Release Notes sisKMR®

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Release Notes sisKMR 2025, Version 32.14

- **433: Bedding type „liquid soil“ implemented**

A bedding type module ‘liquid soil’ was implemented. This bedding type and its calculation basis have not yet been validated. Therefore, the selection and activation of this calculation method is only at your own risk and by contacting the support of GEF Ingenieur AG.

- **500: Undo function implemented**

Completed user actions can now be undone up to 10 steps (UNDO). Once an action has been undone, it cannot be restored! (REDO)
The function is available under the ‘Tool’ drop-down menu.

- **502: Functions branch export / import**

Individual branches can be exported completely from projects in the ‘general system’ and saved in a folder provided for this purpose.
Branches saved in this way can also be imported again (in any other project). The functions are available under the ‘Tool’ drop-down menu.

- **503: Naming of point IDs modified**

The naming of point IDs will follow further on a different pattern. New points will always be assigned the next highest available point ID and prefixed with capital P. Syntax: P1 – P2 … P22 - P23.

- **507: Introduction of object manyfold (Y-pipe fitting) for twin pipe transition**

An additional point object ‘Manyfold (Y-pipe fitting)’ has been introduced. This is mandatory for transitions from twin pipe to single pipe. The transition from twin pipe to single pipe (and vice versa) can and may only take place in a straight direction.

- **508: Graphic labelling of deflection angles**

From now on, deflection angles at points can be shown in the graphic. Bends are given the prefix ‘B’, whereas miters have no prefix at all.

- **509: Changed pre-setting of permissible PUR shear stress**

The permissible PUR shear stress pre-setting has been set to 0.04 N/mm² for all calculation standards in line with the current change to the standard. Old projects must be adjusted manually.

- **510: Improved selection of bedding types**

Previously, clicking twice to open the subgrade type drop-down list was required. This has been improved. The drop-down list is now opened with the first click.

- **513: Changed display of preheating limit temperature**

The lower limit temperature for the display and visualisation of preheating was previously fixed at least 60°C. Preheating was not displayed below this temperature. Below this, preheating was not displayed. Preheating is now recognised if the preheating temperature is more than 10° above the minimum temperature.

- **514: Error correction transfer of section division**

If the division of the current section was changed, this division was also transferred to the change set of other sections, usually unnoticed. The division is no longer transferred as a geometric feature.

- **515: Prevent selection option TEC at intermediate points**

If intermediate points have an angle, TEC could also be selected for the point category. This has been prevented.

- **516: Error correction incorrect graphic display of branch line modelling**

When modelling branch lines, the definition of an angle at the branch line end point in the graphic led to the display of a connecting line (section) that did not exist. This confusing graphic has been eliminated.

- **517: New function Project templates (Template)**

Functions for managing and using project templates have been created:
- New project from template
- Save project as template

The functions are available under the 'Project' drop-down menu.

- **518: Transfer of nominal diameter table data when changing tables**

Changing the nominal diameter table did not previously result in an immediate change to the 'nominal diameter -dependent' data. This has been changed. The previous definition of the nominal diameter table for the entire project no longer applies, but has been adopted as a section attribute. The changes in detail:
- If the nominal diameter table changes, the 4 dependent values of the current section are changed
- If the nominal diameter (DN) of the section does not exist in the newly selected nominal width table, a warning message is issued and no attribute change is made
- Other sections are only changed via the 'Transfer changes for...' setting.
- If the nominal diameter table is changed, the change is made to other sections by selecting a different nominal diameter (as before) or by opening the nominal diameter list and selecting the same nominal diameter (new)
- The nominal width table was previously a project definition and is now saved as a section attribute.

Old projects must be adjusted manually if necessary.

- **519: Error correction decimal delimiter point - comma**

For almost all input fields, sisKMR set values to '0.0' if numerical values were entered with a different delimiter instead of the appearing comma or point. This has been corrected, the programme recognises the input and sets the decimal delimiter to the correct one used by the operating system without losing the numerical value.

- **520: Standardsystem Dialog Parallelabzweig Bauteil-/Montagehöhe überarbeitet**

The input fields for the 'branch height' have been swapped. The leading attribute of the 'Fitting clearance' now comes first, followed by the 'installation clearance, field. Incorrect input values for the 'installation clearance' greater than the 'Fitting clearance' are simply ignored.

- **521: Standard systems T and parallel branch, line category branch supplemented**

For the definition of the two systems 45° T-branch and parallel branch, the line category for the branch line can now be defined separately. The default setting is 'Distribution line' for the main line and 'House connection line' for the branch.

- **522: Delete all manufacturer nominal diameter tables**

The manufacturer nominal diameter tables were largely outdated and were not maintained. They have therefore been removed without replacement for new projects; only tables according to the standard are offered for new projects.

An export/import function (see 537) is provided for importing current diameter width tables or for exporting/importing from old projects.

- **523: Updating the dongle driver**

Version Sentinel LDK Windows GUI Runtime Installer 10.12.169641.1.

- **524: Defusing the miter calculation**

The checking of miters has been revised. Angular deviations that are defined as permissible by the standard are no longer subjected to the computational stress analysis.

- **525: Fix error message EPTYP-APTYP**

Since the introduction of the point type check from version V31 onwards, there have been an increasing number of nonsensical point type EPTYP and APTYP messages due to the model check before calculation, which prevented the calculation from starting. This has been rectified.

- **526: Bug fix for fast user actions**

Fast, repeated user actions via mouse click, such as 'new section' in particular, could disrupt the order of the created objects. This has been fixed.

- **528: Button ‘Do not display attribute value’ removed**

The graphic switch for deactivating all section attributes is rarely used and has therefore been dropped without replacement.

- **529: CAD-Import: checkbox "Main line by level" as standard setting active**

The ‘Main line by level’ checkbox was previously not activated in the default setting. This has not proved successful and has now been set as active by default.

- **530: Programme settings - Check whether saving was successful**

A check for successful saving or errors has been implemented.

- **531: Chinese materials description supplemented**

The material description for the Chinese materials L290, L360, Q355B, DI has been supplemented.

- **532: ‘Delete point’ function invented**

A ‘Delete point’ model editing function has been invented. The function deletes a point. The first section (in the model direction) is extended by the amount of the second section. The second section is deleted.

- **533: ‘Move point’ function invented**

A ‘Move point’ model editing function has been invented. The function moves a point by a value to be specified by the user. The first section (in the model direction) is lengthened or shortened by the amount and the second section is adjusted accordingly.

- **534: Security queries removed**

Various security queries that could disrupt the smooth workflow have been removed. With the invention of the UNDO function, the purpose of the queries is useless.

- **536: Error Correction Report incorrect bedding type output**

In the report, the bedding type 4 was incorrectly specified as 2 under input data. This has been corrected.

- **537: Diameter tables import and export**

Now that all manufacturer nominal diameter tables have been removed from the selection, the standard scope is limited to the standardised definitions. To enable the continued use of manufacturer nominal diameter tables, an export and import function has been provided.

- **538: Delete branch function invented**

A function for deleting an entire branch has been invented. With the exception of the main string, strings with all sections can now be deleted with one action.

- **539: Check for negative horizontal length**

The model check before calculation has been extended to check sections for negative horizontal length, which should not actually occur. These are then listed in the error report.

- **540: Point labelling 'Line_ID' invented**

A function for displaying the line_ID on the point labelling has been invented. This serves as a replacement for the previous line identifier in the point_ID with the prefix of a letter.

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- **383: Composite twin pipes integrated**

The option to calculate composite twin pipes has been integrated. The calculation option is implicitly carried out via the selection and labelling of sections as double pipes. If defined accordingly, the graphical representation is done with a double bar, the labelling "DN" is changed to 2x DN....
Further details and notes for the user on use and results are described in detail in the help documentation.

- **434: Display of material properties switch instead of popup**

When changing the pipe material in the dialogue section, a box with the properties of the selected material of the defined temperature max. opened up to now every time and had to be confirmed with "OK". This hindered the fluid workflow and was suppressed in this context. Instead, a small button was added to the right of the material selection box to display these material properties if required.

- **437: Incorrect error table and error report thick-walled tees**

With the definition "extruded thick-walled" tees, individual stress results were not output correctly in the error table and in the error report in different variations. In the report, however, the results were otherwise correct. The error was corrected.

- **454: Project Header Info Definition and Output Revised**

The header information of projects has now been extended to a uniform 60 characters. The three header information items "Client", "Commission" and "Title" are now printed in the "Description" field of the graphic printout in the same order.

- **455: Faulty message of the pitch of bend cuts**

In the case of curved pipes with large radii, it could happen that a message opened stating that the curve could not be calculated due to too high a pitch. Both the message was corrected and the actual internal determination of the sections of bends was limited to a maximum value of the section or (300).

- **456: Illustration of labelling for curved pipes**

The section labelling for curved pipes was previously done on the straight tangent part in such a way that the length could be misinterpreted. This has been changed. The lengths are now shown separately for the straight section part and the fictitious section tangent.

- **457Display model direction at sections**

A view attribute has been added for the graphic of the sections, which shows the model direction of the sections by means of a direction arrow.

- **458: Uncaught error CAD import**

Import of CAD graphics with more than 49 branches failed and was not caught. This has been corrected.

- **459: Uncaught fault excessive temperature**

Extremely high design temperatures (section) outside the material classification led to uncaught errors. This has been rectified in the form that calculation temperatures are now only permitted up to and including 300°C.

- **460: Project and program preset definition**

As a new function or revised function, extended presets for the programme start can be defined with regard to programme setting and project presetting. It is possible to define *„c:\Users\%username%\AppData\Roaming\GEF\sisKMR\ siskmrsettings.json“* only for one individual user at a time or for all users of the PC *„c:\ProgramData\GEF\sisKMR\siskmrsettings.json“* to make this setting. Detailed description is provided in the manual.

- **461: Incorrect message EBTYP in error report**

Occasionally it could happen that with the start of the calculation the model check issued the wrong error type "EBTYP" in the report. This has been fixed for newly created projects.

- **462: Recurring warning message Pressure exceeding calculation definition**

If the design pressure is set outside the calculation standard, a corresponding warning message appears. The repeated popping up of this message can now be suppressed by the user by activating the option "Do not show message again".

- **463: Error input standard system T- and P-branch**

In the case of the T-branch and parallel branch, an entry of the casing pipe diameter that deviated from the nominal width table was transferred to the service pipe diameter. This has been corrected.
For the parallel branch, the direction option "Direction NFP" was not adopted. This was corrected.

- **464: Recurring warning message Temperature exceeding calculation definition**

If the design temperature is set outside the calculation standard, a corresponding warning message appears. The repeated popping up of this message can now be suppressed by the user by activating the option "Do not show message again".

- **465: Change Tee settings in the background**

When changing attributes "Cover" and "Project class" it could happen that in the background nozzle wall thicknesses were reset to the value of the respective section. This has been fixed.

- **467 TG-ID wrong placement**

For not yet connected tees where the point_IDs "TG**" was entered first, the point ID label jumped to the beginning of the string. This has been corrected.

- **468: Graphic display of several unconnected branch lines on top of each other**

If several unconnected branches were modelled, it was almost impossible to reach them via the graphic, as they were directly above each other. This has been remedied by placing several branch lines offset to each other in the graphic.

- **469: Improved error message wrong branch string index**

The previous message when defining the TT** point ID of branch lines that the index did not match the index of a branch line was not very helpful. This has been improved to the effect that it is now clear which index is incorrect and which should be used instead.

- **470: Improvement of branch modelling TT**

The branch line modelling has been extended by the end point type "TEC". This option is available for selection at the end point of a branch line that is not yet connected. By selecting this type, the correct TT** value is automatically entered in the field Point_ID.

- **471: Addressing point nodes by double click in the graphic**

In the common system, the point node can now also be controlled via the cursor by double-clicking.

- **472: Colour of expansion pads darker blue**

The representation of expansion pads in the graphics and printout was previously done in cyan and was sometimes difficult to recognise. This has been changed to dark blue for better recognisability.

- **473: Save graphic settings**

The saving of the graphic position (zoom window) and rotation with saving the project has been added. Thus the project graphic opens in the position and rotation as the user left the project after the last saving process.

- **474: Decimal places DWG export attributes**

In the DWG export, the blocks receive various section attributes as attributes. However, some numerical values were rounded to two decimal places, which was not enough in some cases. Extend these to four decimal places.

- **475: Message cascade node errors**

In the case of incorrect or incomplete T-connection nodes, there was a cascade of message boxes that had to be acknowledged individually before finally getting to the error list. The messages are not very helpful at this point and have been completely suppressed. After the initialisation of the calculation, the output of the errors now takes place in the error message box.

- **476: Input fields project info**

The string length input fields “Client”, “Commission”, “Title” and “Description” of the project info have been revised.

Client:	60 characters, 1 line
Commission:	10 characters, 1 line
Title:	60 characters, 1 line
Description:	1000 characters, 25 lines

- **477: Addition of tee dimension combinations according to EN 10253-2**

With the amendment of EN10253-2 2021/11, additional nominal diameter combinations for tees were introduced. T-pieces type B, for a total of 13 DN combinations 109 entries were added.

- **478: Freeze dialogue box project manager**

With slow network connections, it could happen that the project manager did not close despite loading the project or could not be closed actively by the user. This led to programme hang-ups. This has been fixed.

- **479: Error defining TG at new end section point**

If sections were subsequently inserted in a line, it could happen that the programme refused to define the TG at the end point of these sections. Message*: "The renaming to the branch node is not possible".* This has been fixed.

- **480: Error point definition TEC and KNK**

When modelling to the front, confusing point type suggestions occurred after a kink was selected once. If modelling is continued, it changes to a kink even without specifying an angle. This behaviour has been fixed.

- **481: User-defined load cases: activate local prestressing**

With the invention of the new GUI under V30, the mechanical prestressing for the object "Point" was switched inactive for load cases. This has been rectified and mechanical prestressing can now be defined again for user-defined load cases.

- **482: Internal pressure superposition**

Axial stress analysis
In axial stress analysis, the superimposed internal pressure force has always been considered and output together with the friction force from thermal expansion. This has been corrected. The axial stress analysis determines this value without the relieving effect of the internal pressure.
As a result, it can happen that projects whose axial force was previously within the permissible range now show axial stress overruns.

- **483: Inclusion of current dongle driver in setup**

The current dongle driver *„Sentinel HASP/LDK Windows GUI Runtime Installer 8.53“* was integrated into the setup.

- **484: Report mentioning wrong bedding type at tees**

In case of different subgrade types at T-piece nodes, sometimes wrong or truncated subgrade types were output in the result report. This was corrected.

- **485: Partial safety factors EN 13941 adapted**

The partial safety factors according to EN 13941-1:2019+A1:2021, 7.2.2.1: Ym=1.1 and Ya=1.25 were adapted

- **487: Graphic Navigation Point to Point with Keyboard**

Navigation in the general system by keyboard from point to point or from section to point has been newly introduced Forward: [Shift + >] Backward: [Shift + <].

- **488: Addition to material list P 355 NH**

P 355 NH has been added to the list of available materials as a standard material.

- **489: Sorting error list**

For the error list, which opens after the calculation in case of stress violations, a sorting of the output columns was enabled by clicking on the corresponding column heading.

- **490: Security question function "new line”**

For the function of creating a new line, a safety query was introduced to prevent the accidental creation of a new string instead of a new section.

- **491: Line style "dashed" for air bedding**

For better distinction and recognisability, the line style "dashed" was introduced for sections with bedding type "L" (air bedding).

- **492: Point type selection lists: abbreviation first**

In the drop-down lists of available point types, the description was previously first, followed by the associated abbreviation. This has been changed. The abbreviation is now first, in order to always and quickly see the defined point identifier in the point dialogue window without having to open the drop-down list.

- **493: Error with T-piece selection "Prefabricated" in combination with "User-defined**

With an unintended tee selection "Prefabricated" in combination with "User defined" in the general system, an endless loop of query and confirmation occurred. This has been corrected.

- **494: Permissible hoop bending stress, temperature dependence**

The permissible hoop bending stress SIGTAll was not shown temperature-dependent in the report. This has been corrected.

- **496: Update diameter tables Fintherm**

The diameter tables of the manufacturer Fintherm have been updated according to their specifications.

- **499: EN 13480 adjusted in report**

The adoption and current version of the last EN adjustments was not correctly indicated in the report. This has been corrected.

Release Notes sisKMR 2022, Hotfix 30.22

- **435: Navigation „next point“ from the section dialog corrected**

The function of the navigation button „next point“ from the common system was faulty. This has been corrected.

- **436: Right mouse button actions on active section corrected**

Operation functions from the context menu „right mouse button“ have not been applied to the actual section but on the next section nearest to the cursor position. This has been corrected. These functions are now executed with the actual and highlighted section.

- **438: Zoom bug on function „new line”**

The function „new line“ caused a faulty graphic zoom view of a random and empty position instead of the newly created section. This has been corrected.

- **439: Point-ID increment**

The default setting of the increment point ID in "Settings -> Program -> General Settings" dialog was incorrect (5 instead of 50). However, the actual increment was used with a value of 50 with the settings unchanged. This has been corrected. The default value is now back to the old value of 50.

- **440: Graphic position of dialog Point / Section**

If one of the two dialog boxes „section“ / „point“ (general system) were moved by the user, they always reopened at the program specified standard position when changing projects or after closing them. This has been changed. The program now remembers the window positions during a session.

- **441: Update correction CN – FR - IT**

Correction of various GUI texts

- **442: Update Material-DB China**

Supplement 4 additional materials for Chinese country version

- **443: Update diameter tables Inpal company**

Updating and correction of nominal diameter table company Inpal

- **444: Section- / Point dialog: Acceptance of changes and navigation**

To optimize the workflow in input mode, changes were made in the navigation of the section and point dialogs in the "common system":

1. Acceptance of changes is implicit by moving to the next or previous section or point.
2. The navigation to the next / previous section / point can be done either via the navigation buttons or via the keyboard with the combination <STRG> + "<-" or " -> " (arrow keys right / left):
    - including implicit acceptance of the changes
    - Keyboard arrow keys always navigate to the next or previous section
3. Reject or accept changes in the section/item dialog via the safety prompt "Accept changes yes/no" when exiting the dialog by:
    - Closing the dialog
    - Mouse click into the graphic
4. The X at the top right discards any changes and closes the Section / Point dialog without asking.
5. Multiple changes: (Apply changes to...) happen exactly as defined, no matter what control action

- **445: Graphic display of pipe movement**

After the wu displacement was activated, it could no longer be switched off after changing the pipe model. This has been corrected. When the pipe model is changed, the result displays are automatically deactivated.

- **446: Error program start minimized**

If sisKMR was terminated in the minimized state (e.g. because the license connection was interrupted), it started completely in the background the next time. As a result, the program started with a splash screen the next time it was started, but then disappeared from the PC interface. The task did not appear in this status in the taskbar either. However, the process was running and visible in the task manager and at the same time, consuming licenses from the server dongle. This behavior has been fixed.

- **447: Double click on section and point addressing**

If double-clicking on any section, the point dialog remained at the previously selected point instead of switching to the actual one. This has been changed. When selecting a section by double-clicking, the point dialog is always updated to the end point of the selected section.

- **448: Input vertical length in section dialog**

In the geometry input dialog of sections, the selection button can be used to determine how the input of the vertical component is to be determined, angle or vertical dimension. However, the unselected option was not set inactive, as in previous versions. This could lead to incorrect entries. This has been fixed.

- **449: Section and point dialog input fields <ENTER>**

Keyboard entries in input fields that were completed with the <ENTER> key were not accepted and the value was automatically reset to the original value. Only if the fields were changed with the mouse cursor did the changed value remain. This has been fixed.

- **450: "Weld seam at end point" radio button added**

The "Weld at end point" radio button was not taken into account when the GUI was changed. This has been added. The function is the same as the previous versions.

- **451: Multiple transfer bend radius and bend wall thickness added**

The option of multiple adoption of the attributes "bend radius" and "bend wall thickness" was not taken into account when the GUI was changed. This has been added and is now possible.

- **452: CAD- Import default values for axial stress and minimum temperature**

For the CAD import, the two section attributes “min. Design temperature" and the axial stress were corrected from 0°C to 10°C and to the temperature-dependent stress value.

- **453: Adaptation of PUR shear stress when changing the calculation standard**

With the change in the calculation standard, the permissible PUR shear stress for AGFW has changed compared to the other calculation methods. This function was reintegrated according to version V28.

Release Notes sisKMR 2021, Version 30.20.4

- **282: New program Graphic User Interface = GUI**

  The program interface has got a complete renewal. Essential feature is that the previous independent graphic box is now integrated in the main graphic user interface. This allows an optimized and more ergonomic arrangement on the desktop.

  The second focus is the logical separation of previously interlinked dialogues of standard systems and the general system.

  The third focus is the logical structuring of the input dialogs, separation between project definition and model definition as well as content-clear structures. In particular, the logical separation between section and point as objects in the common system is considerable and comes along with a significant change in the work flow of modeling.

  The fourth focus is the introduction of a quick function bar in the upper bar of the GUI for the most commonly used program functions. The view control on the left bar in the program window and the quick function bar above were arranged in logical function groups.

  Many more details have been changed. For workflow change to this version, it is recommended for experienced users to view tutorials to be found under the sisKMR YouTube channel.
  The help documentation was completely redesigned.

- **370: Button “Coordinates” removed**

  The recent button without function Coordinate was removed.

- **391: Dialogs Project Definition, Settings and Calculation**

  The project settings were completely separated from modelling and summarized in one new standalone dialog. This dialog is divided into three logical registries: Definition - Settings - Calculation

- **410: Dialogs Standard System**

  The dialogs of the Standard system have been completely revised. All model settings are now content of a single dialog. For each standard system, an understandable graphic is also available, which describes the individual input values of the geometric definition.

- **412: Dialogs Common System**

  For modeling in Common System, two object dialogs have been newly invented: sections and points. The objects can be controlled directly from the graphic. Along strands can be navigated between points and sections. The input dialogs include all required input attributes without nesting.

- **414: PE-casing temperature calculation**

  The pre-setting limit value for the PE casing temperature was increased to 60 ° C for maximum permissible peak temperature according to EN 13941-1.

- **415: Correction of report's section data**

  The column header for PUR shear and compressive load was confused. This has been corrected.

- **416: Report L-System**

  The naming of the compensation legs (only EN, „Sand cushion") was corrected. This has been corrected.

- **417: Correction reducer's dialog box**

  The dialog of the reducer fittings description showed a wrong value for outer diameter of the large DN. This has been corrected. The calculation results were not affected.

- **418: Loading case dialog new**

  The former pull-down menu of loading cases has been replaced by a new invented dialog box. This can be called from the drop-down „Tools".

- **419: Report Miter**

  For miters was a wrong wall thickness reported in the output. This has been corrected. The calculation results were not affected.

- **420: Allowable axial stress as section attribute**

  So far, the permissible axial stress for a project was globally determined by material and temperature for all sections and taken into account in the stress analysis. This has been changed: Now material and temperature are considered for each section, which sets permissible value and takes into account in the stress analysis.

- **421: Minimum design temperature**

  So far, the minimum design temperature for a project has been globally determined for all sections and taken into account in the stress analysis. This has been changed: Now this value is determined individually for the determination of the fatigue stress for each section and fittings and considered in the stress analysis. The value is now also listed for the section data in the report.

- **422: Wrong stress analysis error report**

With the stress analysis in connection with exceeding the permissible axial stress, incorrect fatigue stress values were listed as errors in the error report. This has been corrected. The calculation results itself were not affected, unless there was no axial stress exceeding.

- **423: Program start several program instances**

  The multiple start of sisKMR could lead to mutual data overrun in the temporary directory. This has been fixed, each program instance creates now its own temporary folder under C:\Users\$Username\AppData\Local\Temp. However, multiple program start is only possible if enough licenses are ready.

- **424: Reset license usage PC dongle**

  In the sudden unplugging of a dongle from the PC or other exceptions, it could happen that the license usage in the dongle was not reset. This could only be resolved by a one-time start of the program in the "Shareware version". This has been fixed.

- **425: Saving graphic settings**

  So far, the graphics settings had to be explicitly saved in the graphics window first and then the project itself in order to save defined graphics settings permanently in the project. This has been changed. Graphics settings are now automatically saved with the project.

- **426: Update dongle driver**

  Integration of the latest available Thales dongle driver into the setup.

- **427: Stress analysis EN 13480, consideration restrained expansion loads**

  The stress analysis according to EN 13480 (in general bedding type „L“) did not consider forces caused from restrained expansion for the stress analysis of combined loads. This has been fixed.

- **291: Project settings, internal pressure – cold system modified**

  This project setting in the dialog Project -> Calculation, in previous versions to be found under „Calculation configuration“, was defined as a factor of the pressure of loading case „cold“(Standard: 0 bar). This has been changed:
  - The figure definition has changed from „Factor“ to „Pressure [bar]“
  - The figure is only effective for loading case „cold“

- **428: Windows screen scaling and position of dialog boxes**

  In conjunction with changing screen scaling and / or changing the number of monitors, it could come to different negative phenomena: dialog boxes were too small or large, or sometimes dialog boxes opened on non-existent screen positions so that the program could not continue.
  Both have been fixed: Registry entries for size and position of the dialog boxes, will be deleted with the program start.

- **429: Project manager recognizing of links (*.LNK) and UNC-paths**

  The project manager is now able to recognize and handle project folders from links (*.lnk). Furthermore paths can be used that are defined according to the „Unifying Naming Convention“.

- **431: Error program start with missing printer**

  If there is no standard printer defined while the program start the program struggled with several error messages and did not start correctly. This has been solved.

- **432: Tolerance of angles between sections**

  Angles between section below 0.25° are not anymore recognized as bends or miters, neither for stress analysis nor for point definition.

Release Notes sisKMR 2020, Version 28.14.0

- **038: Database and File Format**

  With the invention of the main version V28 the program operation and data saving has changed over from the recent Borland DB to SQlite. In addition to the internal calculation and program function, the projects and their data storage were also converted to the new format.

  - Projects of previous sisKMR versions are automatically migrated into the new format when opened.
  - When saving, they get saved in the new DB format.
  - The original project data of older projects are archived in a backup folder within the project folder.
  - Projects of the new format are not backwards compatible with older program versions.

- **315: Point_ID Syntax aligned with Common System**

  The syntax of Point-IDs have been aligned to the syntax of the Common System.

  Example: From P10 – P20 – P30… -> A00050 – A00100 – A00150…

- **361: Error Message Dongle Update**

  The message when starting a version of sisKMR higher than the dongle registration has been adjusted in a more understandable way and the related help document linked.

- **362: Display of Point_IDs in Diagram**

  The diagrams are shown on the abscissa in line meters in the direction of calculation. The point IDs can now be displayed for better orientation.

- **363: More detailed PUR stress output in report**

  The calculation, output and stress analysis of the PUR stresses is now evaluated and printed in detail in accordance with the division of the respective sections. Among other things, this enables the exact location of exceeding stresses within individual sections.

- **364: Activating Option „Miter“**

  The option check box "miter" for small angular deviations could not be activated immediately after defining the angle definition. That is now fixed.

- **365: Analysis of Expansion Cushion Compression**

The percentage utilization of expansion cushion compression has been added as a new analysis. The optional evaluation is defined in the "Bedding Data" dialog. The user can determine whether this test should be carried out and if so, what percentage of compression is permitted for the different types of expansion pads.

- **367: Graphic display axial displacement at tees**

  Under certain circumstances, the wu displacement value specified in the graphic output could be incorrectly on the base pipe of a tee fitting. That has been solved.

- **368: Storage of directory history in project manager**

  The project manager saved the last recent 9 filing structures unreliably. This has been revised and solved.

- **369: Geometry error in line section**

  Under certain circumstances, line sections with horizontal and vertical length = 0 could be defined. This could lead to defective projects, they could no longer be loaded. This has been fixed.

- **372: Output option error tagging**

  In the general settings it was possible to suppress the tagging of exceeding stresses. This option was last of no use. It was therefore removed without replacement.

- **373: Negative Miter angle not allowed**

  Negative miter angles in the general system were rejected as not permitted even as the angle was in allowable range. This has been solved.

- **374: Storage of pre-fabricated tee fittings unreliable**

  When opening or viewing already defined, pre-fabricated tee fittings, it sometimes happened that the "row" displayed did not correspond to the initial definition or was not displayed at all. This could be both in the "general system" and "standard system". However, the wall thickness values correspond correctly to the original definition. This behavior has been corrected, the program now reliably remembers the definition made.

- **375: Nominal Diameter Tables, processing and storage**

  The processing of nominal diameter tables has been revised. Changes to tables are possible, new tables can be created or existing ones can be deleted. The integrity of the database is preserved. Changed nominal diameter tables are saved in the project.

- **376: Material Tables, processing and storage**

The processing of material tables has been revised. Changes to tables are possible, new tables can be created or existing ones can be deleted. The integrity of the database is preserved. Changed material tables are saved in the project.

- **377: Bedding Tables, designation, processing and storage**

  The designation was changed from "bedding sheet" to the bedding table. The processing of bedding tables has been revised. Changes to tables are possible, new tables can be created or existing ones can be deleted. The integrity of the database is preserved. Changed bedding tables are saved in the project.

- **379: Error message, project with long file path**

  In the case of very long file paths with more than 128 characters, the program crashed after the calculation process with the message *"Access violation ... []"*
  This has been fixed and the directory depth increased to 512 characters.

- **380: Output of the line category in sections chapter of the report**

  The line category of the individual sections is now listed in the report under the chapter "Input data".

- **381: Standard diameter tables, differentiation between EN 253 and AGFW FW 401**

  The standard diameter tables have been supplemented by three more. A distinction is now made between EN 253 (insulation thickness normal - reinforced - extra reinforced) and AGFW with the same insulation thicknesses but reinforced steel wall thicknesses DN20 to DN80.

- **382: Error message project selection / open project**

  When the project manager was opened without explicitly selecting a project in the project list by clicking, assuming that the blue highlighted project is selected, the program reported *"The sisKMR database directory ……. \ EditSystem.kmr does not exist!"*
  This has been fixed.

- **384: Reduced friction Factor at Expansion Cushions**

  The default definition of axial friction for pipe sections in expansion cushions has been reduced from 1.0 to 0.6, for calculations according to EN 13941 and AGFW.

- **385: Optimization of Expansion Cushions considering compression rate**

  For the „*Standard Systems*“, the attempt to optimize the expansion cushions concerning the allowable compression rate.

- **386: Updated Dongle Driver in the Setup**

  The Setup includes now an updated version of the dongle driver: Version 8.11.102473.1

- **388: Drop-Down Menu "Help" revised**

  Content and functions of the Help menu have been revised. The most important modification is that the Online-Help is also available as a PDF document.

- **389: Output Report „Reducers“ revised naming**

  The abbreviations and naming for reducers wall thickness have been revised.

- **393: sisPipe, wrong material parameter**

  The material parameters "tensile strength" and "strength parameter" were not correctly adopted for individual materials. In these cases, the two values for the material P 235 GH were still used. This bug has been fixed.

Release Notes sisKMR 2019, Version 27.41.0

- **359: Supplement report, length overview**

  With the new main version V27, the length overview was missing for projects of the "Common System". This has been fixed in version 27.39.

- **371: Error Output Tee fittings**

  In the case of tee fittings calculation results according to EN13941 and AGFW, it could happen that overstressings were mentioned in the error table with the (wrong) figure of 0.0 MPa.
  In projects with tee fittings, only in combination with air bedding and stress analysis acc. to EN13480, S4, it could happen that the program displayed the green light and did not list an entry in the error table in the report, although the S4 verification in the report, chapter T-pieces, reported overstressing (*).
  Either have been fixed.

- **378: Error message: „ Uncertain equation system“**

  Individual calculation models with very slim angle definitions, mostly vertical, reported an error during the calculation:

  "Uncertain equation system. Check your calculation data!"

  This bug has been fixed.

Release Notes sisKMR 2019, Version 27.37.0

- **335: Tee Type "Reinforced", false thickness re-inforcement plate**

  The thickness of the reinforcement plate was taken from the section of basic pipe. In the case of a different pipe wall thickness between section data and tee definition, the value of the reinforcement plate was incorrect. That was fixed. Now the wall thickness of the base pipe of the tee definition also determines the thickness of the reinforcement plate.

- **336: Default Friction Figure Sliding Bearings, modified from 0.5 to 0.3**

  The specified coefficient of friction for bearings was changed from 0.5 to 0.3. This corresponds to the specification of EN13480-3: 2017-12, chapter 13.7. Regardless of this, the user can and must adapt the friction values correctly to the project-specific conditions.

- **338: Tee Header Report rectified (only EN, IT, FR, CN)**

  For the languages English, Italian, French, Chinese, Korean the description header of the abbreviation of the result report for tees has been corrected.

- **339: Reducer Revised**

  A: If nominal sizes were changed section by section and sections across arches were changed, the message "Point type at bends not allowed" opened every time. This hindered fluid data modeling. The message is dropped. Reductions in bends are listed as impermissible in the error log.

  B: Reductions are created implicitly. There is an automatic pre-assignment if the reduction is included in the list of pre-fabricated reductions according to EN10253-2. If this is not possible, "user-defined" reductions are created:

  - Reducer Type User Defined
  - Connection Wall Thickness acc. to the wall thickness of the adjoining sections
  - Wall thickness T3 acc. to the smaller diameter
  - Length acc. to the length of the table of smaller diameter
  - Automatic angle calculation

  The automatic definition takes place when creating or changing the nominal section size.

  C: Reductions Definition prohibits "0" values

  D: Correct naming of the values DN, DN1, T, T1 in the input dialog

- **340: Message and Graphic for too short bend sections**

  If the length of sections of angular deviations (bends) was not long enough for the defined bend radius, the user could not continue at this point until this inconsistency was resolved. The system now allows this. Illegal bend or section definitions are shown up as inadmissible in the error table when the calculation is started by the model check.

- **341: Missing Save request at project changing**

  With the introduction of version 27.32, there was no demand for saving for changed projects. With the action "new project" or "open project" the length changes for the current project were discarded without prompting. This has been fixed. A question box appears again beforehand.

- **342: Error Message „project_errorCDS“**

  The message "project_errorCDS" could appear permanently in projects under some circumstances. It was caused by calling empty error messages. This was intercepted.

- **343: Tee section’s modification related Message**

  If changing all lines sections the user received the message: "*Affected tee sections were not changed*". This has changed. Now all sections will change diameters, no matter whether violating tee diameter rules or not. Validation of such rules takes now place before starting calculation.

- **344: Error Message „invalid floating point operation“**

  If the angle values were very small, both horizontally and vertically, the error message "Invalid Floating Point Operation" occurred. This has been fixed. The limit when the angle between two pipe sections is interpreted as an arc has been increased from 0.00001 to 0.00006.

- **345: Error automatic Point_ID**

  With the introduction of the main version 27.32 the automatic point_ID allocation was revised. As a result, duplicate IDs could be assigned when sections were divided several times. This has been fixed.

- **347: Error Wall Thickness Bend, Modification in Background**

  Deviating from the nominal size table, the wall thickness of bends was automatically and imperceptibly set to the standard value if the wall thickness of the medium pipe was changed. This has changed. Bend wall thicknesses are now retained and only change automatically when the section nominal width is changed.

- **348: Report Output Pressure and Temperature**

  The calculation pressure and calculation temperature were assigned in the title page for the load cases "Cold" and "Warm". This was not correct because these values can be very different for individual sections and are defined on each of them. (Exception standard systems)
  These entries have been removed. They can be taken from the input data in the standard systems and the input section data for general systems.

- **349: Definition of Line Category and Load Cycle in Report**

  The report lacked the description and definition of the line categories and assigned load cycle numbers. This has been added to the description of the calculation bases. This has been added to the input data for standard systems.

- **351: Option „Hoop Stress“ selectable again**

  With the invention of the main version 27, the calculation option of "Hoop Stress" could no longer be selected and was therefore always active by default. This has been restored to the previous state. The option is now activated by default, but can be deactivated by the user.

- **352: Description of Bedding Types in the Report**

  The description of the bedding types was missing in the report. This has been added to the description of the calculation bases.

- **353: sisPipe – Pre-Dimensioning / Sag**

  The default value for permissible deflection / sag for supported pipes for the pre-dimensioning has been changed from 20mm to 5mm according to EN13480.

- **354: General Project Settings in the Report**

  The result report was expanded to include extensive general project and calculation information. These serve the general understanding of the calculation results and the complete documentation under which settings and definitions the results came about.

Release Notes sisKMR 2019, Version 27.32.0

- **280: Extended definition and calculation of reducer fittings**

  The definition and calculation of reducers has been far reaching improved. The input dialog allows all required design specification.

  The calculation and analysis consider the relevant methods, depending on bedding type, underground = (BT 1-2-3-H-N-W) or supported (BT L).

  Underground:

  - A1 – Calculation of allowable stress (EN13941, AGFW, ASME)
  - B1 – Calculation of allowable stress (EN13941, AGFW, ASME)

  Supported Pipework:

  - S1 – Calculation of allowable stress EN13480
  - S4 – Calculation of allowable stress EN13480

- **303: Far reaching modification of calculation and result workflow**

  The procedure of the steps calculation and result have been far reaching improved. The procedure has been divided into the steps:

  - Model Check before Calculation -> Error list of model mistakes
  - Calculating -> Error List when stress exceeds
  - Userdefined Result report, compilation and output

  Model control before calculation start

  Before the actual start of the calculation process was invented a logic control of the pipe model. Inadmissible definitions that may cause wrong results or program crash are getting collected and listed in an error list. At the same time the start of the calculation stops. Finally after any model error is identified, the calculation will start. By double clicking the relevant listing from the error table, the related section will get the actual one in the system description dialog. Maybe not every wrong entry is identified yet, but this is going to be extended.

  Calculation and error table in case of stress exceedance

  In case of any overstressing in the pipe model opens a error table box listing any sections or points that are overstressed in any way. Exceeded values are listed in relevant columns. By double clicking the relevant listing from the error table, the related section will get the actual one in the system description dialog

  User defined result report, compilation and output format

After completed calculation the user has access to the dialog box for defining the content of the final report compilation. The output can be viewed in pre-view mode or as PDF. Any part of the report can also be exported to Excel.

- **306: Language Version French**

  The program got in addition the French language that can be selected with the language settings.

- **307: Automatic material property update in sisPipe**

  The automatic material property update sisPipe has been reworked in order to ensure updating for all user actions.

- **310: Modified message in case of „negative length“ at bends**

  By modeling in the „common system“ the program checks whether bends fit with the adjoining section lengths. If this does not fit, the obstinately message box „negative length from point to point popped up. This has been reworked. The message text is better understandable and the box does not anymore prevent the user addressing the section.

- **311: Control of negative ground water definition**

  A wrong user definition of negative ground water is not anymore allowed.

- **312: Miter, extended stress analysis A1 und B1**

  Following the calculation rules the stress analysis for miters has got in addition the A1 limot state proof. B1 limit state proof has been updated.

- **313: Sliding supports (Point Type GL) lift off as default**

  Sliding support properties (Type GL) are defined now in the way that liftoff is allowed. This matches better with the properties of the support type.

- **314: Common Settings**

  The point numbering has been changed. The increment was set to step 50, the number of digits increased to 5. This increases the number of available syntax-equal point numbers at division and increases the total point ID supply per line to 200.
  The General Settings dialog has been adapted to the new calculation and output procedure.

- **316: Update of selection table**

  The function of updating the display dialog of the selection table has been corrected and works now correctly.

- **317: Section control with arrow key**

In the dialog of the system description in the general system, the control of sections by keyboard arrow keys can be used now.

- Arrow Key Up -> next section
- Arrow Key Down -> previous section

- **319: Key entry foam pads in common system**

  Direct input of expansion cushion definition (e.g. N040, W080) with the keyboard is now possible again.

- **323: Online Help and Manual divided**

  The online help (F1 CHM) and the manual have been divided into two separate documents. The online help, available from F1 key, was renewed and explains only the dialogs whereas the manual is a reference handbook with explanation of backgrounds.

- **325: PDF Viewer FoxitReader replaced by Sumatra PDF**

  The previously supplied PDF viewer FoxitReader © has been replaced by Sumatra PDF ©. This eliminates security vulnerabilities and persistent warning issues when launching the Win10 application.

- **327: Renewed Tool „Single Calculations“ now “sisPipe”**

  The former tool "Single Calculations" has been renamed and the calculation options adapted to the current standards.
  Plastics were removed from the list of materials. The storage of the project data now takes place in a SQLite database.

- **329: Button Tee Definition non-active**

  The buttons of the tee setting was inactive if the corresponding section was activated via the graphics window. That is fixed.

- **334: Dongle Driver updated**

  The driver required to run the dongle has been updated to the latest version 7.102.

Release Notes sisKMR 2017, Version 25.18.0

- **293: Updated Zoom Function of Graphic Window**

  The zoom function of the graphic window using the mouse scroll wheel, has been optimized. This is related as well to zoom-in, starting from the overall view as well as zoom-out, starting from a magnified view.

- **293: Missing wu-Figure at Branches**

  Deactivating the Point-ID also switched off the axial displacement (wu) at branches. This is solved now.

- **295: Dongle Driver Update 7.60**

  GEMALTO run-time Installer 7.60 (Windows 10) is now integrated into setup.

- **296: Input field "Component Clearance" moved**

  The input field „component clearance“ in the dialogue „system description“ of „standard systems“ has been moved right below the input field „installation clearance“.

- **297: Graphic, wrong wu-figure**

  In the graphic at the start point of the utter first section appeared under certain conditions the wv-figure instead the wu-figure. This is solved now.

- **298: Control of Entry Expansion Cushion Thickness = 0**

  The user definition of expansion cushion = 0 has not been checked in the past and caused program crash when performing calculation.

  This is solved now. 0mm entry is forbidden now, the least thickness is 5mm.

- **299: Point Graphic 3d Spring and Reducer**

  The point graphic of the 3-dimensional spring support was completely missing since ever. This is solved now. It has got the same graphic as spring hanger.

  The graphic of reducer was too small and has been enlaged by factor 1.5.

- **300: Function "Goto Section" updated**

The Function „Goto Section“ was faulty since the invention of 3d rotation. Depending on the arrangement of the view and geometric model, it was almost impossible selecting individual sections. This was especially true close to branches.

This is updated and solved now.

- **304: FoxitReader Version 9 in Update**

  The recent FoxitReader Version 6.1.3.0321 had a security risk and is replaced by the version 9.0.0.29935, where this is fixed.

Release Notes sisKMR 2017, Version 25.17.0

- **087/183: Graphic Window 3D-Rotation, Rotation Point**

  The control of the graphic has got a full 3D spatial component. 3D control is now also possible for zoomed views. Rotation centre is under the cursor and not, as previously, at the centre of the pipe model.

- **249: Additional Input and Consideration Axial Compensator**

  The definition of axial compensator has got an additional attribute: friction. With this it is possible to consider different types of axial compensators. This has been invented in order to consider “sleeve compensators”.

- **258: Tee Fittings as separate Objects**

  Tee fittings or nozzles have recently been designed by the definition of three sections. Since now this has become a separate object to be defined at the tee node. For all the definition there is an own input dialogue. Causal dependence between sections and tee are now considered. The user can only define allowable parameter. The possible point conditions have been reduced to allowable ones.

- **261: Improvements CAD-Import**

  Bug fixed: The resulting diameter of branches for small diameters. Solved.

  Bug fixed: Newly created import projects will be saved on drive c:\ [root] when pressing save button. Solved: When saving such projects, it opens the project manager in order to define the path by the user by himself.

  Bug fixed: The project template activates the wrong calculation standard. It activates AGFW, but should ASME & AD-S2. Solved: Template is now equal to standard template

  Modification: Any imported line will appear as DN111. No other diameter allowed. The same is true for cover height, it is defined with 1,11m. With this it is clearly possible to identify imported sections that have not been reworked.

  Modification: Pre-definition of the layer names „Layer1“ and „Layer2“. This corresponds with the name convention of AutoCAD for newly created layers.

  Modification: The import dialogue box remembers the settings within a session. With this, the user is not forced to define any setting again in case the import failed.

  Modification: The setting of log file is default active.

  Modification: The graphic setting is now equal to the standard setting of a new project.

- **262: Multiple Section Attribute Labels**

  Line sections in the common system have got the option to label them with multiple attributes. This appears either with a concatenation of the attributes or in a stacked rectangle orientation. Any label appears only for such sections that are long enough to display the entire text label.

- **263: Length Computing of Routing**

  A new feature allows to compute the xyz length of selected line sections.

  Measuring process:

  - Selection of the sections
  - Evaluation -> Selection Table
  - Cursor navigated on the column headline
  - Length appears under the cursor as a tooltip

- **264: Fix Point Symbol in the Graphic for Natural Fix Point**

  For a better understanding of the start point and end point condition of any common system, the point symbol of natural fix point has changed from a circle to a „x“, as the static consideration is equal to a fix point.

- **267: Search by Point-ID**

  The already existing function of section search in the graphic by „right mouse button – go to section“ will open a search box in case of not having found a section. This search box allows now to keying a point ID of the desired section. Recently this dialogue box allowed only searching by a drop-down list of any section.

- **270: Improved Tee Conditions**

  Recently illegal user definitions have been possible, potentially destroying projects completely.

  - Point name „TT**“ at any section point of main line – former illegal, now impossible
  - Last section of main line, point condition „End of line (tee branch)“ – now impossible
  - Renaming branch line, 1. point with TT** - now impossible
  - Renaming branch line or main line, intermediate points with TT** - now impossible
  - Renaming branch line or main line, end- or start point, auf TG** - now impossible

- **274: New Dongle Driver**

  A new dongle driver (7.4.1) for Windows 10 is integrated within the setup

- **275: The feature „ 2D-system with optimisation of cushion length“ is dropped**

  The feature „2D-system with optimisation of cushion length“ is dropped without replacement from the list of available modelling features.

- **281: Only one Result Report File**

  By now sisKMR created two report files after the calculation process. The compilation of large system reports with section results consumes a lot of time.
  As the user has usually no need for the version with section results, the version without section results has now become standard. The creation of two reports at the same time has been dropped. The user has the possibility to define by “Settings -> Common Settings” whether he wants either the creation “Report with section results” or Report without section results”.
  The report file name is now „sisKMR report0.pdf“ for either variant.
  Instead of two different buttons for opening the reports, there is now only one with the label „Report“. Which kind of report has been created is displayed from a tooltip on the “Report” button.

- **284 Result Report line break error solved**

  A bug of line break in case of long project description is solved.

Release Notes sisKMR 2016, Version 24.9.0

- **232: Multilanguage and Unicode**

  The software has been enabled to include any language. This includes Unicode characters like Chinese, Korean and Cyrillic.

- **233: Exceedance of allowable axial stress with * included**

  If the allowable axial stress was exceeded, this was reported with a red headline warning without any further marking of the occurrence. With this version any occurrence is now mentioned with the sign *

- **234: Coordinate symbol in printout, even as deactivated**

  The coordinate symbol was printed in the printout of the graphic, even as deactivated in the graphic settings. This is fixed.

- **235: Hoop stress calculation activated for all calculation standards**

  The calculation of hoop stress was activated by now only for calculations according to ASME standard. This has changed in the way that this option is activated as standard for any calculation standard.

- **236: Enhanced report for hoop stress**

  The output of the hoop stress calculation has been enhanced:

  - The Point-ID (Pkt) is now mentioned
  - Up to 10 occurring bends are listed under point 2.1.1

- **238: DWG-Import, layer name with white space**

  The CAD-Import is now capable to understand layer names that contain white space. In order to define this, such layer names must be set into apostrophe: „Layer Name“

- **240: Wrong wall thickness printout for extruded thick walled tees**

  The report stated wrong wall thickness for extruded tees at the chapter „Tee Table“. The wall thickness of the main line was printed with the wall thickness of the branch. This is now fixed.

- **242: Renaming of the point-ID prefix for the first line point**

  The automatic renaming of the point-ID prefix did not function for the first point of a section of a line. It remained unchanged. This is now fixed.

- **243: New function: new project with same parameters**

  Now there is a new function to create a new, void project with the same basic properties as the actual one.

  The properties are: Customer, Order number, Title, Description, Pipe Data, Bedding Data.

- **244: Transmittal of endpoint angle to the second one**

  When splitting the utter first section of a line that has defined an angle at its endpoint, the defined angle was assigned to the new first section. This has changed with respect to better handling. The defined angle is now assigned to the second one.

- **245: Dongle driver for setup updated, Windows 10 approval**

  The setup contains now the latest dongle driver version 7.32, April 2015. With this measure the release is qualified for Windows 10, 32 and 64 bit.

- **246: Dialog boxes too small at 125% display setting**

  sisKMR dialog boxes are designed for a display settings of 100%. Those users that adjust their setting to 125% or 150% could not reach some navigation or function buttons of those dialogues that hat fix size. Therefore the remaining fixed size dialogues have changed to dynamic ones, the same as any others already are. Dialog box size and position is stored in the registry.

  After the first startup of the new program version the position and size must be manually adjusted.

- **247: Parallel branch downward at standard system causes swopping of FSE and NFP**

  Branched standard systems with downward branches caused swopping of FSE (free system end) and NFP (natural fix point). This is now fixed.

- **248: Bedding type 4: Section cover height the same for start and endpoint**

  For section definitions with bedding type 4 sisKMR considered a cover height of 0,0m. As cover height is interpolated from the previous section endpoint to the actual endpoint, the friction force was calculated accordingly to the interpolated figures. This is changed. No matter what cover height the previous endpoint is defined, the considered cover height for a section of bedding type 4 is 0,0m.

- **250: Limit of section numbers increased from 300 to 998**

With the version 23, issue 228, the limit of the number of sections per line was defined to 300. This limit is now defined to 998. It is to consider, that the total number of sections for a single project remains anyway at 998.

- **251: Implementation of Chinese and Korean language**

- **253: Country kits for China and Korea**

  For the two countries China and Korea, country packs are created and implemented. The activation of these settings is connected with the language definition. After changing the language settings between European and Asian a new start of sisKMR is required.

- **254: Deflection of supported pipes (Bedding type „L“)**

  For supported pipes between two pipe supports the deflection due to the self weight was neither displayed in the graphic nor printed in the section results of the report.

  This was caused by the fact that the section division was pre-defined with 1. It was impossible to modify this at the dialogue of “additional section data” or elsewhere.

  This is now fixed. Newly created sections with definition of so called „air bedding“ (L) get the division of 2. The dialogue “additional section data” allows the user to modify this property according to his own requirements.

- **255: Message box “Extrapolation of material data” as warning, not anymore error message**

- **257: Modified default value for tee type setting, welded on as default**

  Tees are now again pre-defined with the type „welded on“ as default setting

- **259: Pipe size DN table „nwFrei.db“ in setup included**

  The diameter table „nwFrei.db“ for pipes according to EN10216-2 or EN10217-2 was missing. This is now fixed.

- **260: Error 7 characters Point-ID when dividing sections, despite 6 character limit**

  When dividing sections, the automatic point-ID definition did not work properly in case of missing intermediate number.

  Example: Dividing section from A0001 to A0002

  New intermediate point name: New0001 (7 characters)

  The graphic display cut off the last 7th character so that it was invisible. Loading projects already with such points caused error messages “Point name New000” already exists.

  This is now fixed. New such points where there is no intermediate number available, the prefix is defined with “NN” followed by 4 numbers (NN0001)

Release Notes sisKMR 2015, Version 23.8.0

- **186: Branches downwards in the "standard system"**

  It is now also possible, to design branches downwards within the "standard system". This option exist either for parallel branches as for 45° tee branches.

  This can be reached by entering a minus sign before the figure of the clearance value.

- **191: Wrong reinforcement plate thickness data in the report**

  In the report, section data, the thickness figure of reinforcement plates was printed out with "0". The calculation was anyway correct, the same was true for the description in the section tee fittings. This has been fixed.

- **192: Limited possibility of system selection invented**

  Switching the system selection in the appropriate dialogue is now restricted. This is because uncoordinated switching between different options could cause trouble and mistakes.

  Once a selection is made and a calculation performed, this setting is saved in the project database table (siskmr.db).

  Functionalities:

  - System selection, explicitly saving by pressing button (Disk symbol)
  - after saving the selection buttons are inactive (pale)
  - The option „2D-system with optimization of cushion length“ changes after calculation to "common system"
  - Any "Standard pre-insulated bonded pipe system" can be converted to a "common system" with a unique action into a "common system" by selecting the pull down menu "process->convert to 3D-system “.

- **194: Latest Foxit-Reader version included**

  The setup includes now a newer version (6.1.3.0321) of the PDF-viewer "Foxit-Reader". The setup includes now a step where some settings of the "Foxit-Reader" are saved to the registry in order to grant an optimized view.

- **195: Program crash with tees of similar DN in the AGFW standard remedied**

  By the calculation of tees in accordance with the AGFW standard and similar DN Tee neck/basic line occurred a program crash. This has been fixed.

- **197: Second point label invented**

  The point labeling in the "common system" has been enhanced by a second, alternative point labeling attribute.

  Functionalities:

  - Any point can get a second name with an additional attribute field
  - The point name definition is not restricted in any way, excepted the length is limited to 30 signs.
  - The graphic window can be adjusted to display point labels in three different options:

    a: no point name at all
    b: only point name
    c: mixed (if point-name empty, then point-ID)
    d: only point-ID

  - The assignment between point-ID and point-name in the result report is only printed in the section data
  - Any previous rules and requirements concerning the point-ID remain unchanged

- **198: Display of cover height at the end point instead of section middle**

  The display of the cover height in the graphics was in the middle of each section, even this was not quite correct. The cover height is a property of the end point. Now this is displayed after the point name or point-ID in brackets and only if activated. The precision has been reduced to one post decimal position.

- **199: Modification of foampad calculation according to AGFW**

  In calculation formular of the bedding reaction of foam pads according to AGFW FW 401-10, chapter 4.4.2.1.6, section 4, was a mistake calculating the average foampad thickness (d4,average) and has been fixed in accordance with the draft "Entwurf Änderung 1, Juni 2014". As a result, the foampad utilisation has increased.

- **200: Coloured program display faulty**

  Running sisKMR in the „classic windows“ without visual effects caused ill-favoured display of the application window. This has been fixed.

- **201: Spelling mistake "Kommission"(German only) fixed**

- **202: Faulty line break in report fixed**

- **203: Adoption point conditions**

  The modification and adoption of point conditions has been supplemented. Additional functionalities are:

  - the rest of the line
  - the selected sections

- **205: DWG bzw. DXF-export switches decimal delimiter from comma to point**

  Some temporary versions of sisKMR2014 switched the decimal delimiter between comma and point. This has been fixed.

- **206: CAD graphic export including more information**

  The CAD graphic export (DWG and DXF) includes now more details, exported in separate layers. Any layer name start with "sisKMR_"

- **207: CAD graphic import (DWG)**

  Since now it is possible to import entire pipework geometries from CAD into sisKMR.

  Functionalities and requirements:
  - Any import creates a new project
  - Concatenated lines and polylines are recognized
  - Only dedicated defined layers are recognized
  - The geometry has to fulfil the requirements and rules of sisKMR
  - Geometrien are considered 3-dimensional
  - Deviation angles until 3° are recognized as mitres
  - The basic setting consider the longest line chain to be the main line
  - Distinguishing the main line and branches is possible by defining different layers
  - End point tolerances can be defined

- **208/209: Chinese language pack in Foxit Reader and Unicode activated**

- **210: Correction of graphic display bedding type 4**

  Sections defined with "bedding type 4" in the common system have been faulty displayed with "bedding type 2". This has been fixed.

- **211/212/213/214/215: Correction of concepts and words**

  211: Renaming "deviation" to "mitre"
  212: Renaming "E-Muffe" to "Einmalkompensator" and "E-Sleeve" to "One-time compensator"
  213: Single calculations, renaming "weldless" to "seamless"

214: Renaming "reinforcement disk" to "reinforcement plate"

- **216: Stripping off dialogue and function "Nominal width tables"**

  The function "Nominal width tables" (Dialogue Tools-> Nominal width tables) was since long without any functionality. Therefore this dialogue has been stripped off.

- **217: Button for point condition at the "common system"**

  At the "common system" point conditions can be defined. These are displayed on the right side of the point category. In order to modify such definitions, this definitions have become clickable buttons.

- **219: Single calculations; Error calculating C2-proof (only English)**

  Faulty result comparing outer casing diameter vs. steel pipe diameter by function "Global instability: pipe diameter <> casing diameter". This has been fixed.

- **221: Displaying the local pre-stressing at the first section of a line fixed**

  The display of a local pre-stressing in the "common System" is basically valid for the end point. Anyway for the utter first section of any line, the pre-stressing figure was displayed at the beginning. This has been fixed.

- **222: Result report, header redesigned**

  The result report header has been re-designed and has now a clear structure. Outdated content has been deleted.

- **225: Adjustable analysis and appraisal of allowable axial stress**

  The user can now choose with a check box whether or not he wants to accept an exceeding of the young's modulus of pipe material. Depending on how decided, the report will consider the exceedance with a red headline or not. In any case, an exceeding axial stress will cause a black written remark.

  Functionalities:
  - The previous message box, "Warning, exceeding allowable axial stress!" does not open anymore.
  - The setting of exceeding permission will be saved with each project.
  - The standard setting of the check box is "not activated"
  - The decision whether to allow exceeding axial stress limit or not is in full charge of the user. sisKMR does not perform any further control.

- **226: Diameter table selection redesigned**

  The selection and definition of diameter tables has been redesigned. The selection takes place from an overview table. The labelling and display of the selected table names is now in an understandable way. New diameter tables have been included.

- **228: Limited number of sections for branch lines**

  The limitation for branch lines was formerly 200. This limitation has been increased to 300. The limit will be monitored by the program. The user will receive a waning when exceeding this number.

- **229: Correction faulty tee wall thickness in standard systems according to EN10253-2**

  Under certain combinations DN1 / DN2 it could appear, that the wall thickness of the nozzle was defined with the same wall thickness as the DN1. This has been fixed.

Release Notes sisKMR 2014, Version 22.4.0

- **169: Section data adoption for tee sections**

  The adoption of modified section data to multiple sections has been blocked to tee sections. This has been changed. Modifications are now accepted for tee sections for such attributes that do not affect steel pipe dimensions. Changing attributes of steel pipe diameter, nominal diameter ans wall thickness will anymore not be transferred to tee sections.

- **170: Section mass calculation**

  The automatic calculation of the section mass has been overworked. Thereby may the calculated section mass increase slightly.

- **173: Section selection**

  As a complete new feature it is now possible to select and process arbitrary sections in the common system. sisKMR will save the selected sections in a separate database table. This table can be exported in the CSV format in order to process it with Excel, e.g length sum reports. Furthermore it is possible to transfer section modifications to the selected sections.

  Selection variants:

  - Section selection piece by piece
  - Selection of several sections in a row by defining start section and end section
  - Selection of all sections of a line
  - Selection of all sections of the project
  - Deselecting of single sections

- **174: Correction of display and report faults**

  In total 15 faults of dialogue display and report file spelling mistakes have been fixed.

- **175: Correction of the allowable hoop stress**

  The allowable hoop stress in the result report has changed (decreased). Since now the allowable material stress at the defined calculation temperature is divided by the safety factor of 1.5.

- **176: Renewed dialogue „System description“ for the Common system**

  The dialogue „Common System“ and the sub-dialogue „Additional section data“ have been renewed. Some attributes of the main dialogue have been moved to the sub-dialogue other attributes have been added to the main dialogue.

  Modifications dialogue „System description“:

  - Attribute „Accuracy (Division)“ dropped
  - Attribute „Welding seam at the end“ dropped

- Attribute „Installation temperature“ added
- Attribute „Line category“ added
- Attribute group „Nominal width dependent data “ added
- Section number display beside the button „Next section“ dropped
- Buttons „Show section“ und „Show section graphic“ moved to bottom left
- Attribute option „Deviation at the end point“ permanent displayed, pale when inactive

Modifications dialogue „Additional section data“:

- Attribute „Welding seam at the end“ added
- Attribute „Accuracy (division)“ added
- Dialogue colour the same as the main dialogue

- **177: Angle more than 15° forbidden in the standard system „Deviation without expansion cushion“**

  For this calculation the mitre angle is limited to a maximum of 15°.

- **178: Additional attribute displayable „Bedding type“ in the graphic window**

  The graphic window is now capable to display the bedding type a sections.

- **179: Automatic point name „new“ extended with numbers**

  As soon as sisKMR could not generate point numbers according to the syntax, they were named with „new“. These will now get a number extension. Example: New002 – New003…

- **180: Tee table check while project loading**

  While loading a project sisKMR checks the consistence of the tee table. This could cause error messages, even if there was nothing wrong. This has been fixed.

- **181: Renewed structure of the result report**

  The structure of the result report has been renewed.

  Modifications in detail:

  Some results, listed in chapter 2, have been moved (2.2 Detailed stress analysis….) and (2.4. Stress analysis for tees). A new main chapter „Component results“ has been added.

  The numbering of such components is fix, no matter if these parts are mentioned or not. Components that are not content of the model will not be mentioned.

  The order of the new chapter will be:

  4. Bend-Table
  5. Tee-Table
  6. Reducer-Table
  7. Support-Table
  8. Fix point-Table
  9. Compensator-Table

Separate point at the lowest level at the end of the report:

„Detailed stress analysis at the location with the max. composite stress in straights or bends“

- **182: Faulty modification of the first section while changing projects**

  Since the version 21.6.3 it could occur that the length of the current section was transferred to the first section of a new opened project

  This has been fixed.

- **184: Project closing without saving**

  So far it was not made sure that the user was unfailing asked whether to save th eproject or not. This has been fixed

- **187: Revised angular compensator input dialogue**

  The input of some figures for angular compensators required additional calculations of the user. This is now automatically done by the dialogue considering the input data Ca, Cr and CP as well as the internal pressure of the section.

  Distinguishing the two types KAG1 and KAG2 has changed to only one type, KAG. The angle entry is now only in degree, the variant “Rad” does not anymore exist.

- **188: Dongle update Export/Import from the help menu**

  The function to export or import the dongle update file has been integrated into the help menu.

- **189: Project template updated**

  The project templates have been updated for some details. The „common system“ has a modified bend wall thickness for the default diameter DN150, 4.0mm instead of 4.5mm. The default bedding type has changed from „0“ to „3“.

  Casing pipe temperature calculation data: Heat conductivity of soil from 1.0 to 1.2 W/mK
  Clearance between supply and return pipe changed from 0.2m to 0.25m

Release Notes sisKMR 2013, Version 21.6.3

- **155: Fixed or dynamic scaling of the result diagram**

  Result diagrams allow now to being adjusted by the Y-axis. As a standard setting remains a fixed Y-scale.

  How to handle the graphic navigation is now mentioned in a line at the lower part of the graphic window.

- **164: Point numbering in the template**

  The project template has been adjusted to the new point numbering with four digits.

- **165: Faulty attribute saving when switching sections by the graphic window**

  Attribute modifications of sections in the „common system“ have not been taken over if the user switched to another section by using the graphic window and its function „go to section“. This is now fixed.

- **166: Project manager deletes project title and project name**

  Saving a project under a different name and changing the folder in the dialogue of the project manager caused erasing this two information. This is now fixed.

- **167: Additional consistency check between section table and tee table**

  While opening existing projects sisKMR performs now an automatic consistence check between the attributes of the section table and the tee table. In case of differences, the values of the section table are written into the tee table.

- **171: Wrong TauPUR-figures in section data at EN13941 und AGFW**

  The newly invented section attribute “Allowable PUR shear stress” has been defined wrong by calculations according to EN13941 or AGFW:
  EN13941: 0.3 instead of 0.0266
  AGFW: 0.3 instead of 0.4
  Modifications of this attribute in the dialogue „additional section data“ could not be transferred to other sections. This is now fixed.

- **172: Wrong tee data in the section data of the result report**

  In the result report at the section of the tees it could occur, that the dimension attributes were printed out wrong. This is now fixed.

Release Notes sisKMR 2013, Version 21.5.0

- **111 Tee DB table expanded**

  The tee database table “t-stueck.db” has been modified to ensure the full integrity at any time, even if deleting branches. All tee attributes are now being updated at any time. This allows since now to delete branches without any workaround. Due to the re-structuring it is not anymore possible, to open projects of version 21 with older **sisKMR** program versions.

- **112 New button for „New Branch“**

  The existing method to create a new branch line in the common system has been replaced by a single button. Hence the dialogue “system description” hasn’t anymore to be directed to the utter first section to create a new branch.

- **114 Attribute takeover in the „Common System“ again with single mouse click**

  The takeover of modified section attributes takes now again immediately effect by a single click onto one of the buttons „Previous Section“ or “Next Section”.

  An exception of this rule is the takeover of modified expansion cushion thickness: This requires pressing the enter key.

- **115 PUR Shear load section wise definable, reduced TauPUR for EN13941**

  The allowable PUR foam shear load in the „Common System“ can now be defined section wise. Also the calculation and the result figures are now section wise reported in the result file.

  For projects, calculated according to EN13941, the allowable shear load has been reduced to the figure of 0,027N/mm². This measure adopts the requirements of EN 13941. Anyhow the user can define individual sections with different allowable figures (e.g. 0,04N/mm²) in accordance with the standard. For details please refer to EN13941 and EN253:

  - EN13941: 6.4.4.2 Limit state for shear stress
  - EN253: 4.5.5.2 Shear strength

- **116 Reporting of exceeding axial load at reducers**

  The report of exceeding axial loads at reducers has been improved. Concerned reducers are now marked with a „*“ and the point name is also reported.

- **117 Handling and adjustment of the graphic window modified and improved**

  The handling and adjustment of the graphic window has largely been redesigned. Attribute display works now with buttons, arranged left and top of the window. The context menue (right mouse button) contains anymore three functions as there are „Zoom Window“, „Fit View“ and „Go to Section“

  The adjustment of previous and new functions works with buttons, designed with self-explaining symbols and „pop-up texts“:

  - Display Points
  - Display Point Names
  - Display expansion cushion
  - Display bending line
  - Display Wu-values
  - Display pre-stressing
  - Display pre-heating
  - Display coordinate cross

  Additional Section Attributes:

  - Section length [m]
  - Nominal Diameter DN
  - Diameter and wall thickness (carrier pipe)
  - Diameter casing pipe
  - Cover height
  - No Section attributes

- **118 Extended control of project names for not allowed signs**

  When saving projects, sisKMR performs an extended control of the project name if there are not allowed signs in it. If there are not allowed signs in the project name, the program revokes saving and displays a message box. Not allowed signs are: „ \ / : * “ < > | .

- **119, 120 Enhanced graphic plot, coloured highlighting of sections**

  The coloured highlighting of sections has been improved. This concerns displaying single, selected sections as well as displaying pre-heated sections.

- **122 Double printout of diagrams solved**

  Diagrams have been printed twice in general. This has been fixed.

- **123 Verification of pipe material**

  Selected pipe materials are now verified if they are in accordance with the selected calculation standard. In case of failed verification, the user gets an appropriate message.

- **126 Transfer of modified section attributes to all sections „to the beginning of the line“**

  The previous possibilities to transfer modified attributes to other sections have been extended with the new function „to the beginning of the line“. With this modifications can be transferred to all sections within a line that are in a row before the actual one.

- **127 Report and listing of locations with exceeding allowable axial load**

  The report and listing of sections with exceeding allowable axial loads in the result report has been improved. The previous, cryptic definition of the location has been changed in naming section from “point name” to “point name”.

  Example old:
  < 1 1 0
  1 1 17>

  Example new:
  A020 - A030
  C060 - C070 etc.

- **128 „Show section“ as standard setting**

  The already invented coloured highlighting of the actual section in the „Common System“ has now become a standard setting.

- **129 Automatic calculation and definition of allowable axial load**

  The allowable axial load is now automatically calculated. By now this was standard pre-defined with a figure of 190N/mm². Now this is done automatically in dependence of pipe material, calculation standard and maximum operation temperature. By changing one of the determining attributes this figure is re-calculated and newly adjusted. Anyway, if necessary, the user can define this figure manually by himself. By doing this, the automatism gets disabled.

- **130 DXF Export of the geometric model**

  The entire geometric model can be exported to a DXF file. The exported objects are provided with all attribute data. For more details please refer to the documentation

- **131 Maximum number of sections, message**

  The maximum number of sections is limited to 998 pcs. By reaching or exceeding this limit the user gets now an appropriate message.

- **132 Result report standard system, bended pipe, wrong unit**

  In the result report of standard systems with bended pipe was the deflection angle defined with meter [m] instead of degree [°]. This is now fixed.

- **133 and 134: Deviation at the end point, result report fixed**

  In the result report were sections with „deviation at the end point“ reported as if they were bends. This is now fixed.

- **135 Updated DB-tables and templates**

  All Company diameter tables have been either confirmed or updated. Project templates have been updated. Actual information about the company diameter tables are listed in the diameter information table.

- **136 Revised list of pipe materials, indexing**

  Any not FE pipe materials have been deleted from the list of available materials. To guarantee the compatibility with older projects, the deleted materials are shipped in an archive file and can be re-installed on the users own risk.
  Material definitions with the index number from 1 to 100 are now exclusive reserved for sisKMR system materials. User defined materials shall have index numbers above 100.

- **138 Disabled graphic function „go to section“ in Standard Systems**

  The function „go to section“ in the graphic window is now disabled as long as the system definition is a „Standard System“. Using this function could cause program instability.

- **140 Project manager with enlarged dialogue field for project path**

  The project manager dialogue for entry or selection of the file system path has been enlarged to enable reading and selecting long filing structures.

- **143: Tee variant „Welded on FEM“**

  A new tee variant, „Welded on FEM“ calculation has been invented. This calculation variant isn’t based anymore on the old calculation method, defined by equations and formulas of the standards but based on results of a set of FEM calculations.
  By selecting this tee type calculation the wall thickness of the main line as well as nozzle become pre-defined and cannot be modified. For further details please refer to the manual.

- **145: Program crash with additional, multiple loading cases fixed**

  Calculations with additional, multiple loading cases could cause program crash. This is fixed.

- **147: Bend radius DN150, project template updated**

  The bend radius for new projects has been modified to the correct figure

- **148: Material P235GH, definition according to the selected standard**

  The material P235GH is twice available in different variants that distinguish between the calculation standard or bedding type:

  Mat50 = P235GH_EN253 Underground soil, EN13941, AGFW FW 401, ASME&AD-S2
  Mat70 = P235GH_EN10217 Supported, EN13480

- **149: Project compatibility between version 21 and lower**

  With the program version 21, several modifications of the project data structure have taken effect. These modifications don't allow anymore project compatibility to older program versions.
  Opening and working with older projects with the actual version is still possible without any problem. Any modification of such projects updates them to the data structure of version 21 what makes them incompatible for older sisKMR versions.
  The modification of the data structure concern graphic settings, user defined and system material definitions and the administration of tees/branches.

- **150: Single calculation, error message at tee calculation internal pressure**

  At tee calculations for internal pressure sometimes program error messages could occur. This is now fixed.

- **151: Single calculations: Calculations according to EN 13941, 25 bar allowed**

  For the proof of internal pressure according to EN13941 25 bar is now allowed.
  Testing condition old: p< 25bar
  Testing condition new: p<=25bar

Release Notes sisKMR 2012, Version 20.3.2

(Patch)

- **Missing diameter tables were added:**
  - nwFinpolS1.db
  - nwFinpolS2.db
  - nwFinpolW1.db
  - nwFinpolW2.db
  - nwinpal1.db
  - nwinpal2.db
  - nwinpal3.db

- **Function „divide section“ modifies entire length**

  Dividing sections into two automatically determines the length of the other second section. This was only correct if either the cursor in the other section of the dialog box was clicked or the dialogue was closed by pressing the OK button. If the box was closed only by entering a value and immediately closed by pressing the enter key, the length of the other section was not correctly identified and applied. This could change the overall length of the geometry. This is now fixed. The confirmation must explicitly done by pressing the OK button with the mouse cursor.

- **Modification of tee type changes wall thickness**

  Modifications of the tee type set the wall thickness of sections back to the default wall thickness according to the appropriate diameter table. This is now fixed. The according sections will not anymore getting modified. The only exception from this rule is the selection of the „thick walled extruded tee“ – this selection defines at any time special wall thicknesses.

- **Description text line break in the result file**

  Longer descriptions have not been wrapped. This is now fixed. The automatic wrapping doesn’t consider syllables or words. The user is able to define own line breaks by entering the enter key.

Release Notes sisKMR 2012, Version 20.2.0

- **PDF result file**

  The file size of the result file has been reduced by 40%. The PDF document attributes have partial been changed (old)/new:

Edit document:	(not allowed)/allowed
Document structure:	(not allowed)/not allowed
Copy content:	(not allowed)/allowed
Access to content:	(not allowed)/allowed
Extract pages:	(not allowed)/not allowed
Create comments:	(not allowed)/allowed
Complete forms:	(not allowed)/allowed
Digital signing:	(not allowed)/allowed
Create new pages:	(not allowed)/not allowed

- **Graphic settings, default settings**

  New projects have now default setting. This is done with the file (siskmr_graphic.setts) in the template folder.

- **Graphic settings, wu-value and bending line separate adjustable**

  Either graphic attributes, wu-value and bending line, can be set independent from each other.

  The option „display wu-value“ activates also automatically the display of bending line. The activation/deactivation of the “wu-values” works now with a single user action. Formerly the bending line had to be activated separately and in advance.

  As a basic principle remains that the calculation has to take place first.

  The context menu „display wu-value“ remain grey if not available.

- **Graphic settings, section length and diameter**

  As a new feature added is the possibility to display the section length attribute. This is optional possible, but only one attribute can be displayed: Either line length or diameter.

  The display of the diameter has been improved. Now this attribute is to be found at each section. When printing the attributes they remain where they are displayed.

- **Graphic function „go to section“ improved**

The function of the context menu “go to section” recognizes line sections under the cursor easily. Any recognized line section gets highlight color and becomes displayed in the main dialogue „System description“.

- **New graphic function “show section” and “show section graphic” (common system)**

  With the new option box in the dialogue “System description“, the actual line section can be highlighted permanently in red color. Sections outside the actual view are not displayed. There is no automatic modification of the zoom factor or the view range.

  Clicking the new button „show graphic“ fits the actual section into the graphic window. This function helps „finding“ specific sections in larger geometries.

- **Default setting „Update section mass“**

  In the common system, dialogue section data, submenu additional section data can be defined if modifications of diameter data shall update the section mass or not. The former pop-up has been dropped.

- **Diameter tables, servicing, update and storage**

  The provided diameter tables have been updated and the number of them has been reduced. From now on and in future only those diameter tables will be in the default set, which last update is not longer ago than one year. Vendor specific diameter tables will exclusively maintained by the companies themselves. Nearby the diameter select box is now an info button arranged. Clicking this opens a table that gives detailed information about any standard diameter table.

  All diameter tables that aren’t up to date are being delivered in a separate sub-folder named „unsupported“. They are not accessible in the dialogues with the standard setting. If the user wants to use them anyway, he has to copy or move those from the “unsupported” folder into the “nwtab” folder.

  The confirmed, actual diameter tables are located in:
  \programme\gef\sisKMR\data_sisKMR\NWTAB\nw*.db

  The outdated diameter tables are located in:
  \programme\gef\sisKMR\data_sisKMR\NWTAB\unsupported\nw*.db

  The diameter tables being used for a project are now saved additionally in the project folder. To guarantee the compatibility to earlier versions, sisKMR checks project while loading and provides them with the correct diameter table.

- **Project template**

  Project templates consist out of several files newly stored in a separate folder, located here:

  \program files\gef\sisKMR\data_sisKMR\template\system\

  Any setting or modification done by the user will be used for any new generated project. Any modification made in the templates will be overwritten wit a new installation, setup or update.

- **New help functions**

  The drop down menu „Help“ provides now the following new functions:

  - Manual: opens the manual PDF file
  - Release Notes: opens the actual release notes of the version
  - License Condition: opens the actual license conditions of the version

- **Bug fixing: Changing diameter table in the common system, dialogue „Pipe data“**

  Changing the diameter table in the above mentioned dialogue hasn’t been recognized for modifications of the nominal diameter. This works now properly. The content of alternative defined diameter tables takes only effect until line sections’ diameter has changed.

- **Gradient [%] replaced by Angle [°] in the System description of Common system**

  Vertical sections could formerly be defined either with the definition of „Height difference“ or with its „Gradient[%]“. The definition of the gradient hasn’t proven practicable and has therefore been replaced by the definition of the vertical angle [°].

- **Standard working directory**

  sisKMR setup defines the standard working directory at {userappdata}\GEF\sisKMR.

  (Formerly: {Program Files}\GEF\sisKMR\Bin angeboten.)

  This takes effect in that way that the project manager dialogue offers this location as standard project folder.

- **New calculation method for reinforced extruded tees**

  A new calculation method has been invented for special sort of reinforced tees that comply with definitions of wall thickness and shape. This calculation method doesn’t use the formulas coming from the standards but are based on the result of many FEM calculations.

  Selecting this calculation method for one or more tees disables modifications of the pre-defined wall thickness. Further details are to be found in the manual.

- **Single calculations, fittings according to EN10253-2**

  The selection of fittings such like bends, tees and reducers is now defined according to the current EN10253-2.

Release Notes sisKMR 2011, Version 19.2.0

- **Splitting perpendicular line section**

  Splitting of perpendicular line sections in the common system worked so far only for such sections, running upwards into calculation direction. Now this works also for such sections, running downwards.

- **Drop-down list „Bedding type“ enlarged**

  The drop-down list „Bedding type“ of the common system, tab „system description“ was enlarged up to 9 entries. With this are now all contained entries easily selectable without using the scroll bar. (Especially the so far hidden entry „Bedding type 0“)

- **PDF output as secured document**

  All result reports and graphic output are coming now as secured PDF files what guaranties them to be genuine.

- **Greek text font in graphic output adjusted**

  The graphic output by external PDF printers and with German language setting created Greek text characters. This is fixed now.

- **Database editor**

  In the drop-down menu „Tools“ entry „Edit table…“ can be started a editor to open, read or modify arbitrary sisKMR tables of the file type *.db and *.dbf.

- **Automatic accuracy (division) at function „divide section“**

  The automatic calculation of the accuracy of line sections being splitted works now properly. Formerly splitted sections took over the division value of the unsplitted section. That caused sometimes extreme high division values on short sections.

- **Graphic module: News and Modification**

  a. Scrolling view (pan): pressing left mouse button: Cursor changes to hand symbol and scrolls the graphic. (default action)

  b. Zoom In/Out with mouse wheel: scrolling inwards -> zoom in; scrolling outwards-> zoom out.

  c. Zoom rectangle area: This function is now accessible in the context menu, first entry. After selecting pressing left mouse button and dragging the desired area while keeping left mouse button pressed. Releasing the button effects view update. The action is a ‚one shot‘ action. That means, after execution the default pan function is again active.

d. The maximum possible zoom scale has increased from 50 to 200. With this it is easier to view large geometries.

- **Menu/Button Bar :**
  a. Zoom shifter removed, only the zoom factor is displayed as text
  b. Distortion factor/Turning angle shifter with their switches new assorted.
  c. New switch „Save settings“: By pressing this button all the graphic popup settings are saved in a file *„siskmr_graphic.setts“* , in the folder *„$UserTempDir\siskmr“*. All 9 settings, beginning from „Display points“, to „Display coordinate plane” are saved. By saving the entire project to disk, the SETTS file is being copied to the project folder and will be read and used by opening the project the next time. As long as the project isn't saved, the SETTS file remains only in the folder *„$UserTempDir\siskmr“,* and will be overwritten by opening the next project.

- **File/Project manager**
  a. **Alteration of the title „File…“ to „Project…“** As any sisKMR calculation is represented by a folder and not a single file, all dialogues that open or save calculations have been modified from „File…“ to „Project…“.
  b. **Selection working directory:** In the drop down list „working directory“ remain now the last 10 used working directories and can be selected. This may avoid long searching for frequently used directories. During a session all used working directories will be added to the list (if not already contained). The entries are saved in the file „siskmr_dirlist.xml“ directory *„$UserTempDir\siskmr“.* This guaranties that the entries are memorized for later sessions. The number of entries is limited to 10. New entries are added at the end of the list. Old entries are deleted at index number 2. The first entry is reserved for the working directory..
  c. **Project manager focus:** By opening the project manager out of a loaded project the focus points to the actual project. All projects are sorted by the first column by default.
  d. **Date sorting** (last column) sorts now considering date values and not anymore number values.

- **Result file/protocol: PUR foam and casing**

  Each result line of this section has got a separate headline that identifies each pipe section with its line and section number as well as start point and end point. With this it's much easier to find and identify pipe sections.

- **Diameter tables:**
  a. Modified dimension tables for Brugg company
  b. Dimension tables added KWH Pipe: nwkwh1.db, nwkwh2.db, nwkwh3.db

- **Material data of the EN 13941:2010-12**

  Since December 2010 the EN 13941:2010-12 is in effect. The new sisKMR release 2011 covers the modifications of the EN 13941:2010-12 and considers the modified minimum

yield strength for single calculations. To fulfill these requirements in sisKMR, a new material data set has been invented. This one is based on the material P 235 GH (P 235 TR-1 and P 235 TR-2) with modified data according to the new standard. The major difference of the EN 13941:2010-12 is the increasing of the allowable minimum yield strength R_e of P 235 GH, P 235 TR-1 and P 235 TR-2 within the temperature range 50 °C ≤ T ≤ 140 °C. These modifications have already been announced with the EN 253:2009-07 (section 4.2).

There is no influence to the fatigue stress analysis at the low cycle fatigue (Limit state B1), as the therefore defined maximum stress range is being calculated according to proved fatigue test figures (SN-curve) and not by the material properties of the steel.

Effects take place for the calculations of internal pressure prove of piping components (limit state A1) and for the stepwise plastic deformation (limit state A2). In these cases the modified material properties have even positive effect in relation to the required wall thickness.

- **Database update**

  All database tables of the type "db " are classified Paradox Level 7 now.

- **Project path length**

  The string length of the complete storage path for sisKMR projects is limited to 70 characters until Version 18*.* (2010).

  From version 19.2.* (2011) the project path length for new created projects is unlimited. However, older projects will not display the project information in the project manager.

Release Notes sisKMR 2010, Version 18.2.5

- **Compatibility of calculation projects**

  Until further notice all sisKMR calculation projects remain compatible from sisKMR 2003 to sisKMR 2010.

- **New calculation module "Single calculations"**

  With this version sisKMR comes with a new separate module allows calculating single proves. This proves are independent from grid geometry. With the first release this includes:

  Dimensioning Limit State A1:

  - Straight pipe under internal over pressure
  - Pipe bend under internal over pressure
  - Tee fitting under internal over pressure
  - Reducer under internal over pressure
  - Straight pipe under external over pressure

  Dimensioning Limit State A2:

  - Stepwise plastic deformation in fixed area

  Dimensioning Limit State C1:

  - Local buckling or folding

  Dimensioning Limit State C2:

  - Global instability (flexural buckling and loss of equilibrium)

  Pre-dimensioning of distance between support points:

  - Pre-dimensioning of pipe supporter distance based on different requirements

- **New hardware lock (dongle) for licensing**

  After more than 18 years the hardware lock has reached the end of its lifetime and the vendor support is announced to end in near future.

  With the sisKMR version 18.*.* it operates only by using the new dongle variant type HASP HLMAX. These dongles are only available as USB type, either workstation or network license. Operating higher main versions requires a dongle update with a license file. (starting with version 19.*.*) Intermediate Versions within a main version can be run without any action.The dongle exchange for subscribers is **free of charge.**

  For protection purposes of proprietorship each dongle contains in future the name of the licensee. This is visible in the settings dialogue *settings-> common settings* as well as in all result documents.

- **Pipe fitting tables according to EN10253-2**

  For selecting tee pieces of branched systems in the sisKMR main module the underlying tables are now modified according to EN10253-2. If there is the need to calculate tees according to DIN2615, it is possible to overwrite the wall thickness figures in the dialogue.

- **Tee calculation method branched systems, type “reinforced” according to EN13941 and AGFW FW401**

  For selected the calculation methods EN13941 and AGFW FW401 are reinforced tees considered.

  As the publication of the new EN13941 was late, the calculation of this reinforced tees is in the meantime done with the stress intensification factors of AGFW FW401.

- **Casing pipe temperature**

  The adjusted allowable casing pipe temperature is now considered for all sections of calculation and the results are compared against the set value.

- **Diameter tables**

  New diameter tables were included from ZPUM (Poland) and Ecoline (Italy). Diameter tables of Isoplus were updated.

Release Notes sisKMR 2008, Version 17.2.4

- **sisKMR hang-ups in network operation**

  Under certain conditions occurred hang-ups of sisKMR after a calculation and the call of Foxit Reader. This problem is solved.

- **Order of calculations in „File-open“ dialogue**

  Order of calculations in the dialogue „File Open“ column „Project Directory“ is now „case insensitive“. That means the sorting is done independent of small or capital letters.

- **Date in „File-open“ dialogue**

  Network stored calculations were likely to overwrite date simple by opening the „File Open“ dialogue what made search inconvenient. This bug is fixed.

- **Re-opening a calculation**

  If a project is being re-opened that was already calculated now the three result buttons are activated.

- **Section mass calculation**

  The old section mass calculation resulted little too high values. The new calculation approach considers a PUF specific gravity of 60kg/m³ according to EN 253. This means, that some calculated weights are lighter than the figures delivered by pipe manufactures.

- **New Diameter Tables**

  The diameter tables of German Pipe Company have been updated.

Release Notes sisKMR 2006

- **sisKMR common**

  The internal structure of sisKMR program is completely modernised to make in future planned developments possible.

- **sisKMR project description**

  The sisKMR calculation can be described in the register sheet „Task and calculation type“ with a text of max. 1000 characters. This text-description is appearing on the first page of the result report.

- **sisKMR common system – System description**

  a. Automatic point naming available (settings in configuration).

  b. With input of point names (max. 6 characters) now capital letters and small letters can be used. sisKMR takes these as two different characters.

  c. The „accuracy (division)“, necessary for the calculation of underground systems, is available as an automatic generation depending to section-length/bedding-type (settings in configuration. Experienced users can deactivate this setting in configuration).

  d. New button „divide section“. With this button is possible to divide the actual section in two parts. Section length of one new part is calculated automatically after the input of the section length of other part.

- **sisKMR pre-insulated bonded pipe system (pbp) - calculation**

  In register sheet „pipe data“ can be set whether the system is pbp or not. This activates or deactivates the calculation of the PUR-foam stresses.

- **sisKMR result report**

  a. sisKMR works together with Acrobat Reader since version 6 to version 7 (actual version).

  b. There is a hint (with large red letters) on first page of result report when there are occurring any exceeded stress limits.

  c. The result report is available as interactive pdf-file. With using the contents structure of the Acrobat Reader the user is able to view directly the desired chapter of results.

  d. In the table of the stress proof for fatigue the next point names are listed.

  e. In the table for compensator results the angles of rotation are given in degrees.

  f. The result report from the detailed stress analysis is available as pdf-file.

- **sisKMR graphic**

a. In the sisKMR graphic the reducers of medium pipe are displayed with symbol of triangle.

b. Axial displacements of T-piece main pipe or free system ends are displayed.

- **sisKMR manual**

  Extension of the manual and the online help with the new improvements and developments of sisKMR.

- **sisKMR online help**

  The sisKMR online help is developed to a modern HTML-help.

Release Notes sisKMR 2004

- **sisKMR stress analysis with ASME and AD-S2**

  ASME + AD-S2 until sisKMR 2003:

  Until last years version 2003 the choice of line category respectively full load cycles was not possible with using ASME + AD-S2. With standard branch systems the full load cycle value was set fix to 2500, with all other systems also common systems this value was 200. Even there were different factors, that were fixed with a conservative value. Because there were plausible results looking back with today´s experience in using the standard combination ASME + AD-S2 and other standard results are unsatisfied still, GEF decided to carry on and develop further the ASME + AD-S2 proof. This decision also necessary working with the new pipe materials of the European standardization.

  ASME + AD-S2 from sisKMR 2004 on:

  Now dependence of the allowable stress range from the value of load cycles (new possibility of selection of line category, well known from AGFW FW 401 and EN 13941) and also dependence from the material values tensile strength and minimum upper yield strength (more see manual chap. “principles of static calculation). Also all former fixed factors now are being calculated with AD-S2 exactly. GEF recommends in using the ASME + AD-S2 to set the following default values of load cycles depending on the line category:

  · major pipeline - 100 full load cycles

  · main pipeline - 250 full load cycles

  · house service connection - 2500 full load cycles

  For the user to get an overview of results from the different stress proofs, GEF Ingenieur AG executed some example calculations. Please find enclosed the table named “sisKMR -test – comparison of utilization in per cent”. This table shows the utilization of different calculated standard situations. If desired, GEF will send the sisKMR calculation free of charge via e-mail.

- **New sisKMR stress analysis with ASME and AD2000-S2**

  Brand new stress analysis in dependence of the allowable stress range from the value of load cycles (new possibility of selection of line category) and also dependence from the material value tensile strength (more see manual chap. “principles of static calculation).

- **sisKMR extension of the stress analysis and new point type „welding seam“**

  Automatic proof of fatigue of neighboured welding seams to bend, T-piece, segment cut, diameter changes, wall thickness changes etc.. Additional to this the user is able to choose the new point type “welding seam” for manual check of welding seams.

- **sisKMR material data tables**

a. Extension with many new materials for medium pipe from new European standards EN 10216-2 and EN 10217-2.

b. The steel types St 37.0 and St 52.0, which were mostly designed in district heating so far are not existing any more in the new European standard for higher temperatures.

c. The steel St 35.8 is still existing with new name (new name: P235GH) and could substitute the St 37.0 (new name: P235TR1), because both materials have the same thermal dependence of material values. The former technical conditions of delivery are retired by the DIN. The DIN 1626 was valid until 02/2004, the DIN 1629 until 07/2003.

d. So the new sisKMR 2004 default material is for all standards P235GH (former name: St 35.8). For seamless steel pipes the materials could be chosen from EN 10216-2, for welded pipes from EN 10217-2.

a. According information of the AGFW their standard AGFW FW 401, which is only valid for the steel types St 37.0 and St 52.0, is being renewed at the moment and will be finished in the end of 2004. The improvements of this standard will be taken after appearance in sisKMR 2005 immediately.

- **sisKMR calculation of casing temperature**

  The calculation of the casing temperature is renewed completely. Many values are editable and could be changed by the user.

  Attention:

  With the new calculation of the casing temperature the result could be higher temperatures than in older sisKMR version. This is caused e.g. by the influence of the second pipe (return pipe). The default values for this calculation are explained in the manual and should not be changed carelessly!

- **sisKMR result printout**

  The result printout is available in sisKMR 2004 as txt-file and pdf-file (selection in menu settings/output options). From sisKMR Version 2005 on only the pdf-file will be developed.

- **sisKMR graphic**

  The values of the axial displacement at the bends are displayable in the sisKMR graphic. Also the values of length and thickness of the expansion cushions could be displayed in the graphic. The sisKMR graphic could be saved as pdf-file directly.

- **sisKMR diagraph**

  Also the sisKMR could be saved as pdf-file directly.

- **sisKMR manual**

  Extension of the manual and the online help with the new improvements and developments of sisKMR.

Release Notes sisKMR 2003

- **European standard EN 13941 (March 2003)**

  Taking up the new European standard EN 13941 „design and installation of pre-insulated bonded pipe systems for district heating“ in sisKMR.

- **European standard EN 13480 (May 2002)**

  Taking up the new European standard EN 13480 „metallic industrial piping“ in sisKMR. This proof for above ground pipe systems is corresponding in most parts with the FDBR-guideline former used in sisKMR.

- **Combined systems (combined under and above ground systems)**

  With common systems there is now the possibility of choice between different standards separate for under and above ground sections.

- **sisKMR standard system „Reduction“**

  New calculation from free system beginning (FSA) to free system end (FSE), whereby the position of the natural fix point NFP automatically will be determined. If the reducer is set in area of high axial stresses, the user will be warned by a massage and also with a hint in the results report.

- **Pre-dimensioning system “One-time compensator”**

  New possibility of choice between the standards:

  · EN 13941

  · AGFW FW 410

  · ASME + AD-S2

- **Pre-dimensioning system “Admissible laying length”**

  New possibility of choice between the standards:

  · EN 13941

  · AGFW FW 410

  · ASME + AD-S2

- **Extension of point names**

  In common systems there is now the possibility to take 6 characters.

- **Point category - dialogue**

  Possibility to take on changes of one point category (analogous to “further section data”) for

  - point category of the actual section
  - all point categories of the rest of the line
  - all point categories of the whole line
  - all point categories of the whole system

- **sisKMR result printout**
  - load case number on each page of result printout
  - showing longer file names (up to 13 characters)

- **sisKMR graphic**

  The xyz coordinate system will rotate together with the view (in 3-dimensional view).

- **sisKMR material databases**

  Extension with many new material databases.

- **sisKMR nominal width tables**

  Complete revision of existing and extension with many new nominal width tables.

- **File save**

  With saving the file manually or automatically the bending lines in the graphic are not disappearing any more.