

PAKISTAN AERONAUTICAL COMPLEX, KAMRA
MIRAGE REBUILD FACTORY
TENDER NOTICE NO MRF/20-21/07 DATED 09 SEP, 2020.

1. Mirage Rebuild Factory, Pakistan Aeronautical Complex Board Kamra invites sealed bids from the Original manufacturer / authorized distributors / suppliers / contractor registered with Income Tax and Sales Tax Department and PACB registered for supply of following miscellaneous items on F.O.R Basis (Professional Tax certificate, Punjab is mandatory). Details of requirements is as follows:-

“OSCILLOSCOPE TEKTRONICS, AUTO FIRE FIGHTING SYS, LABAVIA BOX TESTER, TOOL BOX WITH DRAWER, DRY BATTERY UPS 12V, UPS 7.5 KV, MOTOR CYCLE HONDA CG 125, POWDER, POWDER, POWDER, PLATE FORM ACCESS OF 3000 KG, ELECTRIC TRANSPORTER, SILVER ANODE(P-364)”

2. List of items can also be downloaded from PPRA website www.ppra.org.pk and as well as PACB website www.pac.org.pk free of cost or can be collected from DTE of Log (LP Section) MRF PAC Kamra Distt Attock from 10-09-2020 during working hours (except holidays).

3. The quotations, prepared in accordance with the instruction in the Tender List, must reach at Mirage Rebuild Factory PACB Kamra **before 24-09-2020 at 1000 Hrs. Quotations will be opened on the same day at 1100 Hrs.** The advertisement is also available on PPRA website at www.ppra.org.pk and as well as PACB website www.pac.org.pk

DUE DATE : 24-09-2020 before 1000 Hrs.
TENDER OPENING TIME : 24-09-2020 at 1100 Hrs.

Please contact **Tele # 051-9099-4727 or Fax No 057-9317412** for any other information.

DIRECTOR LOGISTICS
MRF PACB KAMRA
DISTT ATTOCK

Directorate of Logistics MRF, PAC Kamra



**LIST OF OPEN TENDER NO MRF/20-21/07
DATED 09-09-2020 OPENING DATE 24-09-2020**

SN O	PART NO	NOUN	U/I	Qty	SPECIFICATION
1		OSCILLOSCOPE TEKTRONICS	EA		Channel: 2 Band width: 60MHz Sample Rate: 1 Gs/S Display: Monochrome Input Voltage: 220VAC/50Hz OEM: USA, Europe or Equivalent
2	NSL-CA-01	AUTO FIRE FIGHTING SYS	EA		(i) Complete Repair / Serviceability of Auto Fire Warning System. (ii) Refilling of CO ₂ in Qty 24 Cylinders. (iii) Improvement in existing system to stop / close discharge of CO ₂ , on requirement basis once CO ₂ discharge takes place through fire control panel or by pulling the emergency fire handle.
3	851-750-552-0	LABAVIA BOX TESTER	EA		02 Power Supply Cards Unserviceable (12V and 35 V) DC
4	TRJF-A3061BC	TOOL BOX WITH DRAWER	EA	As Req	Material: PP + Steel Sheet Size: 497 X 253 X 407 mm Inner Size: 460 X 220 X 100 mm Inner Size Lower: 460 X 220 X 100 mm Drawer Inner Size (Higher): 390 X 215 X 50 mm Max Capacity: 40 Kgs N.W.: 9.4 Kgs G. W: 10.4 Kgs Package Size: 515 X 510 X 420 mm QTY / CTN: 02 PCs QTY/20': 508 PCs
5	EN50272-2	DRY BATTERY UPS 12V	EA		Dry Battery 200 AMP
6	5965/PK001315 9	UPS 7.5 KV	EA		UPS 7.5 KVA
7	61MC/2310PK3 010003	MOTOR CYCLE HONDA CG 125	Ea		Motor Cycle Honda CG 125
8	AMDRY386-4	POWDER	CO= 05LBS		Specs are attached at the end please.
9	METCO206A	POWDER	CO= 05LBS		
10	METCO204G- PREMIUM	POWDER	CO= 05LBS		



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SN O	PART NO	NOUN	U/I	Qty	SPECIFICATION
11	3269	PLATE FORM ACCESS OF 3000 KG	Ea	As Req	(1) Replacement of hydraulic power pump Qty 02. (2) Replacement of hydraulic hoses. (3) Repair of hydraulic jacks Qty 04. (4) Repair of limit switches Qty 12. (5) Replacement of electrical wiring. (6) Repair of plate form safety door Qty 01. (7) Replacement of control panel Qty 02.
12	HS4	ELECTRIC TRANSPORTER	Ea		Specification are attached at the end please.
13	093-997-487-1	SILVER ANODE(P-364)	Ea		

(S NO 8) SPECIFICATIONS OF BOND COAT POWDER AMDRY386-4

**Nickle Cobalt Chromium Aluminum [Tantalum, Hafnium Silicon] Yttrium (Nicrocral [Ta, HfSi]Y)
Thermal Spray Powder**

**Thermal Spray Powder Product:
Amdry 386-4**

1. Introduction

NiCoCrAlY family of gas atomized powder is designed to produce thermal sprayed coatings with excellent high temperature oxidation and hot corrosion resistance.

This product can be used as overlay coating on turbine engine components to improve their performance and service life, even under harsh environmental conditions.

Gas aromatization ensures excellent chemical homogeneity and high purity which results in consistent coating results.

1.1 Typical Uses and Applications

High temperature corrosion resistant bond coats for thermal barrier and oxide-based abradable coatings for gas turbine engine hot section components.

Oxidation and corrosion resistant coatings for gas turbine blades, vanes and shrouds.

Repair and restoration of super alloy substrates and parts.

Quick Facts	
Classification	Alloy, Nickel-based
Chemistry	NiCoCrAl[Ta, HfSi]Y
Manufacture	Gas atomized

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Morphology	Spheroidal
Service Temperature	≤ 1050 °C (1920 °F)
Purpose	High temperature oxidation and corrosion resistance
Process	ChanPro™ controlled atmosphere plasma spray, atmospheric plasma spray or HVOF

(S NO 9) SPECIFICATIONS OF TOP COAT POWDER METCO206A

Zirconia Gadolinia Ytterbia Yttria Agglomerated and Sintered Thermal Spray Powder

Thermal Spray Powder Product: METCO 206A

. Introduction

Metco™ 206A is a Zirconia-gadolinia-ytterbia-yttria based powder designed for high temperature thermal barrier applications. Key application areas are combustors, transition ducts, blades and vanes for aerospace & industrial gas engines.

The composition of Metco 206A is unique and patented by the U.S. Government, NASA (1. Tightly controlled particle size distribution and apparent density, as well as the utilization of Oerlikon Metco's high purity raw materials results in coating microstructures with the lower thermal conductivity and improved high temperature sintering resistance compared to present state-of-the-art 7% to 8% yttria-stabilized zirconia materials. Gadolinia-ytterbia-yttria dopants in the zirconium oxide promote the formation of highly-stable (oxide defect clustering) cubic-phase zirconium oxide top coats when applied using atmospheric plasma spray, resulting in a coating with reduced thermal productivity. In addition, low levels of silica, sodium oxide and alumina have also been found to help reduce high temperature sintering at service temperature above 111200 °C (200 °F)

The particle size distribution of this agglomerated and sintered material has been optimized within customer specifications for enhanced flow and high porosity coating structures. Metco 206A is best applied using atmospheric plasma spray. In many cases, a thin intermediated layer of 7-8 Wt% yttria-stabilized zirconia is recommended to improve thermal cyclic life.

1.2 Typical Uses and Applications

Typically used as a thermal barrier coating material for:

- Aerospace and industrial gas turbine applications
- Combustion liners requiring thick, porous coatings
- Blade and vane airfoils



Quick Facts	
Classification	Oxide ceramic, zirconia-based
Chemistry	ZrO ₂ 9.5Y ₂ O ₃ 5.6Yb ₂ O ₃ 5.2Gd ₂ O ₃
Manufacture	Agglomerated and Sintered
Morphology	Spheroidal
Apparent Density	2.0 ± 0.2 g/cm ³
Purpose	Thermal barrier
Service Temperature	≤ 1500 °C (2370 °F)
Process	Atmospheric plasma spray

(S NO 10) SPECIFICATIONS OF INTERMEDIATE COAT POWDER 204G-PREMIUM

8% Yttria Stabilized Zirconia Agglomerated and HOSP Thermal Spray Powders

Thermal Spray Powder Product: 204G-PREMIUM

1. Introduction

Yttria Stabilized Zirconia (8Y₂O₃-ZrO₂) powders HOSP process combine the advantages of pre-alloyed, fused and crushed powders together with the free flowing, consistent shape of spray dried powders.

Densification via the HOSP process ensures high deposit efficiency during the coating process, reducing application time and overspray waste. Powders are spheroidal with excellent flow, chemical homogeneity and structural stability, compositions are manufactured from high purity raw materials, and produce coatings that provide long-lasting, reliable service.

Many of HOSP YSZ produces are manufactured using very high purity, white materials. Coating of these products offer extended coating life through improved sintering resistance. It is the exceptional purity of these materials, with minimized levels of low-melting trace constituents that improves coating performance, even at temperature significantly above 1200 °C (2200 °F).

1.3 Typical Uses and Applications

Usually used as a thermal spray coating for:



- Top coat (insulating layer) in a thermal barrier coating (TBC) system for industrial and flight gas turbine engine components such as combustion liners, transition pieces, afterburners, heat shields, turbine airfoils.
- Thermal protection at temperatures up to 900 °C (1650 °F) on metallic diesel and gasoline engine components such as cylinder heads, piston crown, exhaust and intake valves, turbochargers.
- In general, these materials are used as the insulating layer in a two-part TBC system, consisting of a thermal sprayed bond coat and YSZ top coat. For some applications, they are used as intermediate layers between an oxidation-resistant bond coat and a more porous, low-K TBC system.

Quick Facts	
Classification	Ceramic, Zirconia based
Chemistry	ZrO ₂ 8Y ₂ O ₃
Manufacture	Agglomerated and HOSP
Morphology	Spherical
Apparent Density	2.3 ± 0.2 g/cm ³
Service Temperature	
High Purity Products:	≤ 1350 °C (2460 °F)
Other Products	≤ 1250 °C (5072 °F)
Melting Point	2800 °C (5072 °F)
Purpose	Thermal protection
Process	Atmospheric Plasma Spray, ChamPro™ (LVPS, LPPS, VPS)



(S NO 12) SPECIFICATIONS OF ELECTRIC TRANSPORTER HS4

S No	Noun	Tolerance	M.U	Specification
1	Power Unit			Electric
2	Frame made of			Steel
3	Frame treatment			Polyster Powder Coating
4	Hand arm Vibration		m/s ²	<2.5
5	Noise level at operator's ears		dB	<70
6	Maximum forward speed	± 5%	Km/h	5 to 7
7	Maximum backward speed	± 5%	Km/h	4 to 6
8	Max load capacity on flat ground		Kg	600 to 700
9	Max slop with load		%	30 to 35%
10	Stopping distance in deceleration (without load)	± 10%	M	1.1
11	Battery Voltage		V	12
12	Nominal Capacity K5		Ah	40 to 50
13	Weight of each Battery		Kg	20 to 25
14	Standard Voltage		V	220/240
15	Plug			In use in the country of destination
16	Battery charger			External High Frequency
17	Input Voltage		Hz	225 to 230
18	Input Frequency		Hz	50 to 60
19	Battery Charger Capacity		Ah	12
20	Power Consumption during complete charge cycle		KWh	2
21	Operating Temperature		C	-20/+40
22	Input Fuse		A	5
23	Width		mm	90 to 100
24	Length		mm	180 to 190
25	Height		mm	50 to 60
26	Engine			Electric
27	Electricity			Direct Current



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(S. No. 13) SPECIFICATIONS OF ANODE FOR SILVER PLATING

Description

Material to be used as Anode for silver electro plating.

Suppliers Code Commercially available as

F0632 Anode for silver plating

F4047 Anode for silver plating

Storage conditions : To be stored in original packing

General Characteristics : Material in the form of annealed laminated plates or in extruded strips.

Acceptance Characteristics

(a) Chemical composition

Elements : Limits (in weight)

Silver : 99.97% min

(b) **During process:** Anodes should dissolve regularly with no desegregation.



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TERMS & CONDITIONS:-

- (i) GST may be indicated separately. The envelopes must be marked with "Item's name and Commercial / Technical offer". Literature / brochures of equipment must be attached with technical offer and company stamped.
- (ii) Quotations must be submitted in two copies for single line item i.e. one copy with technical details without price and one copy as commercial offer in one envelopes (no quotation will be accepted if it contains more than 01 item in a single quotation)
- (iii) Validity period should not be less than 90-120 days.
- (iv) Complete technical specifications, MSDS, OEM & Conformance Certificate, Calibration certificate, Fitness report where applicable are required. Sample of chemicals may be asked for test.
- (v) 05 % earnest money required in shape of CDR/BG.
- (vi) Quotation received after due date / time will not be entertained. The CFA reserves the right to accept / reject the part or whole tender.
- (vii) Professional Tax certificate, Punjab
- (viii) Quantity can be increased / decreased at the time of order as per our requirement.
- (IX) All quoted items / Tools must be Original / Branded and accompanied with OEM conformance and originality certificate



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