PAKISTAN AERONAUTICAL COMPLEX, KAMRA
MIRAGE REBUILD FACTORY
TENDER NOTICE NO MRF/20-21/09 DATED 26 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:-

"Powder, Powder, Powder, Silver Anode(P-364), Safety Shoes, Screen 30" Mid Western # 28 TBC (For short Peening Mach MC6060-S), Trichloroethylene, Electric Motor, Power Controller"

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 28-09-2020 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 12-10-2020 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	**:**	**12-10-2020 before 1000 Hrs.**
TENDER OPENING TIME	**:**	**12-10-2020 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/20-21/09
DATED 26-09-2020 OPENING DATE 12-10-2020

SNO	PART NO	NOUN	U/I	Qty	SPECIFICATION
1	AMDRY386-4	Powder	CO= 05LBS	As Req	Specs are attached at the end please
2	METCO206A	Powder	CO= 05LBS		
3	METCO204G PREMIUM	Powder	CO= 05LBS		
4	093-997-487-1	Silver Anode(P-364)	EA		
5	8405/PK0650002	Safety Shoes	PR		Safety Shoes Light Duty
6	SCREEN-28TBC3	Screen 30” Mid Western # 28 TBC (For short Peening Mach MC6060-S)	EA		Screen 30” Mid Western # 28 TBC (For short Peening Mach MC6060-S)
7	33C/836	Trichloroethylene	KG		**Description:** Chlorinaed solvent stabilized. **Chemical Formula:** C2HCL3 **Appearance:** Clear liquid colourless **Density:** 1.45 to 1.47 Kg/DM3 (0.0523 to 0.0531 Lbku.in)
8	MJUA160M2	Electric Motor	EA		**Input:** 440 VAC, 3 Phase, 50/60 Hz **Output:** 15 KW/20 HP, **Revolution (N):** 2950±50 RPM **Operating Temperature:** 75 ± 5 °C
9	TC1028	Power Controller	EA		6.0VP-4066/48MHV

(S NO 1) SPECIFICATIONS OF BOND COAT POWDER AMDRY386-4

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

Thermal Spray Powder Product: Amdry 386-4

1. Introduction

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

(S NO 2) SPECIFICATIONS OF TOP COAT POWDER METCO206A

Zirconia Gadolinia Ytterbia Yttria Agglomerated and Sintered Thermal Spray Powder

Thermal Spray Powder Product: METCO 206A

. Introduction

MetcoTM 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% yttriastabilized 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% yttriastabilized 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	ZrO2 9.5Y2O3 5.6Yb2O3 5.2Gd2O3
Manufacture	Agglomerated and Sintered
Morphology	Spheroidal
Apparent Density	2.0 ± 0.2 g/cm3
Purpose	Thermal barrier
Service Temperature	≤ 1500 °C (2370 °F)
Process	Atmospheric plasma spray

(S NO 03) SPECIFICATIONS OF INTERMEDIATE COAT POWDER 204G-PREMIUM

8% Yttria Stabilized Zirconia Agglomerated and HOSP Thermal Spray Powders

Thermal Spray Powder Product: 204G-PREMIUM

Introduction

Yttria Stabilized Zirconia (8Y2O3-ZrO2) powsders HOSP process combine the advantages of prealloyed, 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 trance 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 crownse, 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 and a more porous, low-K TBC system.

Quick Facts	
Classification	Ceramic, Zirconia based
Chemistry	ZrO2 8Y2O3
Manufacture	Agglomerated and HOSP
Morphology	Spheroidal
Apparent Density	2.3 ± 0.2 g/cm3

Service Temperature High Purity Products: Other Products	 ≤ 1350 °C (2460 °F) ≤ 1250 °C (5072 °F)
Melting Point	2800 °C (5072 °F)
Purpose	Thermal protection
Process	Atmospheric Plasma Spray, ChamProTM (LVPS, LPPS, VPS)

(S. No. 04) 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.

LIST OF OPEN TENDER NO MRF/20-21/09
DATED 26-09-2020 OPENING DATE 12-10-2020

TERMS & CONDITIONS:-

(i) GST may be indicated separately. The envelops 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 envelops (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