



THE BOMBAY TEXTILE RESEARCH ASSOCIATION

JUST RELEASED

**NORMS FOR MECHANICAL
PROCESSING (WEAVING)**

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Weaving sector of the Indian textile industry is undergoing a rapid transformation with the introduction of a large number of shuttleless looms and state of the art preparatory machines. The vision document of the industry for 2007 – 2012 envisages an investment of Rs. 38,000 crores in the weaving sector. With technology change, new benchmarks need to be provided to the industry in order to be competitive in the current market scenario.

Benchmarking is not a mere exercise in target setting but in assisting in ways and means of achieving the set targets. It is here that BTRA with its vast experience of shop-floor studies, consultancy assignments and interaction with the industry, has built up a reservoir of expertise in weaving technology as in all areas of textile manufacture.

The weaving norms in this booklet are a revision of our earlier norms. This revised booklet includes details of cotton and blend yarn characteristics for shuttleless weaving. In addition to waste level, utility requirement and such other details in preparatory sections. This reference booklet as in its previous editions provides practical guidelines on performance standards and it is hoped will be useful to our colleagues in the industry.

**The contents of this publication are given
in the next page.**

- ❖ Demand Draft [or] **AT PAR** cheque may be sent in the name of '**The Bombay Textile Research Association**' payable at Mumbai to the following address.

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The contents of this publication are given below.

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|---|--|--|--|
| <p><u>Yarn characteristics for shuttleless weaving machine</u></p> <ul style="list-style-type: none"> ♣ Cotton yarn – Carded & Combed ♣ Synthetics and Blended yarn <ul style="list-style-type: none"> ✓ 100 % polyester yarn ✓ 100 % viscose yarn ✓ Polyester/viscose blended yarn [65/35] ✓ Polyester/cotton blended yarn [52/48] | | <ul style="list-style-type: none"> ♣ Count CV % at Cone Stage ♣ RKM, ♣ Lea count CV% ♣ Single thread strength CV% ♣ RKM CV% ♣ Elongation at break % ♣ TPI CV% ♣ U % - carded/combed/compact yarns & doubled yarn ♣ Yarn imperfections at cone stage – carded/combed compact yarns & doubled yarn ♣ Yarn hairiness ♣ Classimat faults for wound yarn – carded / combed yarns | |
| <p><u>Winding</u></p> | <ul style="list-style-type: none"> ➤ Yarn breakage, ➤ Cause wise break-up of end breaks ➤ Clearing efficiency % ➤ Yarn clearing setting ➤ Winding speed and machine efficiency ➤ Loss in strength and elongation ➤ Splice failure ➤ Splice quality | <ul style="list-style-type: none"> ➤ Wound yarn package – count / weight / diameter variations ➤ Winding maintenance cost ➤ Compressed air consumption ➤ Electrical consumption ➤ Tail end length ➤ Metal to yarn coefficient of friction ➤ Wax take-up % | <ul style="list-style-type: none"> ➤ Cone packing ➤ Atmospheric conditions ➤ Moisture content % ➤ Yarn conditioning cycle ➤ Steam consumption ➤ Illumination level ➤ Manpower ➤ Hard waste % ➤ Tension on yarn during winding |
| <p><u>Warping</u></p> | <ul style="list-style-type: none"> ➤ Direct warping – machine speed & yarn breaks ➤ Sectional warping – machine speed & yarn breaks ➤ Contribution of spinning and weaving faults | <ul style="list-style-type: none"> ➤ Cause wise break-up of end breaks Tension on yarn during warping ➤ Efficiency of warping machine ➤ Warping knot | <ul style="list-style-type: none"> ➤ Warping maintenance cost ➤ Compressed air consumption ➤ Electrical consumption ➤ Illumination level ➤ Hard waste % ➤ Wax take-up % |
| <p><u>Sizing</u></p> | <ul style="list-style-type: none"> ➤ Mechanical stretch % ➤ Optimum yarn tension during sizing ➤ Sized yarn residual elongation ➤ Norms for gain in strength and loss in elongation at break of sized yarn | <ul style="list-style-type: none"> ➤ Dead loss % ➤ Variation in size pick-up % ➤ Variation in size pick-up in pair of beams on loom ➤ Dropping ➤ Migration of ends ➤ Lappers | <ul style="list-style-type: none"> ➤ Sizing maintenance cost ➤ Compressed air consumption ➤ Electrical consumption ➤ Illumination level ➤ Steam consumption ➤ Coefficient of friction of sized yarn |
| <p><u>Drawing-in</u></p> | <ul style="list-style-type: none"> ➤ Drawing-in production | <ul style="list-style-type: none"> ➤ Knotting productivity | <ul style="list-style-type: none"> ➤ Illumination level |
| <p><u>Loomshed [shuttleless looms]</u></p> | <ul style="list-style-type: none"> ➤ Loom speed ➤ Warp and weft stops per hour ➤ Cause wise snap efficiency losses % ➤ Droppings ➤ Weaving efficiency | <ul style="list-style-type: none"> ➤ Timing for weaver attending faults ➤ Yarn tension during weaving ➤ Gaiting timing ➤ Manpower ➤ Hard waste level | <ul style="list-style-type: none"> ➤ Loom maintenance cost ➤ Grey fabric defects ➤ Air consumption on air-jet looms ➤ Illumination level ➤ Electrical consumption |