

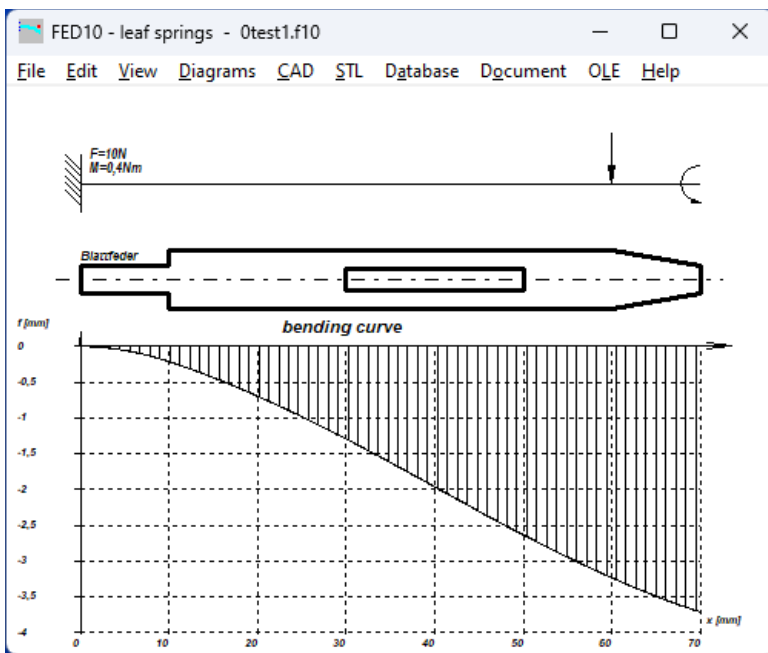
FED10



Software for Calculation of Leaf Springs

for Windows

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Leaf Spring Calculation

FED10 calculates stress, deflection and resonance frequency of flat leaf springs, or of flexural bending springs of round wire.

Spring geometry and load

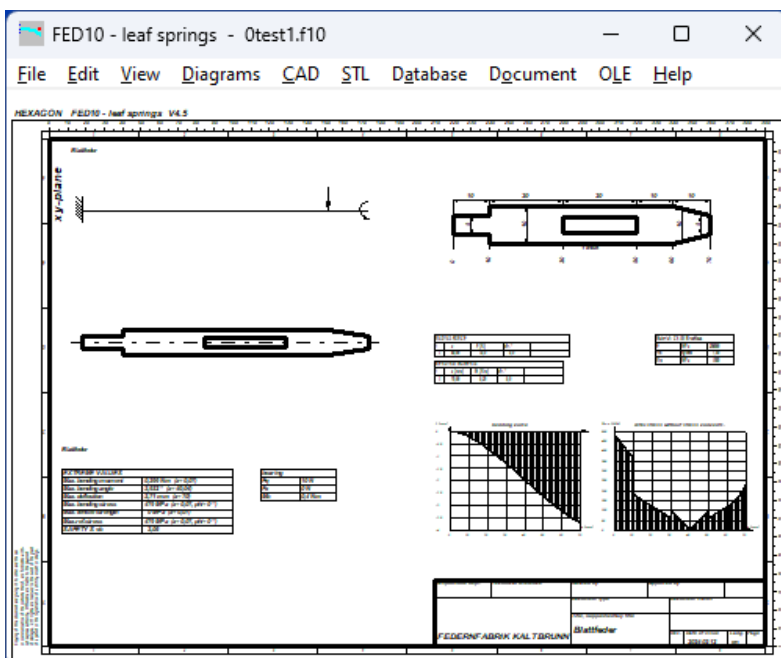
Leaf spring geometry is defined by external and internal coordinates of leaf spring sections. FED10 calculates leaf springs defined by up to 100 sections. Load is defined by up to 50 radial and axial forces, path load, bending moments.

Bedding

FED10 calculates leaf springs with fixed clamping, or 2, 3, 4 or 5 support positions. By input of spring rate, you may even consider bearing stiffness for calculation.

Material Database

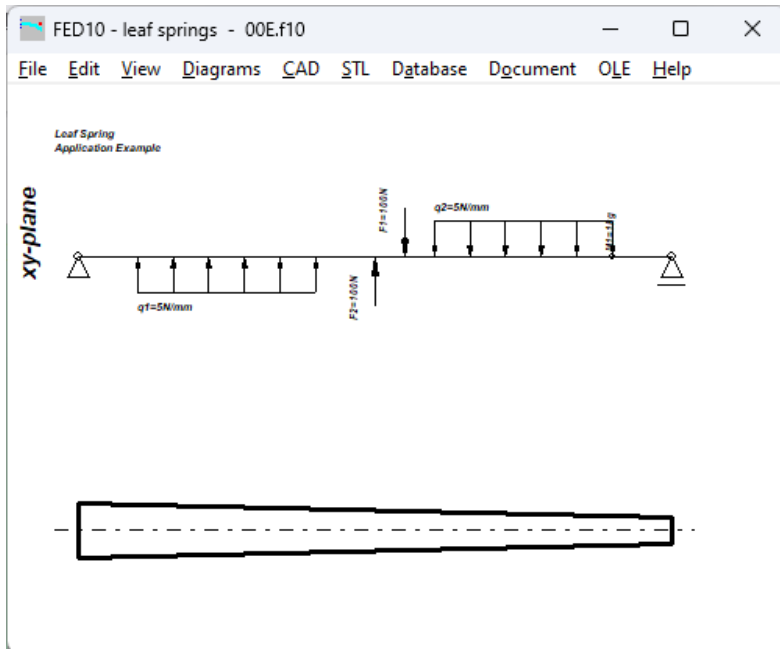
The integrated material database includes mostly used flat steel spring materials. Database may be modified and extended by the user.



NAME1	NAME2	NAME3	N
EN 10132-4 48S17 +QT	cold-rolled steel strip	1.5021	
EN 10132-4 51CrV4+QT	cold-rolled steel strip	1.8159	
EN 10132-4 56S17 +QT	cold-rolled steel strip	1.5026	
EN 10132-4 75Ni8 +QT	cold-rolled steel strip	1.5634	
EN 10132-4 80CrV2+QT	cold-rolled steel strip	1.2235	
EN 10132-4 C100S +QT	cold-rolled steel strip	1.1274	
EN 10132-4 C125S +QT	cold-rolled steel strip	1.1224	
EN 10132-4 C55S +QT	cold-rolled steel strip	1.1204	
EN 10132-4 C60S +QT	cold-rolled steel strip	1.1211	
EN 10132-4 C67S +QT	cold-rolled steel strip	1.1231	
EN 10132-4 C75S +QT	cold-rolled steel strip	1.1248	
EN 10132-4 C85S +QT	cold-rolled steel strip	1.1269	
EN 10132-4 C90S +QT	cold-rolled steel strip	1.1217	
EN 10151-1.4310 +C15	strip X10CrNi18-8 +C1900	AISI 301	s
EN 10151-1.4401 +C13	strip X5CrNiMo17-12-2 +C1300	AISI 316	s

Resonance frequency

Resonance frequency of the spring-mass system can be calculated from leaf spring weight and external masses.



Diagrams

FED10 displays diagrams of radial force, bending moment, bending angle, deflection, bending stress, tension and reference stress. Diagrams can be printed, or exported to CAD or other software via DXF or clipboard.

Calculation Options

You can activate calculation of dead weight and/or external masses as path load. Safety against buckling can be calculated for axial load. Bearing stiffness can be considered for ball-and-socket bedding.

Printout

Calculation results with maximum values of deflection, stresses, radial load, bending moment, safety, spring weight, spring rate, center of gravity, bearing load and bending angle on support positions, resonance frequency, material properties and input data can be printed or exported as HTML table or Excel file.

Quick View

Quick View shows drawing, diagrams and tables altogether on one screen.

2D drawing

FED10 generates a true-scale drawing of the leaf spring as DXF or IGES file

3D drawing

A 3D drawing of the leaf spring can be exported to CAD, or foreshortened on screen.

Production drawing

FED10 generates a production drawing of the leaf spring with all dimensions. Drawing information and modification index can be entered within the program.

3D Printing

You can generate the leaf spring as 3D model and print it on your 3D printer

Help System

You can display a help window for each input value. FED10 displays warnings when values are exceeded. For each error message you can display a more detailed description of the error and a remedy suggestion.

Hard- and Software Requirements

FED10 is available as 32-bit app or as 64-bit app for Windows 11 / Windows 10 / Windows 7.

Scope of Delivery

The FED10 program incl. sample data, auxiliary images, help text, user manual (pdf), input forms, perpetual license for unlimited time use.

Software Maintenance

FED10 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.

