

Technical Specification for Tender No. 2023-24/02 Released Government E - Marketing (GeM Portal)

(PACKAGE - A) Sorting and Separation Equipment's/Machinery

Sl. No.	Items	Unit	Specification
a. Material feed system with Zig zag Air Classifier			
1	Material feed system with Zig Zag classifier equipped with Blower Motor, Rotating valve, cyclone separator etc.	-	Bidder to specify rating of major components such as valve size, cyclone size, motor capacity etc.
	The equipment should be capable of separating out dust and other fluffy non rigid waste/ contaminants, such as labels, paper, and plastic wrappers from grinded/chopped/ agglomerated rigid plastics waste.	-	Should comply
	a) Blower Motor & Rotary valve Motor rating	KW	Suitable for 150-200 kg/hr output
	b) Rotary Valve diameter	mm	Suitable for 150-200 kg/hr output
	c) Cyclone separator volume	L	Suitable for above capacity
2	Output	Kg/Hr	150-200 kg/hr
b. Film Grabber with belt conveyor			
3	The system should have Rotary drum with panel control, Gear motors, centrifugal fan, feeding hopper, discharge hopper speed control etc.	Kg/Hr.	150-200 kg/hr. output
4	Belt conveyor made up of Polyester/Nylon for input feed of waste material, with variable speed drives etc.	-	The construction should be of mild steel with Zinc coated epoxy painted Mild steel
c. Ballistic separator double-stage equipment with belt conveyor			
5	The setup should have Ballistic separator with blades, screening decks, gear motors, paddles etc.	-	Shall be able to handle 150-200 Kg/hr. output

6	Belt conveyor made up of Polyester/Nylon for input feed of waste material, with variable speed drives etc. The construction should be of Mild steel material with Zinc coated epoxy painted	Kg/Hr.	150-200 kg/hr.
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d. Manual Sorting Equipment

7	Belt Type width, length etc.	-	Flat Belt/ Cleated Belt (Polyester – Nylon/ Nylon – Nylon type). Shall be able to handle 150- 200 Kg/Hr. Length of belt conveyor should be suitable for 3-4 persons each side.
8	Construction	-	Roller mounted having construction of structural part of Mild steel with Zinc coated epoxy painted.
9	Frame Configuration	-	Frame width, Height (suitable for manual sorting)
10	Output	Kg/Hr.	150-200 kg/hr. and above
11	Motor	KW	Please Specify
12	Speed	MPM	Adjustable through variable frequency drive, Please Specify Range
13	Built in Safety Features	-	Appropriate safety features to be incorporated

e. Plastics Pipe, Lumps, Shredder, Crusher Grinder machine

14	Usage (Feed Material)	-	Plastics waste especially Rigid, HDPE and PVC Pipes directly from feed throat.
15	Capacity	Kg/hr.	200
16	Shredder Motor power	KW	Bidder to specify (suitable for the above capacity)
17	Crusher Motor power	KW	Bidder to specify (suitable for the above capacity)
18	Shredder Motor speed	RPM	Bidder to specify (suitable for the above capacity)
19	Crusher Motor speed	RPM	Bidder to specify (suitable for the above capacity)
20	Blade steel	-	Heat treated tool steel having hardness HRC 60 or above Good wear resistance is required.
21	Rotary and Stationery blade of shredder (Nos.)	-	Shall be able to meet specified output requirement.

22	Rotary and Stationery blade of crusher (Nos.)	-	Shall be able to meet specified output requirement.
23	Screen hole dia of Shredder	mm	20-40 mm
24	Screen hole dia of crusher	mm	8 to 12 mm
25	Other Features Required	-	shredding and crushing function on one machine strong frame structure, air cooling or water cooling design, electrical cabinet with reputed PLC control system, auto control for co-rotation and reversal, Auto protection while over-load.

All the equipment structures should be robust, properly treated with anti - rust coating with epoxy painted.

**(PACKAGE - B) Automatic Inline Washing & Size Reduction Machinery -
Material : HD, LD, PP FILM, MLP FILMS & Rigid Grinded Material OUTPUT: 150-200 KGS/HR**

Sl. No.	Items	Specification
1	Conveyor	Suitable Belt with cleat (multilayered Polyester/Nylon/PU) should be integral Package of machine for handling required capacity (i.e 150-200 kgs/hr)
1a	Metal detector	For all type of metals ,conveyor should automatically stop to allow removal of metal feed to shredder
2	Single Shaft Shredder	Hydraulic powered cylinder with electrical motor main shaft machine with adequate Nos. of Rotor knives & Stator knives with suitable screen for required output
3	Screw Conveyor 1	Suitable for the above capacity
4	Centrifugal /Horizontal Friction washer 1	Adequate size of rotor and motor for required output per hour
5	Floating tank (with screw) 1	Adequate size & Nos. of Paddles / screw for required output per hour, MOC :Stainless steel
6	Screw Conveyor 2	Suitable for the above capacity

7	Tank type Friction washer 2	Adequate size of rotor and motor for required output per hour
8	Floating tank (with screw) 2	Adequate size & Nos. of Paddles / screw for required output per hour, MOC :Stainless steel
9	Screw Conveyor 3	Suitable for the above capacity
10	Centrifugal dewatering machine	Adequate size of rotor with suitable size of motor for required output per hour, Screen size for sufficient cleaning
11	Blower	Adequate size of motor with two outlets suitable to connects to squeezer& dryer.
12	Squeezer	Suitable Spiral Diameter having adequate size of motor for required output per hour
13	Electrical control panel	A synchronize control Panel with remote and local control possibilities for all the equipments in package. PLC control Should be capable of operating machine in fully synchronized mode and also have bypass possibility to operate in standalone mode.
14	Total power requirement	Please specify

Suitable capacity High efficiency motor of ISI certified reputed Make with AC frequency drive of same company for handling where ever required. The entire equipment in above should work in proper synchronization to yield desired output. All water contact machine Parts should be made of stainless steel . Material certificate for steel, conveyor system and motors should be submitted.

**(PACKAGE - C) Inline Single Screw Two Stage Extruder Cutter Compactor Plant With Water Die Face Cutter MATERIAL: PRE-WASHED SHREDDED/GRINDED HD, LD, PP FILM, MLP FILMS
OUTPUT: 150 – 200 Kg./HR**

Sl. No.	Items	Specification
1	Belt driven conveyor	Suitable Belt with cleat (multilayered Polyester/Nylon/PU) should be integral Package of machine for handling required capacity (i.e 150-200 kgs/hr)

2	MOC	Robust Mild steel structure, fabrication with covers Fitted with caster wheels to move it easily Epoxy powder coating for all metal Parts.
3	Motor	Suitable capacity High efficiency ISI certified of reputed make controlled by AC frequency drive
4	COMPACTOR MACHINE	
a)	Bottom Vessel	Stainless steel
b)	Other Packages	Stainless steel
c)	Top Cover	Carbon steel
d)	Stationary Blades	Adequate Nos of blade for required output
e)	Rotary Blades	Adequate Nos of blade for required output
f)	AC Motor Power with AC frequency drive operated	Suitable capacity High efficiency ISI certified of reputed make controlled by AC frequency drive (i.e 150-200 kgs/hr)
5	TWO STAGE SINGLE SCREW EXTRUDERS WITH PANEL BOARD (Mother & baby Type /Tandem type)	
a)	GEAR BOX	High torque, low noise with High carbon carburized Mild steel of reputed brand
6	MOTOR	
a)	HP	Suitable capacity High efficiency High efficiency Motor, please Specify
b)	RPM	Please specify
c)	Standard	Suitable capacity High efficiency motor of ISI certified reputed Make with AC frequency drive of same company for handling where ever required.
d)	Mounting	Foot Mounted/ Suitably mounted as per the machine requirement.
7	SCREW	
a)	Screw Dia	75-90 mm (Suitable capacity for required output)

b)	L/D Ratio	30 to 40:1 (to ensure high quality desired output)
c)	Material of construction	Bimetallic Screw
d)	Heat Treatment	Toughened, Nitrided and Ground
8	BARREL	
a)	Barrel Size	Suitable capacity for required output
b)	L/D Ratio	Suitable for the screw
c)	Heat Treatment	Duly toughened and nitrided.
d)	Water Cooling	Provided on Barrel below the Feed suction
e)	Blower	For barrel cooling
f)	Vent	2 Nos with water ring vacuum pump
g)	Material of construction	Bimetallic
9	Condensing Unit with Heat Exchanger	
a)	Vacuum Pump	Suitable capacity for required output
10	HEATER	
a)	Heating Type	Ceramic heaters
b)	Construction	Provided with blowers to cool & control excess heat
11	BASE FRAME	
a)	Material of Construction	Heavy duty frame work, stand for no vibration and duly give mounting and locking base for easy installation, Epoxy powder coating for all metal Packages.
12	MELT FILTER	
		Disc Size 500 mm or higher
		Automatic Self-Cleaning Screen Changer Fitted with required capacity Geared Motor

		Screen changer should have one blade rotating on the screen
		Rotating blade should lift the contamination from the screen
		Contamination should be transported to the discharge valve by blades
		The discharge valve should open for a pre-set time frame.
13	DIE FACE CUTTER	
a)	Type	Water ring type (closed circuit)
b)	Construction	Water contact Packages should be made from non-rusting stainless steel
c)	BASE FRAME	Robust frame work, stand for no vibration and duly give mounting and locking base for easy installation Epoxy powder coating for all metal Parts.
d)	De watering System for granules	Stainless Steel
All water contact package items should be stainless steel material with robust construction.		

(PACKAGE - E) 10 KLD Packaged Effluent Treatment Plant (ETP)

Sl. No.	Items	Specification
<p>Brief Description: Effluent Treatment Plant with suitable treatment process is desired for proposed Plastic Waste Management Centre of CIPET being established at various location across country having a tentative plastic recycling capacity of approximately 1-1.5 Tons/day. The plastic waste expected to consist of PP / PE / MLP etc. from various sources. The effluent coming out from washing and cleaning of these waste need to be treated as per the norms / guidelines of respective State Pollution Control Boards before its reuse or discharge.</p>		
<p>Requirements:</p>		
	<p>The ETP shall be compact in nature and may consist of following equipment / Packages with complete accessories required for their operation based on the treatment process being offered:</p>	
	<ul style="list-style-type: none"> · Raw effluent collection pump 	
	<ul style="list-style-type: none"> · Oil / Grease trap or separator 	
	<ul style="list-style-type: none"> · Screen Chamber 	

1	·	Collection / Equalization tank	
	·	Chemical Reaction tank	
	·	Settlers	
	·	Disinfection tank	
	·	Final treatment unit	
	·	Drying and Sludge disposal unit	
	·	Air blowers / diffusers	
	·	Sand / carbon filter	
	·	Air release valves, Pressure gauges, pH monitor, level controller etc.	
2	Shall be capable of treating various type of effluents generated by washing and cleaning of solid mixed plastic waste of municipal solid waste / industrial waste		
3	Construction should be robust and compact in design having rust proof Mild steel / FRP construction		
4	Shall be compliant with the statutory norms of State Pollution Control Boards		
5	Preferably Skid mounted		
6	All required civil work should be carried out by vendor for functional operation of plant as per SITC (Supply, Installation, Testing and commissioning) mode.		
7	Raw & Treated water quality		
Sl.	Parameters	Unit	Raw Effluent
1	pH	-	07-Aug
2	Total Suspended Solids (TSS)	ppm	300 - 350

3	BOD	ppm	1
4	COD	ppm	30 – 40
5	Odor and Smell	--	As per source
6	Oil & Grease	ppm	May be small trace