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1. BASIC TEXTILES TERMS:

- **Yarn:** A continuous strand of fibers/filament, twisted /non twisted, it is basic raw material for weaving.
- **Type of Yarns:** single yarn, double or multi fold yarn, spun yarn & filament yarn etc.
- **Yarn count:** the yarn count is a numerical expression which defines it's fineness or coarseness.
- **Yarn count:**
Indirect system: English count(Ne), Worsted Count etc.
i.e. Higher the yarn number , finer the yarn.
Direct System: Tex, Denier
i.e. Higher the yarn number , Coarser the yarn.
- **Warp & Weft Yarn:**
The lengthwise yarns in the woven fabric are called the warp yarn and the widthwise yarns in the woven fabric are called the weft yarn.

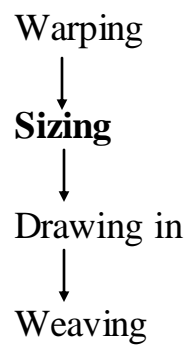
2. Sizing

- Sizing is the process of applying protective adhesive coating on the yarn surface.
- This is the most important segment of weaving preparatory process. Because sizing has direct influence on the weaving efficiency.
- Better the quality of sizing higher the weaving efficiency & vice versa.

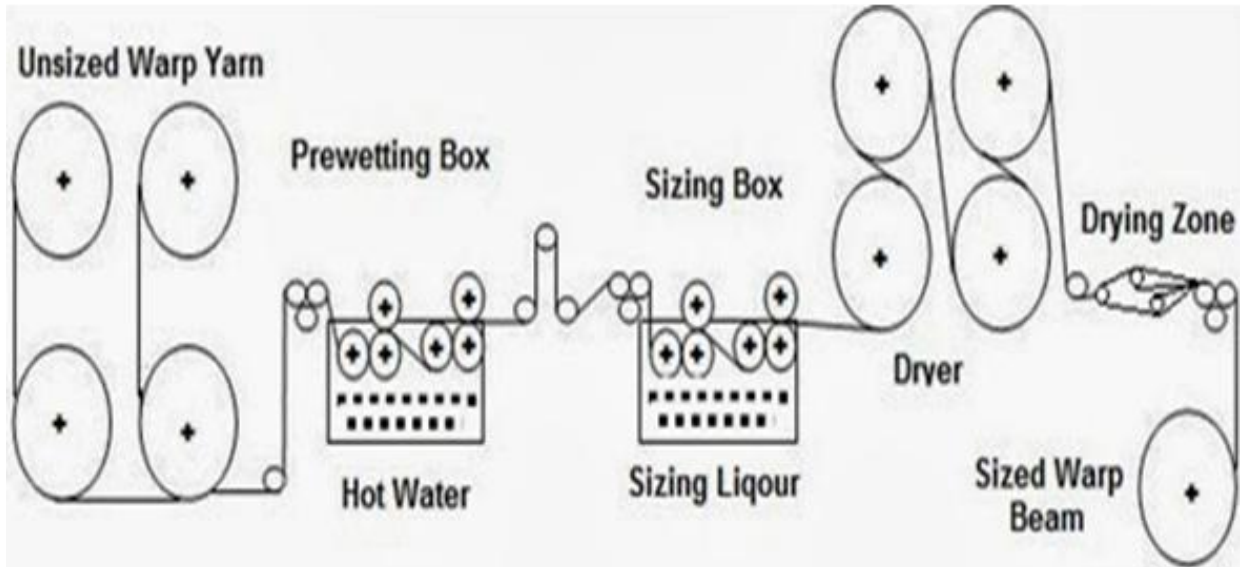
Sizing Process Involves:



2.1 sequence of operation in weaving



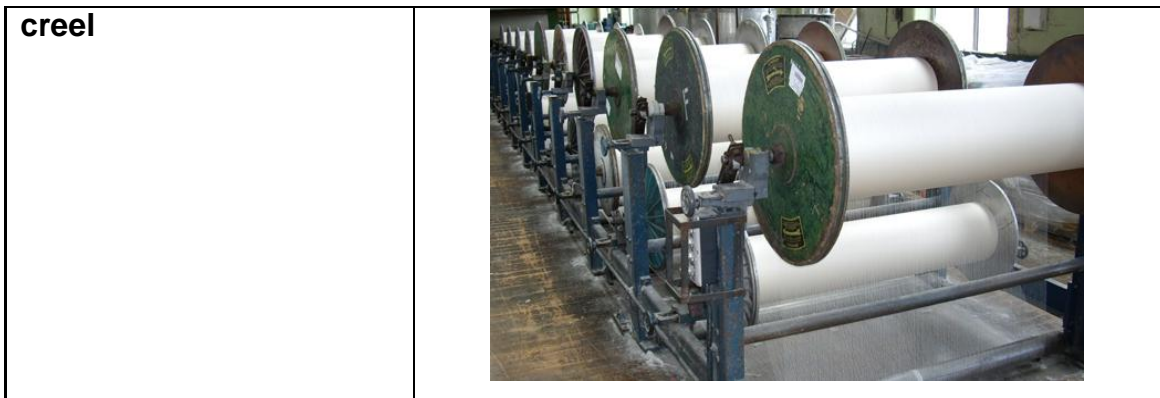
3 Identification of Sizing machine parts

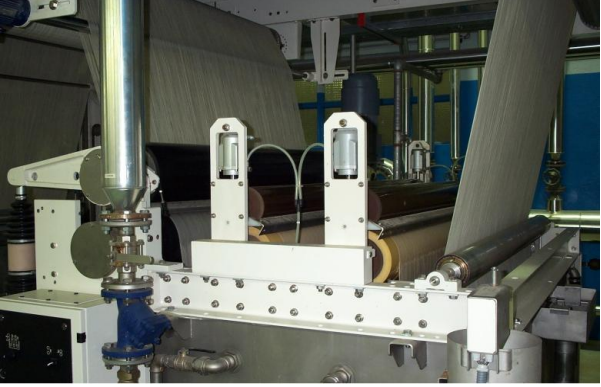





4 Objectives of the Sizing

- To improve abrasion resistance of the yarn.
- To reduce hairiness of the yarn.
- To reduce generation of static charge for polyester blend yarn
- To improve breaking strength of cellulosic yarns.

Sizing Machine parts:



<p>Sow box</p>	
<p>Drying cylinder</p>	
<p>Lease rods</p>	 <p style="text-align: center;">Lease rod</p>
<p>Moisture roller</p>	 <p style="text-align: center;">Moisture Roller</p>

**Head stock & Weavers
Beam**



5 Operation involved in sizing Machine

5.1 Set changing

- Clean the sizing creel & the sizing machine after the run out of the previous program.
- Bring the warped beams for the next set to the sizing from the warping
- Creel the warped beams in the sizing creel as instructed
- Knot the ends from the creeled warped beams with that of the old warp sheet from the previous set.
- Paste tape on the warp sheet, so as to enable the lease to be applied
- Check with higher authority whether single sow box or double
- Show Boxes to be used for the next set.

5.2 Running the Machine

- Pull warp sheet from the creeled warping beam according to the requirement of
- the sow box/ sow boxes,
- Clean the sow box/ sow boxes. before the knots reach the sow box/ sow boxes
- Switch on 'size pump' , 'sow box steam volve' , 'squeeze roller press revolve, moisture control etc. once the size is filled in the sow box/ sow boxes.
- Activate impression rollers

- Ensure that the size is not boiled in excess than required and splash in the warp sheet to avoid size patches
- Check the viscosity & refract meter reading for the size in the sow box/ sow boxes.
- Check the drying cylinders temperature quite often
- Apply 'lease' as advised
- Mend the 'lappers'
- Activate hydraulic rollers, when the machine is running. to ensure the required pressure.
- Ensure that no space is left near the flanges in both the sides
- Ensure that no warp thread is overlapped, particularly near the flanges in both the sides
- Ensure that the "leasing area" .comb area" etc...are free from waste.
- Ensure moisture control & temperature control are properly functioning
- Weigh each & every beam on completion and check the size pick up & Correct the migration of ends
- Note down the lapper details, migration details etc. in the performance log note book.
- Check the Stretch Control

5.3 Doffing Of Sized Beams

- Paste the gum tape on the beam just 2-3 metres before the end of each
- Paste the another tap on the beam after the completion of the beam
- Write the following details on the " beam ticket" and the same has to be pasted in the flange outer of the beam after the completion of each Of the beam:-
 - a) Count
 - b) Set No.
 - c) Beam No.
 - d) Total Ends
 - e) Beam metres

- Note the following set details in the the “ sizing production register ‘after the completion of the Set, “
 - a) Count
 - b) Set No.
 - c) Beam No.
 - d) Total Ends
 - e) Beam Metres
 - f) Size Pick Up
 - g) No. Of Lappers
 - h) No of Migra

5.4 Other Work practices

- Keep the “ lease rope”, ready so as to apply the lease, when required
- Not touch the machine, when it is running.
- Drench the gum tape in water before the tape is wasted, so that the tape doesn't peel off, easily.
- Check with higher authority in advance (before the set is completed) for the continuous use of the size in the sow box/ sow boxes or for the collection of the same in can/ cans
- Give preference to safety , should not enter the area, where he/ she is not allowed.& should not do a job in which training has not being given
- Ensure that no raw material/ cloth/ spare/ tool / any other material is thrown under/ near the machines or in the other work areas.
- Run the sizing machine in the speed, as advised
- Check for the reasons for the frequent breakages, the reasons that could be Corrected by himself/ herself should be corrected otherwise, the same has to be reported to the superiors
- Report immediately to supervisor for any machine faults.

6 SIZING Defects

- Ends are loose and not parallel to each other.
- Non uniform tension from end to end.
- Non-uniform warp density of sized beam.
- Selvage ends are on high or low tension with the warp
- Non-uniform application of size.

7 Remedial measures for defect prevention

- Before and during the starting the machine various zones of stretch control on sizing machines should be checked.
 1. Creel zone: start- last warper beam, end-Dry nip
 2. Wet Zone; Start- dry nip, end- first drying cylinder
 3. Drying Zone: start- first drying cylinder, end- last drying cylinder
 4. Splitting Zone: start-last drying cylinder, end- drag roll
 5. Winding Zone: start- drag roll, end- loom beam
 6. To inform the about the sticky ends and to do combing.

8 Shift interchanging charges

8.1 Taking charge

- Come at least 10 - 15 minutes earlier to the work spot
- Check for the necessary items like “chalk”, “pen” " knife" etc.
- Meet the previous shift sizer , discuss with him/ her regarding the issues faced by them with respect to the quality or production or spare or safety or any other specific instruction etc.
- Check the condition of the running beams , machine, performance of the yarn running for the running program
- Check whether all the stop motions work in good condition
- Take “job cards” for the next programs, from the higher authority.

- Check availability of the warping beams & the empty sizing beams required for the next programs
- Check the quality of the warped beams for the damage, particularly near the flanges
- Check the cleanliness of the machines & other work areas
- Check whether any spare/raw material/ tool /any other material is thrown under the machines or in the other work areas.
- Question the previous shift sizer for any deviation in the above and should bring the same to the knowledge of his/ her shift superior as
- Well that of the previous shift as well

8.2 Handing over change

- Hand over the shift to the incoming sizer in a proper manner & get clearance from the incoming counterpart before leaving the work spot
- Report to his/ her shift superiors as well as that of the incoming shift, in case his/ her counterpart doesn't come for work for the incoming shift. in that case, the shift has to be properly handed over to the incoming shift superior & get clearance from him/ her, before leaving the work spot
- Report to his/ her shift superior about the quality / production /
- Safety issues/ any other issue faced in his/ her shift and should leave the department only after getting concurrence for the same from his/ her superiors

9 Safety aspects

- Comply with health and safety related instructions applicable to the workplace
- Use and maintain personal protective equipment such as “ear plug”, “ nose mask “, “ head cap” etc., as per protocol
- Carry out own activities in line with approved guidelines and procedures
- Maintain a healthy lifestyle and guard against dependency on intoxicants
- Follow environment management system related procedures
- Identify and correct (if possible) malfunctions in machinery and equipment

- Report any service malfunctions that cannot be rectified
- Store materials and equipment in line with organisational requirements
- Safely handle and remove waste
- Minimize health and safety risks to self and others due to own actions
- Seek clarifications, from supervisors or other authorized personnel in case of perceived risks
- Monitor the workplace and work processes for potential risks and threat
- Carry out periodic walk-through to keep work area free from hazards and obstructions, if assigned
- Report hazards and potential risks/ threats to supervisors or other authorized personnel
- Participate in mock drills/ evacuation procedures organized at the workplace
- Undertake first aid, fire-fighting and emergency response training, if asked to do so
- Take action based on instructions in the event of fire, emergencies or accidents
- Follow organization procedures for shutdown and evacuation when required