TOKAISPRING

The formula to determine loads of conical compression springs:

$$P=\frac{\pi d^4 G}{32 R_s^2}\left(\alpha-\frac{d'}{2\pi R_s}\right)$$

In which:

d: Wire diameter

G: Transverse elastic modulus. This value changes depending on the material. You can visit our company's website for more details. (https://www.tokaibane.com/en/spring-design/compression-springs-formulas)

Rs: the radius of the smallest coil that is pressed to the solid height

d': can be determined by the following formula:

$$d'=d\sqrt{1-\left(\frac{R_2-R_1}{nd}\right)^2}$$

(R2: Radius of the biggest coil, R1: Radius of the smallest coil, Number of active coils at free length)