



calculatoratoz.com



unitsconverters.com

Elastic Packing Formulas

Calculators!

Examples!

Conversions!

Bookmark calculatoratoz.com, unitsconverters.com

Widest Coverage of Calculators and Growing - **30,000+ Calculators!**
Calculate With a Different Unit for Each Variable - **In built Unit Conversion!**
Widest Collection of Measurements and Units - **250+ Measurements!**

Feel free to SHARE this document with your friends!

[Please leave your feedback here...](#)



List of 9 Elastic Packing Formulas

Elastic Packing

1) Diameter of Bolt given Frictional Force exerted by Soft packing on Reciprocating rod

$$fx \quad d = \frac{F_{\text{friction}}}{.005 \cdot p}$$

[Open Calculator !\[\]\(a870788d6ed9b8fd294b7654a8c8526b_img.jpg\)](#)

$$ex \quad 14\text{mm} = \frac{294\text{N}}{.005 \cdot 4.2\text{MPa}}$$

2) Fluid pressure by soft packing exerted by frictional force on reciprocating rod

$$fx \quad p = \frac{F_{\text{friction}}}{.005 \cdot d}$$

[Open Calculator !\[\]\(c50c8b7b2cc2cf9ff925edec0ee94c0d_img.jpg\)](#)

$$ex \quad 4.2\text{MPa} = \frac{294\text{N}}{.005 \cdot 14\text{mm}}$$

3) Fluid Pressure given Friction Resistance

$$fx \quad p = \frac{F_{\text{friction}} - F_0}{\mu \cdot A}$$

[Open Calculator !\[\]\(f60b7a900783ac3fd531bfd9c111be6d_img.jpg\)](#)

$$ex \quad 4.20202\text{MPa} = \frac{294\text{N} - 190\text{N}}{0.3 \cdot 82.5\text{mm}^2}$$



4) Fluid Pressure given Torsional Resistance

$$\text{fx } p = \frac{M_t \cdot 2}{.005 \cdot (d)^2}$$

[Open Calculator !\[\]\(cbe80b694ebd74fcfe136a095b608235_img.jpg\)](#)

$$\text{ex } 4.204082\text{MPa} = \frac{2.06\text{N} \cdot 2}{.005 \cdot (14\text{mm})^2}$$

5) Friction resistance

$$\text{fx } F_{\text{friction}} = F_0 + (\mu \cdot A \cdot p)$$

[Open Calculator !\[\]\(3e2231b1ad3ca8da8658228c00dd08e0_img.jpg\)](#)

$$\text{ex } 293.95\text{N} = 190\text{N} + (0.3 \cdot 82.5\text{mm}^2 \cdot 4.2\text{MPa})$$

6) Frictional force exerted by soft packing on reciprocating rod

$$\text{fx } F_{\text{friction}} = .005 \cdot p \cdot d$$

[Open Calculator !\[\]\(0d5ec72f61334709c3fc9450209b754f_img.jpg\)](#)

$$\text{ex } 294\text{N} = .005 \cdot 4.2\text{MPa} \cdot 14\text{mm}$$

7) Seal resistance

$$\text{fx } F_0 = F_{\text{friction}} - (\mu \cdot A \cdot p)$$

[Open Calculator !\[\]\(b64b40baaee5acddc1eab8538ba84754_img.jpg\)](#)

$$\text{ex } 190.05\text{N} = 294\text{N} - (0.3 \cdot 82.5\text{mm}^2 \cdot 4.2\text{MPa})$$



8) Torsional Resistance given Fluid Pressure

[Open Calculator !\[\]\(dfbd6b3763a6d1d9afaa974f64e2e4b5_img.jpg\)](#)

$$\text{fx } M_t = \frac{.005 \cdot (d)^2 \cdot p}{2}$$

$$\text{ex } 2.058\text{N} = \frac{.005 \cdot (14\text{mm})^2 \cdot 4.2\text{MPa}}{2}$$

9) Torsional resistance in rotary motion friction

[Open Calculator !\[\]\(ec9132f1d27c8919987d92907322654d_img.jpg\)](#)

$$\text{fx } M_t = \frac{F_{\text{friction}} \cdot d}{2}$$

$$\text{ex } 2.058\text{N} = \frac{294\text{N} \cdot 14\text{mm}}{2}$$



Variables Used

- **A** Area of seal contacting sliding member (*Square Millimeter*)
- **d** Diameter of elastic packing bolt (*Millimeter*)
- **F₀** Seal Resistance (*Newton*)
- **F_{friction}** Friction Force in elastic packing (*Newton*)
- **M_t** Torsional Resistance in Elastic Packing (*Newton*)
- **p** Fluid Pressure in elastic packing (*Megapascal*)
- **μ** Coefficient of Friction in elastic packing



Constants, Functions, Measurements used

- **Measurement: Length** in Millimeter (mm)
Length Unit Conversion 
- **Measurement: Area** in Square Millimeter (mm²)
Area Unit Conversion 
- **Measurement: Pressure** in Megapascal (MPa)
Pressure Unit Conversion 
- **Measurement: Force** in Newton (N)
Force Unit Conversion 



Check other formula lists

- [Bolt Loads in Gasket Joints Formulas](#) 
- [Elastic Packing Formulas](#) 
- [V Ring Packing Formulas](#) 

Feel free to SHARE this document with your friends!

PDF Available in

[English](#) [Spanish](#) [French](#) [German](#) [Russian](#) [Italian](#) [Portuguese](#) [Polish](#) [Dutch](#)

1/8/2024 | 9:29:38 AM UTC

[Please leave your feedback here...](#)

