

The Institute of Spring Technology  
Henry Street  
Sheffield  
S3 7EQ

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Date: 23.4.2018 ã.  
Time: 11:28:51  
Initials:

#### **Spring Type: Round Wire Compression**

Designed To: EN 13906-1: 2002  
Tolerance Standard: EN 15800: 2010

#### **Material**

EN 10270-1 Drawn  
Youngs Mod (E): 206000 N/mm<sup>2</sup>  
Rigidity Mod (G): 81500 N/mm<sup>2</sup>  
Density: ,00000785 Kg/mm<sup>3</sup>  
Unprestress: 0-45 %  
Prestress: 45-56 %

End Type: Closed and Ground  
Dead Coils: 2,00  
Tip Thickness: 100,00 %  
End Fixation: Both Ends Fixed and Unguided

#### **Design Parameters**

Wire Diameter: 15,00 mm  
Outside Diameter: 165,00 mm  
Total Coils: 12,00  
Spring Rate: 15,28 N/mm (Calculated)  
Free Length: 360,00 mm

#### **Calculated Data**

Solid Length: 195,00 mm  
Min. Length (static): 232,50 mm  
Min. Length (dynamic): 251,25 mm  
Solid Load: 2521,4 N  
Solid Stress: 285,37 N/mm<sup>2</sup>  
Stress Factor: 1,14  
Active Coils: 10,00  
Spring Index: 10,00  
Helix Angle: 3,82 Deg  
Buckling Possible: 214,03 mm  
Buckling Definite: Not Applicable  
Spring Pitch: 31,50 mm  
Inside Diameter: 135,00 mm  
Mean Coil Dia.: 150,00 mm  
Wire Length: 5665,9 mm  
Weight / 100: 785,97 Kg  
Natural Freq: 1450,5 RPM

#### **Stress Data**

|           | Lower<br>Tensile | Solid | % Tensile |
|-----------|------------------|-------|-----------|
| SL        | NO DATA          |       |           |
| SM        | 1110             | 26 U  |           |
| DM        | 1110             | 26 U  |           |
| SH        | 1270             | 22 U  |           |
| DH        | 1270             | 22 U  |           |
| Specified |                  |       |           |

#### **Operating Data**

NO DATA

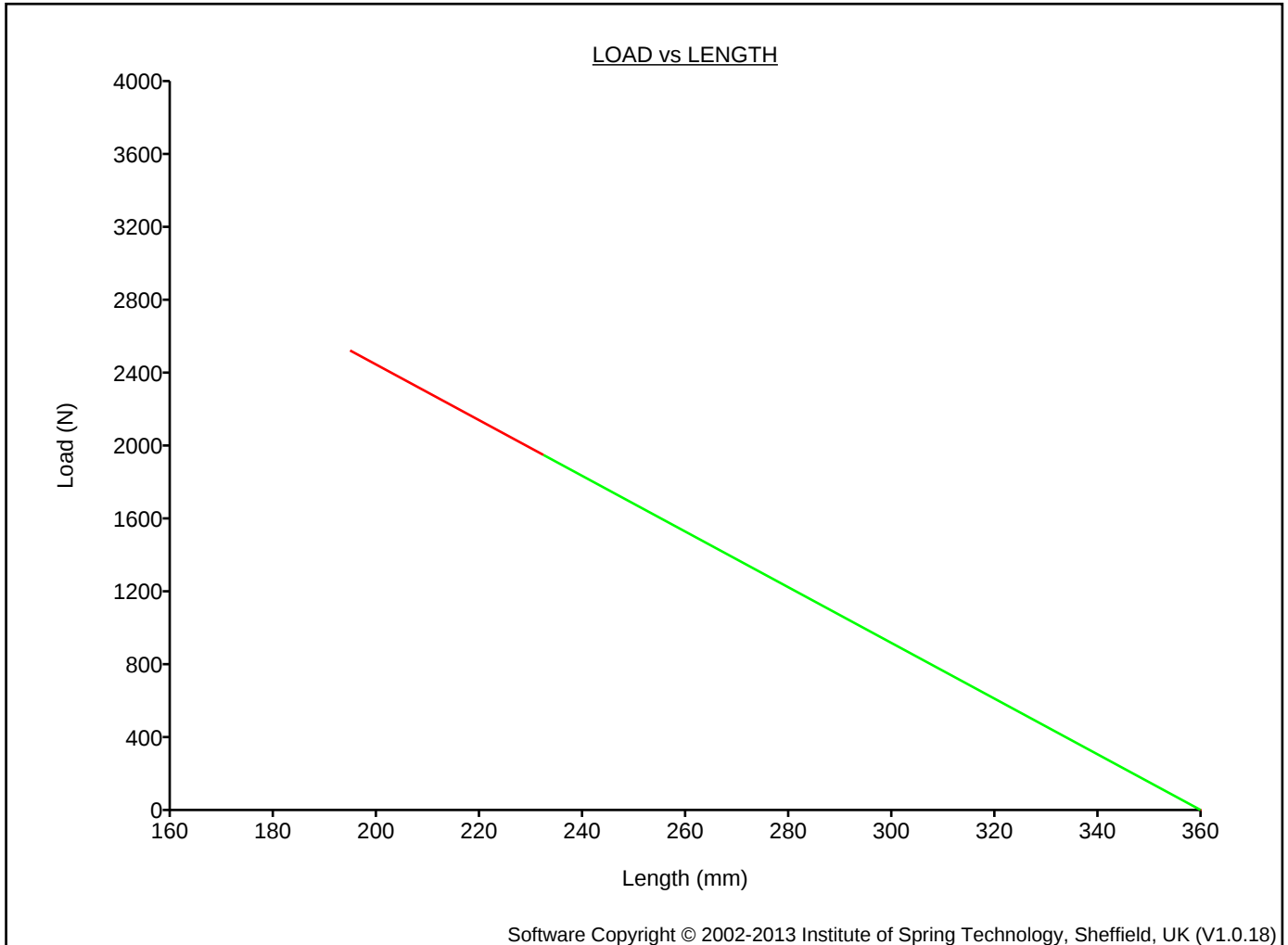
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#### Load / Length Graph

Material: EN 10270-1 Drawn  
Grade: SL  
Lower Tensile (N/mm<sup>2</sup>): 0



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### Spring Drawing

Material:

Right hand helix  
EN 10270-1 Drawn

|           |                   |        |      |
|-----------|-------------------|--------|------|
| $d$       | Wire Diameter:    | 15,00  | mm   |
| $D_e$     | Outside Diameter: | 165,00 | mm   |
| $n_t$     | Total Coils:      | 12,00  |      |
| $R_s$     | Spring Rate:      | 15,28  | N/mm |
| $L_0$     | Free Length:      | 360,00 | mm   |
| $L_c$     | Solid Length      | 195,00 | mm   |
| $F_{cth}$ | Solid Load        | 2521,4 | N    |

