

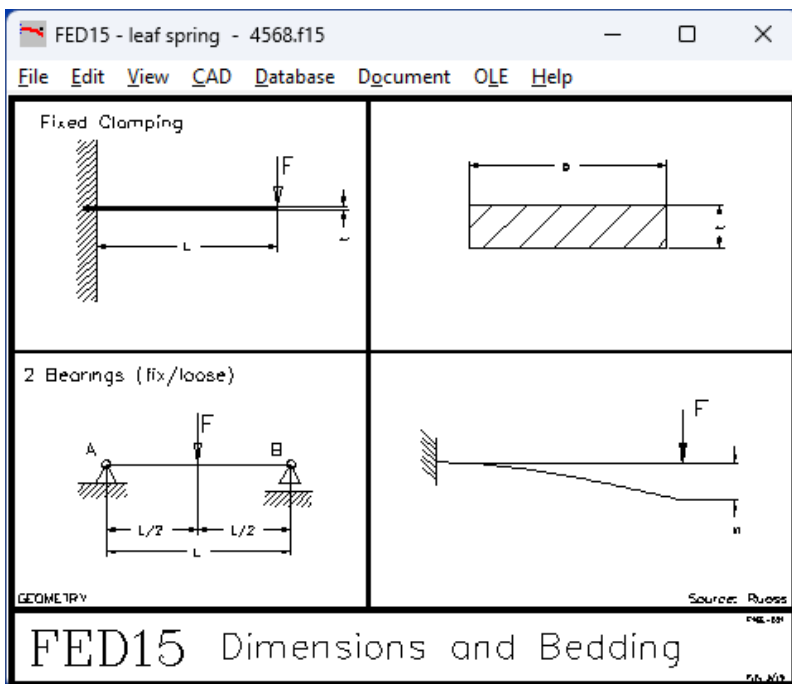
FED15



Software for Leaf Springs

for Windows

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FED15 - Calculation of leaf springs

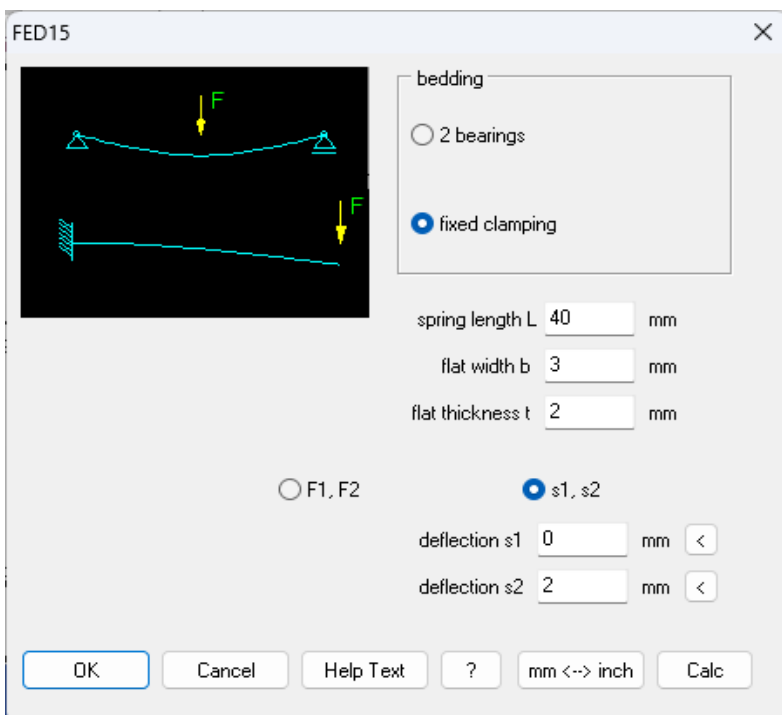
FED15 calculates simple leaf springs from rectangular flat spring material. Leaf spring can be fixed clamped or on two bearings, and loaded by only one force. The load introduction position must be at the spring end if fixed clamping, and in the middle of the spring if bedded on two bearings.

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 $\sigma_{maz}/\sigma_{gam2}$ to vary leaf spring dimensions.

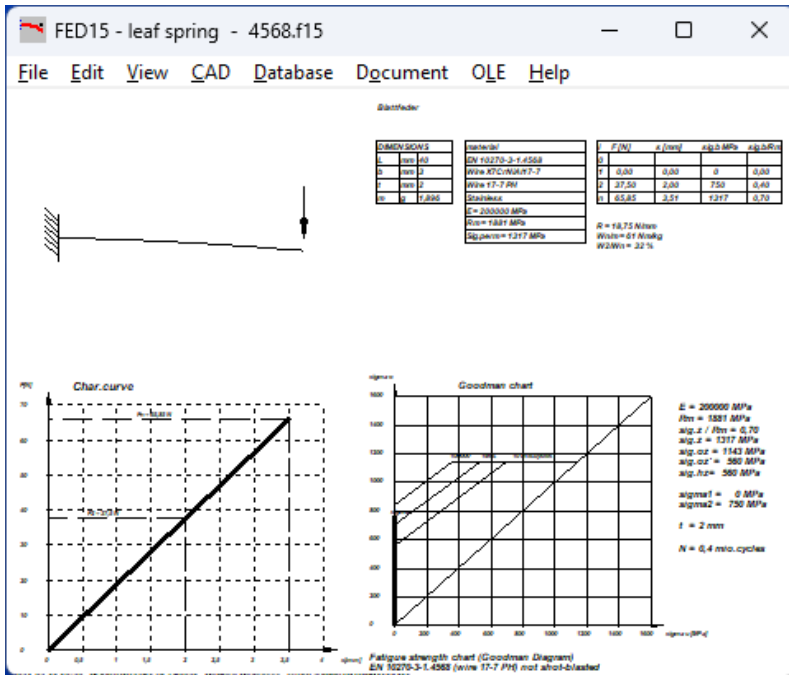
Material Database

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.



The screenshot shows the 'fed9wst.dbf material' window. It has a menu bar with 'File', 'View', and 'Help'. Below the menu bar are search fields and buttons for 'Search', 'Search Next', '51 /57', 'OK', and 'Cancel'. The main area is a table with columns 'NAME1', 'NAME2', 'NAME3', and 'NAME4'. The table contains a list of materials with their properties.

NAME1	NAME2	NAME3	NAME4
EN 10132-4 48S17 +QT	cold-rolled steel strip	1.5021	
EN 10132-4 56S17 +QT	cold-rolled steel strip	1.5026	
EN 10132-4 51CrV4+QT	cold-rolled steel strip	1.8159	
EN 10132-4 80CrV2+QT	cold-rolled steel strip	1.2235	
EN 10132-4 75Ni18 +QT	cold-rolled steel strip	1.5634	
EN 10132-4 125Cr2+QT	cold-rolled steel strip	1.2002	
EN 10132-4 102Cr6+QT	cold-rolled steel strip	1.2067	
INCONEL X-750 ST+age	NiCr15Fe7TiAl	2.4669	Sanicro 75X1
NIMONIC 90 annealed	NiCr20Co18Ti	2.4969/2.4632	annealed+aged
NIMONIC 90 final.red	NiCr20Co18Ti	2.4969/2.4632	final.red.
Hastelloy C-4	NiCr16Mo16FeCo	2.4610	ASTM B619
Monel 400	NiCu31FeMn	2.4360	ASTM B164
Titanium grade 1	Ti99	3.7025	ASTM B348
INCONEL X-750 ST+3HT	NiCr15Fe7TiAl	2.4669	Sanicro 75X1
INCONEL X-750 T.No.1	NiCr15Fe7TiAl	2.4669	Sanicro 75X1
Ti 3-8-6-4-4, ST+age	AMS 4957 Beta-C	Ti-3Al8V6Cr4Mo4Zr	solution treat.+
EN 10270-3-1.4310-NS	wire X10CrNi18-8	wire 18-8, 302, 304	stainless
EN 10270-3-1.4568	wire X7CrNiAl11-7	wire 17-7 PH	stainless
JIS SWP-A	spring steel wire pat. drawn	piano wire	
JIS SWP-B	spring steel wire pat. drawn	piano wire high-tens	
INCONEL 718 ST+age	wire NiCr19FeNbMoTiAl	2.4669	AMS 5669, S682, 7
ELGILOY ST+age	wire CoCr21Ni16Mo	2.4711	UNS R30003, PHYN
INCOLOY A-286 ST	X6NiCrTi26-15	1.4980	spring temper
INCOLOY A-286 ST+age	X6NiCrTi26-15	1.4980	spring temper+age



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 screen.

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

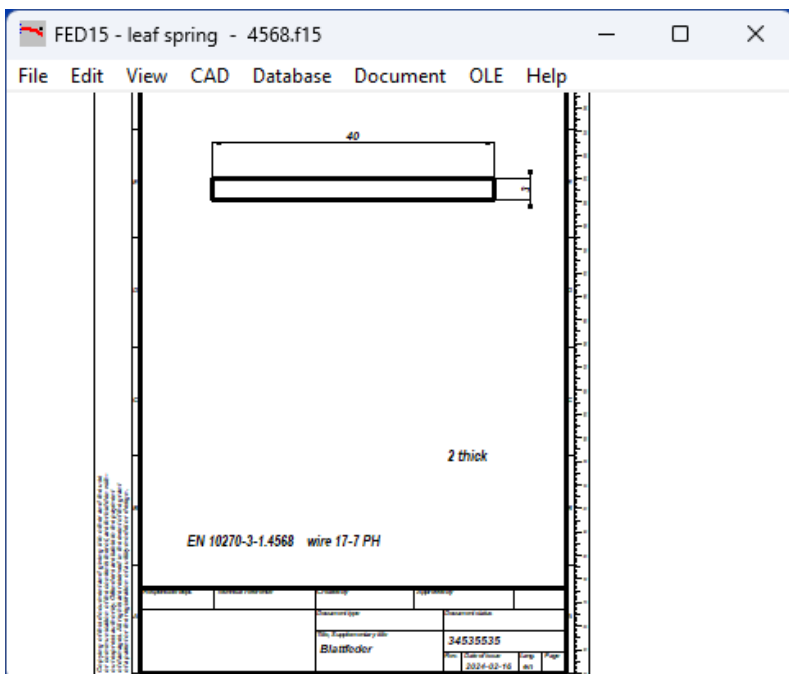
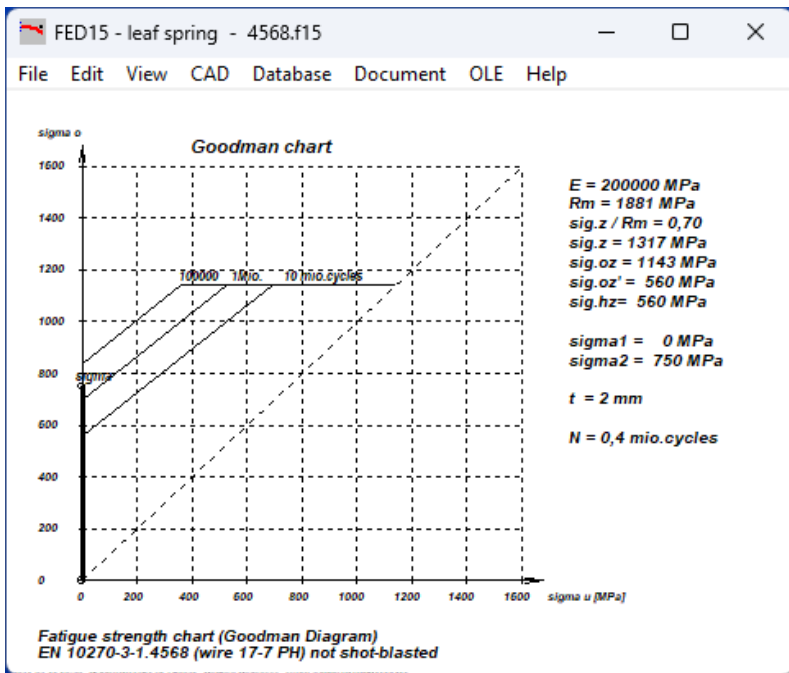
DXF, IGES, HTML, TXT, DBF, Excel, F15.

Import Formats

TXT, DBF, Excel, F15.

Units

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



System Requirements

FED15 is available as 32-bit app or as 64-bit app for Windows 11, Windows 10, Windows 7.

Scope of Delivery

FED15 program with database files, example applications and help images, user manual (pdf), license contract for unlimited time use.

Software Maintenance

HEXAGON software is constantly being improved and updated. Registered users will be informed about news, and can get new versions at a reasonable update price.

Guarantee

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