

FED15

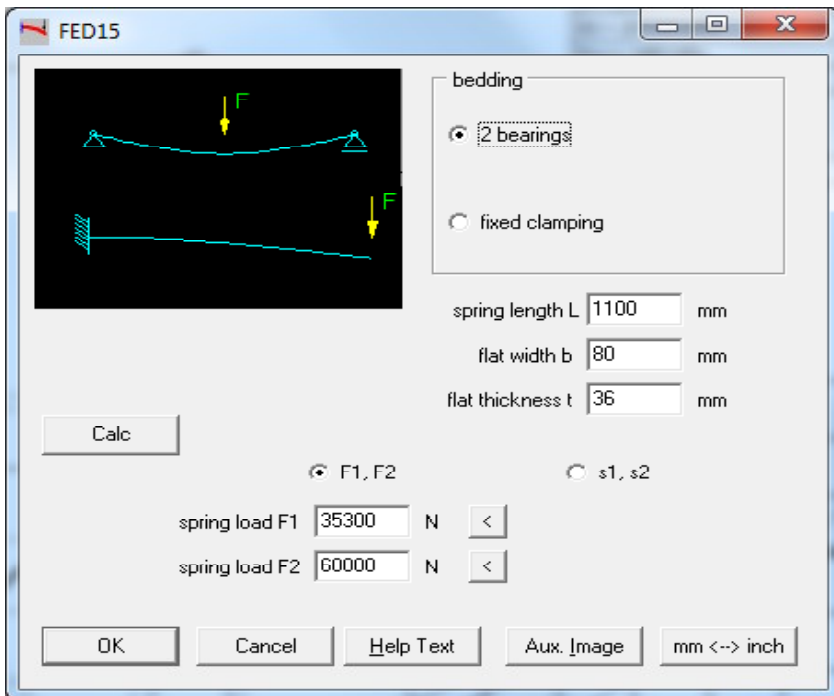


www.hexagon.de

Software for Leaf Springs

for Windows

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FED15 - Calculation of leaf springs

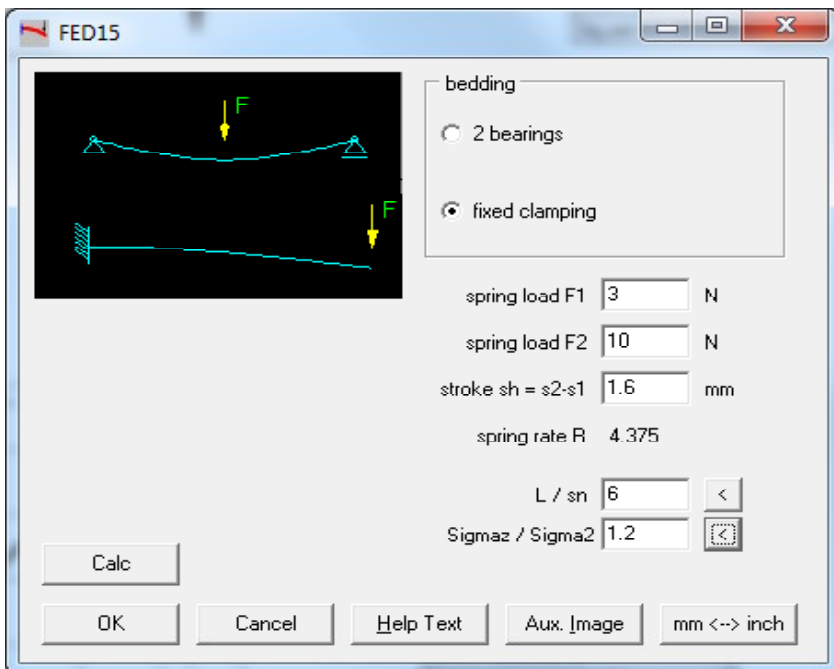
FED15 calculates simple leaf springs from rectangular flat spring material. Leaf spring can be fixed clamped or on two bearings, and loaded by only one axial force. The load introduction position must be at the spring end if fixed clamping, and in the middle of the spring if bedded on two bearings.

Pre-Dimensioning

FED15 also provides a pre-calculation. Enter one or two loads and deflection, and FED15 calculates dimensions of the leaf spring. Modify ratio of spring length to deflection and safety $\sigma_{maz}/\sigma_{ma2}$ to vary leaf spring dimensions.

Units

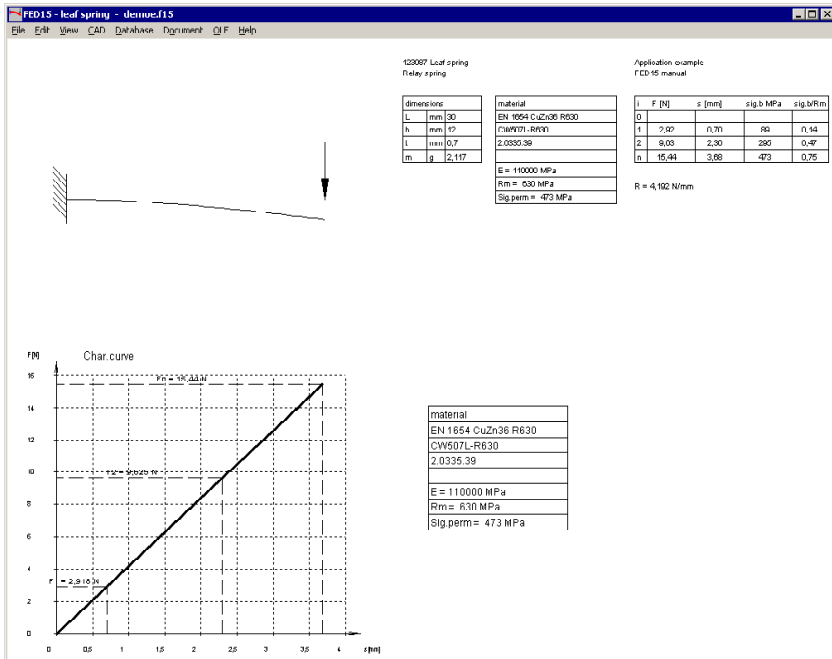
FED15 can be switched between metric units (mm, N, MPa) and imperial units (inch, lbf, psi)



Material Database

Material properties of the most important flat spring materials (tensile strength, permissible shear stress and bending stress as function of material thickness, modulus of elasticity, density) are stored at the integrated material database. The dbf file may be extended and modified by the user.

NAME1	NAME2	NAME3	NAME4	E
EN 10132-4 C85S +QT	cold-rolled steel strip	1.1269		206000
EN 10132-4 C90S +QT	cold-rolled steel strip	1.1217		206000
EN 10151-1 4310 C+T	X10CrNi18-8	AISI 301	stainless steel	193000
EN 10151-1 4401 C+T	X5CrNiMo17-12-2	AISI 316	stainless steel	193000
EN 10151-1 4568 C+T	X7CrNiAl17-7	17-7 PH	stainless steel	200000
EN 1854 CuBe2 R1310	CW101C-R1310	2.1247.97		139000
EN 1854 CuCo2Be R820	CW104C-R820	2.1285.97		140000
EN 1854 CuSn6 R720	CW452K-R720	2.1020.39		115000
EN 1854 CuZn36 R630	CW507L-R630	2.0335.39		110000
Hastelloy C-4	NiCr19Ni9FeCo	2.4610	ASTM B619	212000
NiCONEL X-750 ST+3HT	NiCr15Fe7TiAl	2.4669	Sarico 75X1	212000
NiCONEL X-750 ST+age	NiCr15Fe7TiAl	2.4669	Sarico 75X1	214000
NiCONEL X-750 T. No.1	NiCr15Fe7TiAl	2.4669	Sarico 75X1	220000
Mk 75	Mk 75 (see temper)	PT 140		206000
Monel 400	NiCu31Fe4Ni	2.4360	ASTM B164	173000
NIMONIC 90 annealed	NiCr20Co18Ti	2.4969/2.4632	annealed, final red.	218000
NIMONIC 90 final red	NiCr20Co18Ti	2.4969/2.4632	final red.	239000
Ti-3-8-6-4-4, ST+age	AMS 4957 Beta-C	Ti-3Al8V6Cr4Mo4Zr	solution treat +aged	99000
Titanium Grade 1	Ti99	3.7025	ASTM B348	110000



Load-deflection diagram

FED15 calculates load-deflection line of the leaf spring.

Goodman-Diagram

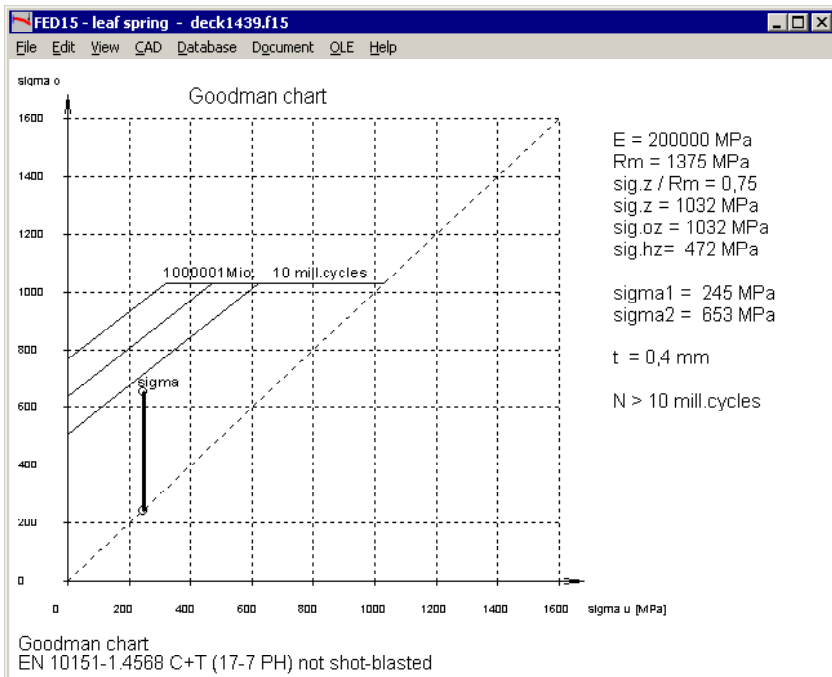
If dynamically loaded, Goodman diagram is useful to calculate fatigue strength safety and bearable load cycles of the spring.

Quick View

Load-deflection diagram together with tables of the essential spring data and results are printed on one page.

Printout

Input data and calculation results with spring travel, spring length, spring load and stresses for different spring positions may be printed, saved as text or HTML file, or exported to MS Excel via OLE interface.



Production Drawing

FED15 generates a production drawing of the leaf spring. Drawing name, date, users and modifications are described in FED15.

HEXAGON Help System

Auxiliary text and images are available for all dialogue windows. If error messages occur, you can get description and remedy suggestion.

Interfaces

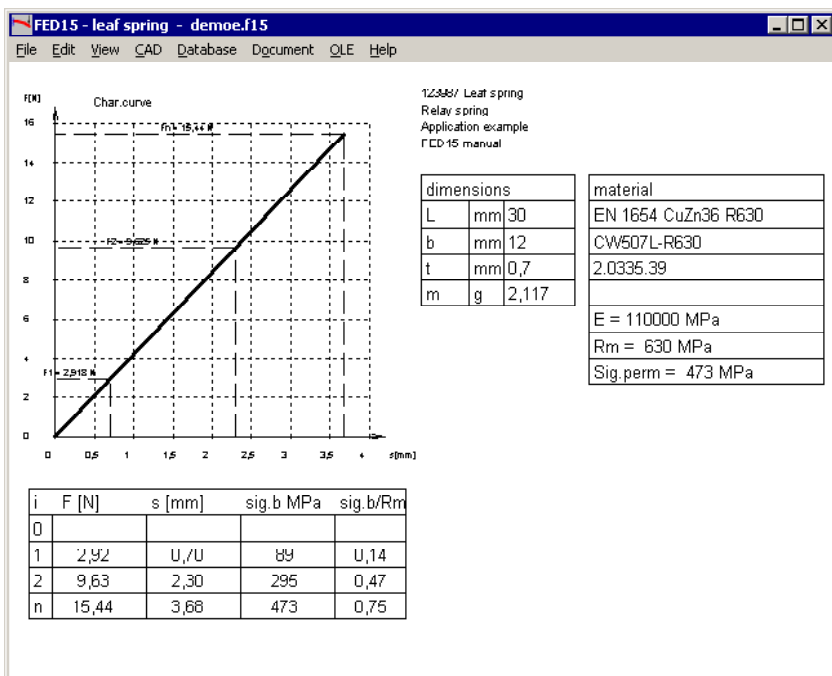
All drawings and diagrams can be saved as DXF or IGES file to be loaded with CAD programs. The OLE interface lets you import/export data from/to Excel.

Export Formats

DXF, IGES, HTML, TXT, DBF, Excel, F15.

Import Formats

TXT, DBF, Excel, F15.



System Requirements

FED15 is available as 32-bit app or as 64-bit app for Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10.

Scope of Delivery

FED15 program with database files, example applications and help images, user manual (pdf), license granting unrestricted rights of use.

Software Maintenance

HEXAGON Software is continuously improved and updated. Registered users are regularly kept informed of updates and new editions.

Guarantee

HEXAGON gives a 24 month guarantee on full functionality of the software. We provide help and support by email and hotline without extra charge.