

DIN EN 13906-2:2013-09 (E)

Cylindrical helical springs made from round wire and bar - Calculation and design - Part 2: Extension springs

Contents	Page
Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions, symbols, units and abbreviated terms	4
3.1 Terms and definitions	4
3.2 Symbols, units and abbreviated terms	5
4 Theoretical extension spring diagram	6
5 Types of loading	7
5.1 General	7
5.2 Static and/or quasi-static loading	7
5.3 Dynamic loading	7
6 Stress correction factor k	8
7 Initial tension force F0	9
8 Material property values for the calculation of springs	10
9 Calculation formulae	10
9.1 General	10
9.2 Spring work	10
9.3 Spring Force	11
9.4 Spring deflection	11
9.5 Spring rate	11
9.6 Torsional stresses	11
9.7 Nominal diameter of wire or bar	11
9.8 Number of active coils	11
9.9 Total number of coils	11
9.10 Initial tension force	12
10 Permissible torsional stress under static or quasi-static loading	12
10.1 General	12
10.2 Permissible torsional stress zul for cold coiled springs	12
10.3 Permissible torsional stress zul for hot coiled springs	12
10.4 Initial tension torsional stress 0	12
11 Calculation of extension springs for dynamic loading	13
Annex A (informative) Types of spring ends	14
Bibliography	18