



## Doode Sanati Pars Company Carbon Black Hard Reactor Revamping



**Class:** FI

**Doc. Number:** DSP-FK-PE-ME-MRS-001

**Rev:** 00

**Date:** Dec. 2020

**Document Title:** Material Requisition for Hard Reactor

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# MATERIAL REQUISITION FOR CARBON BLACK HARD REACTOR

00	28-Dec-2020	IFI	Z.V.	F.SH.	I.S.
<b>Rev.</b>	<b>Date</b>	<b>Description</b>	<b>Prepared By</b>	<b>Checked By</b>	<b>Approved By</b>

## Doode Sanati Pars Company

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## 1. Purpose

### 1.1 Scope

This document provides the minimum requirements for procurement of a Jumbo reactor for Hard carbon black, connections and accessories used in “Pars Carbon Black Plant” project.

### 1.2 Project description

The existing plant of Pars Carbon Black consist of four Soft reactors and also four Hard reactors in the production unit. Due to the fact that the old technology of this plant and lower the performance of the production unit, it is decided to renovate the technology and also revamping the capacity of hard carbon black unit to 20000 metric ton per year. Another necessary consideration is capability of production of N-200 series carbon blacks after revamping. According to the contract, basic design is carried out by TARH O FARAYAND KIMIA Co.

<b>Project:</b>	Basic Design of Pars Carbon Black Hard Reactor Revamping
<b>Client:</b>	Pars Carbon Black Co. (DSP).
<b>Consultant:</b>	Tarh o Farayand Kimia Co (TOFKA).
<b>Vendor/Supplier:</b>	Refers to firm or person who will supply and/or fabricate the equipment or material.
<b>Will:</b>	Is normally used in connection with the action by the “Company” rather than by a contractor, supplier or vendor.
<b>May:</b>	Is used where a provision is completely discretionary.
<b>Should:</b>	Is used where a provision is advisory only.
<b>Shall:</b>	Is used where a provision is mandatory.

### 1.3 Unit and Language


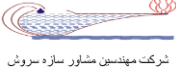



International system of units (SI) shall be use in accordance with NIOEC-SP-00-10, unless otherwise specified.

### 1.4 Site Location

SAVEH City, KAVEH Industrial Estate, Pars Carbon Black Co.

## 2. Applicable Code, Standard, Specification

- 2.1 As a minimum, all equipment supplied as part of this MR shall be designed, manufactured and delivered in accordance with the relevant sections of the National/International Codes, Standards and Regulations listed in attached Specifications/ Documents. Unless otherwise

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stated on the equipment data sheets all codes and standards mentioned in the relevant technical specifications shall be applied.

2.2 The following specifications/ documents are attached to this material requisition and shall be used in conjunction with the MR:

DSP-FK-BE-PR-DBS-301	Basis of Design
DSP-FK-BE-ME-DCR-501	Mechanical Design Criteria
DSP-FK-BE-ME-SPC-504	Specification for Reactor
DSP-FK-BE-PR -DSH-311	Process Equipment Data Sheet For Reactor
DSP-FK-BE-ME-DSH-521	Mechanical Equipment Data Sheet For Reactor
DSP-FK-BE-ME -PRC-511	Welding Procedure Specification
DSP-FK-BE-ME-PRC-512	Packing, Marking and Shipping Procedure
DSP-FK-BE-ME-PRC-514	Shop/ Field Inspection Procedure
DSP-FK-BE-ME-PHL-515	Spare Part Philosophy
DSP-FK-BE-ME-PRC-516	Storage Procedure
DSP-FK-BE-ME-PRC-517	Painting Procedure
DSP-FK-BE-ME-PRC-518	Hydro-Test, Pneumatic Test Procedure
DSP-FK-BE-ME-PRC-519	PWHT Procedure
DSP-FK-BE-ME-PRC-520	NDT Procedure
DSP-FK-BE-IN-SPC-604	Specification for I&C of Package Unit

2.3 In the event of a conflict of technical requirements within the requisition documents, the order of precedence shall be:

- a) Purchase Order
- b) Agreed Deviation / Alternative List
- c) Material Requisition
- d) Equipment Data Sheet
- e) Equipment Technical Specification
- f) Referenced Project Specifications
- g) Referenced Design Codes and Standards

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### 3. Deviations / Clarifications

Vendor shall supply all the materials in accordance with the documentation listed on section 2.2. Vendor shall define all deviations, alternatives and clarifications to the attached documents and referenced standards with a contractual statement that "all specifications are complied with, other deviations / alternatives stated in the quotation". Where no deviations/ alternatives, exceptions with necessary clarifications are stated by the Vendor in his proposal, it will be considered that the proposal is prepared with full compliance with the purchaser's requirements and applicable standards and specifications.

Unless it is expressly stated in Vendor's proposal that some or other of the conditions specified therein differs from the conditions stipulated in Purchase's requirements, Purchaser shall assume that all of the conditions have been fully complied with Vendor.

However, if Vendor considers any exceptions, deviations and/or alternatives regarding Purchaser's requirements, Vendor shall clearly define and list them in his proposal under separate section entitled as "Deviation List".

All agreed deviations/waivers from this document and the referenced standards, specifications and data sheets shall be listed and announced. If no agreed deviation/waiver exists, the Vendor shall be considered to be in full compliance with this document and its referenced Standards, Specifications and data sheets. Consultant/Purchaser will insist on strict adherence to the document and the referenced Standards, Specifications and data sheets with exception to the agreed deviations/waivers.

#### 3.1 Clarification



The Vendor shall clarify any vague point throughout the requisition with the Purchaser before finalizing his proposal.

#### 3.2 Changes

- **Change Order**

The Purchaser reserves the right, from time to time, to make changes in design, quantity and other technical requirements throughout the Project duration.

- **Claims**

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Any claim including those in respect of change order as referred to in the previous paragraph must be submitted to Purchaser in writing with reasons in any event not later than ten (10) working days after the Vendor received change order request from the Purchaser (in case of the previous paragraph) or finds or it would be have found (in case of other claims than paragraph above). After elapse of such days Vendor right for claim will be forfeited. In no event shall Vendor have claim right to this purchase order after the ex-work date of the equipment, except for those submitted to Purchaser before such date.

- **No Change**

Any change arising from the following, but not limited to shall not create any variation order:

- a. Compliance with safety or operability requirements
- b. Error or omission on the part of the Vendor

- **Verification**

The Vendor shall verify, during proposal stage, any information and documentation provided by the Purchaser to be used for the Vendor's services. Should any information or documentation be either insufficient or inaccurate, the Vendor shall promptly inform the PURCHASER. Any change arisen from the failure in verification by the Vendor shall not constitute a variation order in the Vendor's scope of work nor claim.



## 4. Scope of Supply

Vendor shall be responsible for the supply of materials, inspection and tests, guarantee, painting, packing and transportation of Hard Black Reactor equipment.

Client/Purchaser acceptance of Vendor's drawings or data with or without comments does not relieve the Vendor of the responsibility of complying with all terms, conditions, codes, standards, requirements of this requisition and project specifications.

Purchaser reserves the right to review and comment on drawings or data that have previously been accepted with or without comments.



### 4.1. Technical Documentations:

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All documents and drawings shall be in English with System of Units specified in the project specifications. A recommended list of documents are provided in the annex A of this MR. submitted documents by Vendor shall include:

- VPIS (Vendor Print Index Schedule)
- Material Selection Report/Diagram
- Calculation Sheets
  - thermal calculation
  - mechanical calculation
- General Arrangement Drawing
- Detail drawings
  - mechanical detail drawings,
  - refractory shop drawing,
  - nozzles,
  - supports (Anchor bolt size, orientation, arrangement, etc.)
  - Expansion joints.
- Datasheets:
  - Mechanical Datasheet
  - Expansion joint datasheet
  - Instrument datasheet
- Refractory curing procedure
- Allowable nozzles loads
- All documents which are required for transportation and storage such as procedures, instructions, shipping drawing, etc.
- Foundations loads
- Any special requirements for foundation according to designed supports shall be specified by Vendor.
- WPS and PQR (for shop and site assembled parts)
- QA/QC procedures;
- PWHT procedures (if required)



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- All documents which are related to tests and inspections such as procedures, test reports, etc.
- All documents and certificates for Iranian Government approval as required;
- The timely phased submission of Supplier document listed in (a complete list shall be prepared and attached) is essential;
- Failure to comply with this requirement may result in engineering delays or shipment/customs problems, resulting in delays to the project schedule. Meeting deliverable dates for Supplier data is critical to project success and therefore shall not be negotiable.

Purchaser's approval does not relieve Vendor, in any way, from his obligation to fulfill the requirements of the purchase order documents.

#### 4.1.1 Checking of Vendors Documents

Checking of Vendor documents shall be in accordance with "Vendor Data Requirements".

The Vendor shall always comply with provisions entered by the Purchaser on fabrication drawings returned to him. The Purchaser may give comments and/or approval of document also by telex or letter, these being legally binding.



When updated version of Purchaser drawing is received, the Vendor shall, within 15 days, forward to the Purchaser, copies of his updated fabrication drawing.

Unless specified otherwise in the order, the Vendor shall send to the Purchaser a signed and stamped copy of all his final drawings on special transparent paper at least 3 weeks before the delivery of the equipment.

#### 4.2. Hard Reactor

The Vendor's scope of supply shall include but not be limited to equipment, materials specified in the following:



- Shell, body flanges,
- Refractory bricks and mass,
- Rolling/ sliding saddles,

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- Nozzles, gaskets and flanges,
- Manholes and davit,
- Pipes and sleeves ;
- Oil spray system;
- Gas injection system;
- Burner and automatic ignition system;
- Sight glass with suitable cooling system;
- Water quench spray system;
- Valves, fittings and couplings;
- Lifting lug on each segment;
- Surface preparation and painting;
- Flange connections to air preheater;
- Miscilinous Accessories according to section 4.4.

#### 4.3. Miscellaneous:

- Lifting lugs; lifting beams and slings for transportation, erection and installation
- Earthing Boss
- Junction boxes (if required)
- Name plates
- All local electrical and instrumentation designed, calibrated, tested, labeled, supported, wired and connected up to junction box within vessel limit,
- Other Instrumentation for controls according to P&IDs equipment requirements, and wiring within Base plates Including Junction Box (if required)
- Equipment and instrument tagging, if applicable
- Piping, valves & fittings with its support for sealing & flushing, lubrication (if applicable) and other utility services within the confines of vessel.
- All required material, tools and instrument for preservation.
- All other materials to meet requirements of specifications, codes and standards
- Special tools (If any)
- Preliminary Drawing of stair and platform around reactor (if required).

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Any other items not listed above which are necessary for the satisfactory design and operation of the unit, shall be furnished by Vendor.

#### 4.4. Spare Part

- Spare Parts for Installation, Pre-Commissioning, Commissioning and Start-Up
- Spare Parts for Two Years of Operation

### 5. Selection of 'Bought-out' Items and the Use of Sub-Suppliers

Sub-Suppliers list shall be in accordance with the Client/Purchaser approved Vendor's list. Details of proposed Sub-Suppliers of any items which are not part of Supplier own manufacture, and any intent to use Sub-Suppliers to partly or wholly manufacture any part of the equipment or its ancillaries shall be disclosed to the Client/Purchaser in the Supplier tender. This requirement does not apply to standard fasteners and bulk items such as pipe, pipe fittings instrument fittings.

In addition, the Client/Purchaser may nominate Sub-Suppliers from whom certain items shall be obtained and the Supplier shall advise the implications of any such nominations within his technical and commercial tender.



After the placement of the Purchase order, the Supplier shall not substitute any of the nominated Sub-Suppliers without the Client's/Purchaser's prior approval. In all cases it is the responsibility of the Supplier to select, monitor and control its Sub-Supplier in accordance with the agreed project quality system requirements.

The Supplier remains fully responsible for all equipment scope of supply provided by his Sub-Suppliers and shall ensure that all applicable requirements specified in the Purchase order, including those within this document, are adhered to by each Sub-Supplier.

The Client/Purchaser reserves the right to review the Supplier major sub-order documents prior to their issue to verify compliance with the project requirements. This may include Sub-Supplier inspection and test plans where considered necessary by Client/Purchaser.

### 6. Scope of Work

Design, provision of material, fabrication, shop test & inspection, painting, marking, documentation, performance and mechanical guarantee, site acceptance test and packing of one common skids in

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accordance with data sheets as well as provision of spare parts for commissioning, startup and 2 years operation.

### 5.1. Engineering Activity

- Engineering and documentation; documentation and certification per Appendix A;
- Preliminary structural drawing regarding to the stairs and platforms around reactor shall be delivered (if required);
- Manufacturing and assembling;
- Mounting of main equipment on the saddle/skirt (support) at shop;
- Performance Guarantee;
- Mechanical Guarantee;
- Sub-Vendor Coordination ;
- All documents and certificates for Iranian government approval as required;
- Preparing of Final Book.

### 5.2. Fabrication

- Material Supply: Bulk material, raw material, consumables, internal removable parts, ...
- Weldings according to approved Welding Procedure Specification,
- Wiring and Tubing to Junction Box (if any)
- Painting work at shop, according to DSP-TF-BE-ME-PRC-517
- Shop/ Site inspections according to approved ITP
- Test Equipment (If any)
  - All NDEs which are required by Codes and Standards
  - All NDEs which are required by specifications of this project.
  - Material certificate for all supplied items
  - All other inspections and test which are required according to Vendor's experiences due to his responsibility and guarantee.
  - NDT shall be according to DSP-TF-BE-ME-PRC-520
- Protection and Packing (export packing, rust prevention)
  - Export Packing

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- Rust Prevention for Long Term (18 month)
- Seaworthy Export Marking / Packing
- Packing and marking shall be according to DSP-TF-BE-ME-PRC-512
- Supervision for Commissioning and Start up (Per diem - As an option)
- Transportation DDP (Iran)

### 5.3. Site Activities

- Refractory installation;
- Supervision on refractory curing;
- Supervision on Pre-commissioning and Commissioning of equipment;
- Training of the client's personnel (installation, maintenance, inspection, commissioning): 40 hours for 5 persons;
- Supervision for assembling, installation, and configuration, calibration, and testing at the site (SAT);
- After sale service

## 7. Quotation Specification and Detail

All quotations must be valid for at least 30 days after the date issued.

All quotation, drawings, correspondences and documentations shall be in English Language.



Requested copies of quotation shall be as follows:

- a) Technical
- b) Commercial with price

The quotations a & b shall be submitted in two separate sealed envelopes.

The Vendor's quotation must include the following:

- Inquiry No. & Quotation No.
- Promised delivery date
- Country of Origin
- Quality plan
- Quality Control System
- Internal Test Procedure

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- Preliminary details time schedule of manufacturing, testing and delivery and place of manufacture
- Dimensional drawings
- Completed Purchaser's data sheet as requested
- Terms of Payments
- Statement of all taxes, including export tax
- Complete description of material supported by catalogues brochures, certificates, etc.
- Shipping weight and volume with special attention to heavy and oversized packing
- Vendor shall provide prices for materials based upon unit rates or minimum supplied quantity. Minimum quantities shall be clearly defined with Vendor's quotation.

Prices, where applicable, split into:

- Design/Engineering
- Equipment supply EXW (EX work) loaded
- Inland freight up to FOB delivery
- Packaging
- Commissioning & start-up Spare Part List
- 2 Years Spare Part List

### 7.1. Important Notes:

- The time required for the manufacturer to submit certified drawings and information after award of order and the time required to achieve shipment are both critical and each will receive careful consideration.
- Maximum uniformity and interchangeability are desired. However, differences in price and adjustments to shipment time to achieve uniformity and interchangeability will be considered separately during evaluation of the manufacturer's proposal.
- Compliance with the quotation closing date shown is mandatory for the quotation to be considered.
- Quotations will not be considered unless completed data sheets are forwarded with the quotation.

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- Failure to provide adequate preliminary drawings and data may cause a proposal to be declared unresponsive.
- After commitments, failure to provide timely and also failure to provide quality certified data and drawings may adversely affect payments and future invitations to tender.

## 8. Quality Management system

The Supplier shall ensure that all stages of the Work are controlled in accordance with a Quality System that complies with all applicable elements of ISO 9001:2000 series or local equivalent with the additional requirements specified herein.

Should the Supplier be unable to comply with the above requirements, or with any other requirement specified herein, it shall advise Client/Purchaser in its tender and/or at any later date and shall state its alternative proposal for assuring the quality of the equipment scope of supply.

Client/Purchaser reserves the right to evaluate Supplier's and Sub-Suppliers' Quality Management system documentation to determine if the system meets the project requirements.



Client/Purchaser has the right to carry out appraisals and/or quality audits of the Supplier and their Sub-Supplier Quality Management systems at any time following placement of the Purchase order. The purpose of this will be to verify compliance with and maintenance of the quality system in accordance with the Purchase order requirements.

### 8.1 Inspection And Quality Assurance Requirements

The inspection and test requirements shall be performed in accordance with the relevant document attached in this Material Requisition.

The Supplier shall submit a typical "Inspection and Test Plan" (ITP/QCP) document with their tender showing the details, timing and acceptance criteria of inspection and shop tests to the Client/Purchaser for approval.

The detailed Inspection and Testing Plan must be submitted with the bid. This document shall describe all quality surveillance activities to be undertaken by the Vendor during the course of the works, and as such should clearly quantify the extent of the inspection and testing activities proposed by the Vendor.

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The Inspection and Test Plan summarizes the minimum requirements of the inspection and test activities (review, witness, hold, approve, etc.) for the Client/Purchaser, Contractor, Supplier, Sub-Supplier and/or Third Party Inspection Agency.

The Client/Purchaser and/or third party inspection agency reserve the right to witness or audit the Supplier's quality control at the Supplier's facilities when necessary.

At each witness inspection, the Supplier shall submit the inspection and test record/certificate for both witnessed and non-witnessed at his visit to the Client/Purchaser and/or third party inspection agency.

Test equipment such as test gauges shall be calibrated at intervals not exceeding six months and the results shall be recorded.

When the witnessed inspection and test by the Client/Purchaser are required, the Supplier shall note the following:

- (a) The Supplier shall provide all test equipment and facilities required for the witness inspection and test at his cost.
- (b) The Supplier shall furnish the suitable number of assistants to execute the inspection and test at his cost.

The Supplier shall submit the final "Test Report" confirming that the equipment/material is inspected and tested in accordance with the applicable documents in the relevant specifications.



The witnessed inspection and tests do not relieve the Supplier of his responsibility. Shop witness shall be carried out in accordance with the documents approved by Client/Purchaser.

Any witness inspection and tests carried out without approved documentation shall be invalid. "Manufacturing Record Book" (MRB) for equipment shall be prepared in accordance with applicable specifications and shall be completed at the final stage of inspection/test for Client/Purchaser Inspector review prior to shipment of all items of equipment.

Verified MRB by Client's/Purchaser's inspector is the last condition for him to issue Inspection Release Certificate to the Supplier.

The Client/Purchaser may appoint representatives or third parties to act as its representative to witness inspection and testing during manufacturing and/or prior to dispatch. Access to the workshops of the Supplier or Sub-Supplier shall be provided to the Client's/Purchaser's representative for the purpose of such inspection, testing and ascertaining the progress of the manufacturing. The Supplier's and Sub-Supplier's manufacturing methods and practices shall



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also be subject to inspection by the Client/Purchaser or its representative and such Supplier or Sub-Supplier shall, upon request, submit relevant data and documents for inspection.

All witness points shall be notified at latest one (1) month prior to inspection.

## 8.2 Inspection and Test

The detailed Inspection and Testing Plan must be submitted with the bid. This document shall describe all quality surveillance activities to be undertaken by the Vendor during the course of the works, and as such should clearly quantify the extent of the inspection and testing activities proposed by the Vendor.

The ITP shall also include a schedule of testing and inspection activities, procedures to be adopted, acceptance criteria, responsibilities of the parties and designated “hold points”. These details are to allow the Purchaser to cost and schedule any additional surveillance they may consider necessary, above the level proposed by the Vendor.

Inspection and tests shall be performed by Vendor in accordance with ITP and requirements specified in this Requisition and/or any Engineering Specifications attached.

The Purchaser & Inspector reserve the right to inspect and independently test all of the material in Vendor’s work.



The Supplier shall provide a testing program, which shall reflect the specific requirements for the equipment/material specified.

The Supplier shall give Purchaser, or his designated agents a minimum of 15 working days notice prior to commencing any major surface preparation and painting, any witnessed shop testing, or pre-delivery function tests.

The Supplier shall make a preliminary test run to ensure all parameters of the Instrument are in acceptable range to the arrival of the Purchaser’s representative and/or nominated agent.

It is found necessary to dismantle any equipment/material during a test, because of malfunction, the test may be invalidated, and a further test shall be required after the repair of the fault.

Acceptance of shop tests shall not constitute a waiver of requirements to meet the field tests under specified operation conditions, nor shall inspection relieve the Supplier of his responsibilities in any way whatsoever.

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The Supplier shall furnish at his expense all consumable required during the testing of the equipment/material and systems. Rectifying of defects revealed by such tests shall be at the Suppliers expense.

Inspection visits shall be performed in Vendor's shops, as well as in their sub-vendor shops, at specific stages of equipment/material fabrication, assembly, testing, painting and packing (Where applicable). Such specific inspection stages are to be determined for each category of equipment/material in accordance with the finalized/approved inspection and test plan which identifies all inspection, NDT witnessing, and witness testing points applicable to all phases of fabrication, assembly and testing.

### 8.3 Factory Acceptance Test (FAT)

Since units are integrated at site, performance test would not be available at shop. Equipment shall be inspected and tested from following aspects:

#### A. Visual inspection:

All material shall be brand new without any physical damages

Any defects shall be reported in inspection notice.

#### B. Dimensional Inspection

Shell ID and OD and segment length shall be inspected to match details drawing.

Thickness shall be measured according to drawing

All details presented in approved detailed drawings shall be checked and reported.

Minimum film thickness for paint shall be according to the approved paint procedure.

#### C. Certificate Review



Shell raw certificates.

Refractory raw material certificate

### 8.4 Particular Requirements

All witness points shall be notified at latest one (1) month prior to inspection.

Shop drawings shall be submitted to Purchaser four (4) weeks prior to fabrication for approval.

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Documents/drawings submission schedule shall be submitted for approval. All relevant fabrication shop drawings shall be submitted to Purchaser for approval. Fabrication shall not commence before receiving Purchaser approval on documents.

Site supervision for safe handling and installations shall be performed by Vendor upon requested by Purchaser according to the separately agreed rate.

## 8.5 Coordination Meeting

After the order is awarded, Vendor shall, upon receipt of PURCHASER's notice, send a sufficient number of qualified personnel at his cost to PURCHASER's office to hold the coordination meeting(s) including Kick-off meeting (KOM), Pre-Inspection Meeting (PIM) and etc. according to the following schedule:

- The First within 1 Week(s) after the order, for 1 day(s)
- The Second within 1 Month(s) after the order, for 1 day(s)
- The Third within 2 Month(s) after the order, for 1 day(s)

## 9. Storage And Shipping

Adoption of suitable packing methods and materials is at the sole discretion of the Vendor, and should any loss, damage and/or deterioration be caused due to improper packing, the consequences shall be the responsibility of the Vendor.

All commodities shall be stamped or marked the following information at both side of package in black or other permanent color in English.

### ISLAMIC REPUBLIC OF IRAN.

NAME OF MATERIAL:

PROJECT NAME.

CONTRACT NO.:

DATE:

DESTINATION:



PACKAGE NO.:

NET WEIGHT:

TOTAL WEIGHT:

DIMENSIONS(Metric):

TOTAL QTY.:

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Preparation for shipment shall be in accordance with manufacturer's standards and to be approved by purchaser. The manufacturer shall be solely responsible for the adequacy of the "Preparation for shipment" provisions employed with respect to materials and application and to provide equipment to their destination in "ex-works" condition when handled by commercial carriers.

Goods must be carefully protected & packed to provide adequate protection during transit to destination & shall be in accordance with any special provision contained in the specification or purchase order. Special attention must be given for protection against corrosion during transit.

The packing of the materials shall be carried out in order to comply with transport conditions.

Each item shall be identified with its item number. Tags shall be corrosion resistant metal and impression stamped. "Item No.". Tags shall be attached to each component with wire. This tag is in addition to the equipment nameplate.

One complete set of the installation, operation and maintenance instructions in addition to the number called for in the Vendor drawing and data commitment form shall be packed in the boxes or crates with the equipment.

The manufacturer shall be solely responsible for adequacy of the preparation for shipment provisions employed in respect of material & application, to provide materials to their destination in ex-works condition by commercial carrier systems.



The packing preparation shall be suitable for at least 2 years of outdoor storage from the time of shipment.

The shipping container (including any necessary blocking, bracing, cushioning, or waterproofing) shall comply with the regulations of the carrier used & shall provide safe delivery to the destination at the lowest tariff cost. It shall be capable of multiple hauling & storage under favorable conditions for a minimum of two years.

Since the reactor consist of several compartments, each compartment shall be prepared for shipment individually.

The refractory brick shall be packed separatly for installation on site.

Refractory materials shall be stored with protection from extreme weather conditions and exposure to sun.

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## 10. Guarantee

Vendor shall be primarily responsible toward the Contractor for all aspect of the work performed by him and his Sub-Vendors covered by assigned order; this shall include, but not limited to, responsibility for management and design development, quality, costs and scheduled performance.

Vendor shall carry out any work not specified in the assigned order, which is necessary for the completion of the work; this shall include all integrating and interfacing of facilities and service provided under the assigned contract.

Client/Purchaser may audit the Vendor's performance, during all stage of the project, to ensure compliance with the requirements of the order.

Vendor shall be responsible for the design works, supply of materials, guarantee (Vendor shall guarantee the engineering, materials and workmanship of the package for a period of 18 months after successful start-up or 24 months after delivery (which is later), and Spare parts guarantee for minimum 10 years, packing, and transportation to the extent of the vendor's supply.

Under this guarantee, all materials, parts, and assemblies, which are related to Vendor's supply, found to be defective during the guarantee period shall be replaced by Vendor. Vendor shall also, if required, supply the services of an experienced engineer to supervise necessary repairs and replacements.



## 11. Health, Safety And Environment (HSE) At Supplier's Works

The Supplier is required to meet applicable recognized HSE, Iranian conformity standards or other internationally recognized technical and HSE conformity standards, approved by Client/Purchaser.

The Supplier shall carry out assessments of the risks, in the processes carried on materials used, or any risk arising from their work activities, not only to the health and safety and welfare of their own employees and the general public, but also the effects that their process/materials or work activities may have upon those employees/contractors of Client/Purchaser.

In addition, the Supplier shall identify the presence in the equipment scope of supply or services supplied of any chemical or material that is potentially harmful to the health or safety of people or the environment.

For each of these substances, the Supplier shall give the Client/Purchaser a Material Safety Data Sheet (MSDS). The Material Safety Data Sheet shall be prepared in accordance with ISO 11014-1:

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1994 and state the main physical and chemical properties of the substance, its harmful nature, and precautions necessary to ensure its safe use and eventual disposal.

The following substances shall not be used:



- Asbestos
- Cadmium plating of bolts or components.
- Halon for firefighting.
- Chlorofluorocarbon (CFC) chemicals unless no alternative chemical is available.

Client/Purchaser reserves the right to assess Supplier, by means of periodic inspections to verify full compliance with the above. In addition, final tests of equipment originating from outside Iran may be required to be witnessed by Iranian Authorities, Client/Purchaser and or their nominated representative.



Client/Purchaser reserves the right to assess Supplier, by means of periodic inspections to verify full compliance with the above. In addition, final tests of equipment originating from outside Iran may be required to be witnessed by Iranian Authorities, Client/Purchaser and or their nominated representative.

Supplier is required as a condition of the tender to submit the following and maintain for the duration of any contract subsequently awarded:

- An HSE program
- Accident statistics for the past five years, including any fatalities, lost time injuries, OSHA recordable injuries and environmental accidents
- Details of Prohibition Notices, Safety Alerts or any criminal proceedings against Supplier by any government agency relating to any accident at work or damage adverse impact to the environment, served in the last five years and including any pending time.
- Details of any accidents resulting in damage to the environment including pollution of the air, water courses or land; and any remedial actions taken.

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## APPENDIX

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## Appendix A: Vendor Data Requirement Form

ITEM No.	DESCRIPTION	Proposal Stage For Acceptance	REVIEW STAGE		Final As-Built Documents (Certified)	
			For Approval	Subsequent Resubmissions		Document Volume MDR/IOM
<b>1.</b>	<b>General</b>					
<b>1.1.</b>	Submission Schedule of Vendor Document & Drawing		X	X	X	MDR
<b>1.2.</b>	Sub-Vendor List/Country of Origin	X				
<b>1.3.</b>	Sub-Vendors' Document List		X	X	X	MDR
<b>1.4.</b>	Procurement Status of Sub Ordered Items with Copy of Sub Orders (Un-Priced)		X			
<b>1.5.</b>	Vendor Catalogue & Experience List	X				
<b>1.6.</b>	Deviation & Clarification List	X				
<b>1.7.</b>	Manufacturing & Test Schedule		X	X		
<b>1.8.</b>	Manufacturing Procedure		X	X	X	MDR
<b>1.9.</b>	Monthly (Or Bi-Weekly for Later Stage Progress Report (By E-Mail)		X			
<b>1.10.</b>	Spare Part List for Erection Pre-Commissioning & Commission& Start Up	X	X	X	X	MDR
<b>1.11.</b>	Spare Parts List For 2 Years Operation	X	X	X	X	MDR
<b>1.12.</b>	Installation Procedure		X	X	X	MDR
<b>1.13.</b>	Item List Including Code, Material Description, Size, Quantity & Etc.	X	X	X		
<b>2.</b>	<b>ENGINEERING</b>					
<b>2.1.</b>	General Assembly Drawing of each equipment and accessories, including: <ul style="list-style-type: none"> <li>The size, rating and location of all customer connections</li> <li>Overall loading and handling weights</li> <li>Overall dimensions, and maintenance and dismantling clearances</li> <li>Nozzles and manhole and instrument connections</li> </ul>		X	X	X	MDR
	<ul style="list-style-type: none"> <li>Dimensions of saddle complete with diameters, number, and locations of bolt holes and the thickness of sections through which the bolts must pass</li> <li>Grouting details if applicable</li> <li>Forces and moments for nozzles</li> <li>Center of gravity and lifting points</li> </ul>					
<b>2.2.</b>	Manufacturer's P&ID's	X	X	X	X	MDR



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ITEM No.	DESCRIPTION	Proposal Stage For Acceptance	REVIEW STAGE		Final As-Built Documents (Certified)	
			For Approval	Subsequent Resubmissions		Document Volume MDR/IOM
2.3.	Data Sheets	X	X	X	X	MDR
2.4.	Cross sectional drawings and parts lists/ BOM and etc.)	X	X	X	X	MDR
2.5.	List of Nozzles and opening	X	X	X	X	MDR
2.6.	List Of Special Tool, If Any	X	X	X	X	MDR
2.7.	Erection procedure	X	X	X	X	MDR
2.8.	Painting Procedure	X	X	X	X	MDR
2.9.	Education and Training Procedure		X	X	X	MDR
2.10.	Catalogue or Product Specification		X	X	X	MDR
2.11.	Protection and Preservation Procedure for Long Term Storage Prior and During Erection		X	X	X	MDR
2.12.	Operation/Maintenance Manual		X	X	X	MDR
2.13.	Foundation Plan (Static And Dynamic Loads) Loading Data (Including Weights, Seismic and wind load data)		X	X	X	MDR
2.14.	Tie-In/Nozzle Summary		X	X	X	MDR
3.	<b>INSPECTION AND TEST</b>					
3.1.	Quality Assurance Plan		X	X	X	MDR
3.2.	Quality System Certification	X	X	X	X	MDR
3.3.	Vendor's Quality Manual		X	X	X	MDR
3.4.	Quality assurance record book (including material history book for pre fabrication)		X	X	X	MDR
3.5.	Inspection notification		By fax/mail			
3.6.	Inspection & Test Plan	X	X	X	X	MDR
3.7.	Inspection and Testing Procedures		X	X	X	MDR
3.8.	Organization chart of the team assigned to this project	X	X			
3.9.	Inspection & test report				X	MDR
3.10.	Material and mill certificates & acceptance certificate (including history book)		X		X	MDR
3.11.	Welding procedure (WPS)		X	X	X	MDR
3.12.	Welding procedure qualification records (PQR)		X	X	X	MDR
3.13.	Welding procedure for prefabrication piping (girth weld)		X	X	X	MDR
3.14.	NDT record certificates		X	X	X	MDR
3.15.	Factory Acceptance Test Procedure (Panel, etc.)		X	X	X	MDR
3.16.	Site Acceptance Test Procedure (Panel, etc.)		X	X	X	MDR

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ITEM No.	DESCRIPTION	Proposal Stage For Acceptance	REVIEW STAGE		Final As-Built Documents (Certified)	
			For Approval	Subsequent Resubmissions		Document Volume MDR/IOM
3.17.	Material Certificates		X	X	X	MDR
3.18.	Original Certificate of Equipment		X	X	X	MDR
3.19.	Explosion Proof certification (if required)		X	X	X	MDR
3.20.	Instrument Calibrations certificate		X	X	X	MDR
3.21.	FAT report		X	X	X	MDR
3.22.	Inspection release certificate		1 week before delivery	1 Week	MDR	X
4.	<b>OTHERS</b>					
4.1.	detailed packing list (if any)		X	X	X	MDR
4.2.	Export packing specification and procedure		X	X	X	MDR
4.3.	Instruction for handling transportation and long-term preservation		X	X	X	MDR
4.4.	List of components to be erected / installed on site		X	X	X	MDR
4.5.	Site quality control plan(QLP)		X	X	X	MDR
4.6.	List of consumables for erection, commissioning and start-up		X	X	X	MDR
4.7.	Procedure for erection , installation and commissioning of the equipment		X	X	X	MDR
4.8.	Installation, start-up and commissioning instructions		X	X	X	MDR
4.9.	Final Data book index		X	X	X	MDR
4.10.	Final Data book		X	X	X	

### General Notes:

All documents are to be written in English language.

A) "Certified Correct" data and drawings are required within two weeks after return of "For Approval" data and drawings.

B) Cost of above prints must be included in quotation

C) All Drawings must show equipment tag number and P.O numbers. Electronic documents must be followed by original. Final Drawings must be Certified.



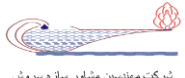

D) Submit all documents via courier service.

E) Always include a transmittal

F) The submitted documents shall be accurate, checked and signed by responsible Engineer(s).

G) The Documents & Data shall be submitted in the form of Designated: E = Electronic Copy, P = Print, D = Disc (CD)



H) All Vendor prints shall state the name of Client (End User), Work No., Req. No.

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## APPENDIX B: Exception & Deviation List

Vendor shall submit the completed Table of Compliance, as a part of the technical offer. Vendor shall confirm compliance with each clause of this requisition and attached Technical Documents by writing, “Yes” in the column headed “Compliance”. Where the Vendor is unable to comply with a particular clause, shall write “No” in the column headed “Compliance” and shall describe the deviation with a full and complete justification in the appropriate adjacent cells, which may be extended on separate page(s) as required. Technical offers with an incomplete Table of Compliance will not be considered during technical evaluation.

Item No.	Description of Proposed Deviation /Exception	Recommended Revision to Specification	Reason for proposed Deviations /Exceptions		Effect on Base PROPOSAL if OWNER /PURCHASER reject Deviations / Exceptions		
					Contract	Price	Schedule
Note:							
1. All columns to be completed by Vendor. 2. Vendor to note Original Manufacturer and Identification Number						Equipment:	
			4				
			3				
			2			VENDOR:	
			1			Equipment Requisition no.:	
			No:	REVISION	DATE	CSP	

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## APPENDIX C: Letter of Conformity

FROM: (VENDOR)



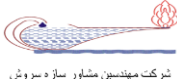

Herewith we confirm that our quotation.....in response to your inquiry ..... Dated ..... is fully in accordance with conditions as stated therein and we confirm that all technical requirements as stipulated in the above mentioned inquiry documents have been adhered to, except deviations listed below:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

-----  
Date, Signature (Vendor)



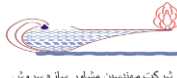

NOTE:

1. Deviation shall be listed separately with brief explanation.
2. If no deviation exists, vendor shall specify by writing “No Deviation”

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#### APPENDIX D: Special Tools for Installation and Maintenance



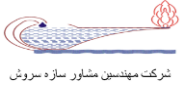

SPECIAL TOOLS FOR INSTALLATION AND MAINTENANCE				
DESCRIPTION OF PART (NOTE: EACH ITEM TO BE TAGGED)	VENDOR'S			
WITH VENDOR'S PART NO FROM COL 3	CROSS SECTION DRAWING NUMBER	PART REF	TOTAL PRICE	REMARKS (see Note 3)
Note:				
1. All columns to be completed by Vendor. 2. Vendor to note Original Manufacturer and Identification Number 3. Tools shall be packed and shipped with the equipment 4. All special tools and equipment necessary for the installation, and, maintenance shall be supplied.	4			Equipment: Pipe
	3			
	2			
	1			VENDOR: EQUIPMENT REQUISITION NO.:
	No:	REV.	DATE	CSP

<div><p>CARBON BLACK Doodeh Sanati Pars Company</p></div> <div><p>PARMAN POOYESH Engineering &amp; Industrial Services Company</p></div> <div><p>شرکت مهندسين مشاور سازد سروش</p></div>	<div><p>Doode Sanati Pars Company</p><p>Carbon Black Hard Reactor Revamping</p></div>		<div><p>TOFKA TARH O FARAYAND KIMIA Eng. CONSULTANT</p></div>
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## APPENDIX E: Vendor Recommendation to Specifications

This lists all VENDOR'S Recommendation to purchaser SPECIFICATIONS. (As listed in, "Applicable Documents")  
 VENDOR believes that these changes can improve their quotation technically or commercially, if a recommendation is approved, VENDOR'S proposal will be adjusted pursuant to effects noted.

Item No.	Description of Recommendation	Recommended Revision to Specification	Reason for proposed Deviations /Exceptions		Effect on Base PROPOSAL if OWNER /PURCHASER Approved Recommendation		
					Contract	Price	Schedule
Note:							
1. All columns to be completed by Vendor. 2. Vendor to note Original Manufacturer and Identification Number						Equipment:	
			4			Pipe	
			3				
			2			VENDOR:	
			1			EQUIPMENT REQUISITION NO.:	
			No:	REVISION	DATE	CSP	

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## APPENDIX J: CERTIFICATE OF ORIGIN

VENDOR shall be liable (without formal notice of non-compliance being required) for any loss or damage incurred by PURCHASER and/or OWNER due to VENDOR or SUB-VENDORS non-compliance with the terms and condition of this Requisition.

### CERTIFICATE OF ORIGIN

Hereby.....(COMPANY NAME)..... with company address ..... at.....  
 (COMPANY ADDRESS).....  
 .....certifies that the material ..... quoted against your  
 Requisition No.....and included in our quotation No..... Dated  
 ....., contains a.....% originate in ...(COMPANY ADDRESS).... and  
 also that is evident; it is signed with authority enough in name and representation of....(COMPANY  
 NAME).....

**Date, Signature and Stamp**

.....(Vendor).....