

# ISO 22705-2:2023-02 (E)

## Springs - Measurement and test parameters - Part 2: Cold formed cylindrical helical extension springs

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
1	Scope .....	1
2	Normative references .....	1
3	Terms, definitions, symbols and abbreviated terms .....	1
3.1	Terms and definitions .....	1
3.2	Symbols and abbreviated terms .....	2
4	Environmental conditions .....	3
5	Qualifications of the person(s) performing the work .....	3
6	Geometries of guiding and supporting devices .....	3
7	Measuring and testing equipment .....	3
8	Measurement and test parameter for technical cold formed cylindrical extension springs ..	4
8.1	Free length (L0) .....	4
8.1.1	General .....	4
8.1.2	Type of characteristic .....	4
8.1.3	Measuring and/or testing equipment .....	4
8.1.4	Conditions of measurement and testing .....	4
8.1.5	Method of measurement and testing .....	4
8.1.6	Test location on the product .....	7
8.2	Body length (LB) .....	7
8.2.1	General .....	7
8.2.2	Type of characteristic .....	7
8.2.3	Measuring and/or testing equipment .....	8
8.2.4	Conditions of measurement and testing .....	8
8.2.5	Method of measurement and testing .....	8
8.2.6	Test location on the product .....	10
8.3	Spring hook length (LH) .....	10
8.3.1	General .....	10
8.3.2	Type of characteristic .....	10
8.3.3	Measuring and/or testing equipment .....	11
8.3.4	Conditions of measurement and testing .....	11
8.3.5	Method of measurement and testing .....	11
8.3.6	Test location on the product .....	13
8.4	Hook opening (m) .....	13
8.4.1	General .....	13
8.4.2	Type of characteristic .....	13
8.4.3	Measuring and/or testing equipment .....	14
8.4.4	Conditions of measurement and testing .....	14
8.4.5	Method of measurement and testing .....	14
8.4.6	Test location on the product .....	15
8.5	Outside diameter (De) .....	15
8.5.1	General .....	15
8.5.2	Type of characteristic .....	15
8.5.3	Measurement and/or testing equipment .....	16

8.5.4	Conditions of measurement and testing .....	16
8.5.5	Method of measurement and testing .....	16
8.5.6	Test location on the product .....	20
8.6	Inside diameter (Di) .....	20
8.6.1	General .....	20
8.6.2	Type of characteristic .....	20
8.6.3	Measuring and/or testing equipment .....	20
8.6.4	Conditions of measurement and testing .....	20
8.6.5	Method of measurement and testing .....	21
8.6.6	Test location on the product .....	23
8.7	Total number of coils (nt), number of active coils (n) and coil direction .....	23
8.7.1	General .....	23
8.7.2	Type of characteristic .....	23
8.7.3	Measuring and/or testing equipment .....	25
8.7.4	Conditions of measurement and testing .....	25
8.7.5	Method of measurement and testing .....	25
8.7.6	Test location on the product .....	26
8.8	Bending radius (r) .....	26
8.8.1	General .....	26
8.8.2	Type of characteristic .....	26
8.8.3	Measuring and/or testing equipment .....	27
8.8.4	Conditions of measurement and testing .....	27
8.8.5	Method of measurement and testing .....	27
8.8.6	Test location on the product .....	27
8.9	Spring load (F) .....	28
8.9.1	General .....	28
8.9.2	Type of characteristic .....	28
8.9.3	Measuring and/or testing equipment .....	28
8.9.4	Conditions of measurement and testing .....	28
8.9.5	Method of measurement and testing .....	28
8.9.6	Test location on the product .....	29
8.10	Spring pitch (p) / distance between the coils (u) .....	29
8.10.1	General .....	29
8.10.2	Type of characteristic .....	29
8.10.3	Measuring and/or testing equipment .....	30
8.10.4	Conditions of measurement and testing .....	30
8.10.5	Method of measurement and testing .....	30
8.10.6	Test location on the product .....	30
8.11	Loop/ Hook position .....	31
8.11.1	General .....	31
8.11.2	Type of characteristic .....	31
8.11.3	Measuring and/or testing equipment .....	31
8.11.4	Conditions of measurement and testing .....	32
8.11.5	Method of measurement and testing .....	32
8.11.6	Test location on the product .....	32
8.12	Shear-off burr .....	32
8.12.1	General .....	32
8.12.2	Type of characteristic .....	32
8.12.3	Measuring and/or testing equipment .....	33
8.12.4	Conditions of measurement and testing .....	33
8.12.5	Method of measurement and testing .....	33
8.12.6	Test location on the product .....	34
Annex A (Informative) Calculation of spring rate R .....		35
Annex B (Informative) Calculation of initial tension force (Fi) .....		36
Annex C (Informative) Types of hooks .....		38