

## MC – 1

### Machinery for Weaving, Weaving Preparatory, Knitting

#### A. Weaving (Loom Shed)

Sr. No.	Name of the machine with specifications
1.	Rapier Loom with Weft Insertion Rate (WIR) not less than 380 mtrs per minutes with or without Electronic Dobby/Electronic Jacquard
2.	Projectile Loom with Weft Insertion Rate (WIR) not less than 750 mtrs per minutes with or without Electronic Dobby/Electronic Jacquard
3.	Air Jet Loom with (i) Weft Insertion Rate (WIR) not less than 1200 mtrs per minutes without Electronic Dobby/Electronic Jacquard (ii) Weft Insertion Rate (WIR) not less than 900 mtrs per minutes with Electronic Dobby/Electronic Jacquard
4.	Water Jet Loom with (i) Weft Insertion Rate (WIR) not less than 1000 mtrs per minutes without Electronic Dobby/Electronic Jacquard (ii) Weft Insertion Rate (WIR) not less than 800 mtrs per minutes with Electronic Dobby/Electronic Jacquard
5.	PLC based Circular Looms with Minimum 6 shuttles, Minimum tubular lay flat width of 90 cms and WIR of 600 mpm or more.
6.	Carpet loom (Spool gripper looms/Jacquard gripper looms/Wireloom weaving / Brussels weaving / Face to face weaving)
7.	Electronic Jacquard and Electronic Dobby suitable for Shuttleless Looms having Weft Insertion Rate (WIR) of 380 mtrs per minutes and above
8.	Air Compressor 15 H.P. and above with inbuilt invertors and air driers for Air Jet looms only
9.	Battery operated trolley for beam gaing
10.	Automatic Beam storage system
11.	Over Head Travelling Clearers
12.	Ultrasonic Cleaning machines for Reed
13.	Electronic Jacquard Computerized Pattern machine for weaving Patterns and Brand Names on the Selvedge.
14.	Shuttleless / Rapier Loom for Sample weaving with or without Electronic Dobby/Jacquard

#### B. Weaving Preparatory

Sr. No.	Name of the machine with specifications
1	Single yarn sizing machine with minimum speed of 250 mtrs per minute
2	High speed multi cylinder sizing machine/ zero twist sizing machine having minimum 8-10 cylinders for single size box and 12-14 cylinders for double size box and minimum speed of 40 mtrs per minutes
3	Direct beam warper with minimum 300 ends creel capacity and minimum speed of 1000mtrs per minutes

4	Computer aided design system for weaving
5	Two-for-one Twister operating at the speed of minimum 8000 rpm with cradle, drop wires and overfeed system. Three-for-one Twister operating at the speed of minimum 5000 rpm with cradle, drop wires and overfeed system.
6	Chenille Yarn Manufacturing Machine with spindle speed of more than 7500 rpm
7	Draw/ Air Texturising machine having minimum speed of 800 mtrs per minutes
8	Sectional warping machine with auto stop & tension control along with minimum 300 ends creel capacity and minimum speed of 350 mtrs per minutes
9	Water Softning/ R.O. Plant for Waterjet Looms
10	Automatic Drawing in/ Warp Reaching, Tying and Leasing-in machine (Not applicable on stand alone machine)
11	Automatic Sample Warper Machine
12	Direct Warping Machine for denim application with bigger flange Dia more than 1000 mm and minimum speed of 700 mpm.
13	Beam to Cone winding machine for Indigo Package.

### C. Knitting

Sr. No.	Name of the machine with specifications
1	High speed circular knitting machine with yarn tension and clearers along with Creel - 1) Having Dia up to 26" with a minimum speed of 20 RPM and above, 2) Having Dia above 26" with a minimum speed of 15 RPM and above.
2	High speed socks knitting machine having minimum production of 15 pairs per hour and gloves knitting machines having minimum production of 3(three) gloves per minute with or without electronic jacquard.
3	Computerised flat bed knitting machine with minimum speed of 11 revolutions per minute / minimum speed of 0.3 Mts/ Sec.
4	Warp/ Raschel knitting machine having minimum working width of 60" and minimum speed of 500 RPM.
5	High speed computerised warping machine for knitting with minimum closed creel capacity of 200 and minimum speed of 100 Mts/ Min
6	Computerised label making Knitting machine with minimum 2 heads and minimum speed of 500 RPM and minimum working width of 50 mm per head.
7	Computerized Strap (Collar/Cuff) Flat Bed Knitting Machine a minimum speed of 0.3 Mts/ Sec with minimum working width of 12".
8	High performance Tricot Machinery with minimum 3 Bar and speed of 2300 rpm and above.
9	Fully Fashioned Knitting Machines
10	Air Compressor 15 H.P. and above with in-built invertors and air driers

MC – 2

**Machinery for Processing of Fibre/Yarn/Fabric**

<b>Sr. No.</b>	<b>Name of the machine with specifications</b>
1.	PLC controlled dye Kitchen management system
2.	Soft Package Precision Winding machine with individual drum/Spindle driven
3.	Automatic Arm Hank Dyeing machine
4.	Air Flow Dyeing machine
5.	Automatic Cabinet type Yarn Dyeing machine
6.	Automatic Sample Yarn Dyeing Machine
7.	PLC based fully automatic Jigger with servo/microprocessor control
8.	Industrial washing/drying machine for garments/made ups/industrial tumble dryers/washers
9.	Reverse Osmosis, Nano Filtration , Multiple stage prefabricated steel evaporator excluding civil construction
10.	PLC controlled Shearing / Cropping machine more than 05 mtrs per minute
11.	PLC based yarn / fabric Singeing machine with auto mixing of air & fuel for temperature and flame control with or without pre and post brushing and desizing unit.
12.	PLC controlled Singeing machine for tubular fabrics
13.	PLC controlled Knit tubular mercerizing machine or bleaching cum mercerising machine with knit fabric diameter adjuster.
14.	PLC controlled Ammonia mercerising machine for fabrics,
15.	PLC controlled fully automatic Yarn / fabric mercerizing machine
16.	PLC controlled continuous Knit fabric bleaching plant
17.	Baloon Padder with silicate dosing along with level control & ratio control mechanism
18.	Slit opener with open width squeeze mangle for knitted fabric.
19.	Fabric automatic reversing machine
20.	PLC & Inverter Controlled Automatic Reeling Machine with stop motion and with length Measuring Device
21.	PLC based open width/rope and squeezing machine with detwister
22.	PLC based J Box
23.	PLC based Solvent Scouring Machine / Vaporlock machine
24.	PLC based Rotary Drum Washer
25.	PLC based Float Dryer with padding mangle.
26.	Fibre cake opener for fibre dyeing machine for yarn dyeing unit
27.	Yarn conditioning machine for Yarn Dyeing units
28.	Precision flock cutting / printing machine for textile processing unit only.
29.	PLC based Relax dryer
30.	PLC based Sueding / peach finishing machine with brushing / raising / contipress / pile cutting
31.	Automatic Pleating/Creasing/Folding machine for fabrics.
32.	PLC based Microwave dryer / Hot air dryer / Infrared dryer.
33.	Automatic Crush machine for uneven pleat for grey/dyed fabrics.
34.	PLC based Dipping machine
35.	PLC based Foam finishing machine

36.	Water softening plant.
37.	Deminerlisation plant.
38.	Open-width continuous scouring and bleaching range with microprocessor attachments and automatic chemical dosing.
39.	PLC based Package Dyeing machines (cheese, cone, Tops, fibres, dyesprings, yarn beam) and with maximum liquor ratio of 1:5
40.	PLC controlled Fully Automatic Flat Bed Printing machine with pneumatic blanket control
41.	PLC based Soft flow Dyeing Machine with pre heating chamber (liquor ratio max 1: 4)
42.	PLC based Rapid Jet Dyeing Machines with minimum capacity of 100 kgs and fabric speed of minimum 60 mtrs per minute (liquor ratio max 1: 4)
43.	Compact continuous dyeing and finishing machine for tapes / narrow width woven fabric
44.	Open width Pad-dry and / or Pad-Steam continuous dyeing.
45.	Indigo Rope/Sheet dyeing range including indigo dyeing cum sizing machine
46.	Digital / laser / len engraving / screen making system for rotary screens for textile processing units only
47.	PLC based fully Automatic Rotary Screen Printing Machine with magnetic / Air flow squeegee system, automatic design setting, and quick change over facility/ flying design change (FDC) system with or without on-line washing arrangement
48.	Digital/Ink jet printing machines (For textile processing units only).
49.	High Speed Micro inkjet engraver with UV exposing unit. (For textile processing units only).
50.	Continuous transfer printing machine (cylinder based) for synthetics.
51.	PLC controlled Thermosoling range (For Synthetics only).
52.	PLC controlled continuous crabbing machine with minimum speed of 15 mtrs per minute.
53.	PLC based scouring and milling machine with minimum speed of 25 mtrs per minute and maximum liquor ratio of 1:5.
54.	PLC based Loop ager with arrangement for moist and superheated steaming with minimum speed of 20 mtrs per minute.
55.	PLC based Powder dot coating / laminating machine for fabrics with dot roll temperature control.
56.	Continuous weight reduction machine through micro wave technique (for Polyester goods only) with minimum speed of 20 mtrs per minute
57.	PLC controlled Multi Chamber Washing range with minimum 5 chambers
58.	PLC controlled Multi cylinder Drying range with individual cylinder drives with or without padding mangle
59.	PLC controlled Multi chamber /Multi layer Stenter (minimum 4 chambers) with arrangement of Thermic fluid / gas heating.
60.	PLC controlled Compressive Shrinking range
61.	PLC controlled continuous decatizing machine with Wrapper tension and auto clave programming and minimum working speed of 30 mtrs per minute
62.	PLC based Airo Machine (for durable mechanical finishes)
63.	PLC controlled Calendering Machine having Thermoplast/Duraplast/Polyamide sleeve
64.	PLC based Compacting machine

65.	PLC Controlled Radio frequency / Radiant gas fired / Loop dryers
66.	Brushing machine for denims
67.	PLC controlled Machine for Softening/Stone wash effect on fabric/garments.
68.	Robotised automatic roll packing machine.
69.	PLC controlled Plasma Treatment machines
70.	PLC controlled Continuous Pressing and Setting Machine / Super finish machine
71.	AC inverter driven PLC based Fabric inspection machine with fault analyzer and report generator and length measuring and cutting device
72.	Hand held spectrophotometer for shop floor colour matching
73.	PLC based Husk/oil / gas fired boiler (Steam /Thermic fluid) with automatic control on combustion efficiency, O2 Monitoring Equipments, and with Electrostatic precipitator and Micro dust collector
74.	Wool Carbonising Line / Plant for textile unit only.
75.	Automatic Hydroextractor
76.	PLC controlled Curing/Polymerising Machine
77.	PLC controlled Coating/Embossing Machine
78.	Multi Cross Linking Resin Finishing Machine.
79.	Pile Lifting Machine.
80.	Latex mixing and dispensing system for Coating Line.
81.	Air compressor 15 H.P. and above with in-built invertors and air driers.
82.	Testing Equipments in Quality Control Lab accredited by National Accrediation Board for Lab (NABL) India and set up in the textile & jute unit.
83.	Fully automatic material handling system
84.	Ultrasonic Cleaning machine for fabrics and strips
85.	PLC controlled Denim wet finishing and Shrinking range with inverter motors.



## MC – 3

### Machinery for Manufacturing of Technical Textiles

Sr. No.	Name of the machine with specifications
1	Machinery for Poly Tetro Fluro Ethylene (PTFE) Breathable film

#### b. Weaving Preparatory

Sr. No.	Name of the machine with specifications
1	PLC controlled High speed computerized warping / sectional warping machine <ul style="list-style-type: none"><li>• For Direct warping machines warping speed should be 1000 mpm and above</li><li>• For sectional warping machines warping speed should be 900 mpm and above.</li></ul>
2	PLC Controlled, 4 axis filament winding machine for composites. Specifications: Mandrel Rotation of 150 rpm or more.

#### c. Weaving

Sr. No.	Name of the machine with specifications
1	PLC based Shuttleless weaving machine with or without creel & weft yarn feeding device for the manufacturing of technical textiles (with specifications given in MC-1)
2	Minimum 5.0 mtr wide shuttle loom with computer controlled shedding mechanism to produce seamless tubes, substrate for wide width belting and other technical textiles
3	PLC based Geo Grid Weaving Machine having minimum width of 380cm with impregnation plant
4	Multi-axial Loom.
5	3-D and Block weaving machine/ Non Crimp Weaving Machines for 3D Weaving of Glass and Carbon Fibres.
6	High Speed Needle looms for narrow woven fabrics
7	Position Driven Compressor stand assembly for weaving
8	Narrow width shuttle loom with positive let off and take up motions with electronic jacquard / dobby and with micro processor controls for producing tubular fabric meant for filters, medical textiles and other technical textiles.

d. Knitting

Sr. No.	Name of the machine with specifications
1	PLC based Weft Inserted Warp Knitting machine (WIWK).
2	PLC based Knitting machine for spacer fabrics
3	PLC based Bi- axial & Multi axial knitting machine
4	PLC based Tricot machinery for the manufacture of technical textiles (Eligible for units having in house capacities for converting grey fabrics into technical textiles)
5	PLC based Rachel double needle bar Machine
6	PLC based Rachel machine for netting
7	PLC based Knitting Machine for the manufacturing of Fish nets with warp knotting system
8	PLC based Circular warp knitting machine for compression garments
9	PLC based Stitch bonding knitting machine
10	PLC based Seamless Knitting machine

e. Processing

Sr. No.	Name of the machine with specifications
1	Mechanical foamer with Crush calendar.
2	Pultrusion machine and equipment for manufacturing of textile composites
3	FRP (Fibre Reinforced Plastic) processing machine & equipment for manufacturing of textile composites
4	RTM (Resin Transfer Moulding) machine and equipment for manufacturing of textile composites
5	Multi cylinder Calendering machines with following specifications: Running Speed : Minimum 30 mts/min Pressure : Minimum 35 ton Heating : Steam, Electric, Gas
6	Finishing machinery for impregnating yarn or fabrics
7	PLC based Dipping machine for tyre cord / industrial fabrics / belting ducks
8	PLC based Dipping machine for single end or cord for reinforcement of v-belts / hoses / hose tires
9	PLC based Coagulated PU or PVC dip coating machine / PU or PVC coating line or coating dipping / knife machine with infrared dryer
10	PLC based Hotmelt and Hot Glue applicators for coating with working width of 500-2600 mm and working speed of 2-200 m/min
11	High precision Plasma Welding and Cutting machines for Sealed Edge Cutting
12	PLC based Precision Annealing Furnace for Stress relieving of fabrics
15	HHP Jigger to process nylon, aramid fabrics

**f. Madeup Technical Textile (TT) Store**

Sr. No.	Name of the machine with specifications
1	RF (Radio Frequency) welding equipment
2	Automatic Ultrasonic cutting and sealing equipment.
3	Laser cutting and sealing equipment.
4	PLC based Back Coating Lines
5	PLC based Braiding machinery
6	Machinery for manufacture of clay liner
7	Machinery for manufacture of prefabricated vertical drains / prefabricated wick drains
8	Complete line for manufacturing chopped strand Glass mat

**g. Non-woven textile manufacturing machines:**

Sr. No.	Name of the machine with specifications
1	<p>Complete production lines or the component / parts forming the production line for the manufacture of following non-wovens upto rolled goods preparation and packing, viz.,</p> <ul style="list-style-type: none"> <li>i. Chemically bonded non-woven</li> <li>ii. Stitch bonded non-woven</li> <li>iii. Spun bonded non-woven</li> <li>iv. Melt blown non-woven</li> <li>v. Spun bond melt blown non-woven (SMS non-wovens)</li> <li>vi. Needle punch non-woven</li> <li>vii. Thermal bond non-woven</li> <li>viii. Spun lace non-woven</li> <li>ix. 3-D Nonwoven Machines</li> <li>x. Eletrospun Nonwoven Machines</li> </ul> <p><b>Note :- The machineries listed at Sr. Nos. g of above are eligible for non-wovens</b></p>

**h. Finishing machines:**

Sr. No.	Name of the machine with specifications
1	Hot melt cold glue applicators for coating
2	Ultrasonic slitting machines/edge sealer
3	Brazing machine with torch (for hot air)
4	PLC operated system with servo drives for measurement/control of tension and temperature
	Film calendering machine
5	Heatset oven with stenter facility
6	Pilot/lab coating line

7	High pressure pump for water jet cutting system
8	Robotic waterjet cutting system
9	Robot for water jet cutting system
10	Water softening/purification system for water jet cutting
11	Machines for powder scattering/paste dot/powder dot
12	PLC based Coating for fusible interlinings
13	PLC based Padding mangle
14	PLC based Lamination machine for technical textiles
15	PLC based Clip/pin stenter for heat setting
16	PLC based Flame lamination machine
17	Jacquard machines for joining two edges by inter weaving.
18	Turret winder and unwinder
19	High speed precision mixers for plastisols/ organosols.
20	Gunning and cutting machine.
21	PU tumbling machine and drying machine.
22	Dimethyl formamide (DMF) recovery plant and distillation plant.
23	Multi cylinder drying range
24	Plasma Machine For Finishing Lines For Technical Textiles
	<b>Note: The machineries listed at Sr. No. h of above are eligible for non-wovens, wovens, knitted technical textiles and convertors of non-wovens into finished products</b>

**i. Non-woven converting machinery:**

Sr. No.	Name of the machine with specifications
1	Complete thermo moulding lines
2	Complete thermosetting lines
3	Machinery of carpet/NVH moulding lines oven/ press
4	Conveyor/thermopack for heating/chiller for cooling
5	Machinery for moulded roofliners
6	Machinery for conversion of nonwovens into face masks / dust masks / duck bill masks / earloop mask sealing / tie on mask sealing / blank mask /Gloves
7	Machinery for conversion of nonwovens into bouffont caps / surgical caps / medicap making machine
8	Machinery for conversion of nonwovens into gowns / pillowslip / shoe covers / ice pack body / ice pack band sealing and cutting / hand bags / filter pocket /head rest cover / CD / DVD cover and other such items
9	Machinery for conversion of nonwovens into sanitary napkins / baby diapers / adult diapers
10	Machinery for conversion of nonwovens into dry and wet wipes
11	Machinery for slitting and rewinding of nonwoven roll
12	Surgical gauze machine making
13	Combined dressing making machine
14	Bandage Roll making machine
15	Machine to compress

<b>16</b>	Abdominal sponge making machine
<b>17</b>	Automatic packing machines
<b>18</b>	Machine for manufacture of tubular filter bag

**j. Complete Production Line for Manufacture of Surgical Bleached Cotton**

Note:

- i. Since some of the machinery eligible for technical textiles can also be used by the other segments of the industry, Joint Inspection Team (JIT) has to verify and certify that the product manufactured by the unit is a Technical Textile.
- ii. The unit which converts the normal textile to technical textile shall be eligible under the segment unless the manufacturer provides proof that the material produced by them can only be used in technical textiles and not in any other general textiles



MC – 4

Machinery for Apparel and Garments

Sl. No.	Name of the machine with specifications
1.	Single / two needle power operated industrial lockstitch sewing machine with or without trimmer having speed 4000 RPM and above.
2.	Blind stitch machine/ multi needle Chain Stitching machine having speed 3500 RPM and above
3.	Power Operated loop making and sewing machine having speed of 2500 RPM and above.
4.	Power Operated flat lock/ overlock machine. <ul style="list-style-type: none"> <li>• Four / five thread overlock machine with or without trimmer having speed of 4500 RPM and above</li> <li>• Five thread flat lock machine with or without trimmer having speed of 4500 RPM and above</li> <li>• Five thread flat lock machine with seam joining device Having speed of 4500 RPM and above</li> </ul>
5.	Zigzag flat bed sewing machine having 2000 RPM and above
6.	Button Stitch sewing machine having speed of 3000 RPM and above
7.	Label/ elastic attaching machine
8.	Decorative Stitching machine having speed of 2000 RPM and above
9.	Automatic J Stitch Sewing machine having speed of 3000 RPM and above
10.	Edge cutting sewing machine having speed of 4000 RPM and above
11.	Automatic Button hole sewing machine having speed of 2500 RPM and above.
12.	Trouser gripper making machines
13.	Hydraulic diecutting / clicking machine for collars and cuffs
14.	Socks boarding machine having a minimum cycle time of 2.5 sec.per piece
15.	Belt attaching machine having speed of 3500 RPM and above

16.	Zip attaching machine having speed of 4000 RPM and above
17.	Electronic / mechanical Bar tacking machine having speed of 3000 RPM and above.
18.	Bottom Hemstitch machine having speed of 2500 RPM and above
19.	Smocking machine/ Automatic multi needle shirring machine having 2000 RPM and above
20.	Computerized Pattern maker/ grader/marker machine/Laser marker
21.	Power driven cloth cutting machine having speed of 2000 RPM and above / laser fabric or label cutting machine/ laser engraving machine
22.	Power operated Band Knife-cutting machine having speed of 2000 RPM and above
23.	Collar/cuff turning/blocking machine/ Pressing machine
24.	Electronic/pneumatic Button and snap fasteners fixing machine having speed of 1000 RPM and above
25.	Pocket creasing and welting machine/ Auto Pocket making machine
26.	Industrial steam iron with vacuum table and/or buck press having 2.5 kg/cm <sup>2</sup> steam pressure.
27.	Boiler exclusively for steam press/vacuum press, Steam Cabinet/ Vacuum table
28.	Fusing Press having minimum pressure of 1.5 kg/cm <sup>2</sup>
29.	Collar Contour Trimmer
30.	Automatic Spreading & Cutting table with vacuum and/or air blowing device having speed of 18 Mts / Min. and above
31.	Shoulder pad- attaching machine
32.	Pocket cutting machine
33.	Automatic Pocket Attaching machine with production capacity 2000 pcs / day and above
34.	Round Knife cutting machine having minimum blade size of 3.5" and 1000

	RPM speed and above
35.	End Cutter with clothpress track
36.	Power operated Cloth drilling machine having speed of 800 RPM and above
37.	Collar Point trimmer/ notch making machine
38.	Computerized High speed fully fashioned flat bed knitted garment manufacturing machine with speed of 10 rpm and above
39.	Whole garment making machine for knitted garments or power operated garment panel forming knitting machine with linking machine
40.	Automatic thread trimming/sucking machine equipped with two motors.
41.	Shirt folding machine with pneumatic system.
42.	Stain/spot removing machine
43.	Pearl/Beads/Stones/Glassete/Hook and Bar attaching machine having speed of 1000 RPM and above
44.	Single and multi head Quilting machine
45.	Fabric inspection/checking machine with fault analyzer and report generator and length measuring and cutting device.
46.	Needle/metal detector machine
47.	Multi head computerized embroidery machine with minimum six heads with or without electronic sequin
48.	Computerised label making machine/computerized label printing machine
49.	Button wrapping/shanking machine
50.	Feed-off-the-arm industrial sewing machine having speed of 2500 RPM and above
51.	Automatic dart/pleat making machine having speed of 2000 RPM and above
52.	Automatic label/ply picking machine
53.	Pin tucking machine
54.	Mechanised fabric pinning table

55.	Single needle basting machine having speed of 1500 RPM and above
56.	Single needle post bed sleeve setting machine having speed of 1000 RPM and above
57.	Programmable Unit Production hanger and conveyor system with minimum of 24 machines operations
58.	Crochet machine for laces and bands with electronic bar operation
59.	String thrusting machine
60.	Plastic Staple attacher
61.	Brushing machine for jeans
62.	Computer Colour matching machine
63.	Automatic placket making machine for knitted garments.
64.	Belt Loop attaching machine having speed of 2000 RPM and above
65.	Collar Heat Notcher
66.	Spot Welting machine
67.	Laser Colour Fading/Marking/Drawing Machine
68.	Laser operated Colour Spraying Machine
69.	RMG curing/heat setting oven with a tolerance limit of +/- 2° C
70.	Air Compressor 15 H.P. and above with in-built invertors and air driers
71.	Computerized Strap(Collar/Cuff) Flat Bed Knitting Machine with minimum speed of 0.3 mts/sec and minimum working width of 12”
72.	Cup Seamer
73.	Automatic Strap cutter machine with electronic feed & cutting device
74.	Cup moulding machine
75.	Auto reeling stitch machine
76.	Automatic combines panel-joining/ tape attaching machine for curtains.

77.	Electronic, pre-programmed, straight line lockstitch curtain pleat tacker with fully automatic curtain hook feeding device
78.	Automatic Combined Panel-joining & Hemming Machine
79.	Automatic Lockstitch Curtain Hemming Machine having speed of 2500 RPM
80.	Fully Automatic Combined Thread Chainstitch Ring attach/pinch pleat tacking machine
81.	Hydraulic combined cutting/pressing machine for processing metal curtain rings
82.	Fully automatic fabric inspection, measure and length cutting machine equipped with meter counter.
83.	Fully Automatic, Programmable, Electronic vertical curtain cutting machine
84.	Fully Automatic drapery pinch pleater with integrated Microflex (r) adjustable curtain hook feeder
85.	Curtain feeding device for fully automatic pinch pleater
86.	High performance motor driven curtain ironing table
87.	Fully automatic front loaded Garment washing/ Dyeing machine
88.	Tumble dryer
89.	Garment Colour Spray Cabinet
90.	Trouser topper/ <b>Form</b> Finisher machine
91.	Trouser turning machine
92.	Fabric Grinding Machine
93.	Hem Breaking Machine
94.	Fagoting/ Picoting machine having speed of 2500 RPM and above.
95.	Placketing machine having speed of 4000 RPM and above
96.	Sequin punching machine having speed of 800 RPM and above
97.	Paddle Dyeing machines for Rugs/Garments/Made-ups

98.	Open Pocket Dyeing Machines for Rugs/Garments/Made-ups
99.	Automatic Length & Cross Cutting Machine for Sheets/Towels
100.	Automatic machine for length and cross hemming machinery for Flat/Fitted Sheet/Towels/Pillow/Pillow Sham
101.	Automatic folding and stacking machine for Flat/Fitted Sheets/Towels & Pillow/Pillow sham/Dust Ruffle
102.	Automatic Comforter shell making machine
103.	Compression Bagger for packing (electronic pneumatic bagging machine)
104.	Automatic machine for flange pillow case
105.	Blending, Opening and Pillow Filling Lines
106.	Vacumising Packing Units for Filled Pillow & Quilts
107.	Die Cutting Machine
108.	Table Top Tufting Machine
109.	Moustache making machine
110.	Computerised Bed filling machine
111.	Ball fibre machine
112.	Seamless Knitting machine
113.	Computerized Multi Head printing Machine for Garment and Garment Panels
114.	Dry to Dry cleaning machine for garments
115.	Continuous pressing / folding ,machine
116.	Ozone Generator with or without Fully Automatic front loaded Garment Washing Machine

## Machinery for Handlooms

S. No	Name of the Machine
1.	Electrical winding machine
2.	Electrical Warping machine
3.	Motorised/Pneumatic/Electronic Jacquard
4.	Semi-automatic /ordinary frame handloom with minimum width of 52", with or without dobby / jacquard and benchmarked technology features, viz., take-up motion, smooth sley movement, bigger shuttle and bobbin (minimum 4"), negative let-off motion. It may include attachments such as multiple weft butta mechanism, pick & pick sliding shuttlebox, solid border weaving catchcord attachment. The frame loom should be made out of ½" x 1 ½" x 3" steel U channel or steel pipe 2 ½" diameter and 8 gauge or sturdy wood with minimum 4" widthx4" thickx6' height. The looms may have additional warp and cloth rollers made of wood or steel to ensure weaving of long length fabric.
5.	Handlooms of fly shuttle frame loom fitted with Dobby like lattice /barrel/tappet/draw bar/iron frame vertical/centre closed shed/wooden frame vertical/double cylinder iron border, Jacquard like single lift single cylinder wooden frame/single lift single cylinder iron frame bar/double lift single cylinder iron frame/double lift double cylinder iron frame/janata/lino Combination of jala and dobby or jacquard; Fly shuttle sley fitted with drop box on one side/drop box on both sides /circular shuttle box pick & pick sley;
6.	Fly shuttle frame loom fitted with let off motions like lever and weight let off motion/special spring motion/rope let off motion/weight system/spring system.
7.	Fly shuttle frame loom fitted with take up motion like ratchet & pawl motion/3 wheel Ichalkaranji type motion/5 wheel take up motion without emery roller/7 wheel take up motion.
8.	Handlooms fitted with special attachments like catch card system/swivel loom/ lappet motion/terry motion/lino mechanism/chennaile weaving (automatic cutting of chennaile while weaving), metal frame handloom/wider width wooden frame handloom/long length cloth weaving mechanism etc.  Note: In addition, handloom units may also be provided with piano card punching machine/electronic card punching machine.
9.	Winding machine with multi spindle for preparation of pirns/bobbins/drums operated by hand/peddle/power.
10.	High Speed Doubling machine having spindle fitted on bolster with ball bearing.
11.	The mobile textile quality testing equipment only for handloom sector and capable of testing all of the following : <ul style="list-style-type: none"> <li>• Colour fastness to washing at about 40 degree Celsius.</li> <li>• Colour fastness to crocking/rubbing</li> </ul>

	<ul style="list-style-type: none"> <li>• Shrinkage</li> <li>• Ends-Picks per inch</li> <li>• Count of yarn</li> <li>• Percentage crimp of yarn</li> <li>• Fabric width, and</li> <li>• Grams per Square meter etc.</li> </ul>
12.	Coating machine for Metallic yarn for jari processing only
13.	Universal Double Covering machine for jari processing only
14.	Micro slitting machine for jari processing only
15.	Coating/Vacuum Metalizer for jari processing only
16.	Twisting/Doubling machine for jari processing only

**Note: The machinery given in MC-5 is only eligible for Handloom.**

MC – 6

Machinery for Silk

**A. Silk Reeling Automated Plant**

<p><b>1. Automatic silk Reeling Plant having 400 ends capacity and comprising of below mentioned eligible machinery –</b></p>
<ul style="list-style-type: none"><li>a. Cocoon peeling machine</li><li>b. Cocoon sorting machine</li><li>c. Vacuum permeating machine</li><li>d. Cocoon cooking machine (Conveyer type)</li><li>e. Automatic silk reeling machine (400 ends)</li><li>f. Reeled silk humidifier</li><li>g. Re-reeling machine (40 Windows)</li><li>h. Basket conditioning oven</li><li>i. Frision scraping machine</li><li>j. Frision treatment machine</li><li>k. Dewater machine</li><li>l. Skein winder</li><li>m. Reel carrier</li><li>n. Conveyer cocoon drier – 2 ton capacity</li><li>o. IBR Boiler (1 ton capacity)</li><li>p. RO based Water Softening equipment (2500 liters/day)</li></ul>
<p><b>2. Automatic Dupion silk Reeling Plant having 142 ends capacity and comprising of below mentioned eligible machinery –</b></p>
<ul style="list-style-type: none"><li>a. Cocoon peeling machine</li><li>b. Cocoon sorting machine</li><li>c. Vacuum permeating machine</li><li>d. Cocoon cooking machine (Conveyer type)</li><li>e. Automatic Dupion Silk reeling machine (142 ends)</li><li>f. Re-reeling machine (20 Windows)</li><li>g. Cocoon Drying Machine</li><li>h. IBR Boiler (1 ton capacity)</li><li>i. RO Water Softening equipment (2500 liters/day)</li></ul>

## **B. Silk Twisting , Weaving & Knitting Machinery:**

- a. Two for One Twisting Machine having 288 X 2 Spindle
- b. Parallel winder with minimum speed of 300 mts per minute
- c. Cone winding machine 24 spindles capacity having minimum speed of 400 mtrs per minute
- d. High speed direct beam warping machine with creel having minimum warping speed of 500 mtrs per minutes and beaming speed of 100 mtrs per minute.
- e. Shuttle less loom (Rapier loom) with WIR of 280 mpm
- f. Electronic jacquard with minimum 480 hooks
- g. Electronic flat bed knitting machine
- h. Automatic circular knitting machine of minimum 22 "dia
- i. Automatic warp knitting machine
- j. Computerized Embroidery machine 16 heads, 8 colours

## **C. Silk Wet Processing Machinery:**

- k. Automatic 2 Arm Spray Dyeing Machine
- l. 4 Arm Spray Dyeing Machine
- m. Winch Dyeing Machine
- n. Calendaring Machine/ Mini Felt Calendaring Machine
- o. Decatizing Machine having
- p. Soft Flow Dyeing Machine with capacity of minimum 5kg
- q. Digital Printing Machine For Silk (8 Heads)
- r. Stenter Machines (4 Chambers)
- s. Reverse Osmosis, Nano Filtration , Multiple stage prefabricated steel evaporator excluding civil construction
- t. Cabinet dyeing machine for silk (20kg Cap.)
- u. Computer colour matching and automatic dispensing unit
- v. Package dyeing machine for cone or cheese (10kg/load)
- w. Drying system for hanks

**Note: The machinery given in MC-6 are eligible for the natural silk segment only.**

MC- 7

Machinery for Jute Industry

S. No.	Machine Description
1.	Two for One Twister with cradle, drop wires and overfeed system and 4500 rpm as minimum speed
2.	Soft Package Precision Winding machine with individual spindle/drum driven with minimum speed of 480 mpm
3.	PLC Controlled Pre-beaming having minimum speed 135 mpm and , Beaming & Sizing Machine having minimum speed of 125 mpm
4.	PLC based Dressing Machine/Direct Warper with minimum speed of 30 mpm
5.	PLC based Circular Looms with minimum WIR of 400 mpm
6.	Warp Knitting Machine with minimum 60" width and minimum speed of 300 rpm
7.	Automatic Cutting Machine having minimum speed of 25 cuts per minute
8.	Automatic Lapping and Measuring Machine with minimum 25 strokes per minute
9.	Sewing Machine with minimum 2900 rpm
10.	Automatic Branding (Screen Printing) Machine with minimum speed of 30 rpm
11.	Automatic Integrated Damping and Calendering Machine with minimum speed of 27 mpm
12.	Integrated Herakle and Safety Stitching Machine with minimum speed of 1400 rpm
13.	Automatic Bag Making machine with a capacity of minimum 50 Bags per hour
	<b>Processing Machines for Jute Diversified Products.</b>
14.	Singeing Machine with minimum speed of 30 mpm
15.	Pressure Kier/Jumbo jigger with minimum speed of 50 mpm
16.	Cloth/ yarn mercerising with minimum speed of 25 mpm
17.	Pad batch /Mangle with minimum speed of 25 mpm
18.	Winch with minimum speed of 25 mpm
19.	Semi-automatic/automatic Jiggers with minimum speed of 50 mpm
20.	Automatic PLC based Jet dyeing machine

S. No.	Machine Description
21.	Automatic PLC based Soft Flow Dyeing machine
22.	Automatic PLC based Cabinet Dyeing Machine (for yarn)
23.	Automatic PLC based Dyeing Machine
24.	PLC based Macro Extractor/Hydro Extractor with minimum speed of 200 rpm
25.	PLC based Multi Cylinder Dyeing Range with minimum speed of 25 mpm
26.	Automatic PLC based Stenter with minimum 3 chambers and minimum speed of 25 mpm
27.	Coating machine with or without stenter with minimum speed of 20 mpm
28.	Carpet Backing coating machine with minimum speed of 20 mpm
29.	Ball making machine (Yarn) with minimum speed of 200 rpm
<b>Machinery for Testing Jute Textiles</b>	
30.	Evenness tester
31.	Jute bundle strength tester
32.	Yarn tensile strength tester
33.	Jute fineness tester
34.	Fabric strength tester
35.	Jute Moisture meter
36.	Scotch guard applicator tester
37.	Electronic twist tester
38.	Abrasion tester
39.	Bending rigidity tester
40.	Color fastness tester
41.	Computerized color matching
42.	Rubbing fastness tester
43.	Fire Retardancy Tester
44.	Light fastness tester

S. No.	Machine Description
45.	Drape meter
46.	Count balance
47.	Laundero meter
48.	Yarn twist tester
49.	Yarn appearance tester (manual/automatic)
50.	Ballistic raw jute strength tester
51.	Latexing tester
52.	Water proofing
53.	Computer color matching machine
	<b>Coating &amp; Laminating Machinery for Jute Industry</b>
54.	Complete Lamination Plant suitable for Poly/Rubber lamination of jute fabric with facility for sandwich lamination/ both side lamination

**Note: The machinery given in MC-7 are only eligible for Jute Segment.**



MC – 1 (A)

Energy Saving Machinery for Weaving, Weaving Preparatory, Knitting

A. Weaving Preparatory

Sr. No.	Name of the machine with specification
1	Single yarn sizing machine with minimum speed of 250 mtrs per minute with Servo drive and Servo Motor and PLC based.
2	High speed multi cylinder sizing machine/ zero twist sizing machine having minimum 8-10 cylinders for single size box and 12-14 cylinders for double size box and minimum speed of 100 mtrs per minutes with Servo drive and Servo Motor and PLC based
3	Direct beam warper with minimum 300 ends creel capacity and minimum speed of 1000mtrs per minutes and with Servo drive and Servo Motor and PLC based
4	Sectional warping machine with auto stop & tension control along with minimum 300 ends creel capacity and minimum speed of 500 mtrs per minutes with Servo drive and Servo Motor and PLC based

B. Knitting

Sr. No.	Name of the machine with specification
1	High speed circular knitting machine with servo motors and servo amplifiers and with yarn tension and clearers along with Creel - 1) Having Dia up to 26" with a minimum speed of 20 RPM and above, 2) Having Dia above 26" with a minimum speed of 15 RPM and above.
2	High speed socks knitting machine having minimum production of 15 pairs per hour and gloves knitting machines having minimum production of 3(three) gloves per minute with servo motors and servo amplifiers and with or without electronic jacquard.
3	Computerised flat bed knitting machine with servo motors and servo amplifiers and with minimum speed of 11 revolutions per minute / minimum speed of 0.3 Mts/ Sec.
4	Warp/ Raschel knitting machine having minimum working width of 60" and minimum speed of 500 RPM with servo motors and servo amplifiers.
5	High speed computerised warping machine for knitting with minimum closed creel capacity of 200 and minimum speed of 100 Mts/ Min and with servo motors and servo amplifiers
6	Computerised label making Knitting machine with minimum 2 heads and minimum speed of 500 RPM and minimum working width of 50 mm per head with servo motors and servo amplifiers.
7	Computerized Strap (Collar/Cuff) Flat Bed Knitting Machine with servo motors and servo amplifiers and with a minimum speed of 0.3 Mts/ Sec along with minimum working width of 12".
8	High performance Tricot Machinery with minimum 3 Bar and speed of 2300 rpm and above and with servo motors and servo amplifiers.
9	<b>Spin - Knit machine (Rove fed Circular Knitting machine)</b>

MC – 2 (A)

Energy Saving Machinery for Processing of fibre/Yarn/Fabric

Sr. No.	Name of the machine with specification
1.	PLC controlled Knit tubular mercerizing machine or bleaching cum mercerising machine with knit fabric diameter adjuster and with caustic recovery system.
2.	PLC controlled Ammonia mercerising machine for fabrics, including ammonia recovery plant
3.	PLC controlled fully automatic Yarn / fabric mercerizing machine with Caustic Recovery Unit
4.	PLC based Soft flow Dyeing Machine with pre heating chamber (liquor ratio max 1: 1)
5.	PLC based Rapid Jet Dyeing Machines with minimum capacity of 100 kgs and fabric speed of minimum 60 mtrs per minute (liquor ratio max 1: 1)
6.	Open width Pad-dry and / or Pad-Steam continuous dyeing range with micro processor based energy control and water monitoring
7.	Indigo dyeing range including indigo dyeing cum sizing machine with heat recovery system.
8.	Continuous weight reduction machine through micro wave technique (for Polyester goods only) with minimum speed of 20 mtrs per minute and with preheating system for recovery tank
9.	PLC controlled Multi Chamber Washing range with minimum 5 chambers with water recovery/ reusable system
10.	PLC controlled Multi cylinder Drying range with individual cylinder drives with Heat recovery system and with padding mangle
11.	PLC controlled Multi chamber Stenter (minimum 4 chambers) with arrangement of Thermic fluid / gas heating and with Heat recovery system.
12.	PLC controlled Compressive Shrinking range and with Heat recovery system
13.	PLC controlled Calendering Machine having Thermoplast/Duraplast/Polyamide sleeve and with Heat recovery system
14.	PLC based Compacting machine with Heat recovery system
15.	PLC based oil / gas fired boiler (Steam /Thermic fluid) with automatic control on combustion efficiency, and Heat recovery system with O2 Monitoring Equipments