

## Theoretical Density Study of Winding Yarns on Spool

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**Abstract :** The aim of work is to define the distribution density of winding yarn on cylindrical and conical bobbins. It is known that parallel winding gives greater density and more regular distribution, but the unwinding of yarn is much more difficult for following process. The conical spool has an enormous advantage during unwinding and may contain a large amount of yarns, but the density distribution is not regular because of difference in diameters. The variation of specific density over the reel height is explained generally by the sudden change of winding speed due to direction movement variation of yarn. We determined the conditions of uniform winding and developed a calculate model to the change of the specific density of winding wire over entire spool height.

**Keywords :** textile, cylindrical bobbins, conical bobbins, parallel winding, cross winding

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