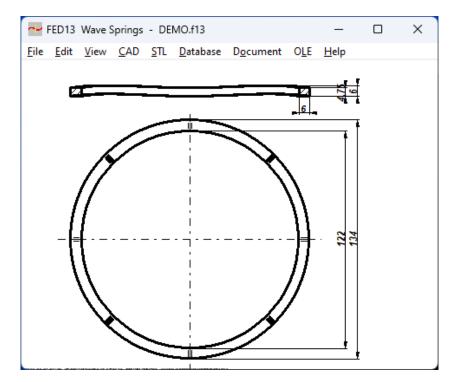
FED13

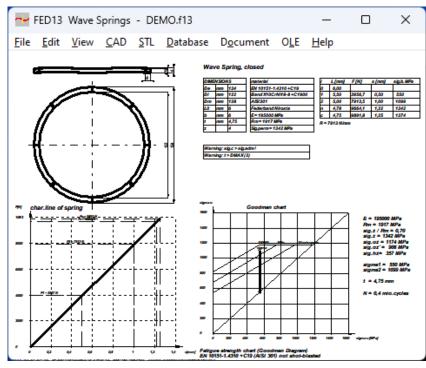


Wave Spring Software

for Windows

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Calculation of Wave Spring

FED13 calculates characteristic line of spring and stresses of wave spring washers. Input data are external and internal ring diameter, flat thickness, number of waves, height of wave spring L0. The program calculates spring load and stress for assembly length L1 and L2. Material properties can be selected from the integrated material database. Wave spring can be closed (washer) or open (made from strip).

Units

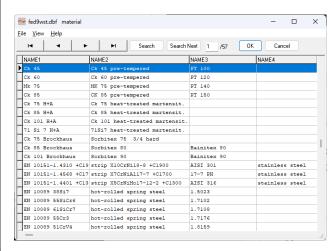
FED13 can be switched between metric units (mm, N, MPa) and imperial units (inch, lbf, psi).

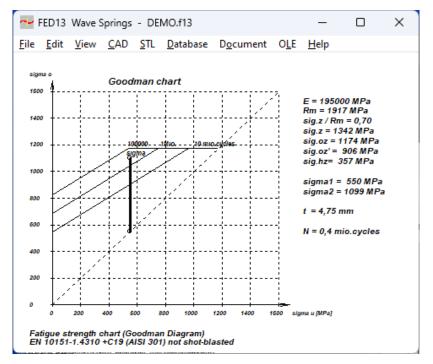
Spring Drawing 2D and 3D

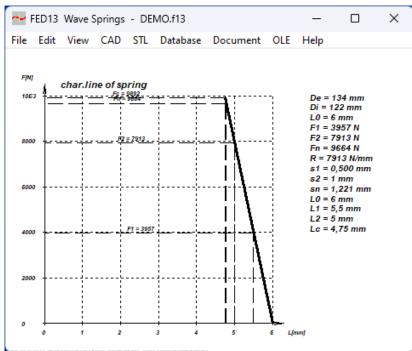
FED13 generates a true-scale drawing of the wave spring washer (2D or 3D) that can be exported to your CAD system as DXF or IGES file.

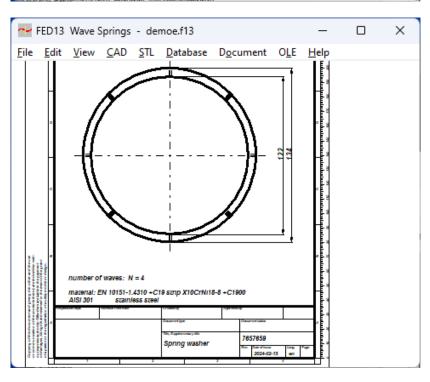
Material Database

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.









Diagrams

FED13 calculates characteristic line of spring (load-deflection diagram) as function of spring travel and spring length.

Goodman Diagram

The operating zone of the selected material for the calculated wave spring is shown in the fatigue strength diagram. You can see whether or not the permissible variation of stress has been adhered to for dynamically stressed springs. The curves for fatigue strength (>10 million), as well as for 1 million and 100,000 load cycles are shown.

Production Drawing

FED13 generates a production drawing of the spring together with a drawing header according to ISO 7200.

Quick View

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

Printout

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

3D Model

A 3D model of the spring can be generated as STL file, ready for STL viewer or 3D printer.

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 MS-Excel.

Export Formats

DXF, IGES, STL, HTML, TXT, DBF, Excel, F13.

Import Formats

TXT, DBF, Excel, F13.

System Requirements

FED13 is available as 32-bit and 64-bit application for Windows 11, Windows 10, Windows 7.

Scope of Delivery

FED13 program with database files, example applications and help images, user manual (pdf), perpetual license for non-expiring right-to-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.