





Republic of the Philippines  
**National Power Corporation**

**TERMS OF REFERENCE**  
**ALTERNATIVE MODE OF PROCUREMENT**  
[SHOPPING – 52.1b]

1. **Scope of Works:** PR NO(s). **HO-MRM25-005/** REF NO. SHB250702 - RM00236  
**FOR THE SUPPLY AND DELIVERY OF TOOLS AND HARDWARE MATERIALS**

PR Item No.	DESCRIPTION	QTY.	ABC (PhP)
1	DRILL BIT SIZE: 12MM	2 PC	4,000.00
2	DRILL BIT SIZE: 14MM	1 PC	2,500.00
3	DRILL BIT SIZE: 10.25MM	1 PC	1,500.00
4	DRILL BIT SIZE: 17MM	1 PC	3,500.00
5	DRILL BIT SIZE: 5 MM	2 PC	800.00
6	DRILL BIT SIZE: 8MM	1 PC	1,600.00
7	DRILL BIT SIZE: 8.5MM	1 PC	1,000.00
8	HAND TAP ½ INCH X 13 UNC (3PCS/SET)	1 SET	10,000.00
9	HAND TAP ¼ INCH X 20 UNC (3PCS/SET)	1 SET	5,000.00
10	HAND TAP 3/8 INCH X 16 UNC (3PCS/SET)	1 SET	8,000.00
11	HAND TAP 5/16 INCH X 18 UNC (3PCS/SET)	1 SET	7,500.00
12	HAND TAP M10 X 1.5P (3PCS/SET)	2 SET	8,000.00
13	HAND TAP M12 X 1.75P (3PCS/SET)	2 SET	9,000.00
14	HAND TAP M14 X 2.0P (3PCS/SET)	1 SET	10,000.00
15	HAND TAP M16 X 2.0P (3PCS/SET)	2 SET	15,000.00
16	HAND TAP M6 X 1.0P (3PCS/SET)	1 SET	5,000.00
17	HAND TAP M8 X 1.25P (3PCS/SET)	1 SET	7,500.00
18	HAND TAP M9 X 1.25P (3PCS/SET)	1 SET	8,000.00
19	C-CLAMP LOCKING GRIP, 6 INCH	5 PC	12,000.00



20	CLAMP C-CLAMP, LOCKING GRIP 4 INCH	10 PC	8,000.00
21	CLAMP C-CLAMP, LOCKING GRIP, 5 INCH	10 PC	10,000.00
22	CLAMP MAGNETIC CLAMP (6PCS/SET)	10 SET	10,000.00
23	ELECTRODE HOLDER, 300-350 AMP.	2 SET	10,000.00
24	MEASURING DEVICE ANGLE FINDER, DIGITAL PROTRACTOR	5 PC	10,000.00
25	STEEL TAPE MEASURE STEEL TAPE MEASURE	40 PC	25,000.00
26	WISE GRIP SIZE: 11 INCH	5 SET	5,000.00
27	BURRS CARBIDE, SIZE 6-9 MM DIAMETER (ASSORTED HEAD SHAPE)	2 SET	5,000.00
28	CUTTING DISC 4 INCH	600 PC	48,000.00
29	GRINDING DISC 4 DIA.	125 PC	24,000.00
30	ALUMINUM ROD ROUNDED (50PCS/PACK)	10 PACK	7,500.00
31	BRAZING FLUX ALUMINUM FLUX POWDER	1 CAN	2,500.00
32	ELECTRODE CAST IRON, STICK WELDING	3 PACK	30,000.00
TOTAL AMOUNT			314,900.00
Notes:			
<ul style="list-style-type: none"> <li>• Warranty: at least Three (3) Months</li> <li>• Model of Award: Lot Award, However, bid price offer should not exceed the ABC per item</li> <li>• Must indicate Brand/Model and provide brochure or specifications on your quotation.</li> <li>• See attached sheet for complete technical specifications</li> </ul>			

**APPROVED BUDGET FOR THE CONTRACT (ABC): PHP 314,900.00**

**2. Delivery Period**

Delivery Period shall not be later than **Thirty (30) Calendar Days** upon receipt of the Purchase Order / Notice to Proceed.

**3. Delivery Point**

Items shall be delivered to **MRMD, Brgy. Buli, Muntinlupa City**

**4. Bid Submission**

The Bidder shall submit their quotations through their authorized representative or in the manner of submission as prescribed in the RFQ.

#### **5. Late Bids**

Any quotation submitted after the deadline of submission and receipt of bids shall not be accepted by NPC.

#### **6. Bid Prices**

The bid price as indicated in the Quotation Form shall be fixed during the Bidder's performance of the Contract and not subject to variation or price escalation on any account. A quotation submitted with an adjustable price quotation shall be treated as non-responsive.

#### **7. Bid Price Validity**

Price Validity shall not be less than One Hundred Twenty (120) calendar days from date of opening of bids/quotations.

#### **8. Eligibility Criteria**

- a. Bids shall be checked using the PASS / FAIL Criteria for Legal, Technical and Financial components.
- b. From the bids that were rated PASSED, the same shall be ranked and corrected for computational errors to identify the Single/Lowest Calculated Quotation (S/LCQ).

#### **9. Detailed Evaluation and Comparison of Bids**

The S/LCQ shall be subjected to detailed evaluation against the Technical Specifications including arithmetical computations. Documents which are deemed not to comply with the requirements of the tender shall be considered non-complying.

#### **10. Post-qualification**

Documents submitted for the Lowest Calculated Quotation (LCQ) will undergo a post-qualification evaluation. Original copies of these documents presented at bid opening/submission must be made available during the post-qualification process. Any quotation that successfully meets the post-qualification criteria will be declared as the Single/Lowest Calculated and Responsive Quotation (S/LCRQ).

#### **11. Total Contract Price**

The Total Contract Price shall be inclusive of all taxes and other related expenses / charges.

#### **12. Notice to Supplier**

- a. The supplier shall pick-up the Purchase Order (PO)/ Notice to Proceed (NTP) from NPC within two (2) calendar days from receipt of the Notice of Award.
- b. Failure to secure the PO/NTP by the supplier within the said period will mean cancellation of the same and imposition of penalties as prescribed by law.



### **13. PO Effectivity**

The PO Shall take effect immediately upon receipt of the PO / NTP by the supplier sent through fax as evidenced by the fax transmission receipt and as confirmed by the supplier's representative.

### **14. Terms of Payment**

Terms of Payment shall be thirty (30) calendar days after submission of complete supporting documents.

### **15. Warranty**

In order to assure that manufacturing defects shall be corrected by the supplier, a warranty shall be required from the contract awardee for a minimum period of three (3) months, in case of expendable supplies, or a minimum period of one (1) year, in case of non-expendable supplies, after acceptance by the procuring entity of the delivered supplies, unless otherwise provided in the RFQ.

### **16. Liquidated Damages**

Where the supplier refuses or fails to satisfactorily complete the work within the specified contract time, plus any time of extension duly granted and is hereby in default under the contract, the supplier shall pay NPC for liquidated damages, and not by way of penalty, an amount equal to at least one tenth (1/10) of one percent(1%) of the cost of the undelivered/unperformed portion of the items/works for every day of delay but not to exceed ten percent (10%) of the total contract price. Once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of the contract, the procuring entity may rescind or terminate the contract, without prejudice to other courses of action and remedies open to it (Section 68 of the Revised IRR of RA 9184).

### **17. Liability of the Supplier**

If after receipt of the Purchase Order, the supplier fails to deliver the goods, appropriate sanctions will be imposed as prescribed under Republic Act (RA) 9184 and its Revised Implementing Rules and Regulations (IRR).

### **18. Disclosure of Relations**

The bidder shall comply with the provisions of Section 47 of RA 9184 and its revised IRR re: disclosure of relations.

### **19. Administrative Sanctions**

Bidder shall likewise be imposed the rules as stated in section 69 (Imposition of administrative penalties) should there be infractions committed.

### **20. Reservation Clause**

NPC reserves the right to accept or reject any bid, to annul the bidding process, and to reject all bids at any time prior to the contract award, without thereby incurring any liability to the affected bidder/s.

**SUPPLIER'S BID QUOTATION**  
**[SHOPPING – 52.1b]**

To: The BAC Chairman:

I have read and examined the Terms of Reference for Purchase Requisition (PR) No/s. **HO-MRM25-005**. I agree with the conditions of the TOR and offer the following supplies with specific description:

ITEM NO.	DESCRIPTION OF ITEM / S TO BE SUPPLIED (INCLUDE BRAND NAME)	QTY	UNIT PRICE (PhP)	TOTAL PRICE (PhP)
1				
2				
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32				
TOTAL BID PRICE				

\_\_\_\_\_  
 Name and Signature of Authorized Representative

Date \_\_\_\_\_

Company Name \_\_\_\_\_

Contact Details \_\_\_\_\_

E-mail address \_\_\_\_\_

*Note: The bidder may use this form or its own company letterhead following this format duly signed by the authorized representative when making the offer.*

1

PR NO. HO-MRM25-005 SUPPLY AND DELIVERY OF HARDWARE MATERIALS

PR NO.: HO-MRM25-005  
 PROJECT/ITEM TITLE: Supply and Delivery of Hardware Materials  
 TOTAL APPROVED ABC: PHP 314,900.00  
 MODE OF PROCUREMENT: SHOPPING  
 MODE OF AWARD: LOT AWARD

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
1	Drill Bit, Size: 12 mm	2	pc	2000	4000
2	Drill Bit, Size: 14 mm	1	pc	2500	2500
3	Drill Bit, Size: 10.25 mm	1	pc	1500	1500
4	Drill Bit, Size: 17 mm	1	pc	3500	3500
5	Drill Bit, Size: 5 mm	1	pc	800	800
6	Drill Bit, Size: 8 mm	1	pc	1600	1600
7	Drill Bit Size: 8.5 mm	1	pc	1000	1000





**TECHNICAL SPECIFICATIONS:**

**A. Standard Compliance:** The drill bit must comply with DIN 338, BS328-ISO 235/1 standards for drill bits, specifically twist drills.

**B. Specifications:**

Type	: Twist
Thread Standard	: Metric
Thread Direction	: Right Hand
Material	: High Speed Steel
Surface	: Titanium Nitride Coated
Point Angle	: 118 degrees

**C. Design:**

Made from high-speed steel with a titanium nitride coating, jobber drill bits are designed for versatility across various tasks and materials. They feature a longer shaft than standard drill bits, making them compatible with both hand and machine drills. Suitable for drilling through metal, wood, plastic, and other materials, these bits are equipped with a right-hand cutting tip and a 118° cutting angle for efficient performance.

**D. Features and Benefits:**

- Titanium Nitride Coated (Tin)
- Longer shaft length
- Right angle cutting tip
- 118° cutting angle

**E. Testing Performance upon Delivery and Acceptance:****1. Durability Testing:**

- 1.1 Test at least one size of Drill Bit on steel material.
- 1.2 Conduct multiple drilling operations in different thickness of steel materials to assess the drill bit ability to withstand repeated use.

**2. Performance Evaluation:**

- 2.1 Verify that the drill bit retains sharpness without significant wear after multiple uses.
- 2.2 Ensure smooth cutting performance with no excessive resistance, binding, or breakage.
- 2.3 Inspect the hole for precision and cleanliness, ensuring they are consistently accurate and free of burrs or defects.

**Note:** The bidder is required to submit brochure for end user technical evaluation.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
8	Hand Tap - Size: 1/2" x 13 UNC x 89 mm overall length, 3 pcs/ set	1	set	10000	10000
9	Hand Tap - Size: 1/4" x 20 UNC x 66 mm overall length, 3 pcs/ set	1	set	5000	5000
10	Hand Tap - Size: 3/8" x 16 UNC x 80 mm overall length, 3 pcs/ set	1	set	8000	8000
11	Hand Tap - Size: 5/16" x 18 UNC X 72mm overall length, 3 pcs/ set	1	set	7500	7500



**A. Standard Compliance:** The hand tap must comply to **ISO 529**, standards for general dimension of short machine taps and hand taps.

**B. Specifications:**

Set Type	: Threading Tap Set
Type	: Straight Flute Tap
Thread Standard	: UNC
Thread Direction	: Right Hand
No. of pieces	: 3
Material	: High Speed Steel (HSS)
Surface Treatment	: Bright
Class of fit	: 2B

**C. Design:**

Made of high-speed steel, this set is designed for precision threading operations. It includes taper, second, and plug taps. The tap bit tolerance class is 2B.

**D. Features and Benefits:**

- Material HSS (high speed steel) - for high durability and resistance to corrosion
- Hand Tap Straight Flute ensures smooth threading operations.
- **UNC (Unified National Coarse)** based on **imperial (inch-based)** measurements thread type
- Right-handed thread direction
- Includes taper, second, and plug taps for versatility.
- Suitable for tapping both through and blind holes.

**E. Testing Performance upon Delivery and Acceptance:****1. Durability Testing: (Delivered Item)**

- 1.1 Test at least one hand tap on different materials (steel, aluminum or brass).
- 1.2 Conduct multiple threading operations in different materials and multiple holes to assess the tap's ability to withstand repeated use.

**2. Performance Evaluation:**

- 2.1 Verify that the tap retains sharpness without significant wear after multiple uses.
- 2.2 Ensure smooth cutting performance with no excessive resistance, binding, or breakage.
- 2.3 Inspect the threads for precision and cleanliness, ensuring they are consistently accurate and free of burrs or defects.

**Note:** The bidder is required to submit brochure for end user technical evaluation.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
12	Hand Tap - Size: M10 x 1.5P x 70 mm overall length, 3 pcs/ set	2	set	4,000	8,000
13	Hand Tap - Size: M12 X 1.75P x 75 mm overall length, 3 pcs/ set	2	set	4,500	9,000
14	Hand Tap - Size: M14 x 2.0P x 80 mm overall length, 3 pcs/ set	1	set	10,000	10,000
15	Hand Tap - Size: M16 X 2.0P x 80mm overall length, 3 pcs/ set	2	set	7,500	15,000
16	Hand Tap - Size: M6 X 1.0P x 56mm overall length, 3 pcs/ set	1	set	5,000	5000
17	Hand Tap - Size: M8 X 1.25P x 63mm overall length, 3 pcs/ set	1	set	7,500	7500
18	Hand Tap - Size: M9 X 1.25P x 63mm overall length, 3 pcs/ set	1	set	8,000	8000





**A. Standard Compliance:** The hand tap must comply with **DIN 352** standards, while also adhering to **ISO 237** and **ASME B94.9** standards, which define the dimensions and specifications for square drive ends.

**B. Specifications:**

Set Type	: Threading Tap Set
Type	: Straight Flute
Thread Standard	: Metric
Thread Direction	: Right Hand
No. of pieces	: 3
Material	: High Speed Steel
Class of fit	: 6H

**C. Design:**

Made from high-speed steel, this set is designed for **metric pitch** threading with a 3-piece tap bit set, including taper, intermediate, and finishing taps. The tap bit tolerance class is **6h**, with a cutting angle of **10 degrees** and straight flutes.

**D. Features and Benefits:**

- Material HSS (high speed steel) - for high durability and resistance to corrosion
- Hand Tap Straight Flute ensures smooth threading operations.
- Metric thread type
- Right-handed thread direction
- Includes taper, intermediate, and finishing taps for versatility.
- Suitable for tapping both through and blind holes.

**E. Testing Performance upon Delivery and Acceptance:****1. Durability Testing: (Delivered Item)**

- 1.1 Test at least one hand tap on different materials (steel, aluminum or brass).
- 1.2 Conduct multiple threading operations in different materials and multiple holes to assess the tap's ability to withstand repeated use.

**2. Performance Evaluation:**

- 2.1 Verify that the tap retains sharpness without significant wear after multiple uses.
- 2.2 Ensure smooth cutting performance with no excessive resistance, binding, or breakage.
- 2.3 Inspect the threads for precision and cleanliness, ensuring they are consistently accurate and free of burrs or defects.

**Note:** The bidder is required to submit brochure for end user technical evaluation.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
19	<b>C-CLAMP</b> (Locking Grip) - Size: 6", Jaw Capacity: 2 1/8 inches or 54 mm	5	pcs	2400	12,000
20	<b>C-CLAMP</b> (Locking Grip) - Size: 4", Jaw Capacity: 1 inch or 25.4 mm	5	pcs	1600	8,000
21	<b>C-CLAMP</b> (Locking Grip) – Size: 5", Jaw Capacity: 1 1/8" or 29 mm	5	pcs	2000	10,000



**A. Specifications:**

Material : Chrome-vanadium steel  
 Handle Material : Alloy Steel  
 Color : Silver  
 Grid Type : Ergonomic vice grip

**B. Design:**

The locking clamp is made of advanced heat-treated alloy steel and added with chrome-vanadium alloy elements, which can withstand corrosive working environments, and has maximum toughness and durability. The handle includes adjustable screw lock with trigger release, versatile open jaws to hold multiple shapes, and fine adjustments to cut your items and materials. The locking C-clamp's fine-tuning knob design makes it easy to adjust the clamping size, provides good pulling force, which improves work efficiency.

**C. Features and Benefits:**

- Material is made high-grade heat-treated alloy steel which can withstand corrosive working environments, and has maximum toughness and durability.
- Ideal for fastening material of any shape or size.
- Wide-opening jaws provide greater versatility in clamping a variety of shapes
- Turn screw to adjust pressure and fit work. Stays adjusted for repetitive use
- Classic trigger release designed to provide maximum locking force

ITEM	PARTICULARS	QTY	DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION		UNIT PRICE	TOTALPRICE
22	Clamp, Magnetic, (Magnetic Holder/Arrow Clamp/Portable Magnetic Clamp), 6Pcs/Set	Set	1000	10000





**A. Specifications:**

Material	: steel, magnetic
Size	: Hexagonal – 25 lbs 2 pcs Triangle – 25 lbs x 2 pcs Mini – 15 lbs x 2 pcs
Holding Capacity	: 25 lb and 15 lb
Holding Angle of fixture	: 45°, 90° & 135°
Plate Color	: High gloss enamel

**B. Design:**

The magnetic welding tongs positioner can provide clamping force and fix welding operations of various sizes together. The powerful magnet used in the bracket can attract any ferrous metal object, thus freeing your hands and allowing you to finish the project safely. This magnetic holder is very suitable for quick setting and stable and accurate clamping of all welding operations, and can also be used as a float for separating steel plates.

**C. Features and Benefits:**

- Adjustable connecting rod welding fixture is used to fix steel plates in brazing, welding or other high-temperature applications.
- Resistant to corrosion
- Precise position angle

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
23	Electrode Holder, 300A, 60% duty cycle - 350A, 35% duty cycle (max)	2	set	5000	10000



**A. Standard Compliance:** The electrode holder must comply to standard EN 6097 4-11 and with Insulation of Class B

**B. Specifications:**

Weight	: 445g
Clamp Size	: 235 mm
Duty Cycle at 35%	: 350A
Duty Cycle at 60%	: 300A

**C. Design:**

Earth Clamps are electrode holders with ribbed handles providing you with a firm grip. The Crocodile Clips are heavy-duty with shielded springs that are protected from and spatter. Cables are fixed to the clamps by a bolt and copper ferrule which is supplied with the earth clamps.

**D. Features and Benefits:**

- Earth Clamps electrode holder
- Ribbed handles.
- Spring loaded
- Spring is protected from spatter
- Cable fixed by bolt and copper ferrule (supplied)
- Heavy duty

**Note:** The bidder is required to submit brochure for end user technical evaluation.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
24	Measuring Device, Angle Finder, Digital Protractor	5	pc	2000	10000

**A. Specifications:**

Frame	: Aluminum alloy
Dimensions	: 62 x 60 x 33 mm
Accuracy	: $\pm 0.2^\circ$
Magnetic	: Yes
Function	: Dual function – Level and angle gauge

**B. Design:**

This digital angle finder is a compact, rechargeable tool combining an angle gauge and level in one. It features a clear, auto-flipping LCD display, one-button toggle for angle/slope modes, and automatic shut-off for battery efficiency. Built-in magnets ensure secure attachment to metal surfaces for precise measurements. Powered by a 3.7V lithium battery with a Type-C charging port (DC 5V 400mA), it's ideal for accurate horizontal and vertical alignment tasks.

**C. Features and Benefits:**

- Dual function level- level and angle gauge
- One button unit switch and relative/absolute modes
- Automatic shutdown and clear LCD display
- Measures the angle of incline objects.
- Magnetic function and precise measurements
- Type C charging port and durable construction

**Note:** The bidder is required to submit brochure for end user technical evaluation.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
25	Steel tape Measure, 8 meters length	40	pc	625	25000





**A. Specifications:**

Length	: 8 meters
Blade Width	: ¾ inch
Graduation	: Inch and meter graduation
Blade Standout	: 2.1 meter
Blade thickness	: 0.15 mm
Material	: Heavy duty tylon coated blade

**B. Design:**

The steel tape measure is made for durability, accuracy and ease of use, with a total length of 8 meters and a blade width of ¾ inch, and blade standout of 2.1 meter that provides versatility for various measuring task. The heavy-duty tylon-coated blades ensures anti-glare readings, allowing for clear visibility in different lighting conditions. Engineered for precision, its Tru-Zero hook enables accurate inside and outside measurements. Additionally, the ergonomic rubber grip and bi-material soft-touch case enhance comfort and control, ensuring a secure hold and reducing hand fatigue during extended use.

**C. Features and Benefits:**

- Provides versatility for various measuring tasks.
- Ensures stability and use when measuring long distances
- Enhances durability and provides anti-glare for readings for better stability
- Allows for precise inside and outside measurement

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
26	Vise Grip, Plier Size:11 inches	5	pc	1000	5000

**A. Specifications:**

Size	: 11 inches
Materials	: Carbon Steel coated with nickel plated
Material Hardness	: HRC38°-HRC48°

**B. Design:**

The Curved Jaw Vise Grip Pliers are constructed from high-quality carbon steel with a hardness rating of HRC38°-HRC48°, ensuring exceptional strength and durability. Designed for versatility, they feature a precision-engineered curved jaw for a secure grip on various shapes and surfaces. The built-in release lever allows for quick and effortless one-handed operation, while the adjustable screw provides customizable pressure and a firm hold for different applications.

### C. Features and Benefits:

- HRC38°-HRC48° provides optional toughness for wear and tear
- The curved jaw offers a secure grip on various shape
- Built-in release lever enables quick and effortless
- Adjustable screw mechanism provides flexibility from different tasks.

**Note:** The bidder is required to submit brochure for end user technical evaluation.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
27	Burrs Carbide, Size: 6-9 mm Diameter, Assorted head shape	2	set	2500	5000



**A. Specifications:**

Shank Diameter	: 6 mm
Cutting Edge Diameter	: 6-12 mm
Total Length	: 45-65 mm
Material	: Tungsten Steel YG8
Number of pieces	: 8 pcs/set
Groove	: Double Rotary
Carbing Bit	: 6mm/10mm/12mm Head A, C, D, & F Rotary Burr
Head	: A : Cylindrical Shape C : Cylindrical ball head D: Spherical head F: curve round head

**B. Design:**

Made from high-hardness carbide for precision and durability, featuring a rotary burr design for efficient material removal. Designed with high micro-hardness and abrasion resistance to handle tough applications, while its excellent toughness ensures long-lasting performance and minimal wear.

**C. Features and Benefits:**

- The carbide alloy rotary file use is extremely widespread, applies in the mold processing manufacture. Machine parts bevel edge, inverted round and trench processing.
  - Can be processed cast iron, cast steel, carbon steel, alloy steel, stainless steel, copper, aluminum and other metals, and marble, jade, bone and other non-metallic
  - Widely used in machinery, automobile, shipbuilding, chemical, craft sculpture etc. Good processing quality, finish high, long service life. Can process a variety of high-precision mold cavity.
  - Easy to grasp, easy to use, safe and reliable. Reduces the arduous manual labor greatly, reduce the cost of production.
- The carbide alloy rotary file main supporting the use of electric tool or the use of electric tool or the pneumatic tool (may also install on machine tool)

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
28	Cutting disc, Size: 4"	600	pcs	80	48,000





**A. Standard Compliance:** Complied EN 12413 is a European safety standard that sets the requirements for bonded abrasive products such as cutting disc.

**B. Specifications:**

Code	: A60T-BF
Abrasive type	: Aluminum Oxide (A)
Grit size	: 60 (fine)
Hardness grade	: Hard (T)
Bond type	: Resinoid (BF)
Thickness	: 2.5 mm
Diameter	: 4" (100 mm)
Application	: Precision metal cutting
RPM	: 11,000

**C. Testing Performance upon Delivery and Acceptance:**

**1. Mechanical & Safety Test:**

- 1.1 Ensures that the disc can withstand high rotational speed without breaking.
- 1.2 Simulates sudden force to check durability.
- 1.3 Ensure smooth operation.

**2. Cutting Performance Evaluation:**

- 2.1 Measure cutting speed and efficiency.
- 2.2 Continuous use to determine life span.
- 2.3 Evaluate heat build-up and disc deformation.

**3. Practical Application Test:**

- 3.1 Check cut quality or the precision of cut.
- 3.2 Assess post cut burrs on materials
- 3.3. Evaluate ease of use, kickback and stability.

**Note:** The bidder is required to submit brochure for end user technical evaluation.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
29	Grinding disc, Size: 4" or 100 × 6.0 × 16.0mm, A24/30T-BF27	125	pcs	192	24,000



**A. Standard Compliance:** Complied EN 12413 is a European safety standard that sets the requirements for bonded abrasive products such as cutting disc.

**B. Specifications:**

Code	: A24/30T-BF27
Abrasive type	: Aluminum Oxide (A)
Grit size	: 24-30 (coarse)
Hardness grade	: Hard (T)
Bond type	: Resinoid (BF)
Depressed Center	: 27
Thickness	: 6 mm
Diameter	: 4" (100 mm)
Application	: General purpose grinding of ferrous metal weld and structural steels and stock removal
RPM	: 15,300

**C. Testing Performance upon Delivery and Acceptance:**

**1. Mechanical & Safety Test:**

- 1.1 Ensures that the disc can withstand high rotational speed without breaking.
- 1.2 Simulates sudden force to check durability.
- 1.3 Ensure smooth operation.

**2. Grinding Performance Evaluation:**

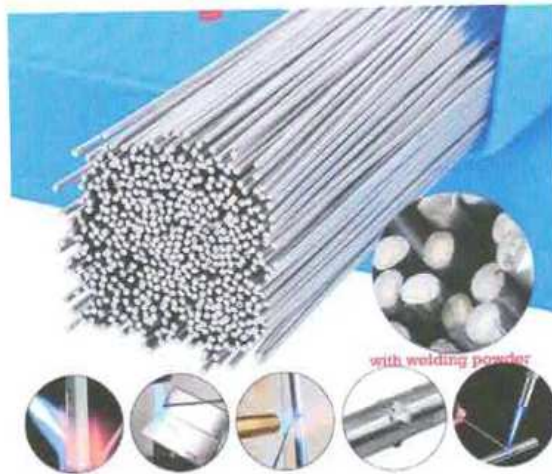
- 2.1 Measure material removal rate and efficiency
- 2.2 Assess durability through continuous grinding to determine lifespan.
- 2.3 Evaluate heat build-up and potential disc wear and deformation.

**3. Practical Application Test:**

- 3.1 Check surface finish and smoothness after grinding.
- 3.2 Assess the presence of burrs, scratches, or uneven grinding marks.
- 3.3. Evaluate ease of grinding, and stability during use.

**Note:** The bidder is required to submit brochure for end user technical evaluation.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
30	Aluminum Rod, Size: 2.5 mm diameter	30	pack	250	7500

**A. Specifications:**

Material	:Aluminum
Diameter	: 2.5 mm
Length	: 330 mm or 33cm
Melting point	: 400°C
Package contain	:50 pcs
Application	: For aluminum iron and copper material

**B. Design:**

The low-temperature flux core aluminum welding rods are designed for high-strength, smooth, and durable welds without requiring additional flux powder. Made from non-toxic, odorless, and corrosion-resistant aluminum, these rods ensure excellent weld ability, high thermal and electrical conductivity, and superior processing performance.



**C. Features and Benefits**

- No Additional Flux Required – Internal flux core eliminates the need for extra solder powder
- High-Quality Aluminum Material – Ensures durability and reliability
- Perfect Welding Effect – Smooth, strong, and corrosion-resistant joints
- Versatile Applications – Ideal for aluminum, aluminum alloys, cast aluminum, and aluminum-magnesium alloys
- Unbreakable & Secure Bonding - Once welded, the bond remains intact without cracking or falling off

**D. Testing Performance upon Acceptance and Delivery:**

1. Ensure compliance with standard requirements.
2. Conduct test on melting point
3. Assess welding performance on aluminum alloys and cast aluminum.

**Note:** The bidder is required to submit brochure for end-user technical evaluation.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
31	Brazing, Aluminum Flux	1	pc	2500	2500

**A. Specifications:**

Material : Powder  
 Color : White  
 Quantity : One (1) Bottle  
 Weight : 250 gram

**B. Design:**

Aluminum flux is designed for use with aluminum welding rods and wires, this flux enhances weld quality by effectively dissolving oxide films at lower temperatures, making the welding process easier and more efficient. With its strong oxide dissolution capability, it helps reduce the welding temperature, ensuring smoother and more precise bonding, even for thin aluminum parts and delicate materials like cans. Its low melting point optimizes heat control, preventing warping or damage to lightweight aluminum components, making it ideal for thin aluminum welding applications requiring precision and strength.

### C. Features and Benefits

- Used with aluminum welding rods/wires.
- Can be in the lower temperature, strong to dissolve oxide film, reduce the welding temperature, so that welding becomes easy.
- Good for welding, even for thin cans.
- Designed for welding of aluminum thin parts and with low melting point, it has strong ability to dissolve the oxide film at low temperature, which can effectively reduce the working temperature of the soldering.

ITEM	PARTICULARS	QTY		DETAILS OF ABC	
	DESCRIPTION/ SPECIFICATION			UNIT PRICE	TOTALPRICE
32	<b>Electrode, Cast Iron, AWS</b> Specification: AWS A5.15 Eni-CI.	1	pack	10,000	30,000



### A. Specifications:

Name	: Cast 308 pure nickel cast iron welding rod
Size:	: 2.5 mm
Quantity	: One (1) kilogram per pack
Electrode Length	: 350 mm
Application	: For welding gray cast iron

**B. Design:**

The welding electrode cast iron, NC-100 is a pure nickel electrode for welding cast iron primarily used for the repair of casting defects, machining errors, shrinkage cavities, gas blow holes, and voids resulting from defect excavation of iron castings. Designed to produce a very fluid molten pool with good wetting properties, making it particularly suitable for the filling of grey casting issues.

**C. Features and Benefits:**

- Free from hard zones, cracks, and porosity
- Excellent tensile strength and ductility
- Repair, reclamation, and build-up of cast iron parts, grey cast iron and malleable (Black heat iron)
- Ideal to be used for auto blocks and heads, cylinder walls, motor exhaust ports, impeller rings, valve seats, cast iron dies, defective castings, gear box housings, pump castings, machine parts, machining errors, and joining steel to cast iron

**D. Testing Performance upon Delivery and Acceptance:**

1. Ensure compliance with standard requirements.
2. Conduct test and welding performance on material compatibility to cast iron and grey cast iron.
3. Hardness test: Evaluate the hardness of the weld to metal to determine its machinability.

**Note:** The bidder is required to submit brochure for end-user technical evaluation.

**General Note:**

1. Bidders are required to submit brochures for the following items for end-user technical evaluation: **Items 1 to 18, 23 to 24, 28 to 30 and 32**
2. Please note that the **winning bidder** must ensure that **Items 1 to 18, 28 to 30, and 32** will undergo **testing performance evaluation upon delivery and acceptance**.