

## Scheme of Fund for Regeneration of Traditional Industries

# SFURTI

(Ministry of Micro, Small and Medium Enterprises, Govt. of India Project)

**M/s APITCO Ltd, Hyderabad**  
**(Implementing Agency for Vizianagaram Coir Cluster)**

*In the Pre-bid meeting held at NAFO (Regional Office, Coir Board, Rajahmundry) on April 10<sup>th</sup>, 2017, the following modifications have been made to the machinery and equipments in consultation with the machinery manufacturers/tenderes, SPV and Implementing Agency, proposed for Vizianagaram Coir Cluster.*

**Requesting the Tenderer to quote the price taking into consideration of the revised specifications (highlighted) as furnished here under:**

### Annexure – 1A

S. No.	Original	Revised
1	<b>UNTWISTING MACHINE</b> Untwisting machine should be suitable for opening & carding of curled coir ropes of 16mm to 25mm diameter into springy loose fibre for feeding into the sheet-forming machine. The Untwisting machines should be mounted over the Feeding Conveyor of the RCP Capacity: 300 kg/hour Power required: 10.5 hp	<b>UNTWISTING MACHINE</b> Untwisting machine should be suitable for opening & carding of curled coir ropes of 16mm to 25mm diameter into springy loose fibre for feeding into the sheet-forming machine. The Untwisting machines should be mounted over the Feeding Conveyor of the RCP Capacity: <b>250 kg/hour</b> Power required: <b>9.5 hp</b>
2	<b>RUBBERISED COIR FLEECE MANUFACTURING</b>	<b>RUBBERISED COIR FLEECE MANUFACTURING</b>

<p><b>LINE</b></p> <p>The plant should be capable of producing in continuous process, endless fleece of maximum width <b>2.0</b> meters.</p> <p>The Rubberised Coir Sheet Forming Plant should consists of</p> <p>A. Feeding Section</p> <p>B. Web Forming Section:</p> <p>C. Spray Station:</p> <p>D. Drying Section:</p> <p>They are detailed below</p> <p><b><u>Feeding Section</u></b></p> <p>Fibre feed system should consist of specially designed feed conveyor with fibre opener picker drum and pneumatic fibre conveyor system. This section is used for further loosening and pickering of the fibre and feeding into the web former.</p> <p><b><u>Web Forming Section</u></b></p> <p>The Web Forming Section should have a Vaned Fibre Distributor, a Single Stage Volumetric Feed Box, Layering Drum and Twin Conveyors. The high-speed layering drums should ensure uniform web density and vertical orientation of fibre. The feed to the layering drum is to be regulated by separate variable speed</p>	<p><b>LINE</b></p> <p>The plant should be capable of producing in continuous process, endless fleece of maximum width <b>2.3</b> meters.</p> <p>The Rubberised Coir Sheet Forming Plant should consists of</p> <p>A. Feeding Section</p> <p>B. Web Forming Section:</p> <p>C. Spray Station:</p> <p>D. Drying Section:</p> <p>They are detailed below</p> <p><b><u>Feeding Section</u></b></p> <p>Fibre feed system should consist of specially designed feed conveyor with fibre opener picker drum and pneumatic fibre conveyor system. This section is used for further loosening and pickering of the fibre and feeding into the web former.</p> <p><b><u>Web Forming Section</u></b></p> <p>The Web Forming Section should have a Vaned Fibre Distributor, Layering Drum and Twin Conveyors. The high-speed layering drums should ensure uniform web density and vertical orientation of fibre. The feed to the layering drum is to be regulated by separate variable speed controlled feed system designed to</p>
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<p>controlled feed system designed to achieve the required uniform web density and vertical orientation of fibre.</p> <p><b><u>Spray Station</u></b></p> <p>There should be two Spray Stations delivering atomised compounded latex through a pair of banks of Latex Spray Guns. The guns should provide fine coating of atomized latex to the coir web, whereby the binding of the coir web is ensured. The Latex Spray Guns should be easy to detach, maintain and reconnect and are designed sturdy.</p> <p>The first spray station should be located just before the fleece enters the Drying Section. The second Spray Station should be located after the first pass of the slat conveyor and just before entering the Drying Section for the second pass.</p> <p><b><u>Drying Section:</u></b></p> <p>The Dryer Section should remove excess moisture in the latex. The Drying Section should have a three-pass slat conveyor system with synchronized common drive. The hot air delivery and distribution system should be designed to ensure uniform distribution of hot air</p>	<p>achieve the required uniform web density and vertical orientation of fibre.</p> <p><b><u>Spray Station</u></b></p> <p>There should be two Spray Stations delivering atomised compounded latex through a pair of banks of Latex Spray Guns. The guns should provide fine coating of atomized latex to the coir web, whereby the binding of the coir web is ensured. The Latex Spray Guns should be easy to detach, maintain and reconnect and are designed sturdy.</p> <p>The first spray station should be located just before the fleece enters the Drying Section. The second Spray Station should be located after the first pass of the slat conveyor and just before entering the Drying Section for the second pass.</p> <p><b><u>Drying Section:</u></b></p> <p>The Dryer Section should remove excess moisture in the latex. The Drying Section should have a three-pass slat conveyor system with synchronized common drive. The hot air delivery and distribution system should be designed to ensure uniform distribution of hot air over the</p>
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	<p>over the entire fleece. All external panels, both fixed and hinged, are to be double-walled and insulated with high-grade imported resin bonded glass wool.</p> <p>The thermic fluid heated hot air generator with in-line heat exchanger and blower. The design should ensure part of the hot air generated is recycled. The hot air distribution should be staggered for maximum delivery at the first and second pass of the slat conveyor          Calendaring of the fleece is to be done at the end of the second pass.</p> <p><b><u>Cutting Section:</u></b>          A trolley mounted motorized circular cutter should cut the fleece to the desired length. It should have independent control and safety guard, handle etc. This is to be designed to cut the fleece without interrupting the production.          Capacity: 500 kg Rubberised Coir Fleece per hour.          Total power required : 65 hp approximately.</p>	<p>entire fleece. All external panels, both fixed and hinged, are to be double-walled and insulated with high-grade imported resin bonded glass wool.</p> <p>The thermic fluid heated hot air generator with in-line heat exchanger and blower. The hot air distribution should be staggered for maximum delivery at the first and second pass of the slat conveyor          Calendaring of the fleece is to be done at the end of the second pass.</p> <p><b><u>Cutting Section:</u></b>          A trolley mounted motorized circular cutter should cut the fleece to the desired length. It should have independent control and safety guard, handle etc. This is to be designed to cut the fleece without interrupting the production.          Capacity: 500 kg Rubberised Coir Fleece per hour.          Total power required : <b>60 hp</b> approximately.</p>
<p><b>3</b></p>	<p><b>PRE-LAMINATION SPRAY SYSTEM</b>          This Spray system is introduced to avoid a</p>	<p><b>PRE-LAMINATION SPRAY SYSTEM</b>          This Spray system is introduced to avoid a</p>

	<p>separate Spray Cabin. The in-line spray station provides a light coat of latex for binding the laminations before pressing. The diluted latex is delivered from a separate pressure tank. The Pre-lamination Spray is to be mounted on a Slat conveyor just before cutting section.</p> <p>Power required: 1 hp</p>	<p>separate Spray Cabin. The in-line spray station provides a light coat of latex for binding the laminations before pressing. The diluted latex is delivered from a separate pressure tank. The Pre-lamination Spray is to be mounted on a Slat conveyor just before cutting section.</p> <p>Power required: 3 hp</p>
4	<p><b>DRUM PRESS</b></p> <p>The Drum Press should consist of a positively driven feeding conveyor, large diameter drum rollers, and a holding roller table. The drum design should ensure the fleece orientation does not dislocate or collapse while pressed. The drum and feed roll conveyor should have separate geared drives.</p> <p>Power required: 2 hp</p>	<p><b>DRUM PRESS</b></p> <p>The Drum Press should consist of a positively driven feeding conveyor, large diameter drum rollers, and a holding roller table. The drum design should ensure the fleece orientation does not dislocate or collapse while pressed. The drum and feed roll conveyor should have separate geared drives.</p> <p>Power required: 2.5 hp</p>
5	<p><b>ELECTRONIC WEIGHING TABLE</b></p> <p>The dry fleece exiting the dryer is measured in length, cut across and stacked on the electronic weighing table. The stacked fleece is then weighed to pre-determined weights before lamination. The weights, time, date and batch are monitored and recorded. The production from the RCP is recorded electronically at this point.</p>	<p><b>ELECTRONIC WEIGHING TABLE</b></p> <p>The dry fleece exiting the dryer is measured in length, cut across and stacked on the electronic weighing table. The stacked fleece is then weighed to pre-determined weights before lamination. The weights, time, date and batch are monitored and recorded. The production from the RCP is recorded electronically at this point.</p>
6	<p><b>HYDRAULIC MAT PRESS</b></p>	<p><b>HYDRAULIC MAT PRESS</b></p>

**Revised Specifications**

	<p>Up stroke gravity return Hydraulic Hot Mat Press for pressing rubberised coir mattress using heated Thermic Fluid</p> <p>Specific pressure 0.5 kg/cm<sup>2</sup></p> <p>Size of platen (solid) 96" (2.44metre ) x 92" (2.33metre)</p> <p>Thickness of platen 40MM +/- 1mm</p> <p>No. of heating platen Seven</p> <p>No. of daylight Six</p> <p>No. of ram Four</p> <p>Dia of ram 100mm (minimum)</p> <p>Stroke of ram 1600mm</p> <p>Distance between platens 250mm</p> <p>Closing time 20-30 seconds</p> <p>Way of operation Manual</p> <p>System of heating Thermic Fluid</p> <p>Power required 10 hp</p>	<p>Up stroke gravity return Hydraulic Hot Mat Press for pressing rubberised coir mattress using heated Thermic Fluid</p> <p>Specific pressure 0.5 kg/cm<sup>2</sup></p> <p><b>Size of platen (solid) 108" x 98"</b></p> <p>Thickness of platen 40MM +/- 1mm</p> <p><b>No. of heating platen Nine</b></p> <p><b>No. of daylight Eight</b></p> <p>No. of ram Four</p> <p>Dia of ram 100mm (minimum)</p> <p><b>Stroke of ram 1800mm</b></p> <p><b>Distance between platens 300 mm for first two remaining 250 mm</b></p> <p>Closing time 20-30 seconds</p> <p><b>Way of operation Manual/automatic</b></p> <p>System of heating Thermic Fluid</p> <p>Power required 10 hp</p>
<p><b>7</b></p>	<p><b>VULCANISER</b></p> <p>The Vulcaniser should consist of glass wool insulated double walled chamber, heat exchangers, blowers to create cycloid flow of hot air, pad stacking trolleys and rails. The latex in the rubberised coir pads is vulcanized so that dimensional stability of the pads is obtained. The media of heating used in the heat</p>	<p><b>VULCANISER</b></p> <p>The Vulcaniser should consist of glass wool insulated double walled chamber, heat exchangers, blowers to create cycloid flow of hot air, pad stacking trolleys and rails. The latex in the rubberised coir pads is vulcanized so that dimensional stability of the pads is obtained. The media of heating used in the heat exchanger is</p>

	<p>exchanger is Thermic Fluid.</p> <p>Capacity Two Trolleys each carrying 10 pads of maximum 8 ft x 8ft at a time</p> <p>Power required 1.5 hp x 8 Nos. (12 hp)</p>	<p>Thermic Fluid. <b>Door opening and closing automatically. Tralley movement is semi-automatic. 22'x12' size chamber is required</b></p> <p>Capacity <b>Four</b> Trolleys each carrying <b>8</b> pads of maximum 8 ft x 8ft at a time</p> <p>Power required <b>14.5 HP</b></p>
<b>8</b>	<p><b>BAND SAW CUTTING MACHINE</b></p> <p>The four-wheeled Cutting Machine should consist of a C-shaped multilayer frame, moving tables, endless band saws, sharpening devices, tensioning devices, etc.</p> <p>Power required: 2 hp.</p>	<p><b>BAND SAW CUTTING MACHINE</b></p> <p>The four-wheeled Cutting Machine should consist of a C-shaped multilayer frame, moving tables, endless band saws, sharpening devices, tensioning devices, etc.</p> <p>Power required: 2 hp.</p>
<b>9</b>	<p><b>BALL MILL</b></p> <p>Ball Mills are to be robust in design, lined with ceramic bricks and designed for 250 litres loading capacity. The ball mills shall be complete with supporting frame, safety guards, hour-meter, all electrical, suitable drive system etc.</p> <p>Power required : 15 hp.</p>	<p><b>BALL MILL</b></p> <p>Ball Mills are to be robust in design, lined with ceramic bricks and designed for <b>1250 litres</b> loading capacity. The ball mills shall be complete with supporting frame, safety guards, hour-meter, all electrical, suitable drive system etc.</p> <p>Power required : <b>10 hp.</b></p>
<b>10</b>	<p><b>AGITATOR MOUNTED PRESSURE TANK</b></p> <p>The tank should have loading capacity of 1500 ltrs. It should be robust in design, made out of tested epoxy coated mild steel with dished ends. The tanks should be mounted with</p>	<p><b>AGITATOR MOUNTED PRESSURE TANK</b></p> <p>The tank should have loading capacity of 1500 ltrs. It should be robust in design, made out of tested epoxy coated mild steel with dished ends. The tanks should be mounted with reduction</p>

	<p>reduction gear driven agitators. The tank should be having pressure resistant stuffing box to prevent leakage of air to prevent pressure drop. The tank should have stainless steel inlet and outlet air valve, ammonia resistant pressure gauges, safety relief valve, drainage valve, manhole with cover and pouring mouth with dummy.</p> <p>Capacity: 1,500 Litres Power required : 1 hp.</p>	<p>gear driven agitators. The tank should be having pressure resistant stuffing box to prevent leakage of air to prevent pressure drop. The tank should have stainless steel inlet and outlet air valve, ammonia resistant pressure gauges, safety relief valve, drainage valve, manhole with cover and pouring mouth with dummy.</p> <p>Capacity: 1,500 Litres <b>Power required : 2 hp.</b></p>
<b>11</b>	<p><b>DE-AMMONIATING STIRRER &amp; MIXING TANKS</b></p> <p>The Latex Stirrer will have 5 hp motor and reduction gear common drive to all the six agitators. The whole equipment will be mounted on heavy duty frame work with suspended stirrer shaft and blades. There will be 3 latex tanks of 400 litre capacity placed on individual trolleys. The tanks will have epoxy coating inside and enamel paint outside.</p>	<p><b>DE-AMMONIATING STIRRER &amp; MIXING TANKS</b></p> <p>The Latex Stirrer will have <b>2 hp</b> motor and reduction gear common drive to all the <b>4 agitators</b>. The whole equipment will be mounted on heavy duty frame work with suspended stirrer shaft and blades. There will be <b>4 Latex tanks (i.e., 1 SS &amp; 3 MS)</b> of <b>200 litre</b> capacity placed on individual trolleys. The tanks will have epoxy coating inside and enamel paint outside.</p>
<b>12</b>	<p><b>QUILTING MACHINE</b></p> <p>Maximum Width of Material: 90" Maximum Quilting Width: 84" Maximum Distance between Needles: 1" Number of Needle Row: 3 Distance between Row: 3" Number of Needle: 252</p>	<p><b>Not Required</b></p>



	Power Required: 3 hp	
<b>13</b>	<p><b>DUST EXTRACTION SYSTEM</b></p> <p>Dust rising from the Untwisting Section volumetric chambers and the layering drums are sucked out to the dust extraction system. All necessary suction blowers and dusts dust catchers etc. are included</p> <p>Power required: 10 hp.</p>	<p><b>DUST EXTRACTION SYSTEM</b></p> <p>Dust rising from the Untwisting Section volumetric chambers and the layering drums are sucked out to the dust extraction system. All necessary suction blowers and dusts dust catchers etc. are included</p> <p>Power required: <b>20 hp.</b></p>
<b>14</b>	<p><b>AIR COMPRESSOR</b></p> <p>One single stage, rotary screw element complete with:</p> <p>Dry paper type suction air filter with silencer. Conveniently located for easy replacement of filter element. Unloader with Integrated regulating valve for load/unload control system. Simple design with only one moving part needs no regular adjustments. Three-way solenoid valve required for load/unload regulation of the compressor. Air/Oil temperature switch/gauge. Air oil temperature at element outlet and to shut down the compressor in case of too high element outlet air temperature.</p> <p>Air check valve at the element discharge end. Air oil receiver tank consisting of: Sight glass for oil level indication and oil filling arrangement.</p>	<p><b>AIR COMPRESSOR</b></p> <p>One single stage, rotary screw element complete with:</p> <p>Dry paper type suction air filter with silencer. Conveniently located for easy replacement of filter element. Unloader with Integrated regulating valve for load/unload control system. Simple design with only one moving part needs no regular adjustments. Three-way solenoid valve required for load/unload regulation of the compressor. Air/Oil temperature switch/gauge. Air oil temperature at element outlet and to shut down the compressor in case of too high element outlet air temperature.</p> <p>Air check valve at the element discharge end. Air oil receiver tank consisting of: Sight glass for oil level indication and oil filling arrangement.</p>

	<p>Minimum pressure valve to close off the compressor from the air net when the unit is stopped or running unloaded and to maintain required air pressure in the system for proper oil lubrication. Safety valve. Gauge for air oil receiver pressure. Oil draining arrangement. Three stage air oil separation system. First by cyclonic action (Centrifugal), second by gravitational (heavier particles separate down), Third by passing through coalescent filter. Air &amp; Oil cooler assembly – Air &amp; oil cooler are compact block coolers of Aluminium for optimum heat transfer. Lower pressure drop and lower weight. After cooler reduces the temperature at outlet air to approximately 8 to 10° C above ambient temperature. Oil filter mounted on air oil cooler for filtration of lubricating oil. Thermostatic valve to regulate oil temperature within the system.</p> <p>Power required: 10 hp.</p>	<p>Minimum pressure valve to close off the compressor from the air net when the unit is stopped or running unloaded and to maintain required air pressure in the system for proper oil lubrication. Safety valve. Gauge for air oil receiver pressure. Oil draining arrangement. Three stage air oil separation system. First by cyclonic action (Centrifugal), second by gravitational (heavier particles separate down), Third by passing through coalescent filter. Air &amp; Oil cooler assembly – Air &amp; oil cooler are compact block coolers of Aluminium for optimum heat transfer. Lower pressure drop and lower weight. After cooler reduces the temperature at outlet air to approximately 8 to 10° C above ambient temperature. Oil filter mounted on air oil cooler for filtration of lubricating oil. Thermostatic valve to regulate oil temperature within the system.</p> <p>Power required: <b>20 hp.</b></p>
<b>15</b>	<p><b>THERMIC FLUID HEATER</b> Thermic Fluid Heater of capacity 6 lakhs kcal. per hour Standard vertical type coiled heater Power required: 16 hp.</p>	<p><b>THERMIC FLUID HEATER</b> Thermic Fluid Heater of capacity <b>10 lakhs</b> kcal. per hour Standard vertical type coiled heater Power required: <b>40 hp.</b></p>
<b>16</b>	<b>CHIMNEY &amp; FLUE DUCT</b>	<b>CHIMNEY &amp; FLUE DUCT</b>

	Standard Chimney of appropriate Diameter to maintain steady up-draft of flue gases, ladder, as per IS standards	Standard Chimney of appropriate Diameter to maintain steady up-draft of flue gases, ladder, as per IS standards <b>Power required : 7.5 hp</b>
<b>17</b>	<b>UTILITY PIPELINES</b> Standard utility pipelines for Thermic Fluid, Compressed Air for delivery at various tapping points in the plant. Pipeline for thermic fluid include provision for booster pump to maintain dual temperature for various equipment	<b>UTILITY PIPELINES</b> Standard utility pipelines for Thermic Fluid, Compressed Air for delivery at various tapping points in the plant. Pipeline for thermic fluid include provision for booster pump to maintain dual temperature for various equipment <b>including solenoid valves, normal valves and globe valves, where ever necessary.</b> <b>A receiver tank, moisture controller are required thermic fluids, insulation of pipe lines, OHT are also included</b>
<b>18</b>	<b>MATERIAL HANDLING EQUIPMENTS</b> Various material handling equipments to move raw materials, semi-finished goods and finished goods like trolleys, pallets, electric hoists, barrel movers etc.	<b>MATERIAL HANDLING EQUIPMENTS</b> Various material handling equipments to move raw materials, semi-finished goods and finished goods like trolleys, barrel movers etc.  <b>Trolleys : 4 Nos ( 8' x 9')</b> <b>Barrel movers : 1 Nos etc.</b>
<b>19</b>	<b>WEIGHING EQUIPMENTS</b> Weighing Equipments like platform scales at various point of production and packing for dispatch	<b>WEIGHING EQUIPMENTS</b> Weighing Equipments like platform scales at various point of production and packing for dispatch

		<p>Plat form weighing balance – 1No (8' x 8') each, 100 Kg capacity 100 Kg capacity weight balance (Small size) – 2 Nos</p>
20	<p><b>HAND TOOLS</b> Hand tools for routine maintenance, minor repairs and in-house fabrications like welding set, angle grinders, drilling machines etc.</p>	<p><b>HAND TOOLS</b> Hand tools for routine maintenance, minor repairs and in-house fabrications like welding set, angle grinders, Hand drilling machines etc. <b>Platform drilling machine upto 3/4<sup>th</sup> inch with motor – 1No</b> <b>Angel Grinding Machine – 4" – 1No</b> <b>Welding Machine – 20amps with cables and accessories</b> <b>Hand Tools including all set of spanners, hammer, screwdriver, box of wrenches, cutting players, tester, etc</b></p>
21	<p><b>Additional Requirement</b></p>	<p><b>ELECTRIFICATION</b> <b>Which covers main panel board to individual machinery panels, then to each motor including electrical wiring etc.</b></p>