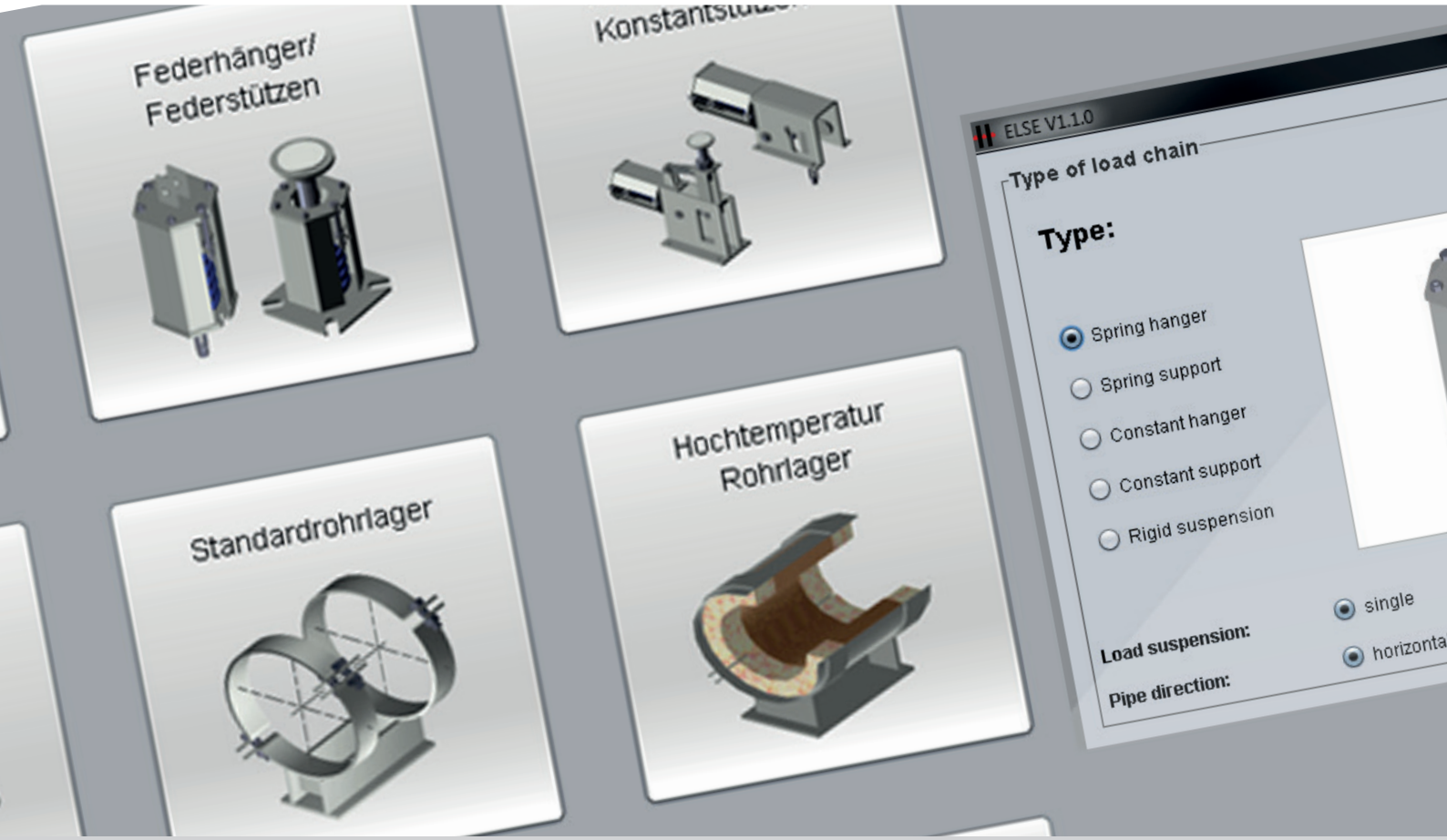
HESTERBERG ELSE

Version: 3.0.0

User Guide

12.05.2016



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Disclaimer

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Likewise, this disclaimer does not apply to the breach of contractual obligations, the proper implementation of closed between the parties only could allow and trust in which the contractual partner (So-called cardinal obligations or material contractual obligations).

Our liability is limited in principle to the damages in with its formation we expected use of this program under the circumstances prevailing at that time we had.

Content

1. Installation and system requirements

In the Hesterberg program, ELSE involves a Java application.
To run the program, the Java Runtime Environment (JRE) must be installed on the computer. If JRE is available on the computer, ELSE can be performed without additional installation effort.
Although Java applications are platform-independent in principle, the use of a Windows operating system is recommended.

- Recommended operating system: Windows 7 and higher
- Java Runtime Environment (JRE) version 1.7.0_55
- Minimum screen resolution of 1152 x 864 pixels

2. Hesterberg ELSE - An introduction / About us:

Hesterberg pipe supports

One of the leading specialists for pipe supports in Europe. For three decades, our company has dealt with pipe support systems for many different applications. Many of our customers and employees have been with us since it was founded in the 80s.
Our company and our product range have grown steadily ever since.
Highly trained engineers, experienced application engineers and an effective production ensure that Hesterberg is known worldwide today as a competent advisor and problem solver for pipe supports. We can react flexibly and individually and find more optimal solutions to special requests of our customers.

Short hierarchies allow direct communication between the departments.
This increases the innovative power of the developers, who are therefore particularly close to the needs of customers. Even decisions are quickly made and implemented in this way. So Hesterberg remains flexible and is one step ahead of the state of the art.
To build on this successful strategy, we have especially strengthened our team in the engineering field. Our team consists mainly of the combination of very experienced engineers and very young innovative employees, who complement each other perfectly. This enables us to ensure that we address your questions even faster and more customized and to be more successful together.

Hesterberg ELSE

To support our customers in their planning work and to simplify product selection, we have developed the design program ELSE.
Our modular design program ELSE supports the designer of the pipe support with detailed engineering. ELSE helps the user to plan efficiently and cost effectively, as well as to enhance the quality of his design.
Using the program is easy and user-friendly. ELSE guides the user through a dialogue system that supports the user with the help of clear, graphic menus during input. Only technically sensible support combinations that fulfil the customer requirements are displayed.
ELSE is also a valuable and reliable help for beginners and unskilled users in the field of the support construction. ELSE helps you to reduce lead times and to further increase the quality of your projects.
Other main focuses of the program are the output of 2D-drawings with parts lists, documentation in various languages - simply shifting is also possible afterwards, production of collective parts lists and order proposals.

For further use in PDMS, an export file can be generated via the PDMS interface of ELSE for each support configuration and this is uploaded in PDMS. Based on the exported data, the support configuration is then modelled in PDMS with the help of the Hesterberg PDMS catalogue database and can be incorporated in the model. Then all possibilities of PDMS, such as a collision check, are available to the full extent.

3. Software environment of ELSE

ELSE is used to select, configure and order products from the Hesterberg product range. However, ELSE is not alone, but is part of a series of other software products. ELSE unfolds its whole potential only in conjunction with these other components.

Mention should be made here of:

- Hesterberg catalogue database for PDMS
- PDMS Plug-in

At the centre, there is the Hesterberg catalogue database for PDMS. In this catalogue database the 3D-representations of the available Hesterberg components for use within PDMS are deposited. To facilitate the work with the catalogue database for PDMS, the PDMS Plug-in was developed.
Among other things, this plug-in supports the creation and modification of support configurations in a PDMS project. For more information on installing and working with the PDMS Plug-in, please refer to the separate Installation and User Manual.
ELSE occurs at two places in conjunction with the PDMS Plug-in. Firstly, *.props files can be generated with the help of the PDMS Plug-in for each support point in the PDMS model (in addition also see sections 4.3.2.2 and 4.4.4). In these *.props files, support point data are stored, i.e. data such as forces, movements or design temperature. These *.props files can be imported by ELSE again. The manual input of the support point data is taken in this manner from the user. Secondly, using the export functionality, ELSE can generate *.hef files to the support configurations gathered from the customers (see also Section 4.5.2). These *.hef files can be imported by the Hesterberg PDMS Plug-in. From these, the Hesterberg PDMS Plug-in creates the corresponding hanger chain in PDMS.

4. Working with ELSE

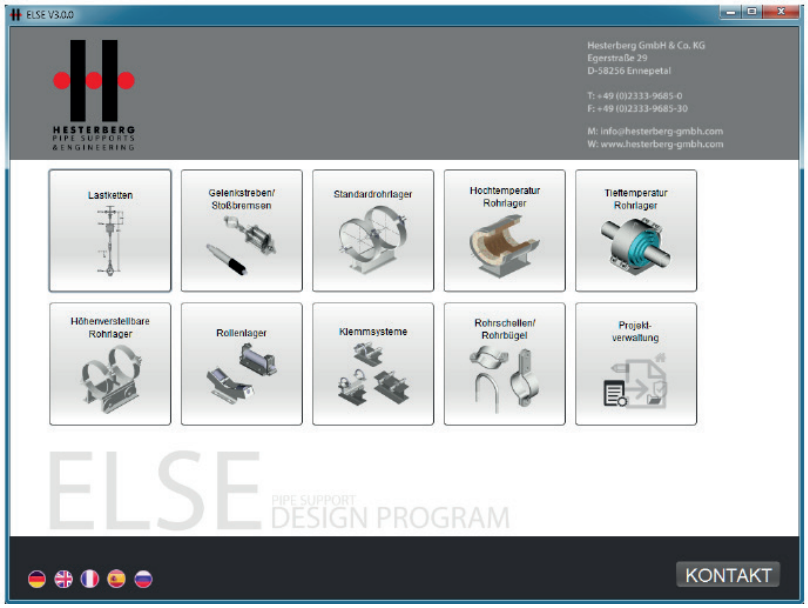
4.1 Fundamental to ELSE

The basic philosophy of our design program is to support the user as much as possible with the component selection. In addition, we have placed the focus on intuitive user guidance, which leads the user specifically to the products desired by him with graphics and auxiliary texts. To achieve this, we have already made changes in the early development stage of test versions of ELSE, in order to incorporate customer feedback in our full version as far as it was possible.

4.2 Home page

4.2.1 Construction of the home page

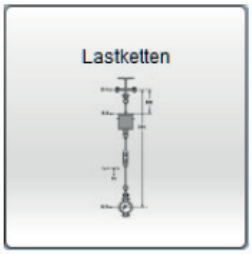
After starting ELSE, the user is on the home page. From here, the user has access to the language selection, the contact key and in the middle part, to the keys for the product categories and the project management.



4.2.2 Product categories + Project management

The subdivision of the product categories is broken down by product master. By clicking on a product master, you enter the main menu. With some product masters, a query mask is still inserted to limit the product choice further.

By clicking the load chains key, you come to the most complicated part of the ELSE design program.



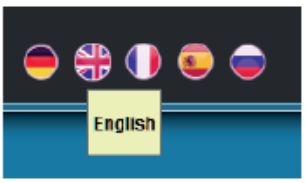
In this category, you can put together support configurations that consist of the following components:

- Spring hangers and spring supports
- Spring supports with swivel head
- Constant hangers and constant supports

In addition, you still have the choice between single and double versions and the possibility to realise different pipe runs (horizontal or vertical) or to dispense entirely with a pipe connection.
If you do not want to select any products, but edit an existing project, you can jump from the home page also by clicking the appropriate key in the project management. Also see Section 4.4.

4.2.3 Language selection

The language settings of ELSE can be changed by clicking the country flag keys at the bottom left margin of the home page. In addition to the displays on the windows of ELSE, these settings also apply to the export to Excel and PDF.
Currently available languages are German, English, French, Spanish and Russian.



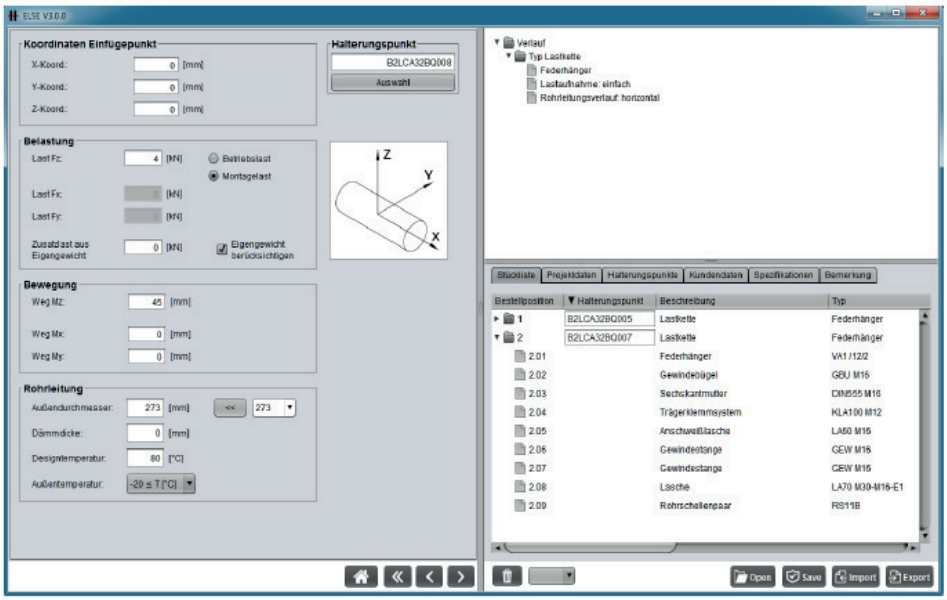
4.2.4 Contact

By clicking the contact key in the bottom right margin of the home page, the standard web browser of the user is opened and the web page is loaded to Hesterberg ELSE. There you find the current version of ELSE and more information about ELSE. The components needed for the Hesterberg PDMS Plug-in can also be downloaded there. In addition, see also Section 3.

4.3 Main page

4.3.1 Construction of the main page

The main menu is split into three subwindows. In the large subwindow on the left is the current input screen. The kind of input screen depends on which step of the component configuration the user is in. The input screens consist of input or selection fields waiting for user entries. Usually there is a context help for these fields, which provides information about the allowable input range. With missing or inadmissible entries there is a warning from the program. In the upper right subwindow is the history. It is used to search through the current entries. Bottom right is the project management with the current parts list and the options for managing the project. In addition, in the footer of the program you find the keys that you need for navigation and file operations.



4.3.2 Functions of the main page

4.3.2.1 Navigation with the keys to move forward and/or back in the process of product selection.

With this key you come back to the home page.

<< Here you go to the actual product category at the beginning of the selection.

< By pressing this key you go one step back in the selection process each time.

> By pressing this key you go to the next step in the selection process each time.

4.3.2.2 File operations

With the key for the file operations, you can open and save projects. Furthermore, projects can be exported and/or support point data can be imported.

Open

With this key, projects created in ELSE can be opened. ELSE project files have the file ending *.hof.

Save

By clicking Save, ELSE projects can be saved *.

Import

With Import, support point data can be input to ELSE. In addition, also see Section 4.4.4.

Export

The Export dialogue is opened by clicking the Export key.
The Export dialogue allows you to export ELSE projects in a number of standard formats. In addition, also see Section 4.5.

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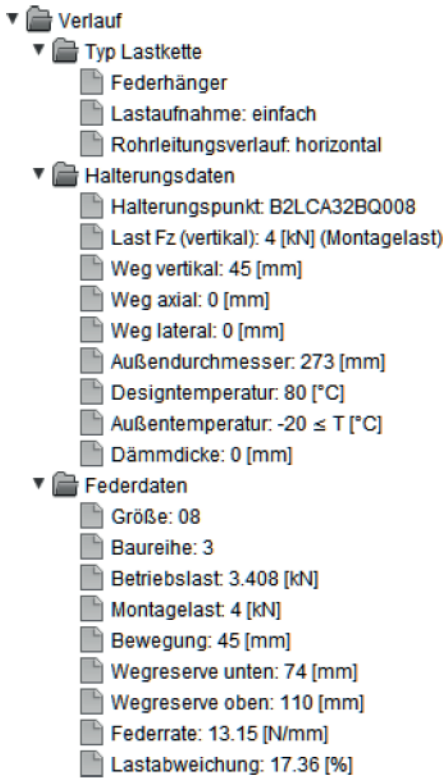
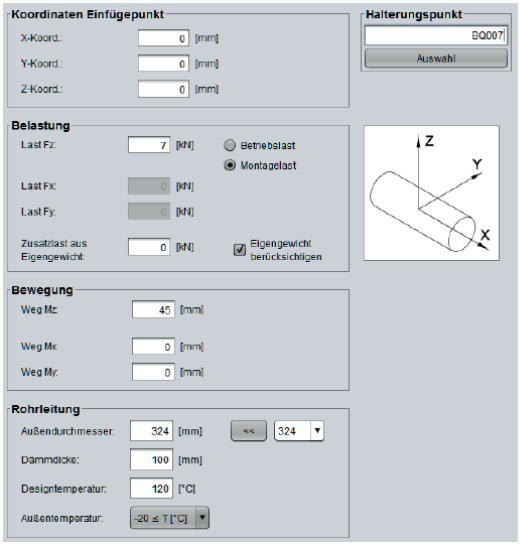
4.3.2.3 History

In the upper right window of the main menu there is the history. With the help of the history, during the processing of a support point you can check your entries made up to now. The history is structured like a tree and the individual nodes can be opened and closed for a better overview.

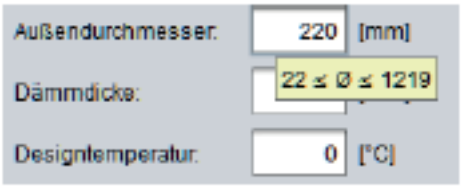


4.3.2.4 Data entry screens

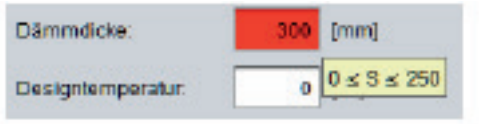
On the left part of the main page, there is always the current input screen. Depending on in which process step the user is located in the component selection, the type of input screen displayed varies. Since with ELSE particular attention is placed on an intuitive operation, the input screens form only a relatively small number of different operating elements that are repeated in the various product categories with slight modifications. The most important operating elements are input fields, drop-down lists and different switches with which the user can choose between several options.



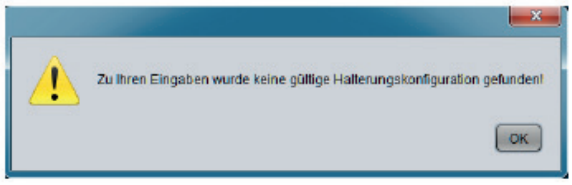
For fields where only entries within certain limits are allowed, the user is informed about the allowed values by a context help. The context help is activated by the mouse pointer.



If the user has made an inadmissible entry, the affected input field is highlighted in colour.



There are also a number of other messages or warnings that indicate problems or provide additional information.

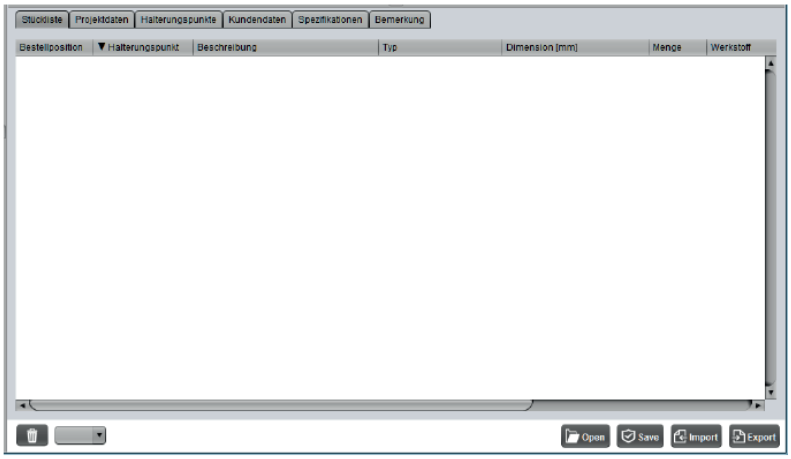


4.4 Project management

4.4.1 Features of the project management

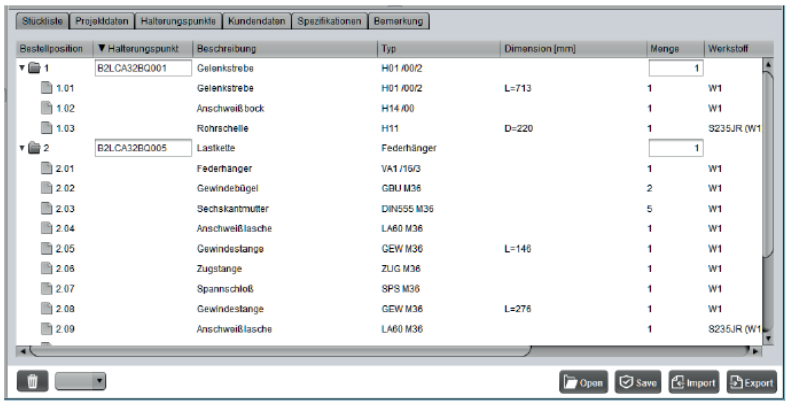
The functionalities of the project management can be accessed directly from the home page, via the corresponding key. Alternatively, the functions of the project management are also permanently visible in the lower right window of the main menu and through this are also usable.

Using the functions of the project management, you can keep track of your current project and carry out some project-specific settings. The project management functions are organised on tab sheets and can be retrieved by clicking on the respective tab in the foreground. Via the keys of the footer, a project can be opened, saved and exported.



4.4.2 Parts list

Via the Parts list tab, the parts list of the current open project can be displayed in detail. Via the key bar in the bottom right margin of the Parts list, projects can be opened, saved and exported. In addition, also see Section 4.3.2.2.
Via the recycle bin icon in the bottom left margin of the Parts list, individual parts list items can be deleted.



The fields Support point, Quantity and the Remarks field can be edited by the user later. Via a context menu (right mouse key), other functions can be accessed.

Edit

Using Edit, existing order items can be edited.

Copy

By using Copy, one or more order items can be selected to be copied. Several order items can be selected by pressing the SHIFT or the CTRL key.

Insert

Using Insert, the items previously selected with Copy can be inserted in a desired position within the Parts list.

Delete

By clicking Delete, one or more order items are able to be deleted.

Create

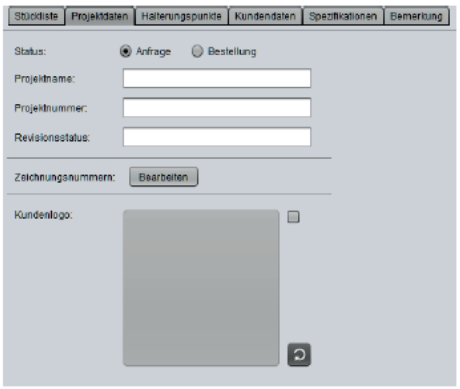
Create allows the creation of individual additional items. This is possible at the order item level, as well as at the level of the sub-items of order items.

Exit

With Exit, the operations Edit and Copy can be exited.
Furthermore, by clicking on the table header in the Support point field, it is possible to sort the Parts list in ascending order.

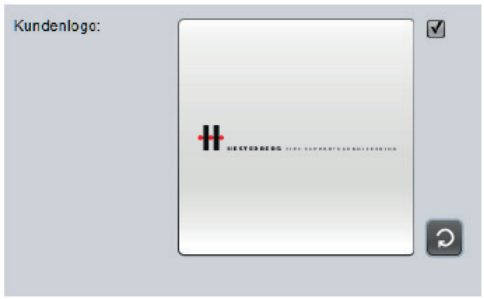
4.4.3 Project data

Under the Project data tab, the user can save information regarding project status, project name, project number and revision status. Among other things, this information is displayed with the production of drawings in the drawing header.



Furthermore, with the Edit button it is possible to deposit individual drawing numbers for each item of the Parts list.

Should an individual customer logo be used in the drawing production, this can also be selected here. This is done by putting a checkmark in the box with the customer logo and selecting a graphics file in the format .GIF, .JPG or .PNG by clicking the still empty preview window. In addition, see also Section 4.5.3.

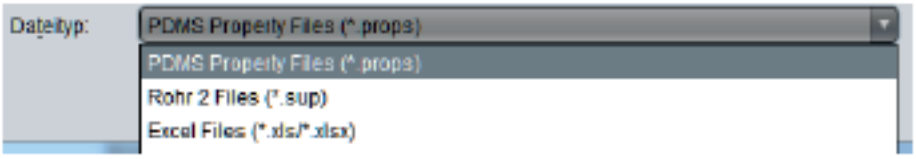


4.4.4 Support points

Using the Import function, support point data can be loaded in an ELSE project. In addition, see also Section 4.3.2.2.

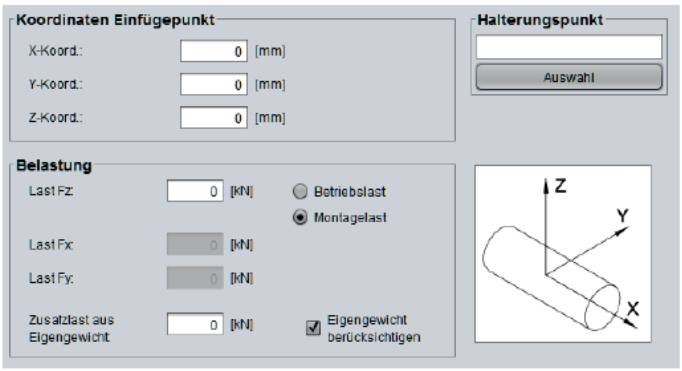
At the moment, importing the following formats is possible: . (*.props) - This format is generated by the PDMS Plug-in. With this help, support point data can be transmitted from PDMS to ELSE. In addition, see also Section 3.

- (*.sup) - Here the Rohr2 format can be read.
- (*.xls, *.xlsx) - Support point data can also be transferred from the Excel format to ELSE. This can be used as a solution for other support point data formats that are not imported directly. A template for such an Excel table can be downloaded from the ELSE website.

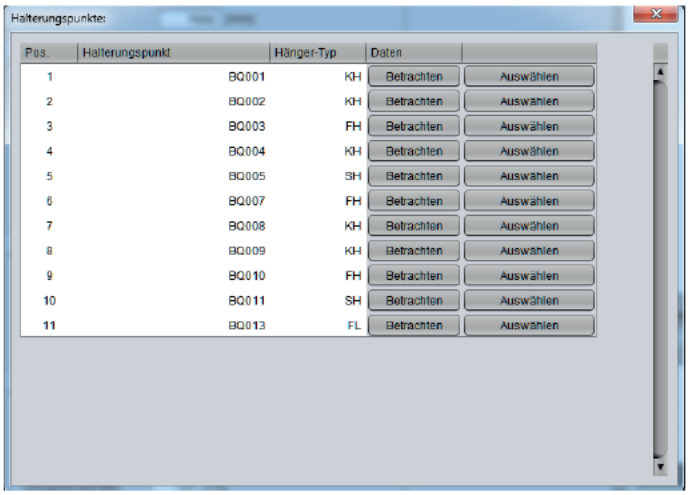


After the import, the Support points tab displays an overview of the support point data loaded in the project. The support point data can be edited in this overview. Furthermore, it is possible to sort the list of support points in ascending order by clicking on the table header in the support point field.

On the input screens that expect the input of the support point data, by clicking on the Selection key it is now possible to incorporate support point data easily.

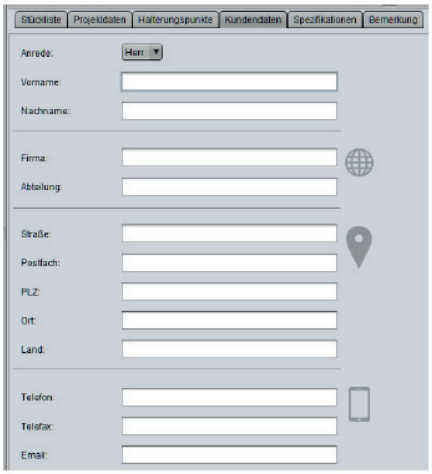


After selecting a support point, the corresponding data fields are automatically filled.



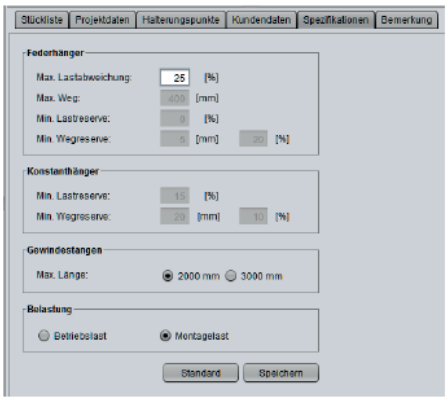
4.4.5 Customer data

In the area of Customer data, the user can enter his contact data. The completeness of these data facilitates the subsequent order processing and/or inquiry treatment.
The name selected under surname is also used by the drawing production in the drawing header as the editor's name. See also Section 4.5.3.



4.4.6 Specifications

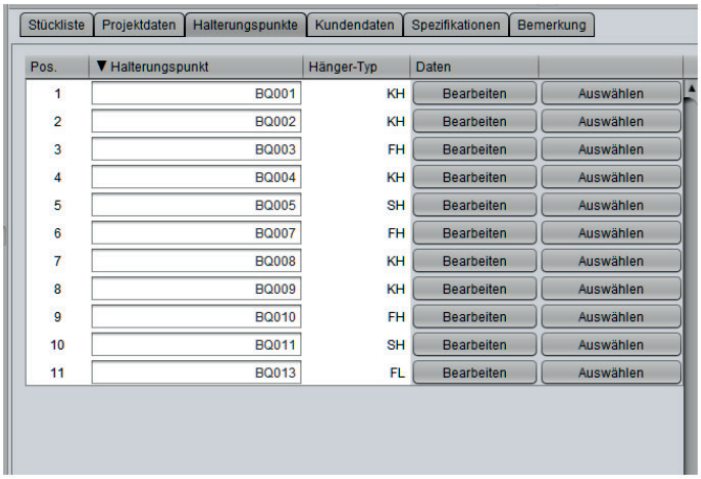
Under Specifications, the settings can be configured that have an influence on the selection process for the selection of catalogue parts. These entries are relevant in particular for the load chain selection in the Spring and Constant hanger categories. The settings are taken into account in each case from the time of the update. Subsequent changes have no impact on the already selected components at that time, i.e. the order items that are already on the Parts list.



Note:

The default settings correspond to the VGB standard. Changeable at the moment are:

- the max. load variation (this value is also selectable specific for the support point with the selection of the spring sizes/model ranges). See also Section 4.6.4.
- the max. length of the threaded rods



4.4.7 Remarks

Under the Remarks tab, free text can be entered. The Remarks text can be used in order to present comments with regard to individual Parts list items or also information that concerns the project as a whole.

4.5 Export

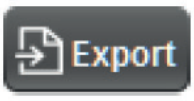
4.5.1 General

Hesterberg ELSE provides the ability to document the result of the selection process in a number of common file formats.

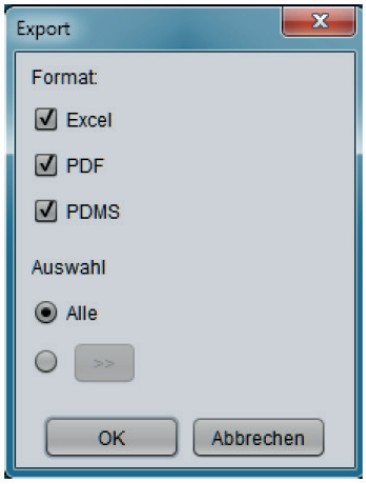
Export-formats:

- (*.hof) - This is ELSE's own file format and the complete project data are saved in the *.hof files.
- (*.pdf) - Standard PDF format
- (*.xls) - Microsoft Excel-format
- (*.hef) - This format is used to transfer component information to PDMS

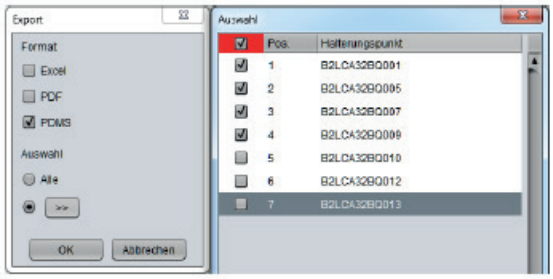
The Export dialogue is opened by clicking the Export key in the footer of the project management. In addition, see also Section 4.3.2.2.



Below the folder selected with the Export dialogue, an ELSE_PROJECT directory is created. In this there is a folder with the name of the project. In another deeper level there are folders with the names Excel, PDF and PDMS. Moreover, in the project folder there is still the *.hof file of the project.



With Export, the user basically has two possibilities. Either he can export the complete project data in all available export formats, or he can limit the export with regard to the formats and/or export only one selection of the support points.



In the exported *.hof file there are basically always the complete project data.

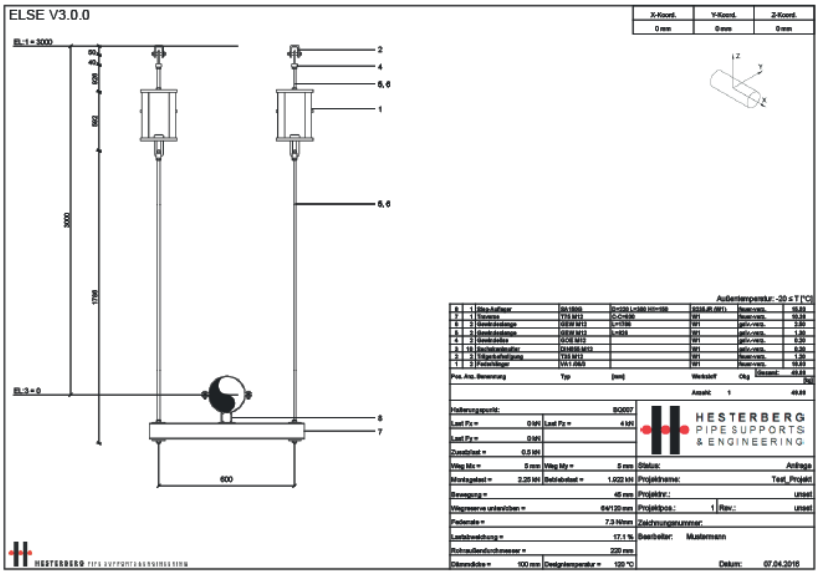
4.5.2 PDMS

For each support point, files with the file ending *.hef can be generated with the Export functionality. Using the Hesterberg PDMS Plug-in, component information can be transferred from ELSE to PDMS by these *.hef files. The PDMS Plug-in creates a 3D-model of the support configuration in PDMS from the data of the *.hef files. The name of the *.hef file is derived from the support point name. For the PDMS Plug-in, see also Section 3.

Further information about exporting to PDMS and the use of the PDMS Plug-in can be found in the associated Installation and User Manual.

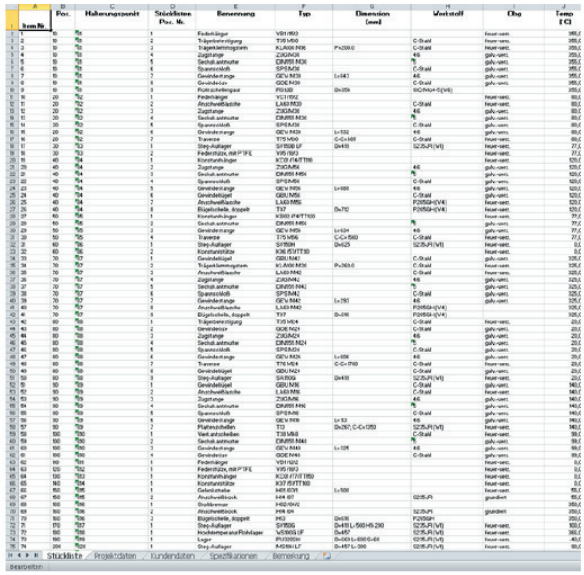
4.5.3 PDF

PDF output can basically be accomplished in ELSE in two ways. The user can use the Export function described in this Section. The second possibility is to print directly from one of the preview windows. See also Section 4.6.7. The drawing contains all the relevant data for the respective support point in a clear form. If the drawing is created by the Export function, the name of the PDF file is automatically derived from the support point name. When printing via the preview function, the name must be selected by the user.



4.5.4 Excel

The output Excel table contains all the information of the project in a clear form. The Excel table is identical in structure to the project management within ELSE. Here you again find the already known tabs, Parts list, Project data, Customer data, Specification and Remarks. However, in contrast to the view of the Parts list within the ELSE project management, the Parts list is not shown in a tree view, but has the form of a mass excerpt. For each item, the individual and cumulative weights are displayed. In addition, the total weight is output for all items. Furthermore, all relevant support point data



4.6 Product configuration example (Load chain category - Simple spring hangers)

4.6.1 Preliminary remarks

To illustrate the work with ELSE, the configuration of a load chain, using the example of a simple spring hanger with pipe clamp, will be discussed in the following example Sections. The selection process begins on the home page (see Section 4.2) by clicking on the load chains category.

4.6.2 Type selection

After the Load chain product category was selected on the home page, you can more precisely specify the type of load chain on the following page. When selecting the type, there is initially a distinction between spring hangers / supports, constant hangers / supports and rigid suspensions. For individual spring hangers or individual constant hangers, only the actual spring hangers / constant hangers are offered without other connection parts. Load suspension is divided into the categories single and double. There is this distinction for hangers as well as supports. With the pipe routing, horizontal, vertical and without pipe connection can be selected under the alternatives. Without pipe connection means "without pipe clamp" for hangers, and for supports it means a structure "without pipe bearings". The option with a sliding plate is selectable only for simple spring supports.

There should be selected here:

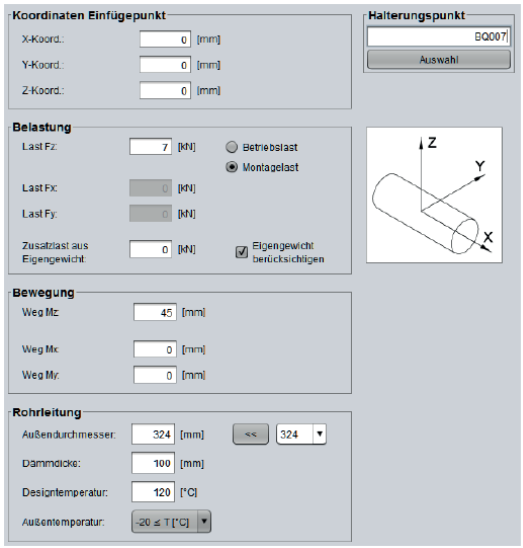
- Type: Spring hanger
- Load suspension: simple
- Pipe routing: horizontal

If the selection is finished, by clicking the Forward icon in the navigation bar you come to the next page of the product configuration.

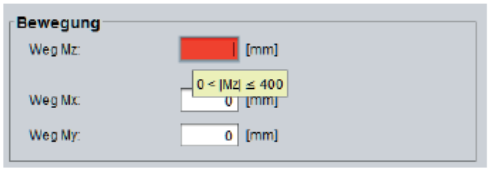
4.6.3 Support point data

On this page the user can enter the support point data. For this, the user basically has two possibilities. Either the user can manually enter the necessary entries in the fields, or he can input the support point data automatically by selecting a support point. To use this function, the support point data must have been input by the user beforehand. In addition, see also Section 4.4.4.

Required fields in our example are support point, Fz load, Mz path and external diameter. In the Load Section, the installation load is the default; this default can be changed via the specifications under project management. In addition, see also Section 4.4.6. There is also the option to incorporate the dead weight of the load chain in the calculation. This option is also active in the default setting..
In the Movement Section, the movements are asked for in the X, Y and Z directions.
The movements in the X and Y directions are used later in the program sequence in order to check that the maximum allowed lateral deflection (4°) of the construction has not been exceeded.



Also here, you get to the following page by clicking on the Forward icon in the navigation bar. If required entries are missing, the affected input fields are marked in red. Only after entering meaningful values can it go on further. For the required fields, there is usually an indication of what inputs are allowed, and this is visible by positioning the mouse pointer over the corresponding input field.

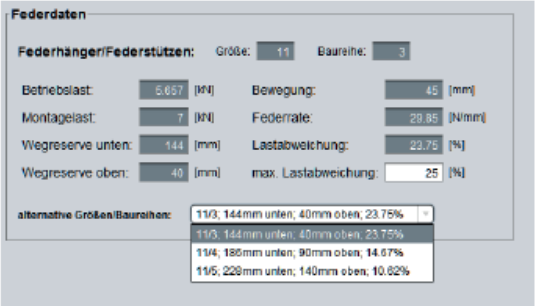


4.6.4 Spring data

Based on the entered support point data, a suitable spring hanger/support is now selected by the program. The screen displays all important data on the selected spring hanger/support. If there are different possible combinations of spring sizes/model ranges for the effected input values, it is possible to select these alternatives in the pull-down menu.

Since the different model ranges sometimes differ significantly with regard to the installation height, it can also make sense at this point to play through the alternatives offered.

The field max. load variation can be edited by the user and in this way the indicated alternatives can be limited or extended. The default value entered in this field can be adjusted in the specification settings within the project management. In addition, see also Section 4.4.6.



If you are satisfied with your selection, by clicking the Forward icon in the navigation bar you get to the following page. For this example configuration, the proposed size / model range combination was simply transferred.

4.6.5 Component configuration

The configuration of the load chain spring hanger with pipe clamp happens at 3 levels:
Connection on top, middle and connection underneath. The respective selection is chosen by clicking on the pictures and the selected variation is highlighted in yellow.

Connection on top

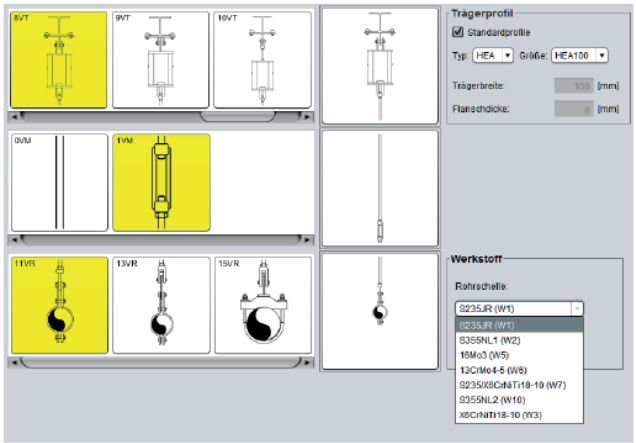
With the connection on top, the user has a choice between a variety of different types of connection. In the example, a variation was selected with a support clamp assembly. On the basis of this selection, other entries have to be made with regard to the support profile.

Middle

In the middle area, you can select between the variants with and without turnbuckle.

Connection underneath

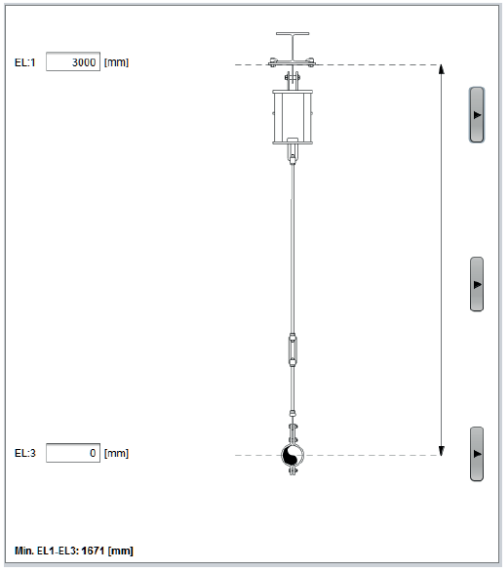
Depending on the input data, the user here again also has the choice of different construction variations. Besides the choice of the type of connection, the user can also specify here the pipe clamp and pipe bracket material. Which materials can be selected again depends on the information provided with regard to load, design temperature and outside temperature.



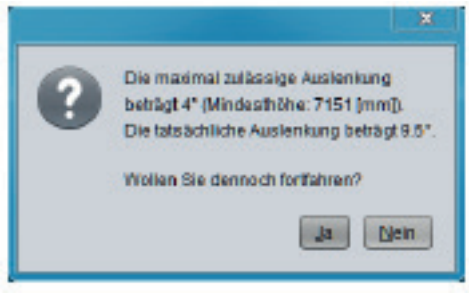
Afterwards you confirm your selection by clicking on the Forward icon in the navigation bar.

4.6.6 Height lines

Using this screen, the height of the upper and lower connection points can be fixed. Through the selection of the components a minimum installation dimension is calculated.
This designates the distance between the connection on top (EL:1) and the connection underneath (EL:3). The minimum installation dimension is displayed in the left lower border of the screen. The user can adjust this installation dimension to his needs by editing the entry screens within certain limits. If the allowed limits are exceeded, the user is warned by ELSE. In configurations where several views are available, the view can be rotated by up to 90° by clicking on the arrow keys. For this example, an installation dimension of 3000 mm was set. Required extensions of the threaded rods and possible coupling pieces are automatically calculated by the program.



Should the maximum allowed lateral deflection of 4° be exceeded by determining the installation height, the program issues a warning.
At the same time, the user is informed about the minimum installation height that would be needed to remain within the 4° limit. See also Section 4.6.3.

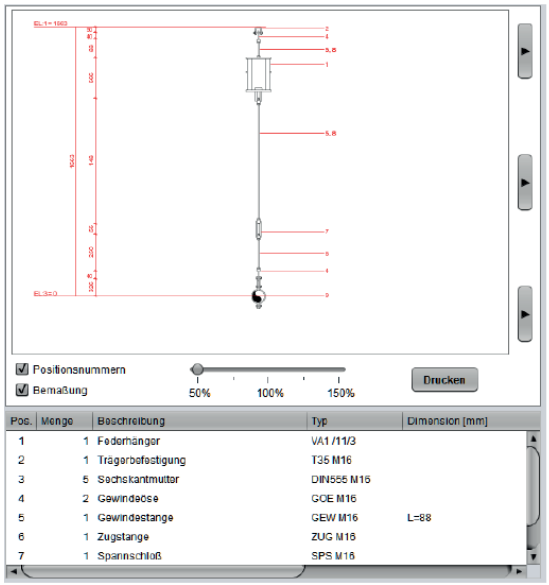


Next, it continues again by clicking on the Forward icon in the navigation bar.

4.6.7 Preview

On this screen you get a preview of your selection. In the upper part you see the complete load chain including the dimensioning and item numbers.
The dimensioning and item numbers can be made visible or invisible using the check marks at the lower edge of the screen. To be able to look at the details of the selection more closely, you can use the zoom function. From here, by pressing the Print key you can also create a technical drawing of your selection in PDF format. The Print function takes into account whether the check marks are active for the item numbers and dimensioning or not. The view selected via the arrow buttons is also considered.

In the lower part of the screen, you can find all the information about the individual items that make up your selection in the table shown there.



If you are satisfied with your selection, you must once again click on the Forward icon in the navigation bar. Now you are asked whether you want to accept the selection in the parts list. If you reply negatively, you can further edit your selection.

If you reply with Yes, your selection is accepted in the parts list. There your selection can be further edited within the project management.
In addition, see the also Section 4.4.2.