

GGU-PLATELOAD manual

Plate load test evaluation (DIN 18134)

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Theorie. Und Praxis.

Geotechnische Softwarelösungen können so einfach sein. Denn Theorie und Praxis lassen sich mit **GGU-Software** und den neuen Angeboten der **civilserve Academy** prima kombinieren: Knackige theoretische Aufgaben lösen und als Sahnehäubchen Ihr

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1 GGU-PLATELOAD: Preface

The program GGU-PLATELOAD enables the analysis and presentation of plate loading tests according to German Standard DIN 18134 or Austrian Standard B 4417.

The program includes convenient data input. The system is permanently displayed on the screen. Every change to the data is displayed on the screen, so that optimum control of the input data is guaranteed.

There are "?" and "Info" buttons in the dialog boxes for many technical and program-specific questions. Click on the "?" buttons or "Info" buttons to obtain the necessary information.

The graphic output supports the true type fonts provided by WINDOWS, so that an excellent layout is guaranteed. Colour output and numerous graphic formats (BMP, TIF, JPG etc.) are supported. PDF and DXF files can also be imported via the integrated **Mini-CAD** system (see "**Mini-CAD**" manual).

The program has been extensively tested. No errors have been found. Nevertheless, liability for completeness and correctness of the program and the manual, and for any damage resulting from incompleteness or incorrectness, cannot be accepted.

2 GGU-PLATELOAD: Licence protection

To protect the GGU software from unauthorised access, each GGU program is equipped with the **CodeMeter software protection system** from WIBU-Systems. Each GGU program is bound to a so-called **CmContainer** via a licence with the corresponding product code.

To be able to use the GGU licences in a CmContainer, a runtime environment, the **CodeMeter Runtime Kit**, must be installed on your computer via driver software. You can obtain the current version from [Software for Users - Wibu-Systems](#) (CodeMeter User Runtime for Windows).

You can work with the following CmContainer types on your PC with the CodeMeter Runtime Kit installed (= **CodeMeter licence server**):

- **CmStick**
The licence for your GGU program is stored in a USB dongle.
- **CmActLicense** (soft licence, not for virtual PC/servers)
The licence for your GGU program is stored in a licence file that is linked to the hardware of a computer.
- **CmCloudContainer**
The licence is located on a CmCloud server of WIBU-Systems and is mirrored to your CodeMeter licence server. The advantages of this type of licence binding are described on the following website: [Licence binding | GGU Software](#).

The GGU programs check at start-up and during runtime whether a corresponding license is available in a CmContainer.

3 GGU-PLATELOAD: Language selection

The GGU programs can be used in German and English. The program always starts with the language in which it was terminated.

The language preferences can be changed at any time in the "**Info**" menu, using the menu item "**Spracheinstellung**" (for German) or "**Language preferences**" (for English).

4 GGU-PLATELOAD: Starting the program

After starting the program, you will see two menus at the top of the window:

- File
- Info

After clicking on the "**File**" menu, a previously calculated system can be loaded by means of the "**Load**" menu item, or a new one created using "**New**".

The program allows simple input procedures by moving directly to the option box after "**New**" is clicked; this can also be reached by pointing to the **File/New** menu item. You can now directly select the standard to be adopted and the target values to be used. After leaving this box by pressing "**OK**" you will arrive at the initial program screen, containing all elements of the output sheet that will be filled after data input.

Five menus then appear at the top of the window:

- File
- Edit
- Graphics preferences
- Output preferences
- Info

After clicking one of these menus, the so-called menu items roll down, allowing you access to all program functions.

The program works on the principle of ***What you see is what you get***. This means that the screen presentation represents, overall, what you will see on your printer. In the last consequence, this would mean that the screen presentation would have to be refreshed after every alteration you make. For reasons of efficiency and as this can take several seconds for complex screen contents, the screen is not refreshed after every alteration.

If you would like to refresh the screen contents, press either **[F2]** or **[Esc]**. The **[Esc]** key also resets the screen display to your current image zoom, which is usually preset to 1.0, which corresponds to an A3 or A4 sheet in most GGU programs (see menu item "**Graphics preferences/Refresh and zoom**").

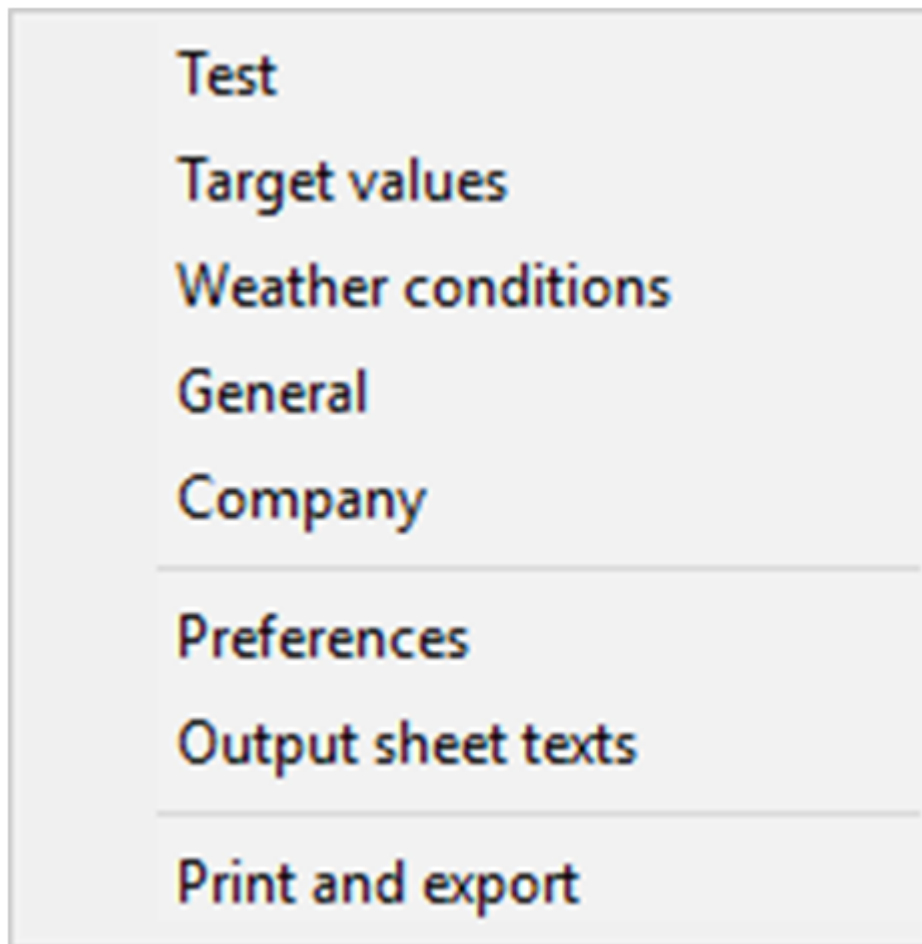
5 Tips and tricks

5.1 GGU-PLATELOAD: Keyboard and mouse

You can scroll the screen with the keyboard using the cursor keys and the **[Page up]** and **[Page down]** keys. By clicking and pulling with the mouse, with **[Ctrl]** pressed, you activate the zoom function, i.e. the selected section will fill the screen. Furthermore you can use the mouse wheel to zoom in/out or scrolling the screen presentation. The following mouse wheel functions are available:

- Mouse wheel up = move screen image up
- Mouse wheel down = move screen image down
- **[Ctrl]** + mouse wheel up = enlarge screen image (zoom in)
- **[Ctrl]** + mouse wheel down = shrink screen image (zoom out)
- **[Shift]** + mouse wheel up = move screen image right
- **[Shift]** + mouse wheel down = move screen image left

If you click the right mouse button anywhere on the screen a context menu containing the principal menu items opens.



By double-clicking the left mouse button on legends or **Mini-CAD** objects, the editor for the selected object immediately opens, allowing it to be edited. By double-clicking output sheet elements while holding the **[Shift]** key, the preferences for the position, size and appearance of the element open for editing in the editor.

5.2 GGU-PLATELOAD: Function keys

Some of the function keys are assigned program functions. The allocations are noted after the corresponding menu items. The individual function key allocations are:

- **[Esc]** refreshes the screen content and resets the screen section to your current image zoom, which is preset to 1.0. This is useful, for example, if you have used the magnifying glass function to display sections of the drawing on the screen and want to quickly return to the overall view.
- **[F1]** opens the manual file.
- **[F2]** refreshes the screen without altering the current magnification.
- **[F11]** activates the menu item "**Move objects**", which appears in the GGU programs under various menu titles, e.g. "**Page size + margins**", "**Graphics preferences**" or "**Output preferences**".

In this GGU program, the following function keys are also assigned to program functions:

- [F3] opens the menu item "**Graphics preferences/Refresh and zoom**".

5.3 GGU-PLATELOAD: "Copy/print area" icon

A dialog box opens when the "**Copy/print area**" icon

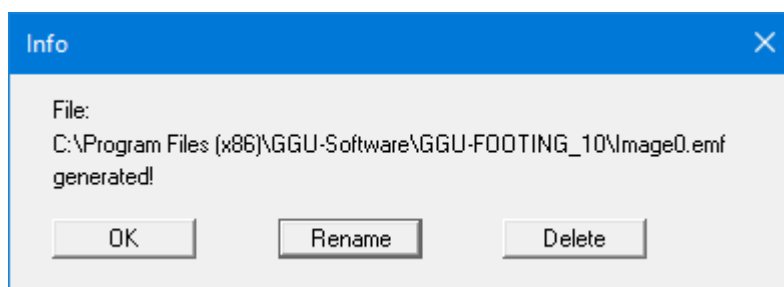


in the menu toolbar is clicked, describing the options available for this function. For example, using this icon it is possible to either copy areas of the screen graphics and paste them into the report, or send them directly to a printer.

In the dialog box, first select where the copied area should be transferred to: "**Clipboard**", "**File**" or "**Printer**". The cursor is displayed as a cross after leaving the dialog box and, keeping the left mouse button pressed, the required area may be enclosed. If the marked area does not suit your requirements, abort the subsequent boxes and restart the function by clicking the icon again.

If "**Clipboard**" was selected, move to the MS Word document (for example) after marking the area and paste the copied graphics using "*Edit/Paste*".

If "**File**" was selected, the following dialog box appears after defining the area, shown here as an example for the **GGU-FOOTING** program:



The default location of the file is the folder from which the program is started (here: GGU-FOOTING_10) and, if several files are created, the file is given the file name "**Image0.emf**" with sequential numbering. If the

"**Rename**" button in the dialog box is clicked, a file selector box opens, and the copied area can be saved under a different name in a user-defined folder. Saving can be aborted by pressing the "**Delete**" button.

If the "**Printer**" button was pressed in the first dialog box, a dialog box for defining the printer settings opens after marking the area. Following this, a dialog box for defining the image output settings opens. After confirming the settings, the defined area is output to the selected printer.

6 File menu

6.1 GGU-PLATELOAD: "New" menu item

You use this menu item to start a new plate loading test. A dialog box opens, where you can decide whether you want to use the German DIN 18134 (old version of 2001 or current version dated April of 2012) or the Austrian Standard B 4417.

New

Standard

- ☒ DIN 18134:2012-04
- ☐ DIN 18134:2001-09
- ☐ Austrian standard B 4417

Only for Austrian standard B 4417

Stress factor 1 [-]:

Stress factor 2 [-]:

☐ With correction function

Target values

☒ Test and show target values (Ev2, etc.)

Allow. Ev2 [MN/m²]:

Allow. Ev2/Ev1 [-]:

☒ Also test $Ev1 \geq \text{allow. factor} \cdot Ev2$

Allow. factor [-]:

☒ Diagram with output table

☐ Use MPa as unit

You can define the target values for Ev2 and the ratio of Ev2/Ev1, that will be checked and entered by the program. In addition, a target value factor can be given, with which Ev1 can be correlated.

If the "**Diagram with output table**" check box is activated, a short output table is displayed together with the load-settlement curve evaluation. Furthermore you can use the unit "**MPa**" instead of "**MN/m²**". All current measured data will be deleted. You can then enter new data points and the corresponding data.

6.2 GGU-PLATELOAD: "Load" menu item

You can load a file with system data, which was created and saved at a previous sitting, and then edit the system.

6.3 GGU-PLATELOAD: "Save as" menu item

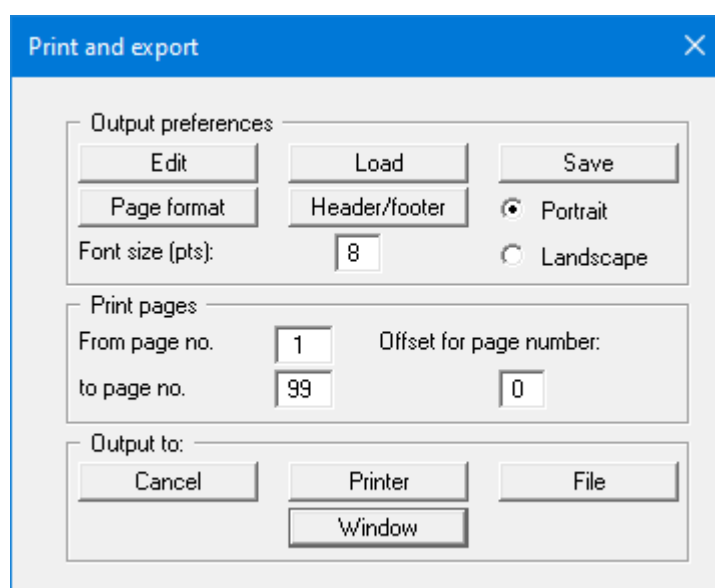
You can save data entered during program use to an existing file or to a new file, i.e. using a new file name. For reasons of clarity, it makes sense to use ".**pdr**" as file suffix, as this is the suffix used in the file requester box for the "**File/Load**" menu items. If you choose not to enter an extension when saving, ".**pdr**" will be used automatically.

6.4 GGU-PLATELOAD: "Save" menu item

You can save data entered or edited during program use to a file, to have them available later, or to archive them. The data is saved without prompting with the name of the current file. The file contains all system information. Loading again later creates the same visualisation as was present at the time of saving.

6.5 GGU-PLATELOAD: "Print output table" menu item

You can have your analysis data sent to the printer, without further work on the layout, or save it to a file for further processing using a different program, e.g. a word processing application.



In the dialog box you can define output preferences.

- **"Output preferences"** group box

Using the **"Edit"** button the current output preferences can be changed or a different printer selected.

Using the **"Save"** button, all preferences from this dialog box can be saved to a file in order to have them available for a later session. If you select the program name with the extension **".drk"** as the file name and save this file at program level (default setting), this file will be loaded automatically the next time the program is started.

Using the **"Page format"** button you can define, amongst other things, the size of the left margin and the number of lines per page. The **"Header/footer"** button allows you to enter a header and footer text for each page. If the **"#"** symbol appears within the text, the current page number will be entered during printing (e.g. **"Page #"**). The text size is given in **"Pts"**. You can also change between **"Portrait"** and **"Landscape"** formats.

- **"Print pages"** group box

If you do not wish pagination to begin with **1** you can add an offset number to the check box. This offset will be added to the current page number. The output range is defined using **"From page no." "to page no."**.

- **"Output to:"** group box

Start output by clicking on **"Printer"** or **"File"**. The file name can then be selected from or entered into the box. If you select the **"Window"** button the results are sent to a separate window. Further text editing options are available in this window, as well as loading, saving and printing.

6.6 GGU-PLATELOAD: "Printer preferences" menu item

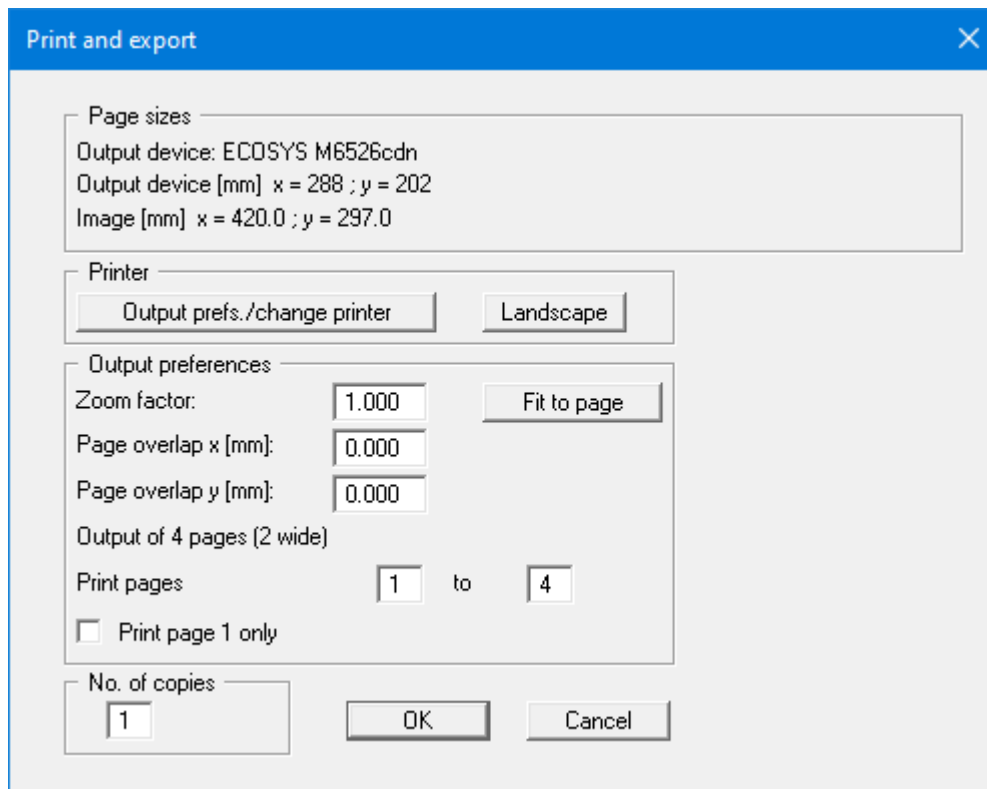
You can edit output preferences (e.g. swap between portrait and landscape) or change the printer in accordance with WINDOWS conventions.

6.7 GGU-PLATELOAD: "Print and export" menu item

You can select your output format in a dialog box. You have the following possibilities:

- **"Printer"**

allows graphic output of the current screen contents (**graphical representation**) to the WINDOWS standard printer or to any other printer selected using the menu item **"File/Output preferences"**. But you may also select a different printer in the following dialog box by pressing the **"Output prefs./change printer"** button.



In the upper group box, the maximum dimensions which the printer can accept are given. Below this, the dimensions of the image to be printed are given. If the image is larger than the output format of the printer, the image will be printed to several pages (in the above example, 4). To facilitate better re-connection of the images, the possibility of entering an overlap for each page, in x and y direction, is given.

Alternatively, you also have the possibility of selecting a smaller zoom factor, ensuring output to one page ("**Fit to page**" button). Following this, you can enlarge to the original format on a copying machine, to ensure true scaling. You can also print only the 1st page with zoom factor = 1.0, in which case the bottom left-hand area is printed. Furthermore, you may enter the number of copies to be printed.

- **"DXF file"**
allows output of the graphics to a DXF file. DXF is a common file format for transferring graphics between a variety of applications.
- **"GGU-CAD file"**
allows output of the graphics to a file, in order to enable further processing with the **GGU-CAD** program. Compared to output as a DXF file this has the advantage that no loss of colour quality occurs during export.
- **"Clipboard"**
The graphics are copied to the WINDOWS clipboard. From there, they can be imported into other WINDOWS programs for further processing, e.g. into a word processor. In order to import into any other WINDOWS program, you must generally use the "*Edit/Paste*" function of the respective application.
- **"Metafile"**
allows output of the graphics to a file in order to be further processed with third party software. Output is in the standardised EMF format (Enhanced Metafile format). Use of the Metafile format guarantees the best possible quality when transferring graphics.

If you select the **"Copy/print area"** tool

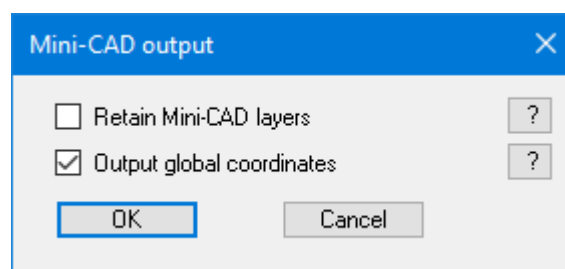


from the toolbar, you can copy parts of the graphics to the clipboard or save them to an EMF file. Alternatively you can send the marked area directly to your printer (see **"Tips and tricks"**).

Using the **"Mini-CAD"** program module you can also import EMF files generated using other GGU applications into your graphics (see menu item **"Graphics preferences/Mini-CAD"**).

- **"Mini-CAD"**

allows export of the graphics to a file to enable importing to different GGU applications with the **Mini-CAD** module.



If the **"Retain Mini-CAD layers"** check box is activated, the layer allocations for any existing **Mini-CAD** elements are saved. Otherwise, all **Mini-CAD** elements are saved on Layer 1 and are also inserted into Layer 1 in other GGU programs via the **"Load"** function in the **Mini-CAD** pop-up menu.

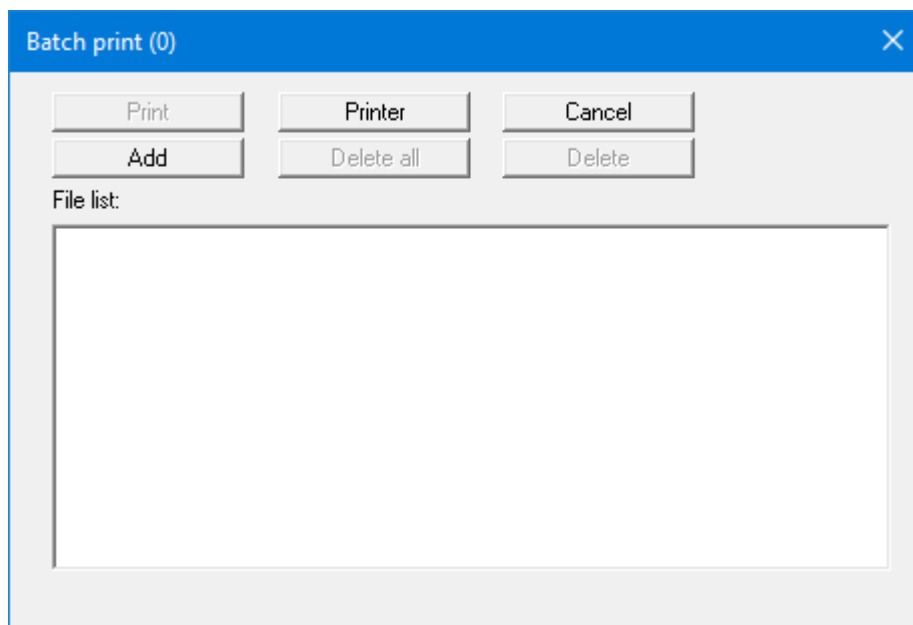
By activating the **"Output global coordinates"** check box, the present graphics are saved in the system coordinates [m]. Otherwise, they are saved in the page coordinates [mm]. If you import the **Mini-CAD** file saved using **"Global coordinates"** into a different GGU program, the coordinates are also transferred. After importing the file and pressing the [F9] function key (menu item **"Page size + margins/Auto-resize"**) the system coordinates and the scale are corrected according to the transferred world coordinates. -

"GGUMiniCAD"

allows export of the graphics to a file in order to enable processing in the GGUMiniCAD program. - **"Cancel"**
Printing is cancelled.

6.8 GGU-PLATELOAD: "Batch print" menu item

If you would like to print several appendices at once, select this menu item. You will see the following dialog box:



Create a list of files for printing using **"Add"** and selecting the desired files. The number of files is displayed in the dialog box header. Using **"Delete"** you can mark and delete selected individual files from the list. After selecting the **"Delete all"** button, you can compile a new list. Selection of the desired printer and printer preferences is achieved by pressing the **"Printer"** button.

You then start printing by using the **"Print"** button. In the dialog box which then appears you can select further preferences for printer output such as, e.g., the number of copies. These preferences will be applied to all files in the list.

6.9 GGU-PLATELOAD: "Exit" menu item

After a confirmation prompt, you can quit the program.

6.10 GGU-PLATELOAD: "1, 2, 3, ..." menu items

If you have not stored a working directory for the program icon, the program jumps to the program directory after starting to load or save a file.

Under the menu items of the File menu, the most recently edited files are listed with the respective storage path ("**1, 2, 3, ...**"). Selecting one of these files loads the selected file. The next time the **"File/Load"** or **"File/Save"** menu items are called up in the same program session, the program automatically jumps to the directory of the last file loaded.

7 Edit menu

7.1 GGU-PLATELOAD: "Preferences"

A dialog box opens, which can also be reached via the **"File/New"** menu item . The applicable standard and the target values can be edited.

7.2 GGU-PLATELOAD: "Test" menu item

This is the central menu item of the program. Here you can enter almost all base data for calculation. After clicking on this menu item the following dialog box appears:

Plate loading test values [X]

Transmission ratio: 1.0000

Plate diameter [cm]: 30.000

Plate substratum:

☒ Apparatus with one gauge ☐ First test only

Manometer values in: ☐ bar ☒ MN/m² ☐ kN

Test number:

Measuring station:

Depth:

Soil type:

Water content under plate:

Station

Edit first test Edit second test

Show current data Zero gauge readings

Import ASCII file Done

First, enter general information on your data collection point into the respective input boxes. Newer plate loading apparatus only have one dial gauge for measuring the settlement of the loading plate. The "**Apparatus with one gauge**" check box is therefore activated as the default. If you deactivate this check box it is possible to enter several gauge readings.

Then the entry of the dial gauge reading follows with the unit [0.01 mm]. The marked texts in the dialog box also appear in the output sheet. Input boxes can be altered or switched off such as "**Station:**" as shown in the above dialog box by going to the menu item "**Output preferences/Texts**". The following buttons are then available:

- "**Edit first test**"

After clicking the button you reach a dialog box, where you enter the manometer readings of each load increment (including the unloading). The entry of a negative manometer reading characterises the end of the table. Then the entry of the dial gauge reading follows with the unit [0.01 mm].

- "**Edit second test**"

A dialog box appears which enables the entry of the second loading cycle. Input is completely the same as described for the first loading cycle.

- "**Show current data**"

The data which belong to the latest test are calculated and shown.

- "**Zero gauge readings**"

The button allows all the dial gauge (first and second loading cycle) to be set on **zero** after a confirmation prompt.

- "**Import ASCII file**"

You can import measured values received with plate loading apparatus from various companies.

- "**Done**"

After leaving the dialog box by pressing the "**Done**" button the data is evaluated and all input and results displayed on the output sheet.

7.3 GGU-PLATELOAD: "Target values" menu item

Using this menu item the target values for E_{v2} and the ratio of E_{v2}/E_{v1} can be defined. These values will be checked and entered by the program, just as under the menu item "**File/New**". In addition, a target value factor can be given, with which E_{v1} can be correlated.



You can select the type of marker or annotation for the subsequent representation of the results if the condition is fulfilled.

7.4 GGU-PLATELOAD: "Weather conditions" menu item

Corresponding information about the weather can be entered.

7.5 GGU-PLATELOAD: "Test times" menu item

You can enter start and end time of a test.

7.6 GGU-PLATELOAD: "General" menu item

After selecting this menu item you can enter general data such as project designation, report number, annex number etc.



These data will be displayed in the corresponding areas of the output sheet.

7.7 GGU-PLATELOAD: "Company" menu item

You can enter your company address in four lines. These lines will be entered at the top left of the output sheet.

7.8 GGU-PLATELOAD: "Remarks" menu item

You can enter more information, such as deviations from the specified procedure or any observations made during the test.

8 Graphics preferences menu

8.1 GGU-PLATELOAD: "View output table"/"View diagram" menu item

By selecting the menu item "**Graphics preferences/View output table**" you can have the results calculated by the program shown on the screen. This output table contains the most important test data and can be printed for delivery.

After once selecting this menu item you will see the menu item "**View diagram**" instead of "**View output table**" in the "**Graphics preferences**" menu. If you select the "**View diagram**" menu item, the load-settlement curve will be visible again.

You can switch between diagram and output table presentation with the smart icon



in the toolbar of the program.

8.2 GGU-PLATELOAD: "Preferences" menu item

After selecting this menu item a dialog box appears, in which you can edit preferences for graphical presentation.



By activating the "**Do not connect points**" switch, you can ensure that the measured values are not connected to a load-settlement curve. Only in rare cases, e.g. if you need to draw a load-settlement curve **by hand**, you will use this switch.

According to DIN 18 134, a 2nd degree polynomial using compensation according to the least squares method is required for analysis of the plate loading test. This method is utilised in all cases to determine the governing plate loading values, completely independently of the smoothing out procedure selected here. However, representation of the plate loading test using the "**2nd degree polynomial**" switch sometimes leads to rather unusual curves. Alternatively, then, and for optical effect only, you can select between the methods "**Connect points linearly**" or "**Bezier spline**" for the representation.

Regardless of the selected setting for the load-settlement curve you can separately specify a linear connection for the unloading curve data points. In addition it is possible to display the secant in accordance with Figure 4 of DIN 18134.

By activating the "**Show markers**" or the "**Show test numbers**" switch the load-settlement curve will be displayed with markers or their current numbers at all measuring points. You can switch off both, when you only want to display the curve on the output sheet. The size of the markers can be influenced with the input in the "**Marker size [mm]:**" field.

Using the "User-defined axes" button it is possible to define your own axes scales. Otherwise, the axes will be scaled automatically. If you select this button you are first offered the automatic scale values in a box, which you can then edit as required.

In addition, you can vary the number of decimal places for manometer data input between "3" and "5" for each plate loading test performed.

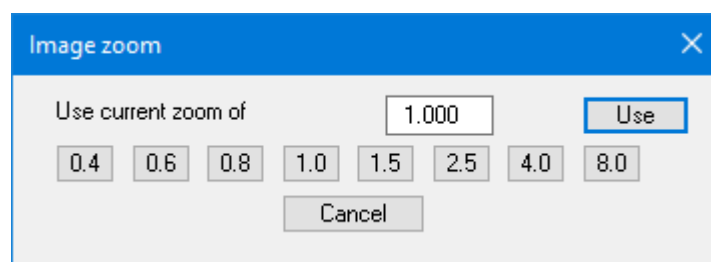
The value a_0 should be given in the evaluation of your plate loading test in compliance with DIN 18134. Display in the "**Deformation modulus**" evaluation table can be achieved by activating the check box "**Enter a_0 in table**".

When you leave the dialog box with "**OK**", all preferences will be accepted.

8.3 GGU-PLATELOAD: "Refresh and zoom" menu item

The program works on the principle of ***What you see is what you get***. This means that the screen presentation represents, overall, what you will see on your printer. In the last consequence, this would mean that the screen presentation would have to be refreshed after every alteration you make. For reasons of efficiency and as this can take several seconds for complex screen contents, the screen is not refreshed after every alteration.

If, e.g., after using the zoom function (see below), only part of the image is visible, you can achieve a complete view using this menu item.



A zoom factor between 0.4 and 8.0 can be entered in the input box. By then clicking on "**Use**" to exit the box the current factor is accepted. By clicking on the "0.4", "0.6", etc. buttons, the selected factor is used directly, and the dialog box closed.

It is much simpler, however, to get a complete overview using [**Esc**]. Pressing [**Esc**] allows a complete screen presentation using the zoom factor specified in this menu item. The [**F2**] key allows screen refreshing without altering the coordinates and zoom factor.

8.4 GGU-PLATELOAD: "Zoom info" menu item

An info box informs you about the activation and options of the zoom function.

The quickest way to enlarge a specific section of the screen is to open a zoom window by holding down the **[Ctrl]** key and the mouse button.

8.5 GGU-PLATELOAD: "Legend font selection" menu item

With this menu item you can switch to a different true-type font. All available true-type fonts are displayed in the dialog box.

8.6 GGU-PLATELOAD: "Font size selection" menu item

You can edit font sizes for various text elements of your graphic.

8.7 GGU-PLATELOAD: "Pen colour and width" menu item

In order to enhance the clarity of the graphics you can preset the pen settings for various graphic elements in the GGU programs

You can change the pen widths for the elements listed in the dialog box and adjust the pen and/or fill colours by clicking on the button with the element name. In some GGU programs you can also define a line colour for selected elements.

For the graphic output of colours on **monochrome printers** (e.g. laser printers), colours are replaced by an equivalent shade of grey. In the case of very light colours, the corresponding graphic elements are then barely visible on the printer. In such cases, it makes sense to change the colour setting to darker colours.

8.8 GGU-PLATELOAD: "Mini-CAD toolbar" menu item

Using this menu item you can add free text, lines, circles, polygons and images (e.g. files in formats BMP, JPG, PSP, TIF, etc.) to the main program graphics. PDF files can also be imported as images. A pop-up menu opens, the icons and functions used are described in more detail in the **Mini-CAD** manual saved in the **"C:\Program Files (x86)\GGU-Software\Manuals"** folder during installation.

Drawing objects that you create with this **Mini-CAD** system refer to the page format (in mm). They therefore always remain in the same page position. You should select this menu item if you want to enter general information on the drawing (e.g. company logo, report number, system number, stamp).

If you transfer this so-called **header data** to a file via the icon



in the pop-up menu, you can save this header data in a **".kpf"** file for a completely different system (with different system coordinates) and also load it again in other GGU programs using the icon



in the pop-up menu. The saved header data will then be in the same position again. This simplifies the creation of general page information considerably.

8.9 GGU-PLATELOAD: "Toolbar preferences" menu item

After starting the program, a horizontal toolbar for menu items appears below the program menu bar. If you would rather work with a popup window with several columns, you can specify your preferences using this menu item. The smart icons can also be switched off.

At the bottom of the program window, you find a status bar with further information. You can also activate or switch off the status bar here. The preferences will be saved in the **"GGU-BORELOG.alg"** file (see menu item **"Graphics preferences/Save graphics preferences"**) and will be active at the next time the program is started.

By clicking on the tools (smart icons) for the menu items you can directly reach most of the program functions. The meaning of the smart icons appears as a text box if you hover with the mouse pointer over the tools. Some of the tool functions cannot be called up via normal menu titles and menu entries.

Not all of the icons described below are available in all GGU programs.



"Next page"/"Previous page"

You can use these icons to scroll forwards and backwards between individual pages. In many GGU programs, you can use this in the **output table representation**.



"Select page" or "Diagram/Output table"

If you are in the **output table representation**, you can use this symbol to jump to a specific page or switch back to the normal display, i.e. your graphic display.

**"Zoom out"**

If you have previously zoomed in, this tool returns to a full screen display.

**"Zoom (-)"/"Zoom (+)"**

With the zoom functions you can zoom in or out of parts of the image, by clicking the left mouse button.

**"Copy/print area"**

Use this tool to copy only parts of the graphics in order to paste them, e.g. to a report. You will see information on this function and can then mark an area, which is copied to the clipboard or can be saved in a file. Alternatively, you can send the marked area directly to your printer (see **"Tips and tricks"**).

**"Colour on/off" or "Colour/hatching"**

If you want to remove the colour from the system display, e.g. to create a black and white printout, you can do this using this on/off switch.

In several GGU programs, 4 colour and hatching settings are possible via this icon, which you can click through in sequence. A colour filled representation is the default setting, the next click shows the hatching, then coloured and hatched. The fourth click shows a representation with neither colour nor hatching. The next click starts again.

**"Move object"**

Use this icon to position legends and diagrams at the desired position on the output sheet.

**"Undo move object"**

By clicking this icon the last performed movement of graphical elements made using the [F11] function key or the menu item **"Output preferences/Move objects"** can be undone.

**"Restore move object"**

By clicking this symbol, the last object movement undo carried out using "Undo move object" can be restored.

**"Construction phase back"/"Construction phase forward"**

If you are in the display of construction phases, you can use these icons to scroll back and forth between the individual construction phases.

9 Output preferences menu

9.1 GGU-PLATELOAD: "Page size" menu item

The default page set-up is A4 when the program is started. Using this menu item you can edit height and width of the output sheet.

9.2 GGU-PLATELOAD: "Texts" menu item

The default labelling of some output sheet elements can be edited in this menu item's dialog box. Among other things, the name of the output sheet can be specified here.



Your input in the first row, "**Manometer designation**", will be used as column heading in the output tables. Your input in rows 1 to 6 of the above dialog box, as well as the input for "**Report:**" and "**Annex:**" also represent the designations for the input boxes in the "**Edit/Test**" and "**Edit/General**" menu items dialog boxes.

If rows are deactivated in the above dialog box, the corresponding input boxes in the "**Edit/Test**" menu item dialog box are also deactivated. Use "**Reset**" to restore the default labelling settings. If you have retroactively changed the language you will see the internal program translations in the input boxes.

9.3 GGU-PLATELOAD: "Margins" menu item

In the default program preferences the output sheet is shown with cutting borders. For output to an A4 printer, a reduction of the printer output is generally necessary, as proprietary printers cannot fully cover an A4 page. The margin preferences can be defined in a dialog box.



By deactivating the "**With borders**" check box and with an appropriate choice of left and lower margins, it is generally possible to create a non-reduced printer output. It is necessary to also adapt the page height and width.

9.4 GGU-PLATELOAD: "Position info" menu item

The positions and layout of the individual elements on the output sheet can be altered using the following menu items. This menu item provides information on the options for altering the position and layout more quickly using the mouse.

9.5 GGU-PLATELOAD: Title (change position)" menu item

The position and layout of the title element can be altered via the dialog box for this menu item, if the **"Title display"** check box is activated.



The position of the element on the output sheet and its size can be defined or edited by means of the variables **"x"** and **"y"**, **"dx"** and **"dy"**. The element can be provided with a frame and a background colour to suit your personal requirements. If the element needs to be returned to its original condition, this can be done using the **"Reset"** button. Alternatively, you can alter the size and shape of the element using the mouse (see menu item **"Output preferences/Move objects"**).

The heading shown in the title element can be edited in the menu item **"Output preferences/Texts"**. The texts **"Project (1st line)"** to **"Project (3rd line)"** are entered immediately after double-clicking the element or using the menu item **"Edit/General"**.

9.6 GGU-PLATELOAD: "Deformation modulus" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"Deformation modulus"** element.

The value a_0 should be given in the evaluation of your plate loading test in compliance with DIN 18134. After double-clicking the **"Deformation modulus"** element a dialog box opens allowing activation of the **"Enter a_0 in table"** check box.

9.7 GGU-PLATELOAD: "Company" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"Company"** element.

The input for this element can be edited immediately after double-clicking on the element or via the menu item **"Edit/Company"**.

9.8 GGU-PLATELOAD: "Text no., etc." menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. To edit the **"Test no. etc."**, element, simply proceed as described there.

The input for this element can be edited immediately after double-clicking on the element or via the menu item **"Edit/Test"**. For this element you also have the option of adapting the texts in front of the input boxes to suit your needs. Go to the menu item **"Output preferences/Texts"**.

9.9 GGU-PLATELOAD: "Annex and report" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. To edit the **"Annex and report"** element, simply proceed as described there.

The input for this element can be edited directly by double-clicking the element or by going to the menu item **"Edit/General"**. For this element you also have the option of adapting the texts in front of the input boxes to suit your needs. Go to the menu item **"Output preferences/Texts"**.

9.10 GGU-PLATELOAD: "Load-settlement curve" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"Load-settlement curve"** element.

9.11 GGU-PLATELOAD: "Plate diameter" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"Plate diameter"** element.

9.12 GGU-PLATELOAD: "Remarks" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. To edit the **"Remarks"** element, simply proceed as described there.

The input for this element can be edited immediately after double-clicking on the element or via the menu item **"Edit/Remarks"**.

9.13 GGU-PLATELOAD: "Short output table" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"Short output table"** element.

9.14 GGU-PLATELOAD: "Weather conditions" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"Weather conditions"** element.

The input for this element can be edited immediately after double-clicking on the element or via the menu item **"Edit/Weather conditions"**.

9.15 GGU-PLATELOAD: "Target values" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"Target values"** element.

The input for this element can be edited immediately after double-clicking on the element or via the menu item **"Edit/Target values"**.

9.16 GGU-PLATELOAD: "Test times" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"Test times"** element.

The input for this element can be edited immediately after double-clicking on the element or via the menu item **"Edit/Test times"**.

9.17 GGU-PLATELOAD: "First test (output table)" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"First test (output table)"** element.

To view the output table you must change to the output table using the menu item **"Graphics preferences/View output table"** or by clicking the



icon.

9.18 GGU-PLATELOAD: "Second test (output table)" menu item

Almost exactly the same dialog box opens with the same preference options as that described in the **"Output preferences/Title (change position)"** menu item. Simply proceed as described there to edit the **"Second test (output table)"** element.

To view the output table you must change to the output table using the menu item **"Graphics preferences/View output table"** or by clicking the



icon.

9.19 GGU-PLATELOAD: "File name" menu item

If the button **"Show legend"** is activated, a legend with file information will be displayed on the output sheet.



You can define and edit the position of the legend using the "x value" and "y value" and the size of the legend using "Font size".

In addition to the prompted heading, you can have a designation before the file name. The file name can be excluded or displayed automatically with or without the file path and/or date and time.

9.20 GGU-PLATELOAD: "Reset all" menu item

With this button, all preferences for the aforementioned elements, which may have been edited with the previous menu items, will be reset to the program defaults.

9.21 GGU-PLATELOAD: "Move objects" menu item

When you go to this item you can move the various objects with the aid of the mouse. Move the mouse over the object to be moved. When you are located above a moveable object the mouse pointer appears in the shape of a cross. You can now press and hold the left mouse button and drag the object to the required position.

After going to this menu item only one object at a time can be moved using the mouse or its size be altered.

In order to move or edit several objects, this function can be more quickly activated by pressing [F11] or the



icon.

The size of an object can also be altered using this menu item or the [F11] key. If you move over the frame of a changeable object after activating this function the mouse assumed the shape of a double-headed arrow. Hold the left mouse button and move the frame until the object has reached the required size. To retain the ratio of the sides, pull at one corner only. If on one side only is pulled the object will become higher or wider.

The last change made in the position or size of an object can be undone using [Back] or by clicking the



icon.

10 Info menu

10.1 GGU-PLATELOAD: "Copyright" menu item

You will see a copyright message and information on the program version number.

The "**System**" button shows information on your computer configuration and the folders used by the GGU program.

10.2 GGU-PLATELOAD: "Maxima" menu item

You will see information on the default program maxima.

10.3 GGU-PLATELOAD: "Help" menu item

The manual is opened as a PDF document. The help function can also be accessed using the **[F1]** function key.

10.4 GGU-PLATELOAD: "GGU on the web" menu item

Using this menu item, you can access the [GGU Software website](#).

Check the page of your program module at regular intervals for information about updates and changes. On the "**Changelogs**" subpage, you can also subscribe to an e-mail notification that informs you of all changes on a monthly basis.

10.5 GGU-PLATELOAD: "GGU support" menu item

This menu takes you directly to the [GGU Software Support Portal](#).

Here you can enter your support request directly and upload your edited GGU program file.

10.6 GGU-PLATELOAD: "What's new?" menu item

You will see information on program improvements in comparison to older versions.

10.7 GGU-PLATELOAD: "Language preferences" menu item

This menu item allows you to switch the menus and the graphics from German to English and vice versa. To work in German, deactivate the two check boxes "**Dialoge + Menüs übersetzen (translate dialogues, menus)**" und "**Graphiktexte übersetzen (translate graphics)**".

Alternatively, you can work bilingually, e.g. with German dialog boxes but with graphic output in English. The program always starts with the language setting applicable when it was last ended.