

TEARING STRENGTH

Measurement of fabric tearing strength:

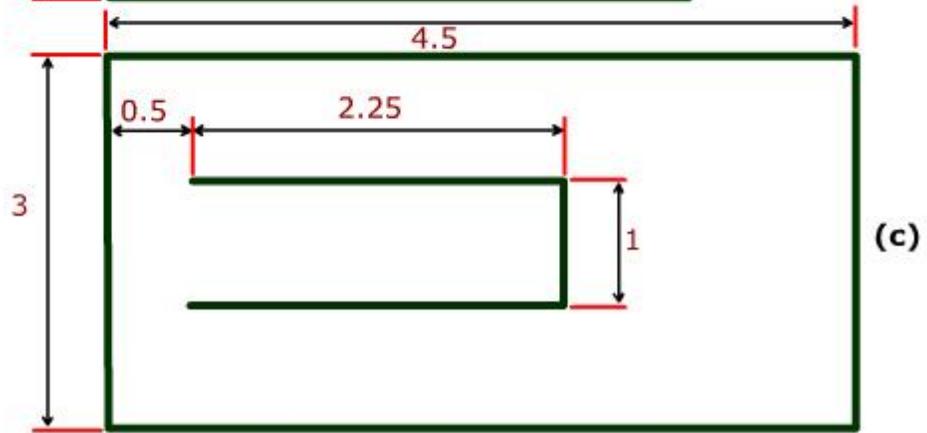
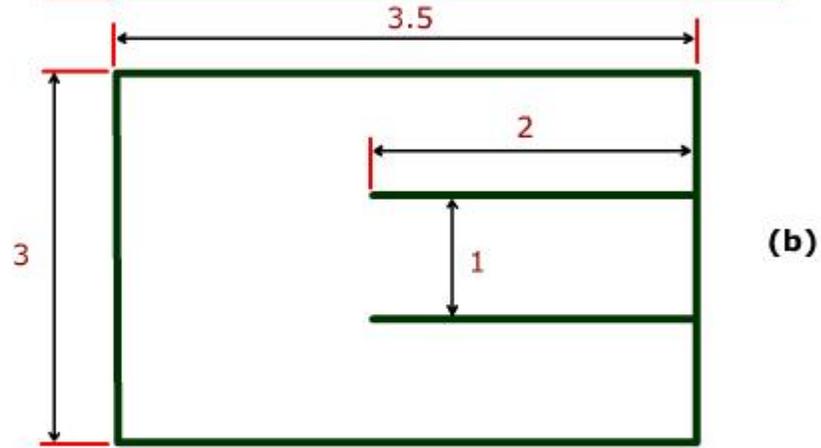
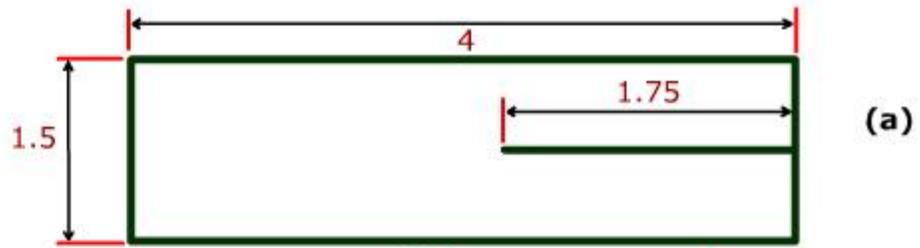
a. Single rip tear test / Tongue tear test:

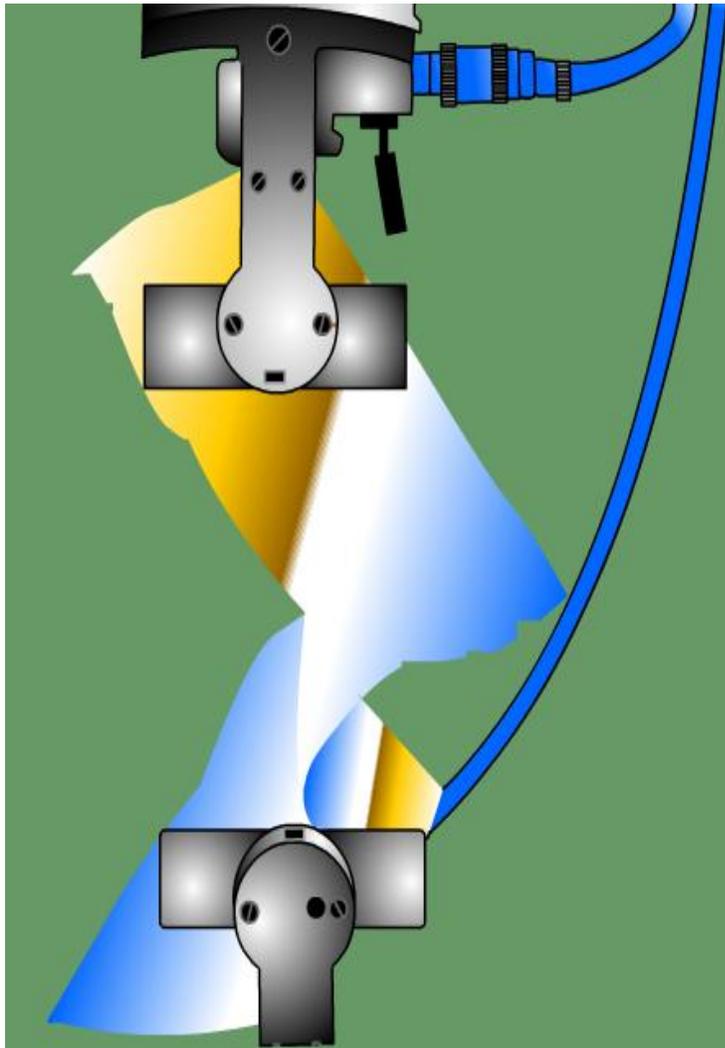
- ➡ Tail 'A' is clamped in lower jaw and 'B' in upper jaw.
- ➡ Speed 50mm/min or 300mm/min.
- ➡ The separation of jaws causes the tear to proceed through uncut part.
- ➡ Averages of the five highest peaks are taken as tear strength.
- ➡ Depending on the directing of testing, the tear strength of warp or weft yarns are report

b. Double rip tear test:

- ➡ The central one is gripped in one jaw and outer two is other jaw.
- ➡ Two tears are simultaneously made so it is known as double rip.

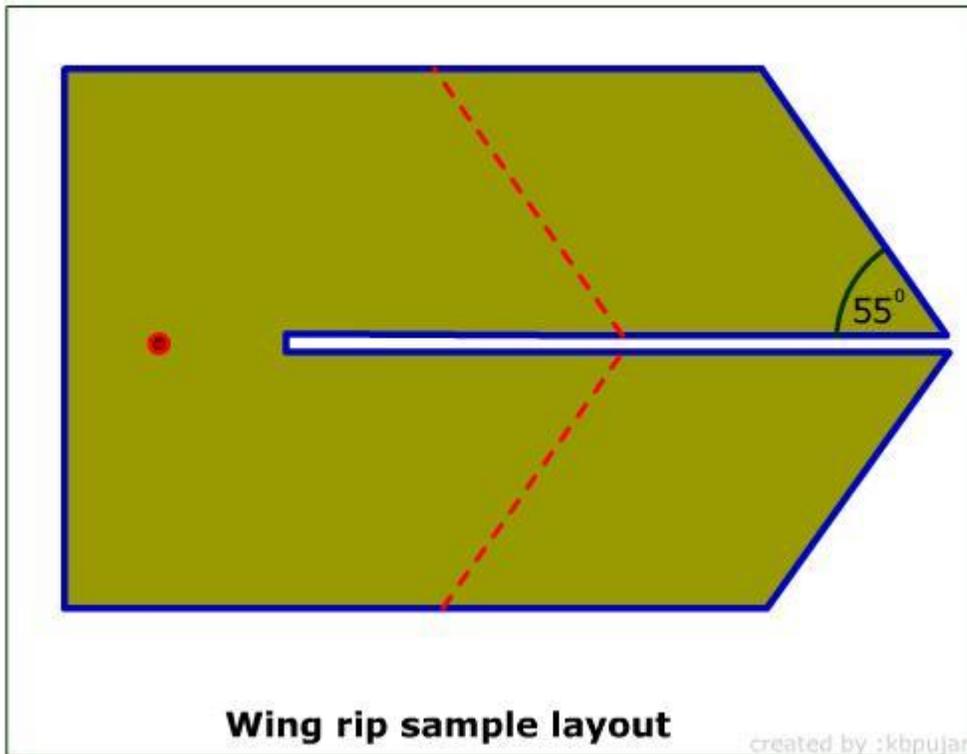
Tear Test Samples
(All dimensions are in inches)



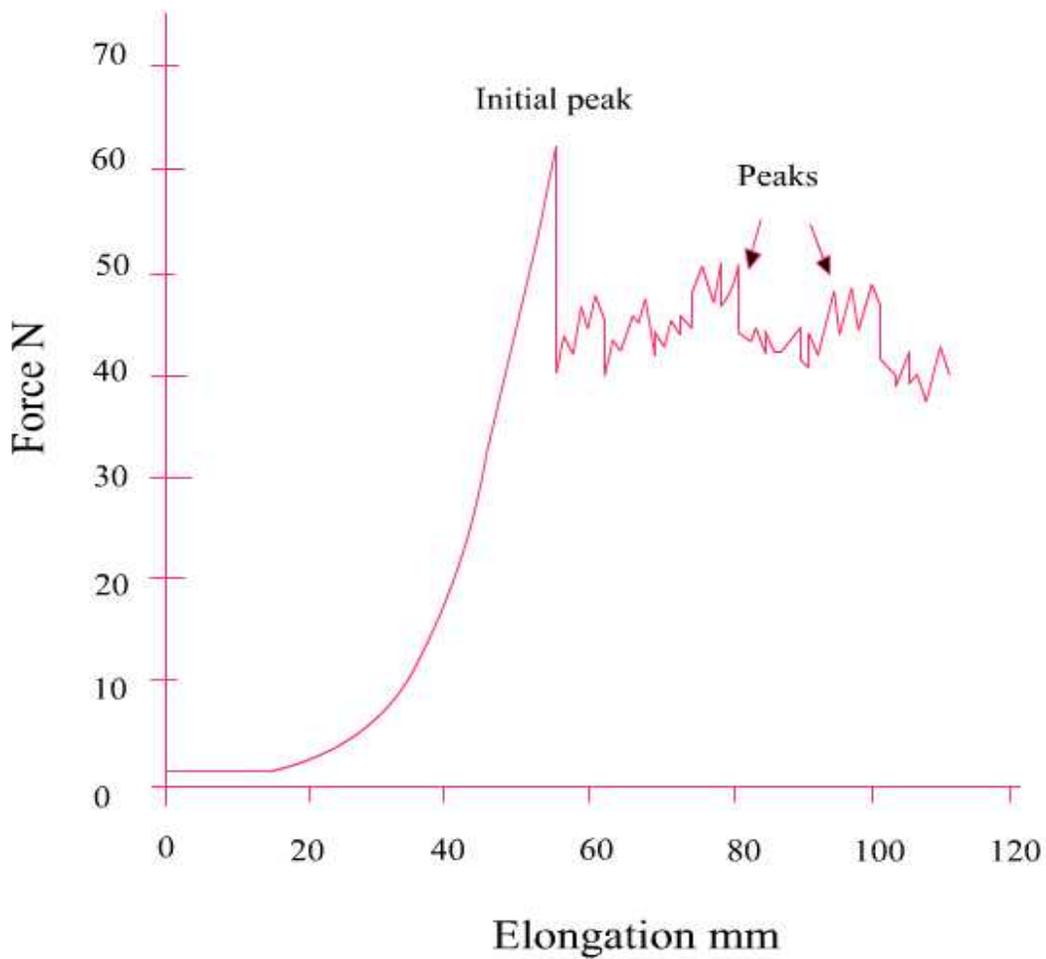


c. Wing rip tear test:

- It does not transfer the direction of tear. In other methods, due to wide difference in tear strength of warp and weft the direction of tear changes from high to low.
- During the test, the point of tearing remains substantially in line with the centre of the grips.



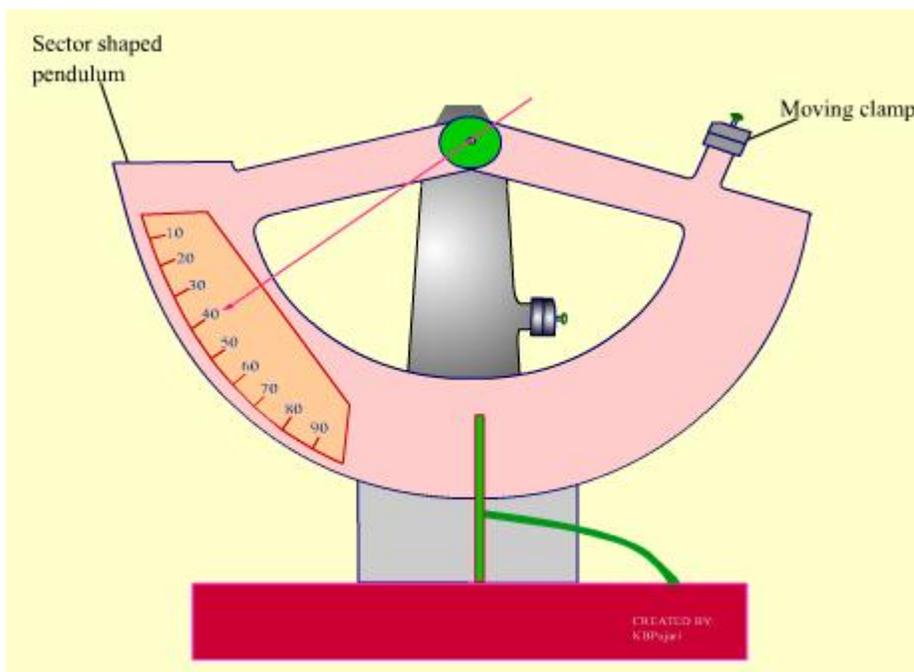
- Not suitable for loosely constructed fabrics, (fail by slippage of yarns rather than by rupture of thread).
- Tested at CRE m/c with 100mm/min speed.
- Highest peak or mean of five peaks are taken.



Tear test force extension curve

d. Elmendorf tear tester:

Click on Image to run the animation



- ✔ Pendulum type ballistic tester which measures energy loss (gf) during tearing.
- ✔ Energy loss = tearing force x distance
- ✔ Loss of potential energy = work done.