Important Geometric Design of Railway Track Formulas PDF













13.10) Speeds from Length of Transition Curves for Normal Speeds Formula 🕝

Evaluate Formula 🕝

Formula	Example with Units
$V_{Normal} = 134 \cdot \frac{L}{e \cdot 1000}$	$217.75\text{km/h} = 134 \cdot \frac{130\text{m}}{0.08\text{m} \cdot 1000}$

Variables used in list of Geometric Design of Railway Track Formulas above

- **D**_c Degree of Curve for Railways (Degree)
- D_{Cant} Cant Deficiency (Centimeter)
- **e** Super Elevation for Transition Curve (Meter)
- ebg Equilibrium Cant for Broad Gauge (Meter)
- **e**Cant Equilibrium Cant (Centimeter)
- eeq Equilibrium Cant in Railways (Meter)
- **e**Egmax Maximum Equilibrium Cant (Centimeter)
- emg Equilibrium Cant for Meter Gauge (Meter)
- eng Equilibrium Cant for Narrow Gauge (Meter)
- eth Theoretical Cant (Centimeter)
- e_{Thmax} Maximum Theoretical Cant (Centimeter)
- e_{Vmax} Equilibrium Cant for Max Speed (Centimeter)
- G Gauge of Track (Meter)
- L Length of Transition Curve in meters (Meter)
- L_{AG} Length of Curve based on Arbitrary Gradient (*Meter*)
- L_{CD} Length of Curve based on Cant Deficiency Rate (*Meter*)
- L_{RC} Length of Curve based on Railway Code (Meter)
- L_{SE} Length of Curve based on Change of superelevation (*Meter*)
- n₁ Number of Trains with Speed 1
- n₂ Number of Trains with Speed 2
- n₃ Number of Trains with Speed 3
- n₄ Number of Trains with Speed 4
- R Radius of Curve (Meter)
- Rt Radius of Transition Curve (Meter)
- S Shift in Railways in Cubic parabola (Meter)
- V Speed of Vehicle on Track (Kilometer per Hour)

Constants, Functions, Measurements used in list of Geometric Design of Railway Track Formulas above

- constant(s): pi,
 3.14159265358979323846264338327950288
 Archimedes' constant
- Measurement: Length in Centimeter (cm), Meter (m)

Length Unit Conversion 🕝

 Measurement: Speed in Kilometer per Hour (km/h)

Speed Unit Conversion

• Measurement: Angle in Degree (°) Angle Unit Conversion

- V1 Speed of Trains Moving with Same Speed 1 (Kilometer per Hour)
- V₂ Speed of Trains Moving with Same Speed 2 (Kilometer per Hour)
- V₃ Speed of Trains Moving with Same Speed 3 (Kilometer per Hour)
- V₄ Speed of Trains Moving with Same Speed 4 (Kilometer per Hour)
- V_{bg/mg} Safe Speed on Transitioned Curves for B.G/M.G (Kilometer per Hour)
- V_{High} Speeds from Length of Curve for High Speeds (Kilometer per Hour)
- VMax Maximum Speed of Train on Curve (Kilometer per Hour)
- Vng Safe Speed on Transitioned Curves for N.G (Kilometer per Hour)
- V_{Normal} Speeds from Length of Curve for Normal Speeds (Kilometer per Hour)
- Wave Weighted Average Speed (Kilometer per Hour)



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