Yarn Twist: TPI, TPM and Twist Multiplier

Twists per inch and per metre from the twist multiplier and English count (TPI = TM √Ne), with the equivalent tex twist factor for metric users.

Method: Definitions and mass and energy balances: TPI = TM √Ne (cotton system); tex twist factor = turns per cm × √tex

Input parameters

Unit system: SI

Parameter	Value	Unit
English cotton count	30.000	
Twist multiplier	3.8000	

Calculated results

Parameter	Value	Unit
Twists per inch	20.813	
Twists per metre	819.43	
Tex twist factor (turns per cm × √tex)	36.356	

Formula and method

$$TPI = TM\sqrt{Ne}, \quad TPM = \frac{TPI}{0.0254}$$

Variables

Ne	English cotton count	-
TM	Twist multiplier	-
TPI	Twists per inch	-
TPM	Twists per metre	-
α_m	Tex twist factor (turns per cm × √tex)	-

Method and standards

Twist definitions.

Assumptions and limits

- Cotton count system.

References

- Definitions and mass and energy balances: TPI = TM √Ne (cotton system); tex twist factor = turns per cm × √tex

Report details

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Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/chemical/textile-rice-oil/yarn-twist-tpi

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.