

USER DOCUMENTATION

FOR

NEW FEATURES OF EDITPIPE 9.0

November 11, 2016

1 What's New

Please find below a brief description of the new features implemented in Editpipe and Editpipe Manager. Detailed explanations follow. Some of the new features are connected to new features of PIPESTRESS or POSTR. Please consult the documentation of PIPESTRESS and POSTR.

1.1 Editpipe Manager

- ✓ Select and copy text in reports windows.
- ✓ View spf files.
- ✓ New table FORCES in stress report generation

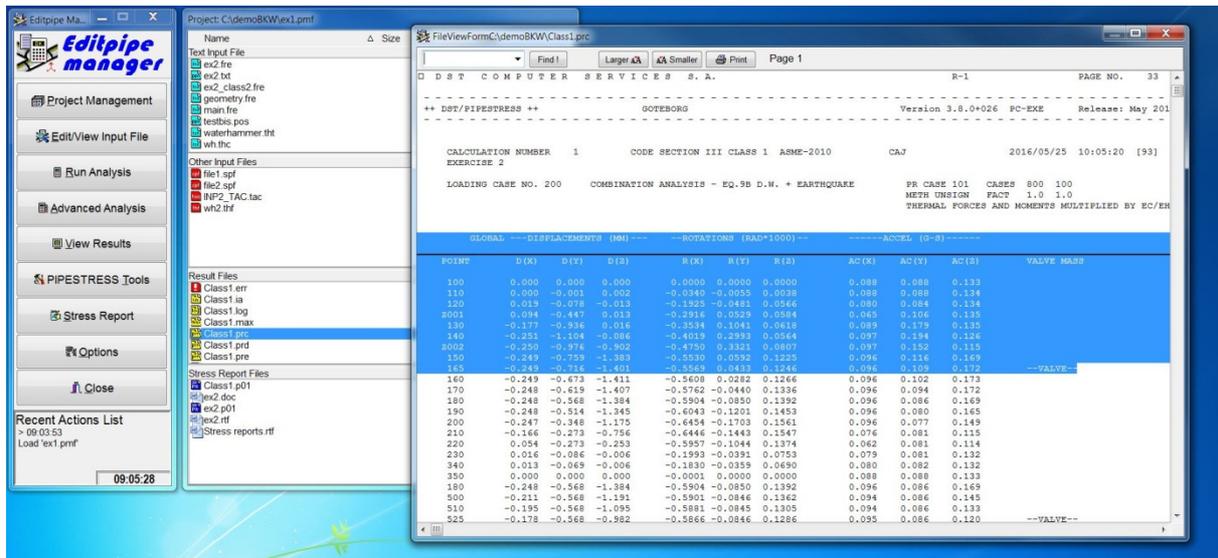
1.2 Editpipe

- ✓ Better handling of include file mechanism.
- ✓ TRAN/FLUD card editor updated.
- ✓ New data lists for transient definition.
- ✓ Display of thermal transient analysis results.
- ✓ Some cards can be edited directly from the data lists.
- ✓ Easy free editor preserves text format.
- ✓ Text delimiters are no longer necessary in cards editors for fields TI and AL.
- ✓ Possibility to copy/paste data in most tables (e.g. in SPEC or TRAN editors).
- ✓ Save icon is disabled if the file has not been modified since last save.
- ✓ The text editor handles three types of files: free files for standard PIPESTRESS input, poststr file for POSTR input and text files. Some functionalities, such as highlighting of text, depend on this type.
- ✓ New wizard "Quick POSTR" helps you creating the file for POSTR input in the same way as "Quick Pipe". It allows define the input data for the new flange calculation feature added to POSTR.
- ✓ The piping view has been modified and uses now the OpenGL engine for a better 3D visualization of the piping.
- ✓ It's now possible to define the geometry of BEAM cross sections so that they can be rendered in 3D.
- ✓ Export/Import options to/from a configuration file.

2 Changes in Editpipe Manager

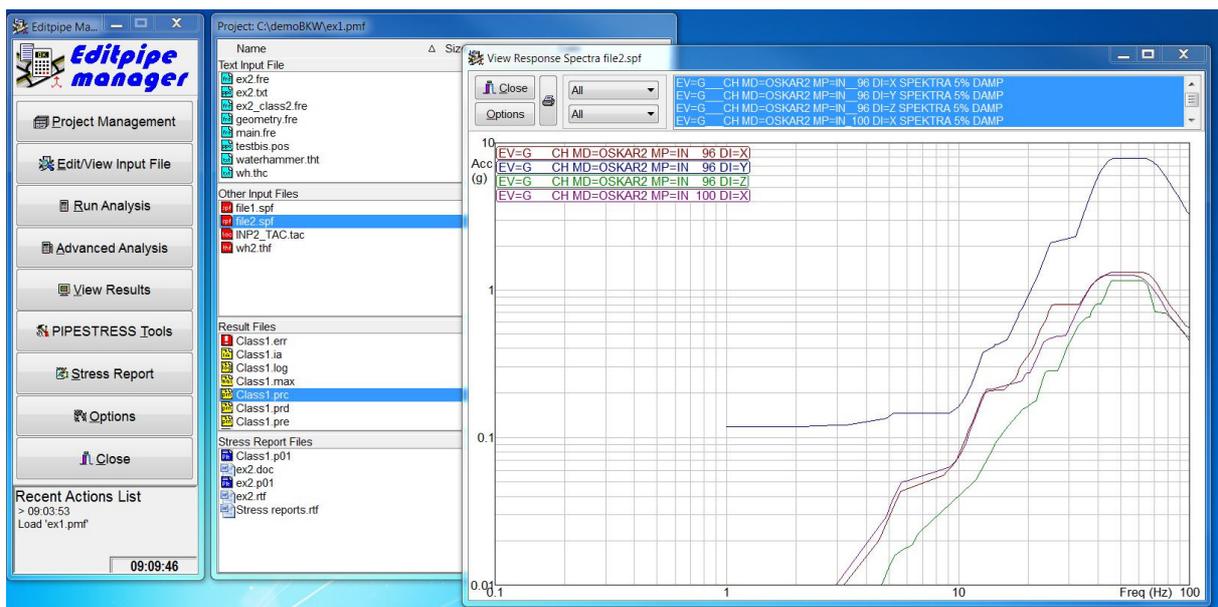
2.1 Select and copy text in reports windows

Open a report (e.g. by double-clicking on it). Use the mouse to select text and then copy it to the clipboard by pressing **ctrl + c**. You can now paste it wherever you need.



2.2 View spf files

Double click on a .spf file. A window opens and displays plots of the spectra. This window is the same as the one displayed when selecting "Options → Response Spectra..." in Editpipe.



2.3 New table FORCES in stress report generation

The key word `$$FORCES$$` can be used in your template document to instruct the stress report generation tool to add the data of cards FORC and MOMT to the report. The fields PT, CA, TI, FX, FY, FZ, MX, MY and MZ can be displayed.

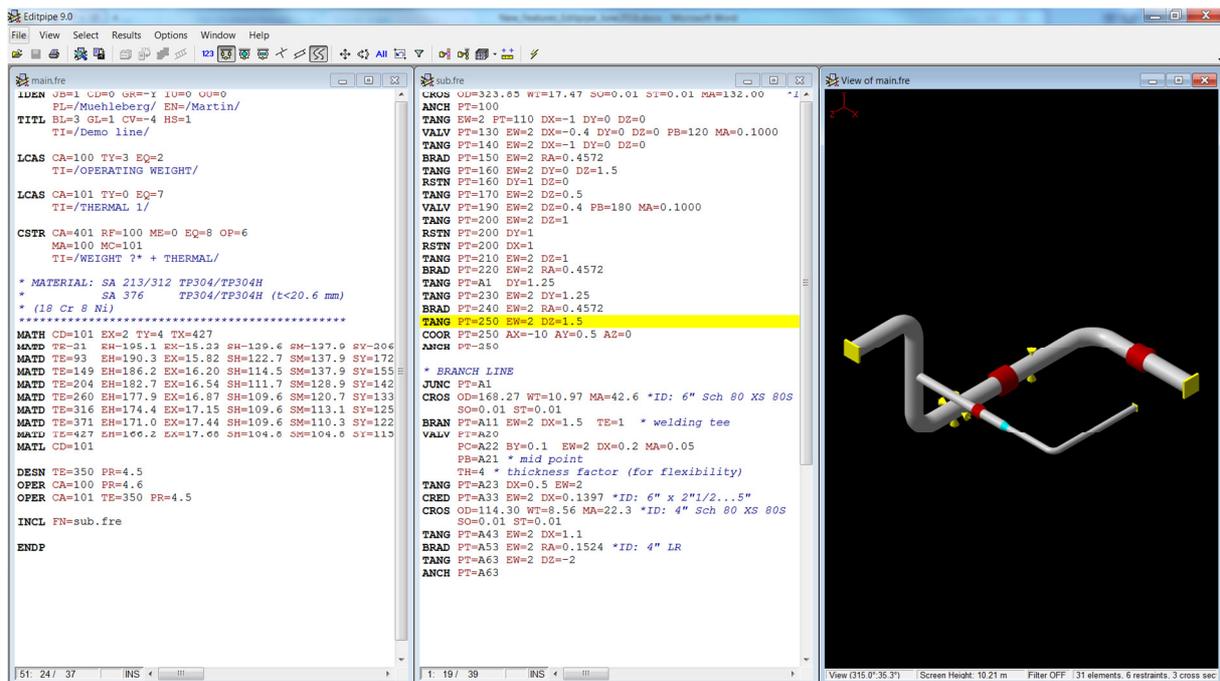
3 Changes in Editpipe

3.1 Better handling of include file mechanism

Let's assume that there is a main file (main.fre) containing an INCL card referencing a sub-file (sub.fre).

Double clicking on the INCL card in the text window of the main file will open a new text window displaying the contents of the sub-file.

Imagine that the view window of the main file is open and that you select an element (or a support) whose definition is in the sub-file. Before it would have shown the card INCL in the text view of the main file. Now it will open the sub-file window and highlight the correct line.



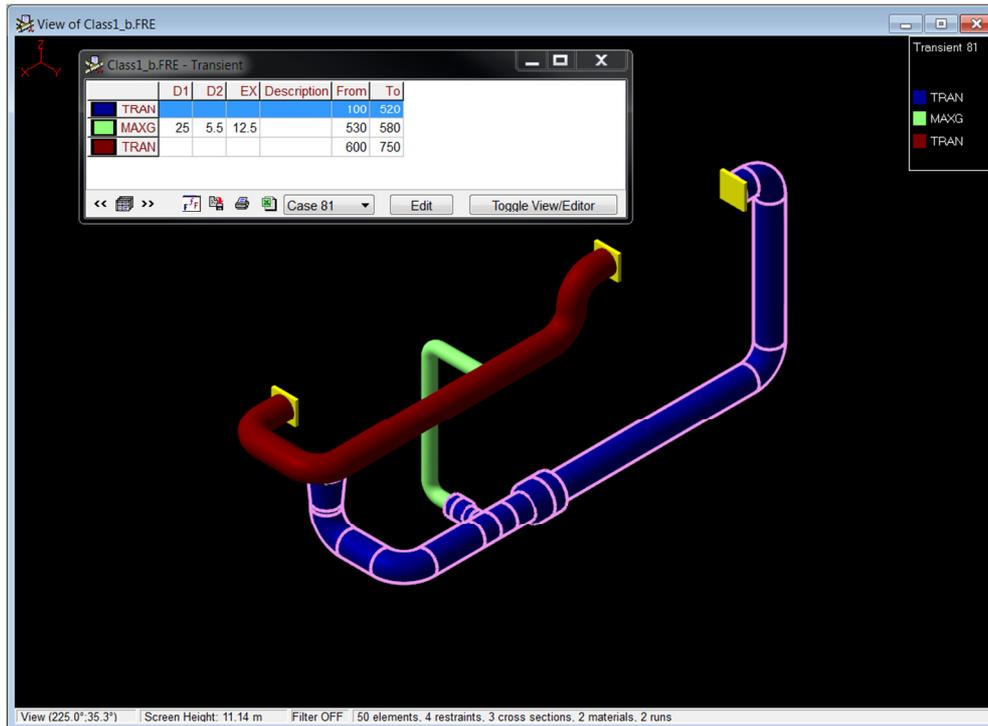
The program keeps a link between the main file and the sub-file. This link is activated when an interaction is done between the main and the sub-file, e.g. when you double click on the INCL card or when you select an element defined in the sub-file. As long as the link is active, every command associated with the view (e.g. plot the view, load results or highest stresses, or display data lists) will be executed for the main file even if triggered from the text window of the sub-file. For example pressing F6 from the text window of the sub-file will display the whole model. The links dies out when you close the text window of the main file.

3.2 TRAN/FLUD card editor updated

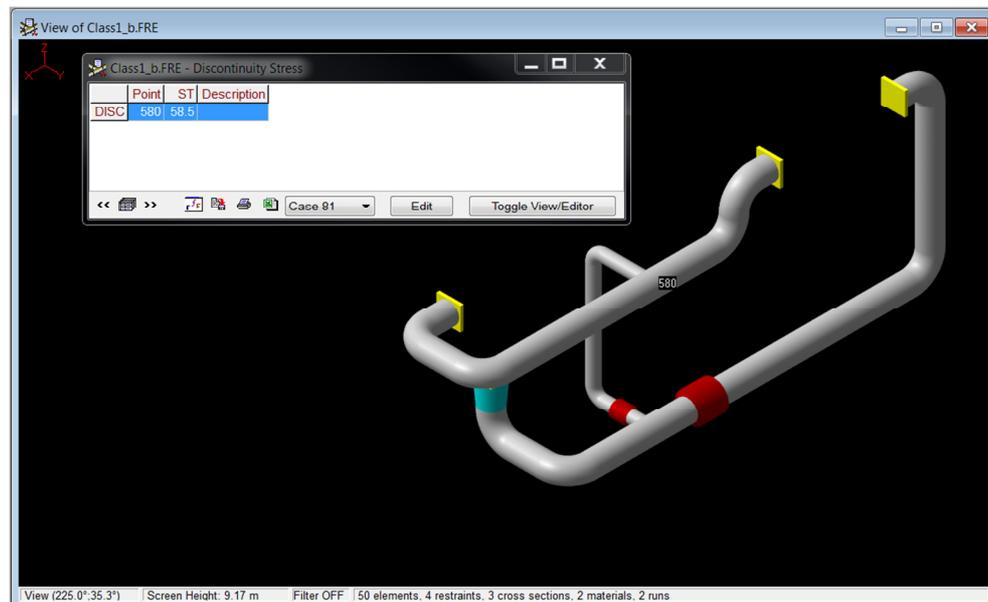
You can edit the new fields XT and DT (see PIPESTRESS documentation).

3.3 New data lists for transient definition

Two data lists have been added: transients and discontinuities. The thermal transients data list shows TRAN, FLUD and MAXG cards, and on which part of the piping they are applied.

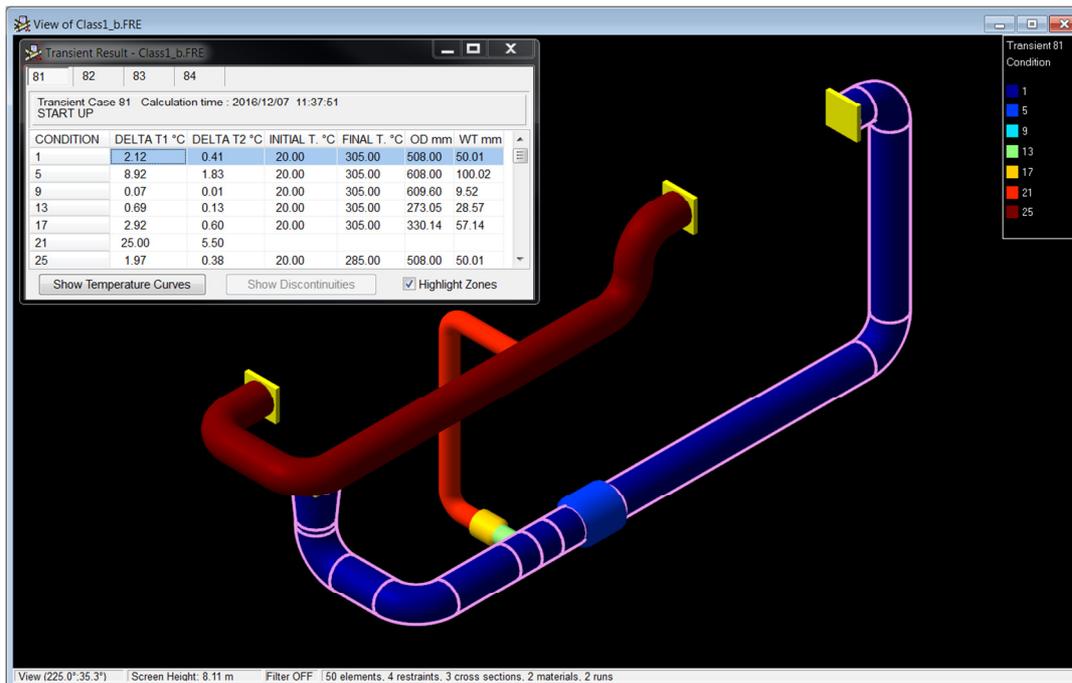


The discontinuities data list shows the DISC cards and the node where they apply.



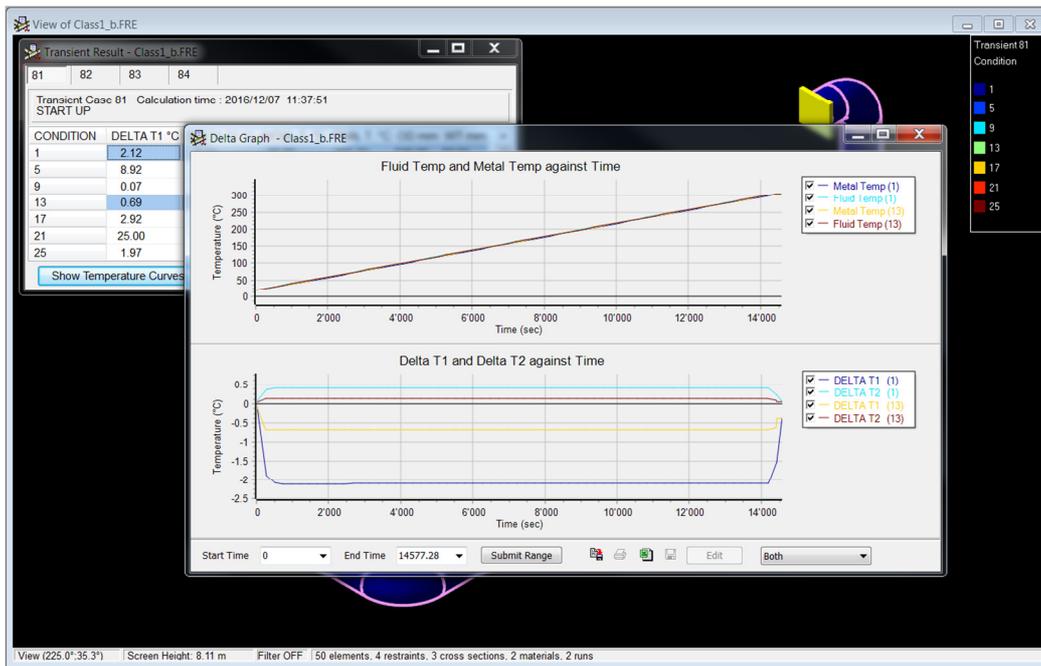
3.4 Display of transient calculation results

You can visualize the result of transient calculation done by PIPESTRESS by selecting "Results → Load Transient Result". The program extracts the data from the reports I-4 in .pri file and F-5 in .prf file. The results are displayed case by case in a table listing the different conditions calculated by PIPESTRESS. The view shows where the conditions are applied. You can select several rows by clicking and pressing the ctrl key or select a range of rows by clicking and pressing the shift key.



Clicking on "Show Temperature Curves" will open a popup window with one graph with Fluid and Metal Temperature, and one graph with Delta T1 and Delta T2, for the selected conditions. The following actions are available:

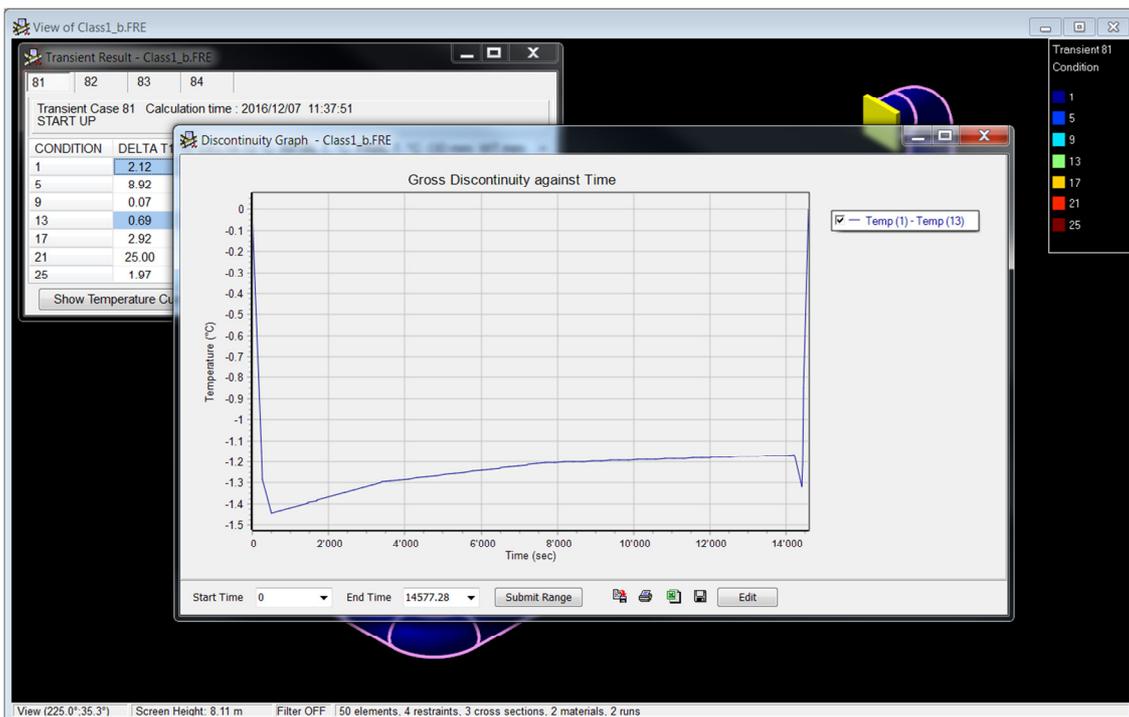
- Hide/Show curves with the checkbox in the legend.
- Select a different range of time with the input fields.
- Zoom to a portion of the graph with the mouse (draw a rectangle on the zone you want to zoom to). Zoom out by drawing a rectangle with the second corner to the left of the first corner.
- Export the data to a .csv file or directly to excel with the appropriate icon buttons.



If you select only one graph (with the dropdown list on the bottom right) you can also

- Print the graph with the printer icon.
- Save the graph (as JPEG, Bitmap, ...) with the disk icon.
- Edit the graph with the "Edit" button.

From the table of conditions you can also access to a graph showing the gross discontinuities (if two or more rows are selected). The window provides the same functionalities than the one for the temperature curves.

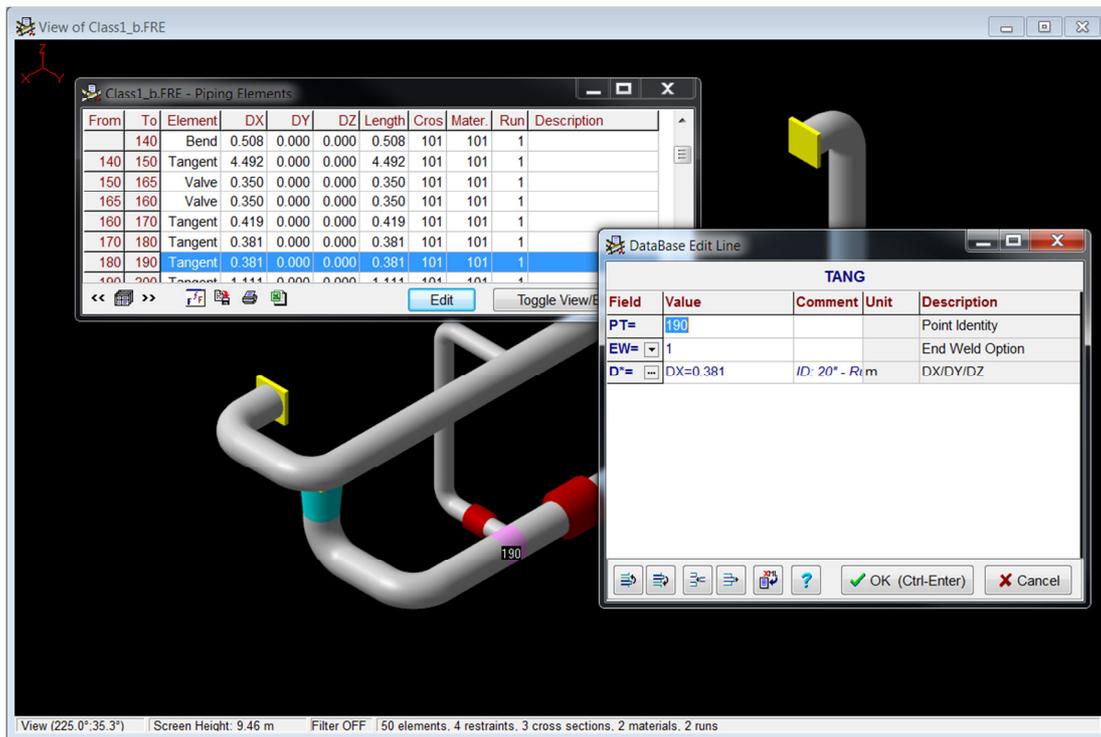


3.5 Some cards can be edited directly from the data lists

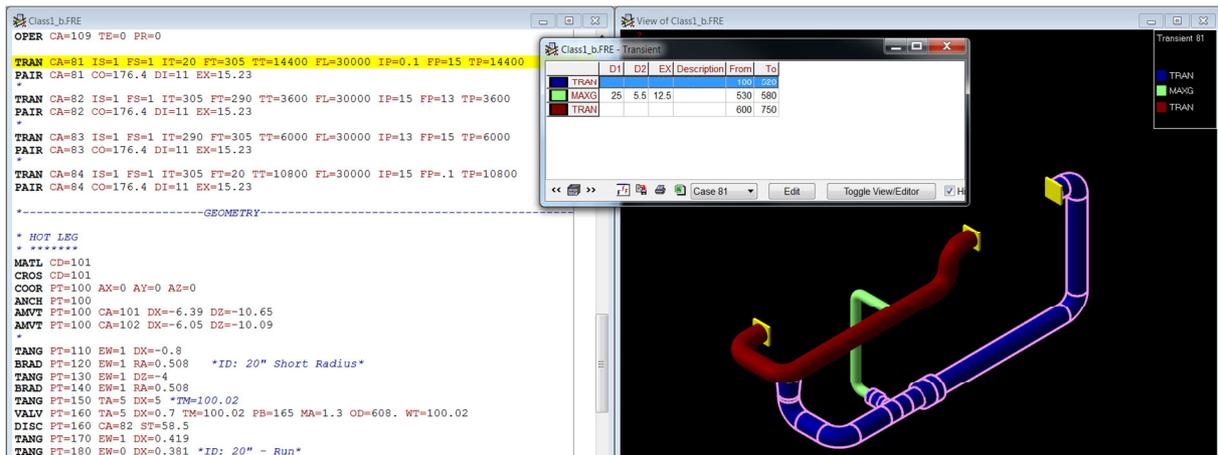
The following data lists provide a direct edition of the card defining the data.

- ✓ Lumped Mass
- ✓ Piping Elements
- ✓ Cross Sections
- ✓ Operating Condition
- ✓ Applied Force and Moments
- ✓ Wind and Snow Loads
- ✓ Stratification
- ✓ Piping Supports
- ✓ Supports Movements
- ✓ Soil Parameters
- ✓ Transient
- ✓ Discontinuity Stress

Once the data list is open you can select a row and click on the "Edit" button (or double click on the line), and the corresponding card editor will pop up. You can edit the data, and the text and the view will be updated.



You can also access to the line where the card is defined by clicking on the "Toggle View/Editor" button. This mechanism is designed to support include files.



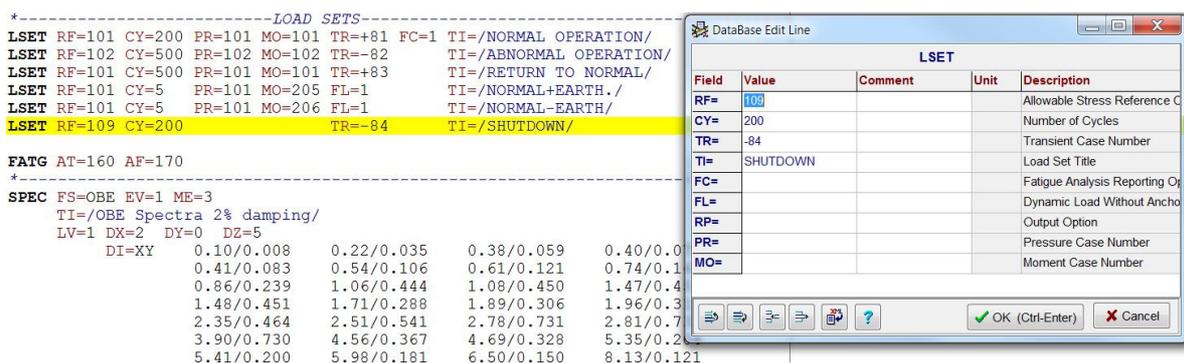
Please mind that you cannot change the position of the cards in the text with this mechanism. That means for example that changing the field PT of an AMVT card from the data list is not a good idea, since an AMVT card must follow the restraint card it applies to. Please remark also that some lists are grouped by case. For those lists you can change the case with the dropdown list on the left of the "Edit" button.

3.6 Easy free editor preserves text format

When using the generic card editor the format of the text is preserved, as long as the ordering of the fields is not changed and that no new comments are added. In particular the text stay the same if no change is done to the card.

3.7 Text delimiters are no longer necessary in cards editors for fields TI and AL

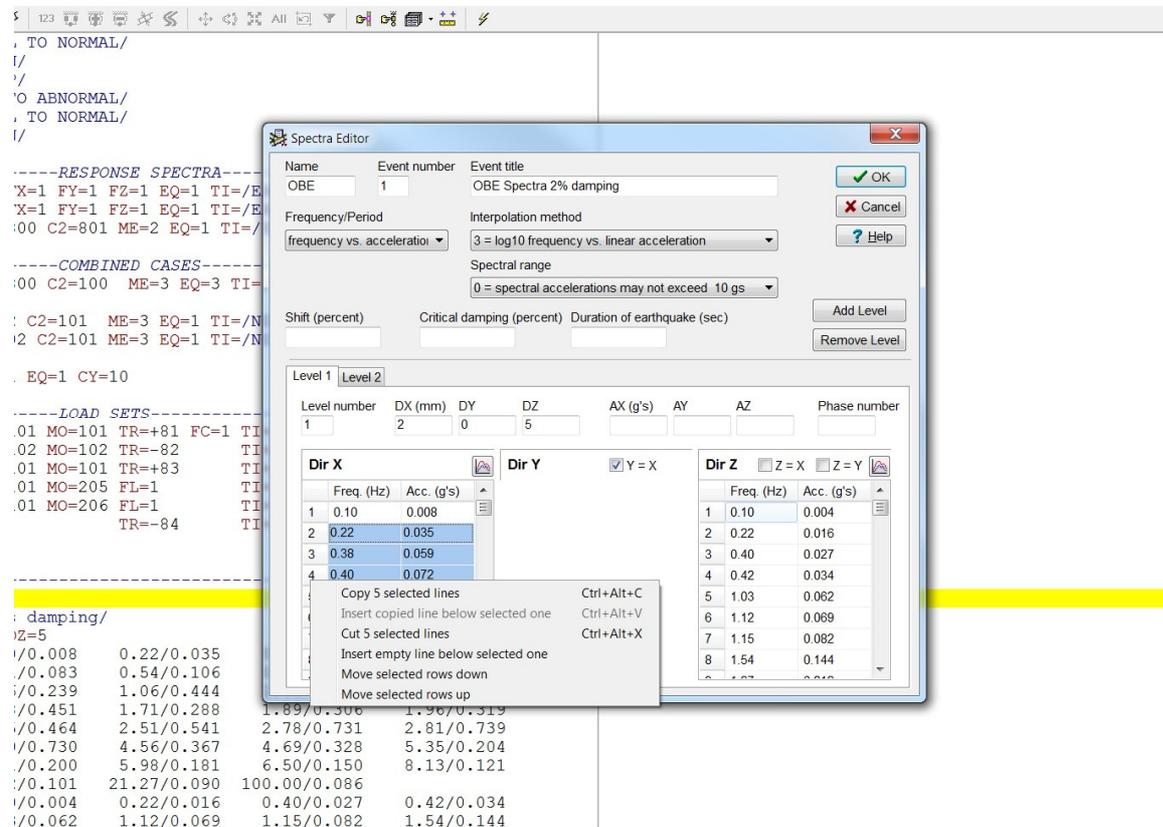
The program takes care of adding the delimiter for the escaped strings for label and titles.



3.8 Possibility to copy/paste data in most tables (e.g. in SPEC or TRAN editors)

In most editing tables you can select a range of rows: click on the first row, then click on the last row while pressing the shift key. Right clicking on the first column of the table displays a popup menu that allows you to copy the selected rows. You can then paste them in the same table or in another one (by right clicking on the place you want to paste it and selecting the

appropriate action). You can copy data from Excel and paste them by the same mean (when it makes sense). The popup menu also offers you to move or delete lines.



The screenshot shows the Editpipe 9.0 interface. In the background, a text editor window displays seismic data parameters such as `TO NORMAL/`, `ABNORMAL/`, `RESPONSE SPECTRA`, `COMBINED CASES`, and `LOAD SETS`. Overlaid on this is the **Spectra Editor** dialog box. The dialog contains the following fields and options:

- Name:** OBE
- Event number:** 1
- Event title:** OBE Spectra 2% damping
- Frequency/Period:** frequency vs. acceleration
- Interpolation method:** 3 = log10 frequency vs. linear acceleration
- Spectral range:** 0 = spectral accelerations may not exceed 10 gs
- Shift (percent):** [empty]
- Critical damping (percent):** [empty]
- Duration of earthquake (sec):** [empty]
- Buttons:** Ok, Cancel, Help, Add Level, Remove Level

Below these fields are two tables for **Level 1** and **Level 2**. The **Level 1** table has columns: Level number, DX (mm), DY, DZ, AX (g's), AY, AZ, and Phase number. The **Dir X**, **Dir Y**, and **Dir Z** sub-tables have columns: Freq. (Hz) and Acc. (g's). A context menu is open over the **Dir X** table, showing the following options:

- Copy 5 selected lines (Ctrl+Alt+C)
- Insert copied line below selected one (Ctrl+Alt+V)
- Cut 5 selected lines (Ctrl+Alt+X)
- Insert empty line below selected one
- Move selected rows down
- Move selected rows up

3.9 The text editor handles three types of files

When opening a file, the program determines its type with the file extension. You can override this choice by right-clicking on the editor and choose "Switch file type" in the popup menu. The highlighting and the cards available in Easyfree depends on this file type. The view and other related functionalities (results, selection, etc.) are disabled for non-free files.

```

CA=98 TI=/NORMAL TO ABNORMAL/
CA=99 TI=/ABNORMAL TO NORMAL/
CA=80 TI=/SHUTDOWN/

-----RESPONSE SPECTRA-----
CA=800 TY=1 EV=1 FX=1 FY=1 FZ=1 EQ=1 TI=/EARTHQUAKE PRIMARY/
CA=801 TY=6 EV=1 FX=1 FY=1 FZ=1 EQ=1 TI=/EARTHQUAKE SECONDARY/
CA=802 RF=101 C1=800 C2=801 ME=2 EQ=1 TI=/EARTHQUAKE TOTAL/

-----COMBINED CASES-----
CA=200 RF=101 C1=800 C2=100 ME=3 EQ=1
CA=205 F1=1 C1=802 C2=101 ME=3 EQ=1
CA=206 F1=-1 C1=802 C2=101 ME=3 EQ=1

CA=210 C1=800 FL=1 EQ=1 CY=10

-----LOAD SETS-----
RF=101 CY=200 PR=101 MO=101 TR=+81 F0
RF=102 CY=500 PR=102 MO=102 TR=-82
RF=101 CY=500 PR=101 MO=101 TR=+83
RF=101 CY=5 PR=101 MO=205 FL=1
RF=101 CY=5 PR=101 MO=206 FL=1
RF=109 CY=200 TR=-84

AT=160 AF=170

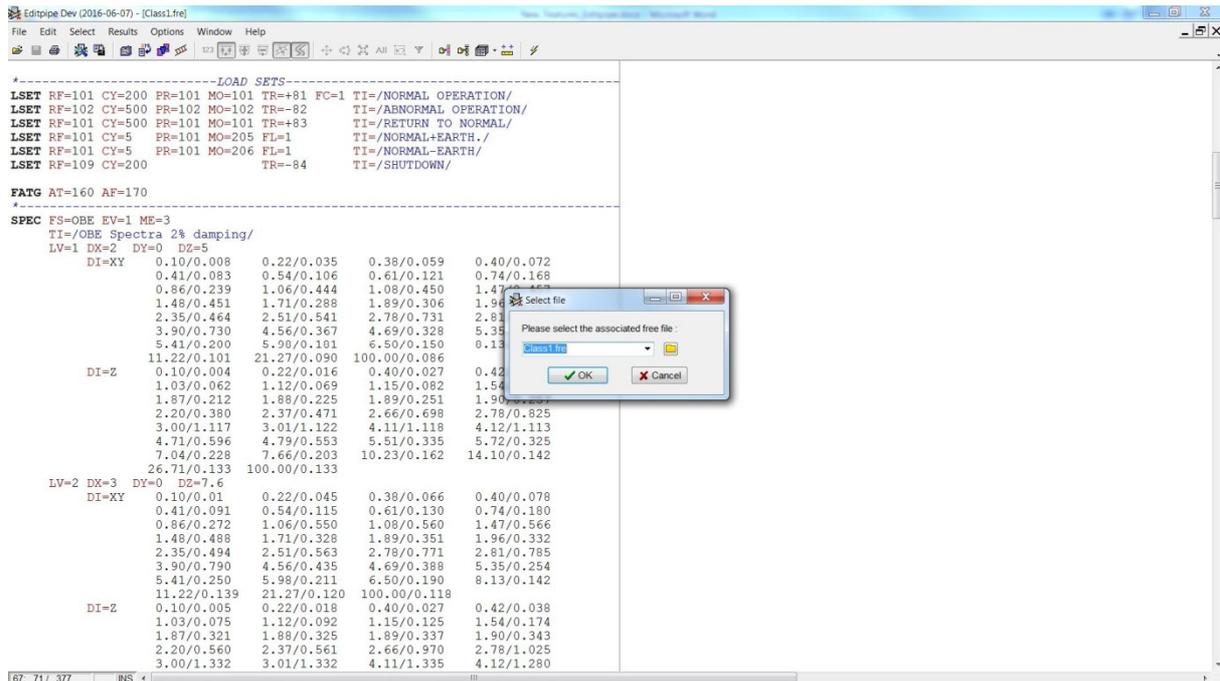
FS=OBE EV=1 ME=3
TI=/OBE Spectra 2% damping/
LV=1 DX=2 DY=0 DZ=5
  DI=XY  0.10/0.008  0.22/0.035  0.38/0.059  0.40/0.072
         0.41/0.083  0.54/0.106  0.61/0.121  0.74/0.168
         0.86/0.239  1.06/0.444  1.08/0.450  1.47/0.457
         1.48/0.451  1.71/0.288  1.89/0.306  1.96/0.319
         2.35/0.464  2.51/0.541  2.78/0.731  2.81/0.739
         3.90/0.730  4.56/0.367  4.69/0.328  5.35/0.204
         5.41/0.200  5.98/0.181  6.50/0.150  8.13/0.121
         11.22/0.101 21.27/0.090 100.00/0.086
  DI=Z   0.10/0.004  0.22/0.016  0.40/0.027  0.42/0.034
         1.03/0.062  1.12/0.069  1.15/0.082  1.54/0.144
         1.87/0.212  1.88/0.225  1.89/0.251  1.90/0.257

```

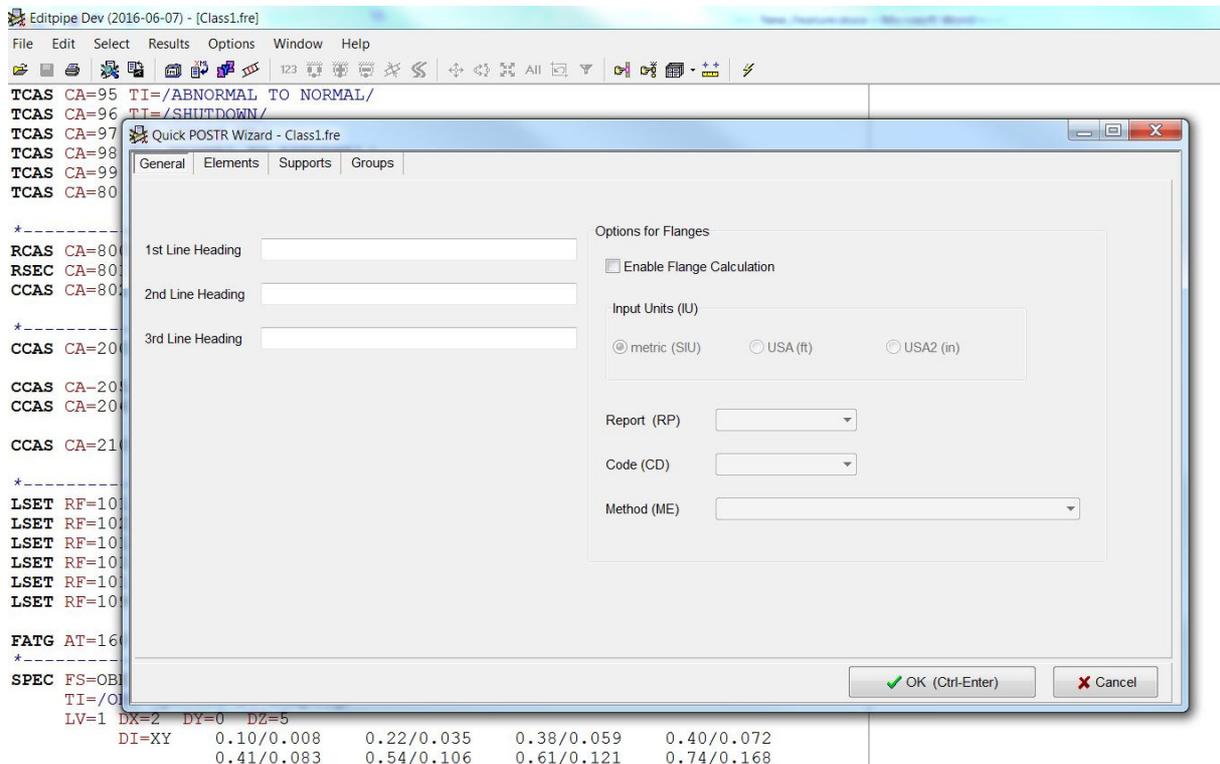
3.10 New wizard "Quick POSTR"

This wizard helps you creating file for POSTR input in the same way as "Quick Pipe" does for PIPESTRESS input. It allows to define the input for the new flange calculation feature added to POSTR.

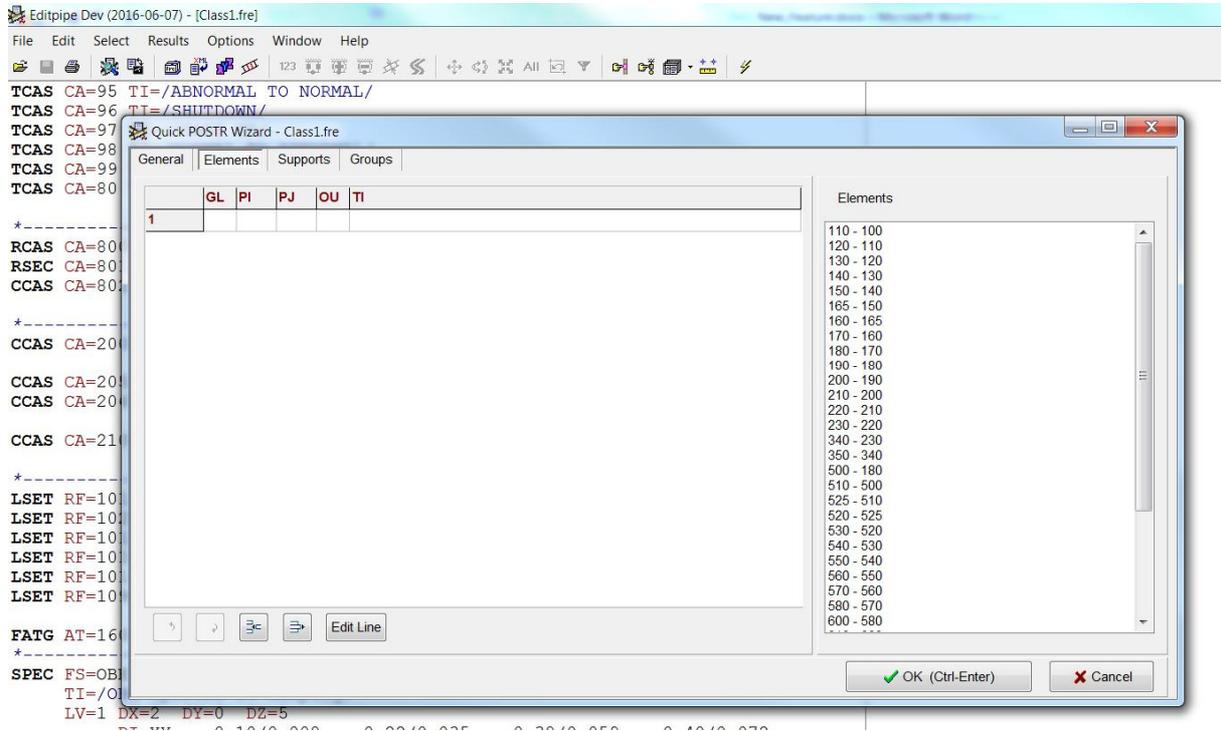
To launch the wizard, select in the upper menu "Options → Quick POSTR Wizard...". You're asked to select the free file you want to create a post processing input file for. A list displays the free file opened in Editpipe and the ones registered in the project manager. You are free to select any other file by clicking on the folder icon.



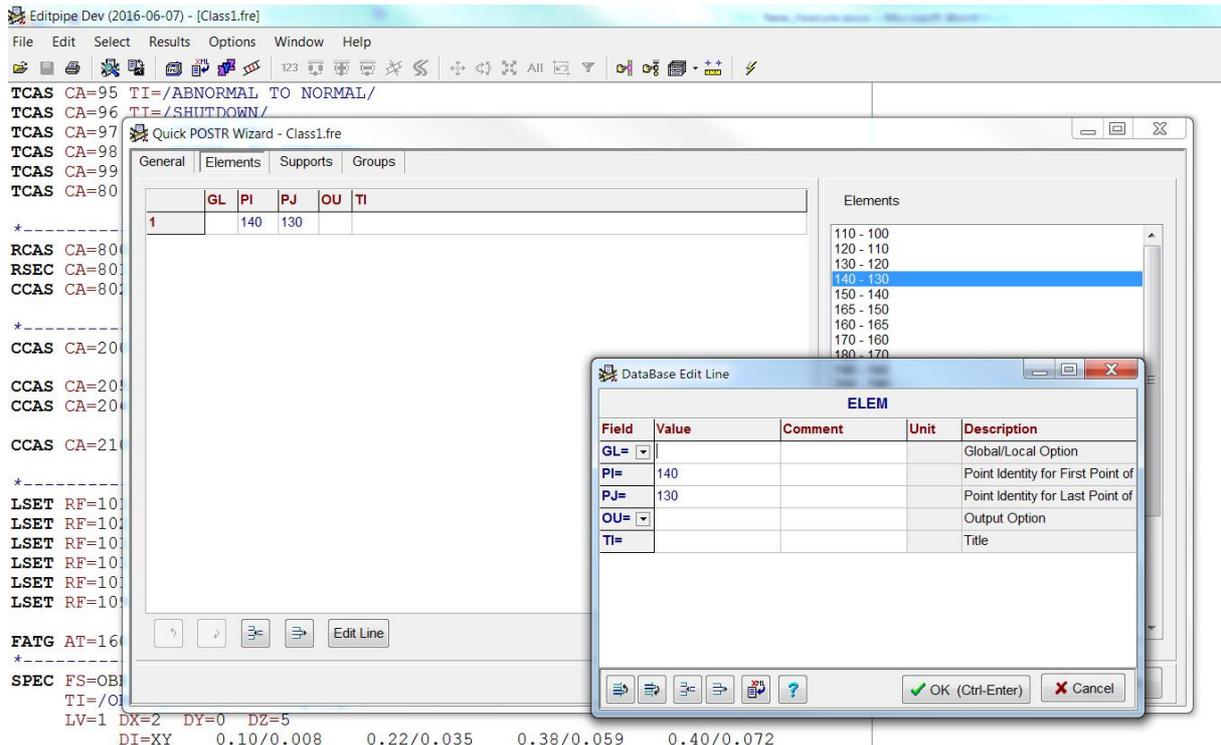
Once you have selected a file, the wizard pops up. Four tabs are displayed that will help you to fill the cards necessary to define a POSTR input file. The tab "General" deals with general information. On the left you can fill the card IDN1, IDN2 and IDN3. The right part with the checkbox "Enable Flange Calculation" allows you to define cards for the flange calculation. We will come back later to this part and we will now focus on the "classic" use of POSTR (so keep the checkbox unchecked for now).



The tab "Elements" helps you define ELEM cards. Each row in the left grid corresponds to an ELEM card. Please consult PIPESTRESS help for the meaning of each field. On the right, a list of the elements defined in the free file you have selected is displayed.

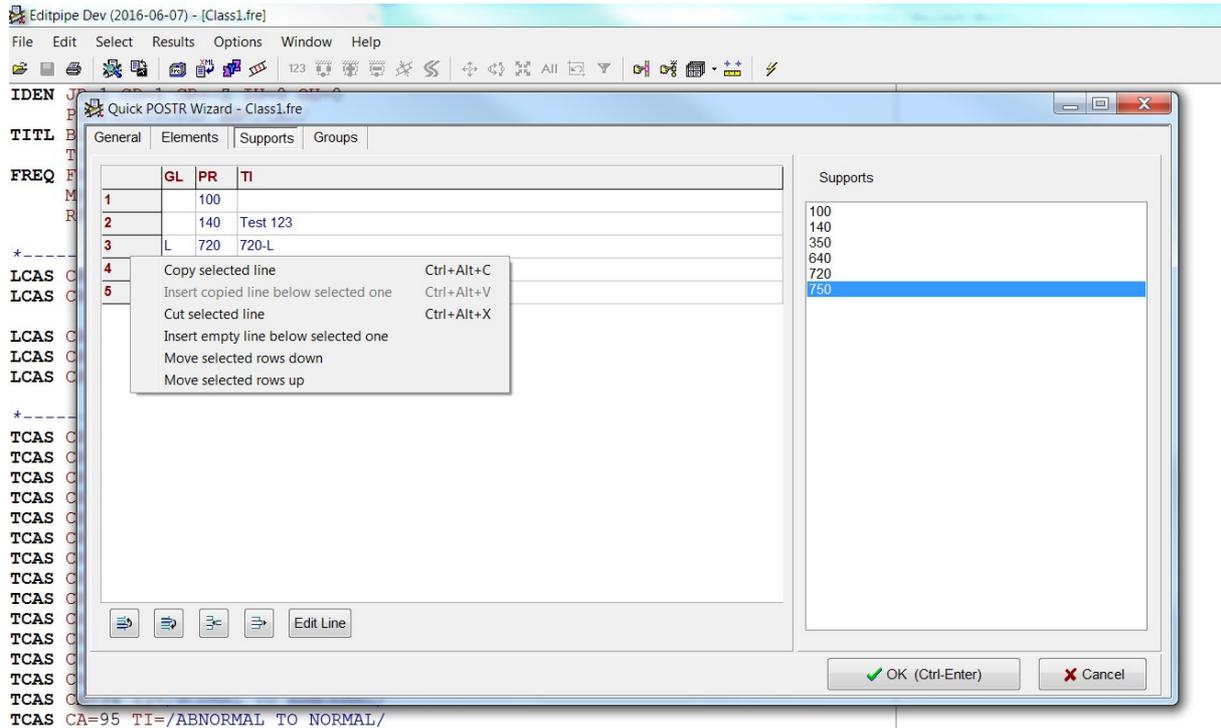


You can add a new row by double clicking on an element in the right list. You can drag on drop an element of the right list to a row of the grid to update the value of PI and PJ. Double clicking on a row or clicking on the "Edit" button will open the associated card editor.

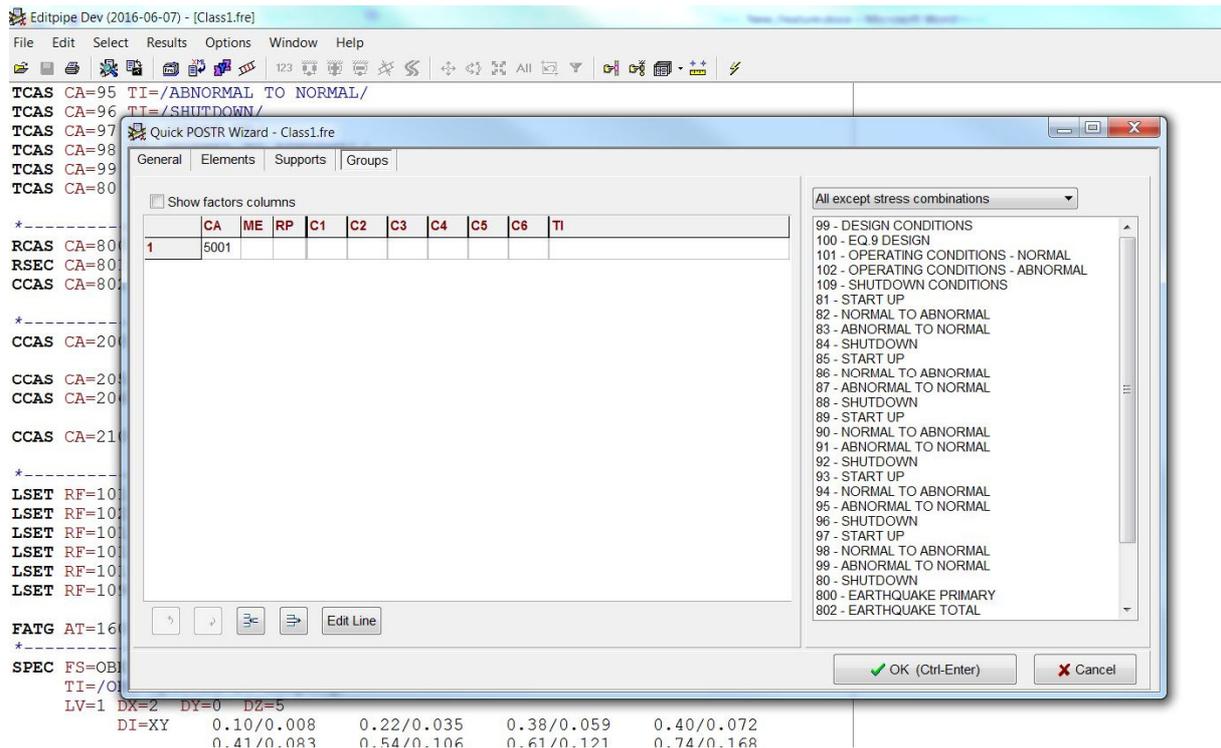


You can move, suppress, add or copy rows with the icons below the grid or with the popup menu that appears when right clicking the mouse.

The tab "Supports" helps you define SUPP cards. It works like the Elements tab, but the right list provides a list of the supports defined in the selected free file. Please read PIPESTRESS help for the meaning of each field.



The tab "Groups" helps you define GROU cards. Each row of the left grid defines a GROU card. Please consult PIPESTRESS help for the meaning of each field. The checkbox above the grid allows you to show/hide the fields F1, ...,F6 and save space if you don't use them. On the right of the screen a list of all the cases and combinations defined in the free file is provided. This list is updated when you add new groups. The dropdown list above this list allows you to filter depending on the type of combination.



You can use the right list to update the field C1,...,C6 by one of the two following ways :

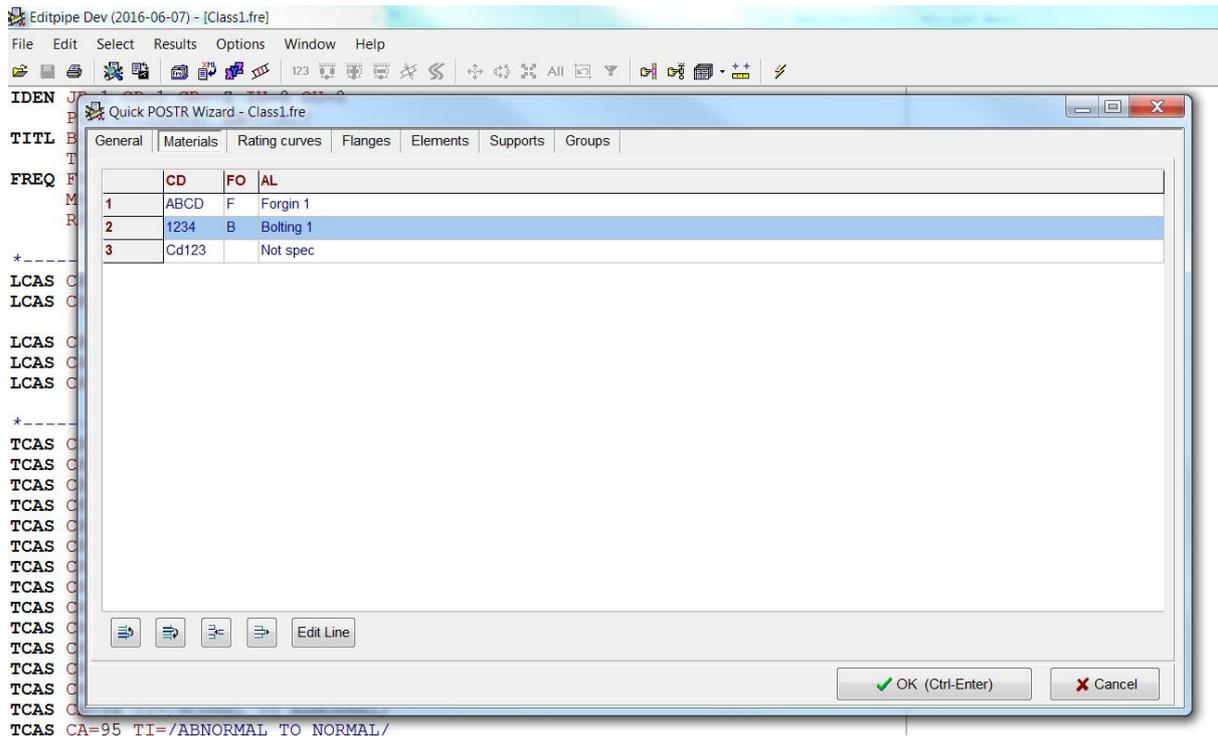
- ✓ Drag and drop an element of the list to a cell.
- ✓ Select a cell and double click on the element of the list.

As for the other tabs you can use the buttons below the grid or the right click popup menu to edit, copy, delete, add or move rows.

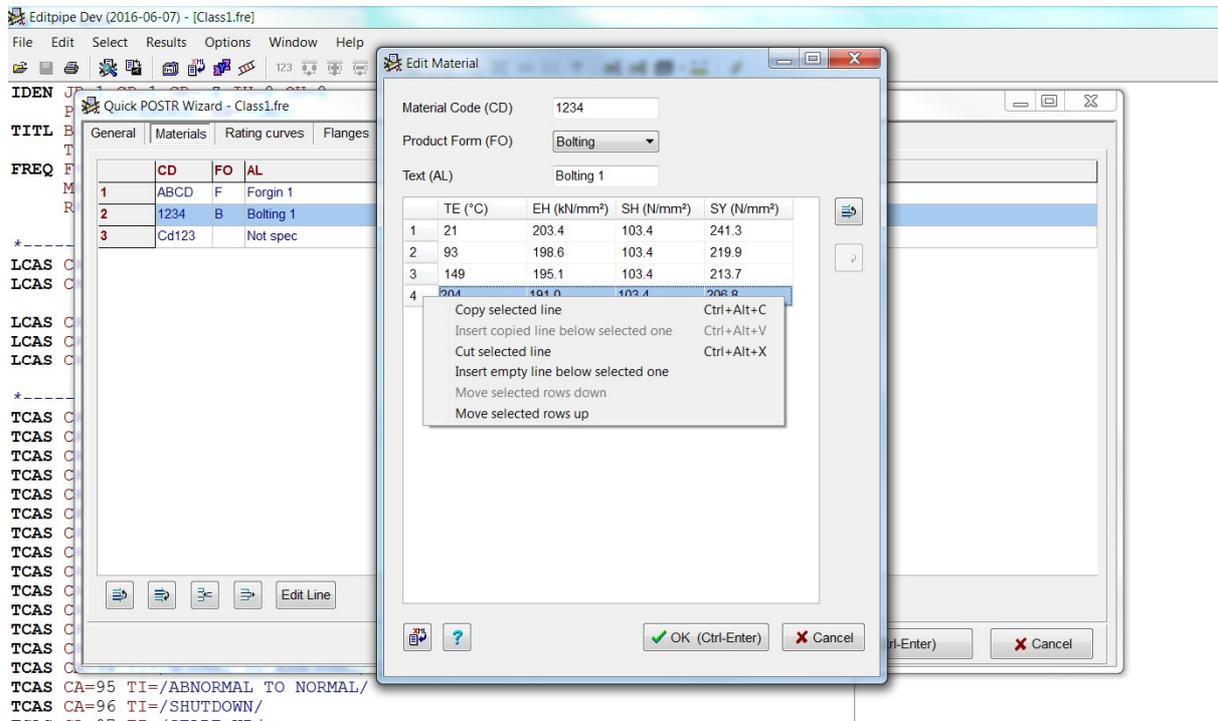
Now let's see how to exploit the new feature of POSTR regarding flange calculation. Please consult the POSTR documentation. Go back to the "General" tab and check the option "Enable Flange Calculation". The following changes occur :

- ✓ Three new tabs appears: "Materials", "Rating Curves" and "Flanges".
- ✓ The options for flanges on the "General" tab are enabled. You can therefore choose the values for the OPTN card.
- ✓ The columns LV and RF are now available in the grid of the "Groups" tab, since they only make sense for the flange calculation.

The "Materials" tab will help you to define the MATE cards. Each row of the grid represents a MATE card. As for the other tab you can add, edit, move, delete or copy rows as usual.

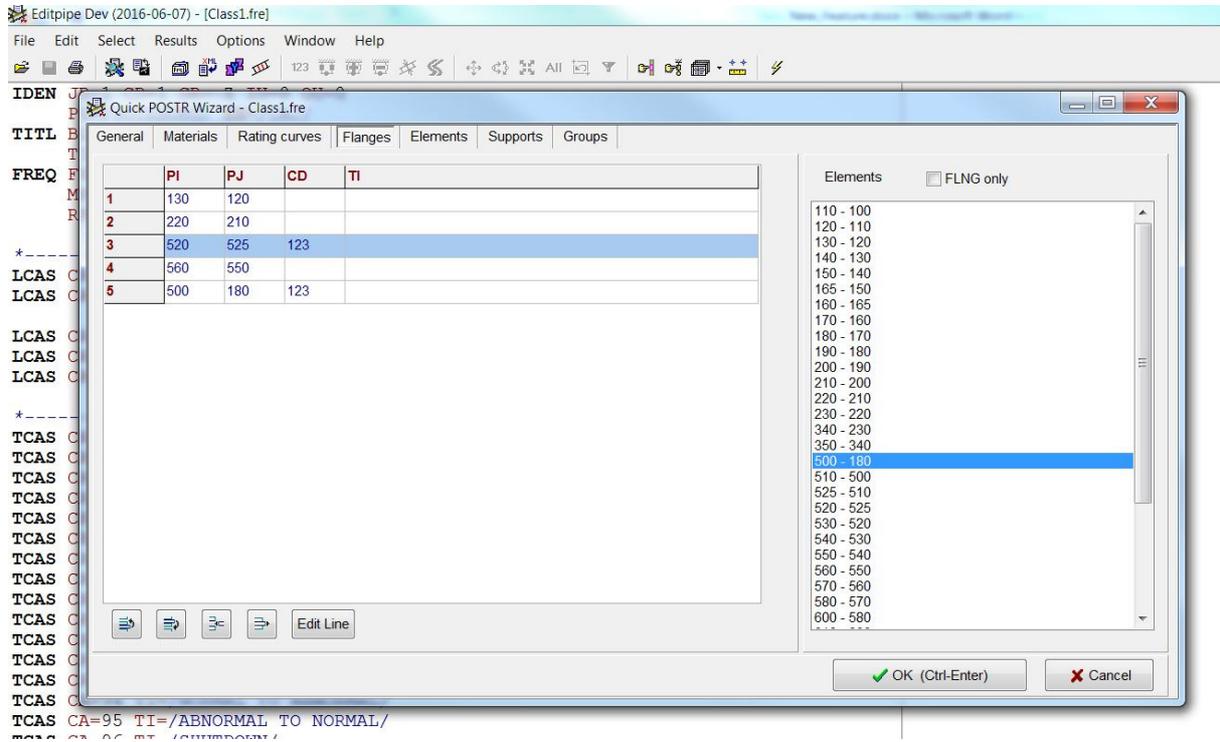


The MATE card has a custom editor that allows you to define the material property for different temperatures in a grid. You can use the property of the grid (add, delete, copy, ...) as usual. You can load data from the xml library with the XML icon button.

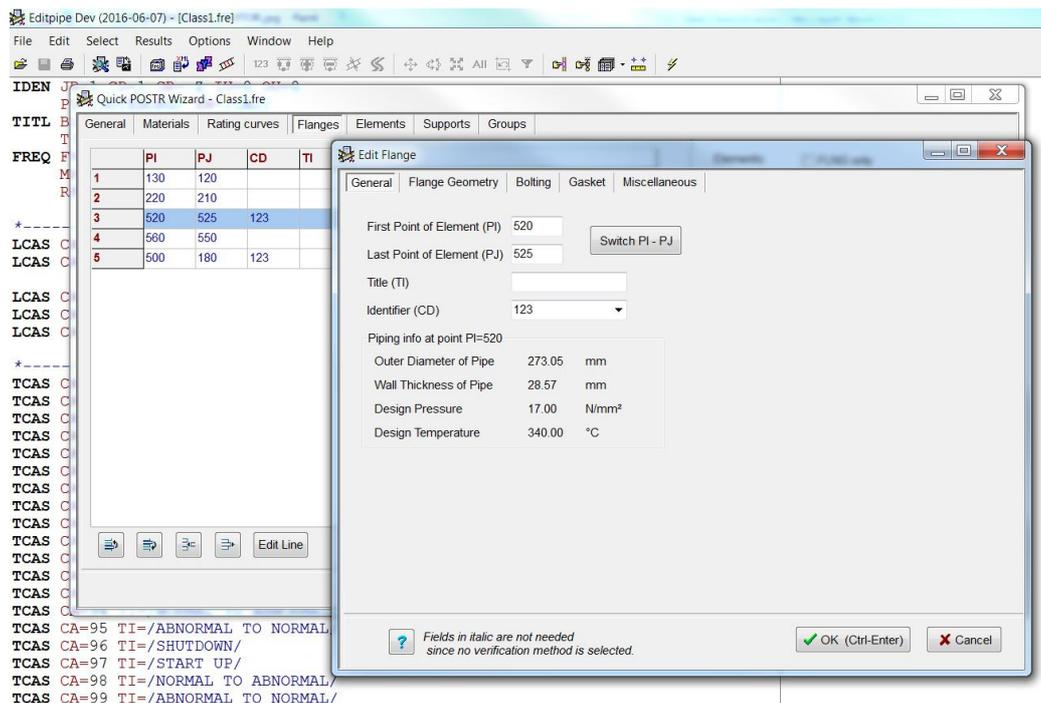


The "Rating curves" tab works like the "Materials" one. The RATC card has a custom editor similar to the one of MATE card.

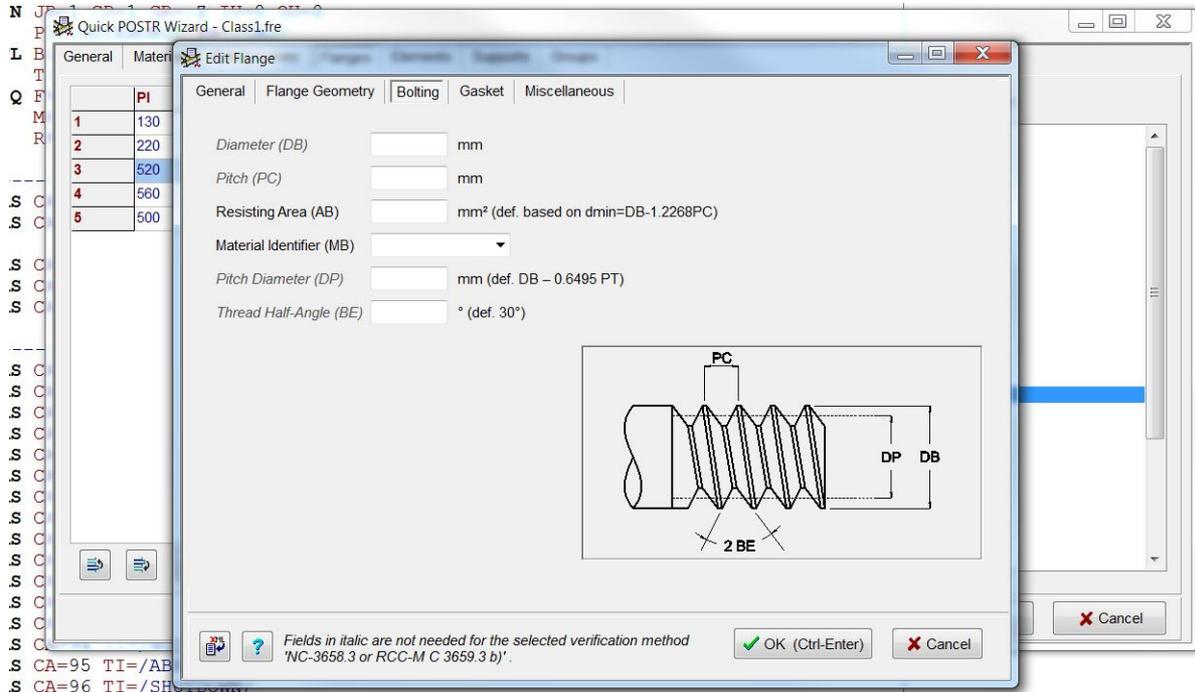
The "Flanges" tab is similar to the "Elements" one. Each row of the grid on the left represents a FLNG card and a list of elements defined in the free file. The checkbox above this list allows you to filter elements that were defined as flanges in the free file.



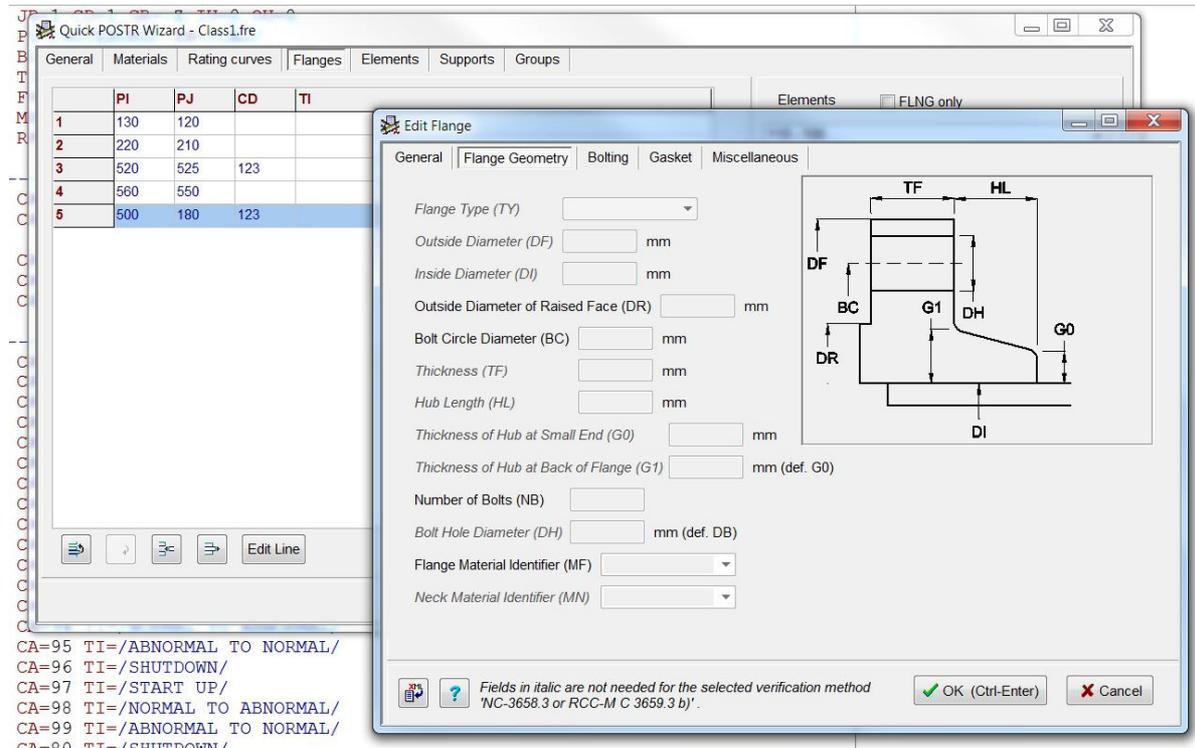
Editing a line opens the custom editor for flange. This editor regroupes the numerous fields of the FLNG card in five tabs: "General", "Flange Geometry", "Bolting", "Gasket" and "Miscellaneous". In the "General" tab piping information at the selected element can be found.



On other tabs, some fields might be displayed in gray to enhance the fact that they will not be used for the calculation method you have selected in the OPTN card.



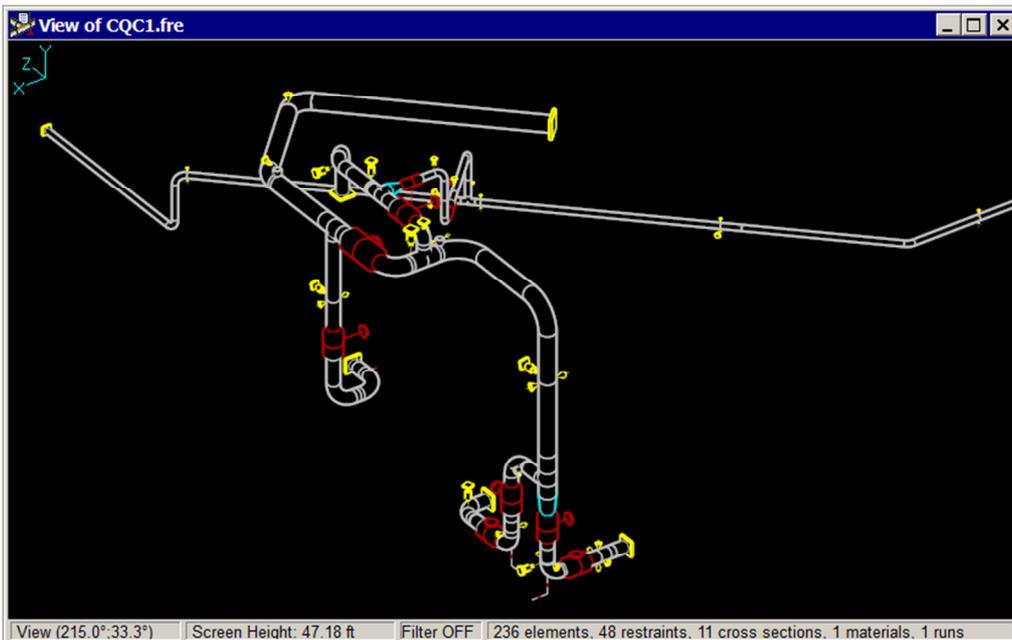
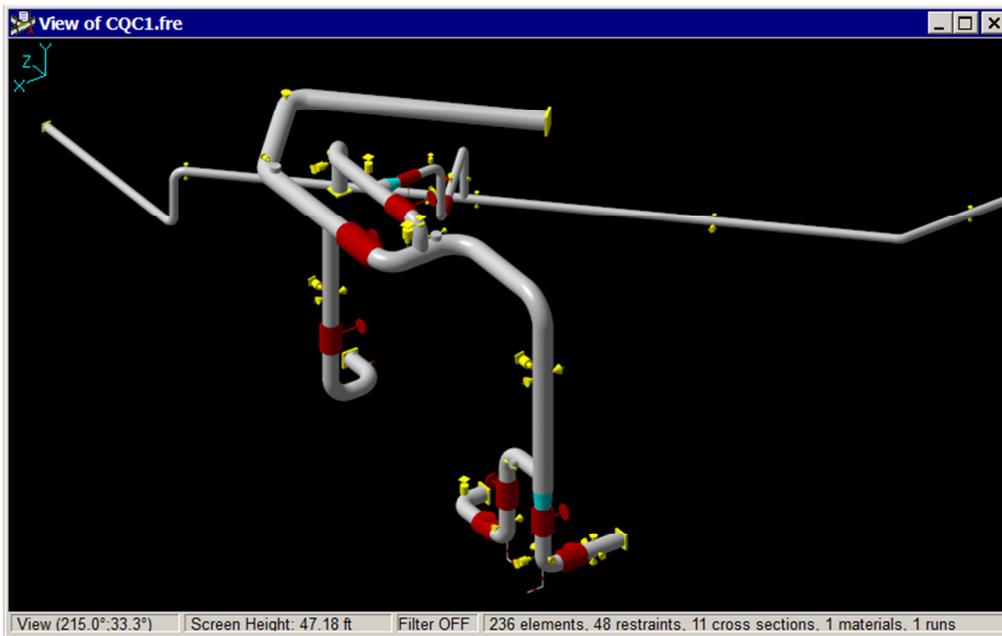
If you use the field CD to reference an already defined FLNG card, then the fields on every tab but the "General" one will be disabled.

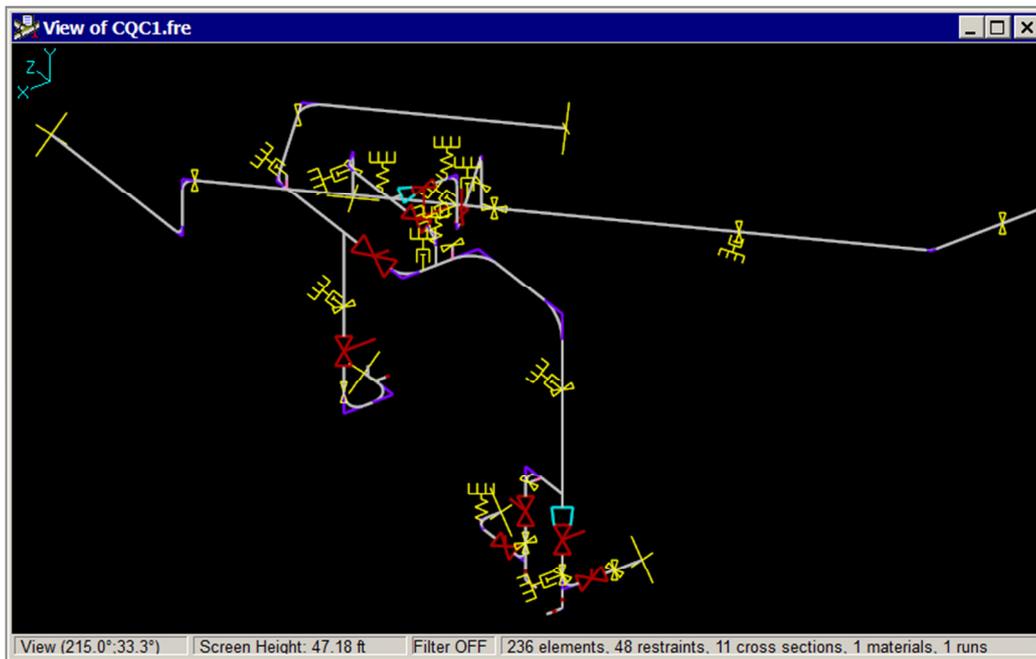


Once you have finished filled all the data you can click on the OK button. This will open a new text window filled with the cards you edited. This window has the file type postr and you can keep editing it (adding comments or even editing the data as usual). You can then save this file and use it in the Editpipe Manager for your post processing.

3.11 OpenGL engine

A new view using the OpenGL engine has been implemented. It comes in three flavors : rendered, outline and wire.

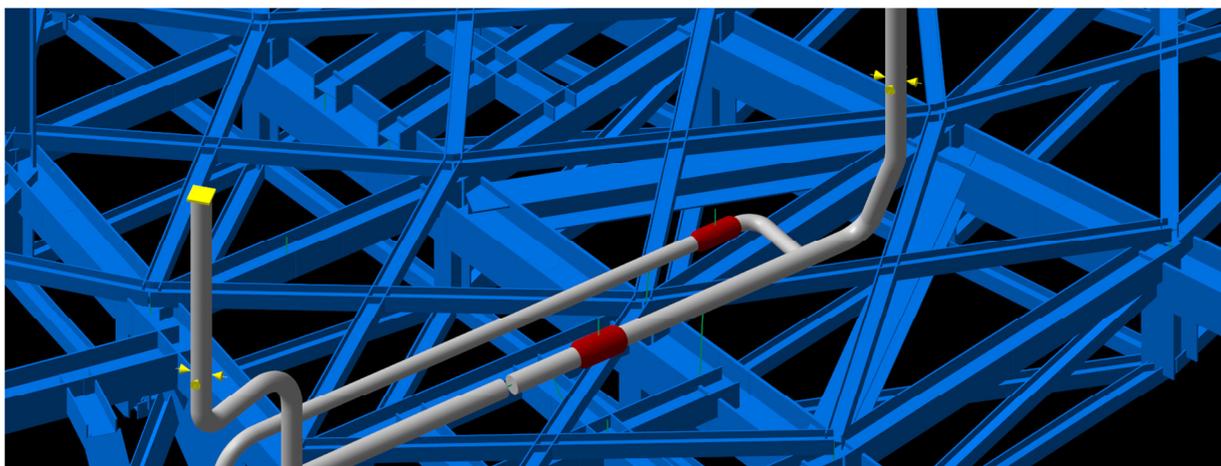




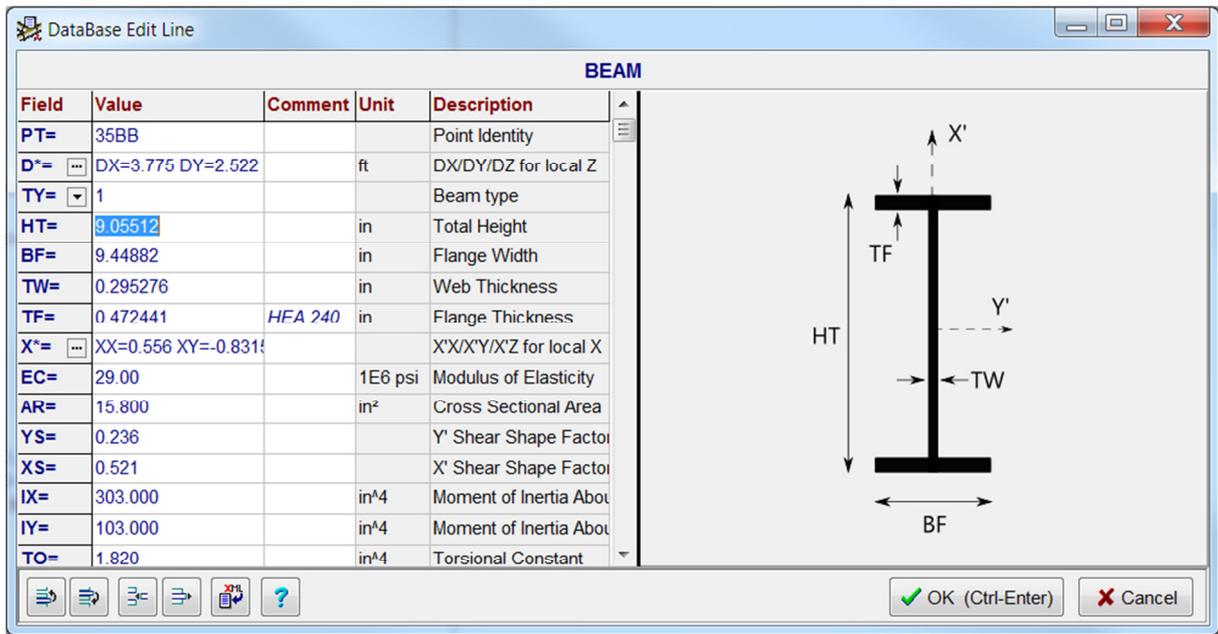
Please be aware that the interactions with the view have changed. You can find more information in the documentation (e.g. in Editpipe -> Selected Topics -> Keyboard Summary and Mouse Summary).

3.12 Geometric definition of BEAM

We introduce new fields TY, HT, BF, TW, TF that allows the user to define the geometry of the BEAM. The BEAM elements can therefore be rendered in 3D and the verification of the orientation of the BEAM is simplified.

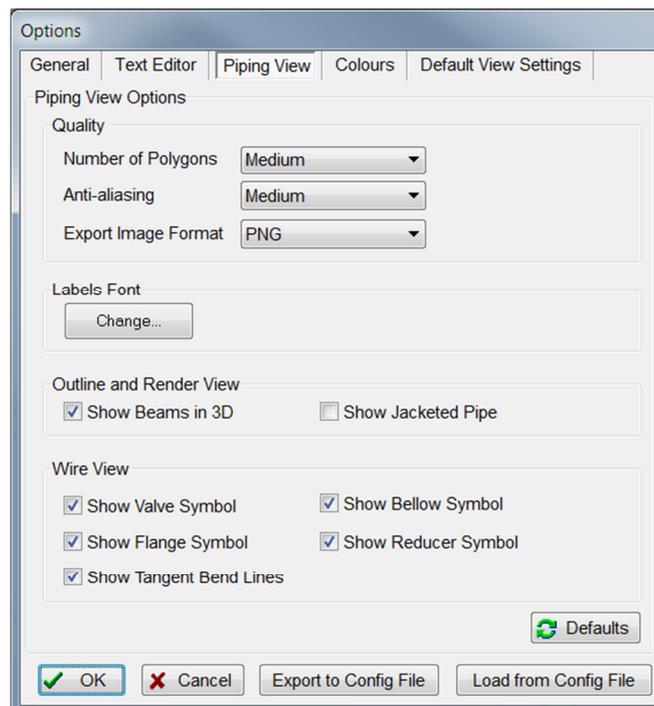


The editor of the BEAM card displays a picture that explains what the geometric fields represent for the selected section.



3.13 Export/Import options to/from a configuration file

An export/import mechanism has been implemented to save/load options from a configuration file. It allows the user to save the current settings to an *.ini configuration file or to import a configuration file created previously. It can be useful for example to quickly switch between a working configuration and a printing configuration (with different colors and quality for the piping view) or to share settings with colleagues.



For assistance contact: support@dst.ch