bidders' scope of work

The Contractor must ensure H&S supervision throughout the entire project realization period.

It is require that during HSM stoppage reserved to perform works Bidder will be working in 24/7 system – all shifts fully filled. Stoppage time – 30 days. Works which have no impact to production process must be started before the stoppage. The planned date for mill stoppage is April 2023. The exact date of the stoppage will be given by AMP project team 30 days before the planned date – 01.04.2023

3.1. The scope of work and deliveries should include the following elements

1. Performance of current state analysis and safety system and including the outcome of this analysis in the technical offer.
2. Execution of project and technical documentation of the Straightener and other machines in all necessary scopes (technical documentation for review and approval by the ArcelorMittal team). Documentation required for building permit and environmental permit to be submitted in 1,5 month from contract signature.

Approval of the technical documentation by ArcelorMittal doesn't release the Bidder from responsibility of the proper functioning of the system.
3. As-built documentation for the system, installation etc. Delivered documentation must include protocols (e.g. electrical measurements), settings of security system if needed, manuals for devices installed in the system, electrical and network diagrams, construction drawings, new area layout, order numbers and manufacturers of the installed parts, operating instruction for maintenance etc. As-built documentation must be in Polish and must be delivered 30 days after signing the "commissioning" protocol
4. Design BE/DE, assembly and commissioning of the new 9-roller vertical straightener and associated machines:
 - a. Basic engineering for the whole investment
 - b. List of loads together with place of their touchdowns
 - c. Technological project
 - d. Technical specifications of equipment and installations including maintenance
 - e. Routes of pipelines and other networks from equipment or tanks to TOP points - single line diagram
 - f. Description of the technology, working conditions, equipment, installed power, power consumption during operation
 - g. Basic (single-line) power scheme of the main equipment

Completed Basic Engineering documentation must be delivered up to 6 months from contract signature and completed Detailed Engineering documentation must be delivered up to 13 months from contract signature.

5. Performance all required disassembly works necessary for installation of new devices. Disassembly works and construction works will be carried out simultaneously in some areas of the project. Disassembly works will start 60 days from planned mill stoppage (01.04.2023)
6. Performance all assembly and piping works (distribution, technological and installation piping etc)
7. Performance all electrical (including modernization of the switchgear – if necessary) works.
8. Installation on site of the whole system elements including straightener, new roller table, guiding system and manipulator arms.
9. Deliver and install control panel for all delivered machines, this panel will be installed inside 6K1 bridge in the Dąbrowa Górnicza mill and will be incorporated into the existing infrastructure
10. Automation system design with ramp up for all delivered machines.
11. Delivery and installation of all required cables e.g. power supply, ethernet, communication cables. ArcelorMittal will show the place where is a possibility to connect required cables.
12. Basic and auxiliary materials necessary to complete the scope of the project must be provided by the Bidder. Equipment for the project realization must be provided by the Bidder (e.g. driller, chain slings, crane).
13. Delivery and installation of switchgears and MV / LV dry-type transformer
14. All assembly-installation works occurring during design, installation and erection time of the project and related to the project will be a responsibility of the bidder.
15. Providing an additional fence - safety fencing. Installation must prevent access by unauthorized people
16. First fill of the new system together with delivery of the necessary utilities are on the bidder side.
17. Delivery of spare parts list for one year operation – parts critical for the system with long term delivery, consumable parts etc . List of spare parts acc. to appendix No.6 – must be agreed with ArcelorMittal. Net worth should not exceed 600KEuro.
18. Utilization and disposal of generated waste on the side of the Bidder. Utilization should be taken care of according to Polish law.
19. Delivery of a block type algorithm of process control system to ArcelorMittal for verification. At least 2 months before installation works. Algorithm must start from rail entering into the vertical straightener and finishing on rail leaving the horizontal straightener
20. The Bidder will provide a list of exclusions / exclusions in the form of a liability matrix relating to the subject of the contract not constituting the acceptance criteria - IF APPLICABLE. The list of exclusions may not lead to partial implementation of the subject of the order by the Supplier. The purpose of the list of exclusions is to show the Supplier's responsibility for the material performance of the subject of the order. The list of exclusions may not constitute the scope of any supplementary or additional orders at a later stage of the project implementation.

21. The bidder will provide additional equipment for the mechanical part of the project (mechanical support, construction frames for the machines etc.)
22. Bidder must provide training for operators, maintenance and AMP engineers all shifts. After the warranty period, ArcelorMittal will be fully responsible for the service of new devices.
23. Commissioning of the new vertical straightener c/w manipulator arm and guides. The Bidder must provide the team and resources in such a quantity to allow timely putting the new system into operation. The bidder will specify in the offer how long would the commissioning of all delivered machines will take in order to start normal production of the rail and tram rails.. The Bidder shall ensure the presence of an automation system engineer. The automation system engineer will be present during the commissioning works and will be responsible to solve any programming and ramp-up problems.
24. Bidder or bidder's representative (Project Manager) must be present on every technical meeting during project execution period of time or on AMP request. The project manager will supervise the correctness of the execution of works in the field of mechanics, construction, electricity, automation . It will also inform AMP about the progress of the disassembling work and commissioning of the new machines. Communication between AMP and the Bidder's representative will be in Polish or English.

3.2. Plan of handover and tests

1. Delivery of the part of Basic Engineering documentation within 1,5 month from the contract signature (part of Basic Engineering required to apply for building and environmental permit).
2. Approval of the Detail Engineering documentation will be done by ArcelorMittal up to 4 weeks after delivery documentation from the Bidder.
3. Delivery of all equipment and materials acc. to the Purchase Order (min 14 days before assembly on site).
4. Installation of all delivered equipment and material acc. to the Purchase Order.
5. Checking of installed equipment and quality of performed works:
 - a. Supervision over installation and checking quantity of installed equipment specified in the "Technical Specification" and approved the technical offer.
 - b. Supervision over installation and checking quality of performer work specified in the "Technical Specification" and approved the technical offer.
 - c. Signing of the protocol confirming the scope and quality of performed work by the construction company. The protocol will be signed trilaterally by the AMP representative, the vertical straightener provider and the representative of the company performing the construction work. The protocol confirms the correctness of the installation by the **supplier of the vertical straightener technology**, which guarantees correct start-up.
6. "Cold" tests /without material/
 - a. Checking functionality of all installed equipment.
 - b. Checking the correctness of safety system operation – adjustments and control of all protections completed with protocols.
 - c. Functional and voltage tests of electrical systems
 - d. Pressure and leak-proof tests of hydraulic systems and ventilation (if required)

Note: Successful completion of cold tests will be base for signature of so-called "commissioning" protocol and starting hot tests.

7. Hot tests /with material/:

- a. **Operation of the line for 30 days without any failure** in accordance with current production plan.
- b. **The following list of profiles and grades shall be tested during the hot commissioning, and the required straightening results must be obtained. Rails R260 and R350HT (60E1) must be tested during the hot commissioning period**

Profile	Grade
60E1/E2	R350HT
54E1/E4/E5	R350HT
49E1/E5	R350HT
136RE	SCHS AREMA
136RE	R400HT
115RE	SCHS AREMA
P65	R350HT
60E1/E2	R400HT
60E1/E2	R370CrHT
P50	R350HT
MAV 54	R350HT
54E2	R350HT

- c. Hot commissioning will be carried out by ArcelorMittal with bidder supervision. Rails R260 and R350HT profile 60E1 and other profiles and grades of the rails presented in the table above will be tested and required technical parameters must be obtained –the hot commissioning will be finished by signing the Final Acceptance Protocol (FAP). ArcelorMittal reserves the rights to decide which profiles and grades of the rails (mentioned in point b) will be tested during the hot commissioning period.
 - d. Successful completion of the hot tests, delivery of whole required project documentation in Polish, performing of required training for AMP personnel and 30 days of failure free operation of the whole installation will be base for signing of the "FAP" - protocol Final Acceptance Protocol.
 - e. Time for removing the significant failure (stoppage of the production) – up to 48H
 - f. Time for removing the non-significant failure (stoppage of the production) – up to 8H
7. Drawings and documentation
1. List of all elements and parts used for project execution
 2. List of necessary spare parts
 3. Recommendations regarding periodical inspections and maintenance preventive activities, manuals – delivered documentation in Polish.
 4. As-built documentation which will include:
 - Electrical diagram

- Network diagram
- Cable trays
- Mechanical assembly and execution drawings
- Custom made parts – execution drawings
- Safety analyze protocol
- Conformité Européenne - CE declaration for new straightener system
- Maintenance manual and service manual in Polish

Documentation must be supplied in quantities: 3 x hardcopy, 3 x electronic and editable version. Software not protected from reading and editing.

8. Software

Delivery of software which is unprotected form reading and editing.

4. Time of work completion

1. Execution of works specified in this technical specification will take place in April 2023

2. The initial schedule will be attached to the offer, including specific timeframes within which the Bidder shall submit to the Investor / execute technical assumptions for discussions, drawings, diagrams, elements of the system, software, assembly, integration, tests, commissioning etc.

Assumptions to the erection schedule:

a. Installation: April 2023

3. The schedule will be prepared after mutual agreement prior to contract conclusion. The schedule will be guaranteed by the Bidder and will be a part of the commercial provisions indicated in the Commercial Offer.

4. Schedule:

- Submission of the technical documentation necessary to obtain a building permit and environmental decision up to 1.5 months from signing the contract - condition confirmed by signing the protocol on both sides.
- Submission of basic documentation (BE) for full scope of work - up to 6 months from signing the contract - condition confirmed by signing the protocol on both sides.
- Submission of detailed documentation (DE) for full scope of work - up to 13 months from signing the contract - condition confirmed by signing the protocol on both sides.
- Completion of complete deliveries up to 2 weeks before the start of the shutdown (planned period from 01/04/2023 to 30/04/2023) - completion of deliveries will be confirmed by signing the protocol on both sides.
 - Delivery of the block type algorithm of process control system to ArcelorMittal for verification at least 2 before installation works. Algorithm must start from rail entering into the vertical straightener and finishing on rail leaving the horizontal straightener
 - Disassembly of old machines will start 60 days before the start of the mill stoppage period
- 30 days for programming and commissioning, which will result in a positive cold test and hot test and the signing of the Commissioning protocol, which will allow the start of the new system - (Completion date during heavy section mill stoppage from 01/04/2023 to 30/04/2023)
- After completion of the cold tests and signing the Commissioning protocol, 4 months of hot tests will begin, during which profiles R260 and R350HT 60E1 and other various profiles and grades of rails mentioned in point 3.2.7 will be tested and the required parameters (described in section 2.5) must be achieved - the completion of the hot tests will be confirmed by a mutually signed Final Acceptance Protocol. Also failure free operation of the whole installed system during the period of 30 days must be obtained in order to sign the FAP.

The positive completion of the hot tests and the signing of the Final Acceptance Protocol must take place within 20 months from the date of signing the contract, not later than 30/09/2023.

5. Guarantee and warranty of delivery and execution quality

1. The Bidder shall guarantee high quality of works and of all specific and collective elements of the system. The bidder shall also guarantee high quality of systems/installations executed in accordance with his specification/design.
2. Required guarantee period – 20 months from signature of FAP.
3. The required response time of failure notification service: up to 24h; 24/7
4. Time given to remove a significant failure* – up to 48h, time counted from the arrival to the plant
**Significant failure- failure with a negative impact to the quality of the final product (out of the process quality requirements.) or which stops or limits the production by more than 20%*
5. Time to remove non-significant failure* up to 8h, time counted from the arrival to the plant
**Non-significant failure – failure which don't have a negative impact to the quality of the final product and does not stop or limit the production be more than 20%*
6. Requires availability of maintenance service in Polish language. Possibility to report the failure by mail.
7. The Bidder should attach to the technical offer Responsibility Matrix for maintenance team for guarantee period.
8. The Bidder should attach to the technical offer failure notification procedure required service intervention.
9. The operational warranty shall include all elements of the system, including IT infrastructure, dedicated devices, software, electrical installations, etc. The fine for noncompliance with the warranty terms will be agreed upon in the commercial part during negotiations
10. The entire system compliant with the offer scope will be free of defects resulting from noncompliance with standards, good engineering practices, or from negligence during documentation execution. The bidder will be responsible for carrying out repairs and/or replacement of the faulty elements without additional charges.

6. Quality, workmanship, tests and control

1. Chosen and specified materials and devices must be of high quality, properly chosen for its purpose and compliant with practices and standards included in the requirement of this specification. All specified components used in later stages of works are subject to later inspections (checking) unless this obligation was withdrawn pursuant to the written statement submitted by the purchaser.
2. The purchaser reserves the right to re-inspect (by himself or by authorized parties) delivered data and documents. In the event of claims in reference to studies, documents or works – implementation of changes or improvements in works in accordance with presented remarks may be demanded from the Bidder

7. Safety of work and installation executed based on the scope

All delivered data (in view of studies, drawings and specifications, lists and technologies of workmanship) are subject to risk analysis of the installation. The analysis will be accessible to the staff of the purchaser or to the persons authorized by the purchaser to safely carry out works foreseen in the detailed engineering, to have access to the equipment in case of carried out maintenance works or during regular works. The offer should include all safety elements normally used in such cases. Also HAZOP study should be included in the offer.

8. Price

Price should be given for whole scope of work as detailed as possible. All elements should be divided into groups and described with a short identification. Price part of the offer should be executed based on the instruction delivered with RFQ or according to guidelines from Purchase Department.

9. Contact data

Project Manager:

1. Maciej Wrona +48 664 154 103 Maciej.Wrona@arcelormittal.com

Detailed technical consultation will be provided by:

2. Piotr Szablicki +48 664086562 Piotr.szablicki@arcelormittal.com
 3. Tomasz Dzierżawczyk +48 608 029 006 Tomasz.Dzierzawczyk@arcelormittal.com
 4. Piotr Nabielski +48 608 695 474 Piotr.Nabielski@arcelormittal.com
 5. Sylwester Żak +48 32 7768775 Sylwester.Zak@arcelormittal.com

Approved by	Position	Date	Signature
Maciej Wrona	Project Manager	25.01.2021	
Piotr Szablicki	Support Manager	25.01.2021	
Tomasz Dzierżawczyk	HSM Manager	25.01.2021	
Piotr Nabielski	HSM Manager	25.01.2021	
Sylwester Żak	Support Manager	25.01.2021	