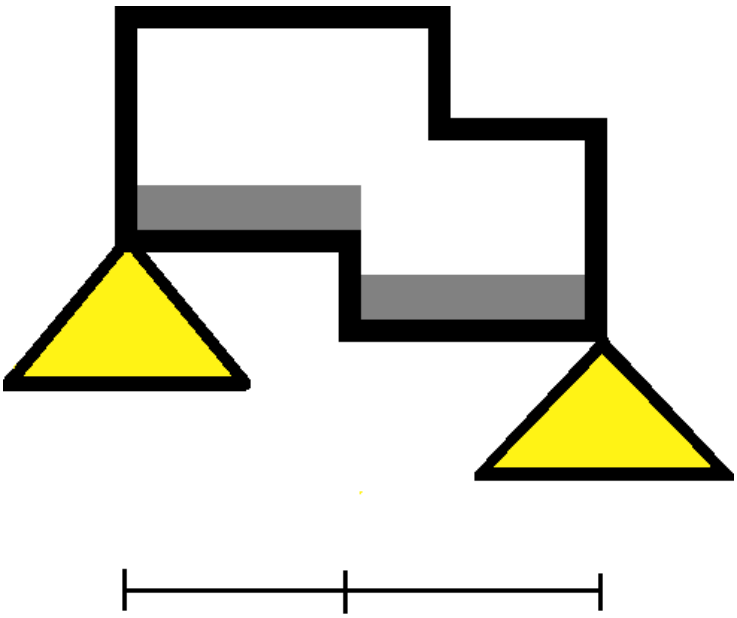
RSLigR 3.00



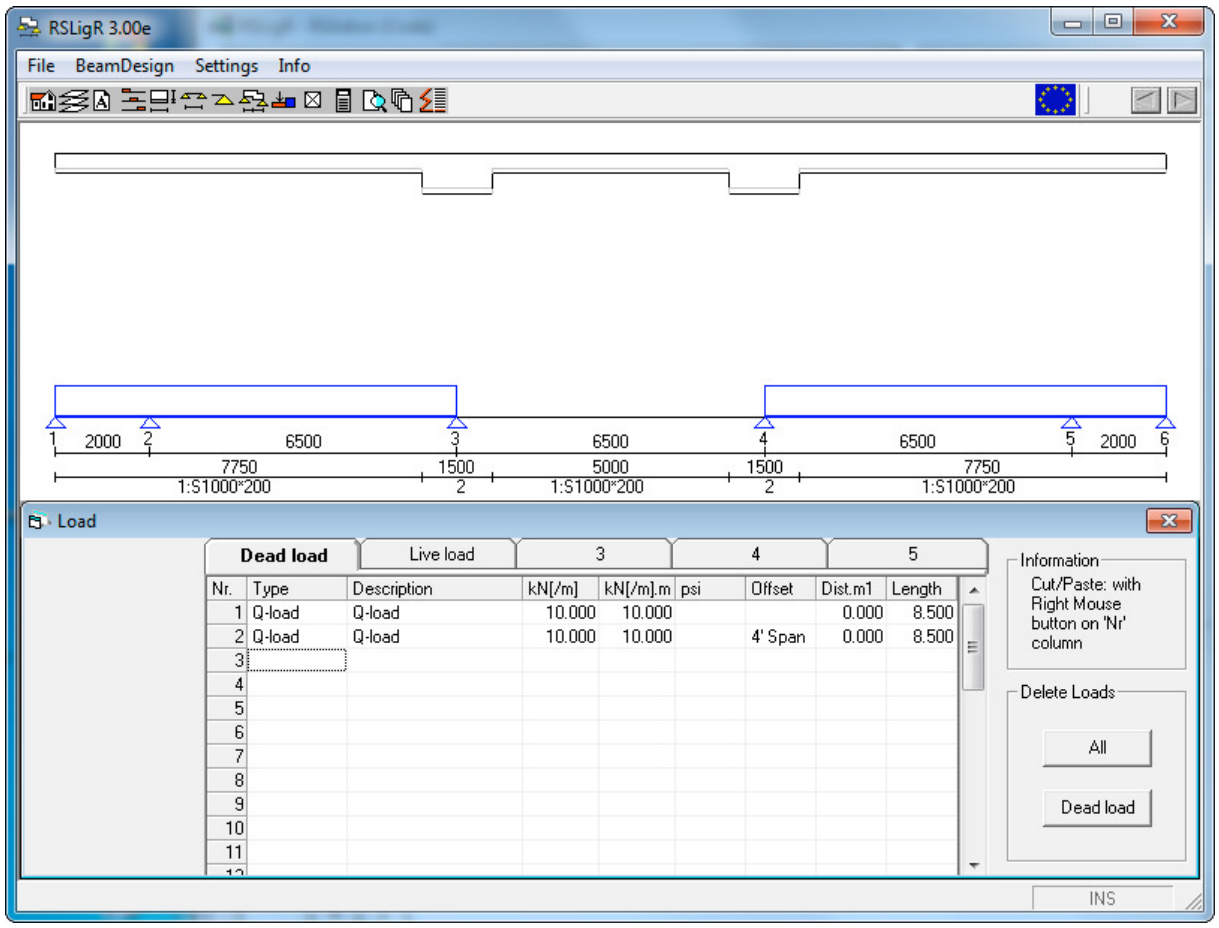
Program to design concrete plates, beams and slabs:

- Floor plate for floor systems
  Reinforced
  Prestressed
- Hollow-core slabs
  Reinforced
  Prestressed
- Ribbed floor elements
  Reinforced
  Prestressed

Beam-Block floorsystem
Prestressed

0.1 General

At the start of the programs display the fields and the beam as graphic. The menu speaks for itself. Almost all menu items are placed in buttons.



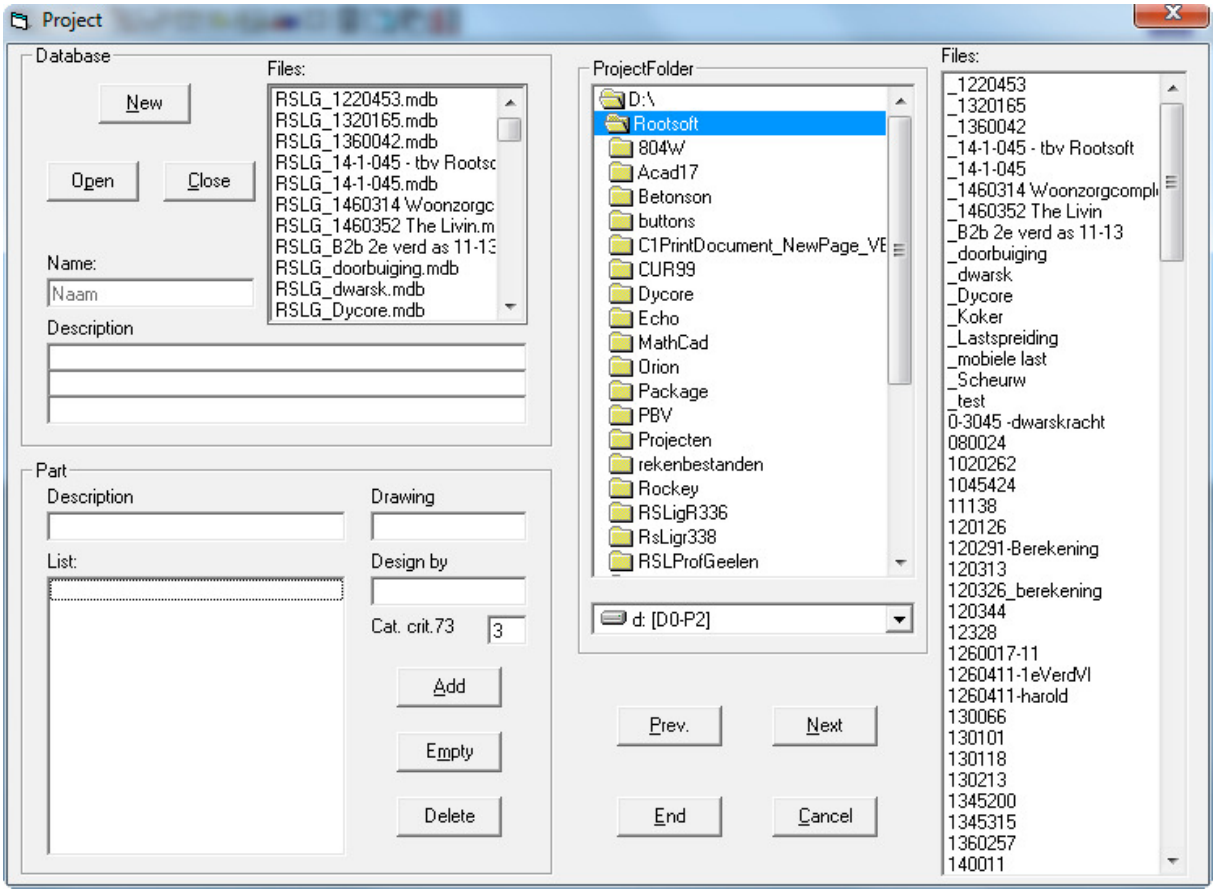
From left to right:
- Project
- Part
- General
- Combination Section
- Fields (Spans)
- Supports
- Distances
- Loads
- Openings (only hollow core plates)
- Computing (Solve)
- Preview
- Solve all components of a part and preview
- Cost Calculation (Option)

Note:

If the decimal is represented by a comma then in 's panel of "international" setting change. It should / could be distinguished for the use the comma or point of view, numbers and currencies. The latter may remain, the institution must figure a decimal point and possibly. a 1000-point range.

1. Project

This menu should be regarded as the file menu. Data is stored in an Access database. RSLigR.mdb parent is an empty file. With the button 'New' a copy is made with the default or edited name in the current directory. An existing project can be opened and closed using the 'Open' or. Close. The descriptions may be edited.



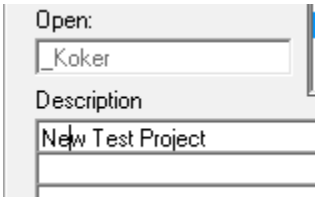
The database contains all parts of a project such as Ground floor, first floor, etc.

In addition to the description of the part, with drawing number and formulator, a new part can also be created "Add" and deleted. When adding, the clicked part is copied or not. The right-hand window "Projects" is opened if more than 11 projects are found.

The name under "Calculated by" can be saved by choosing "save" in <Settings> and will then be filled in automatically for each new project. This also applies to the 2nd and 3rd description.
NOTE: No project may have been opened, so first "Close". The entry "Calculated by" can be extended with a reference to the signature file by using. an "#" e.g. #AvB or e.g. with the full name "A from Best #AvB" where "AvB" is the reference to file RSLParAvB.wmf, or .bmp, .jpg, .gif. (see also par. 13)

Note:

- A project can only be removed with the Windows File Manager.
- The name under "Calculated by 'can be saved by <Settings> to' save 'to choose and then with each new project will be completed by defaults. Also for the second and third definition (description) is this. A project may be not open, so first 'Close' it.



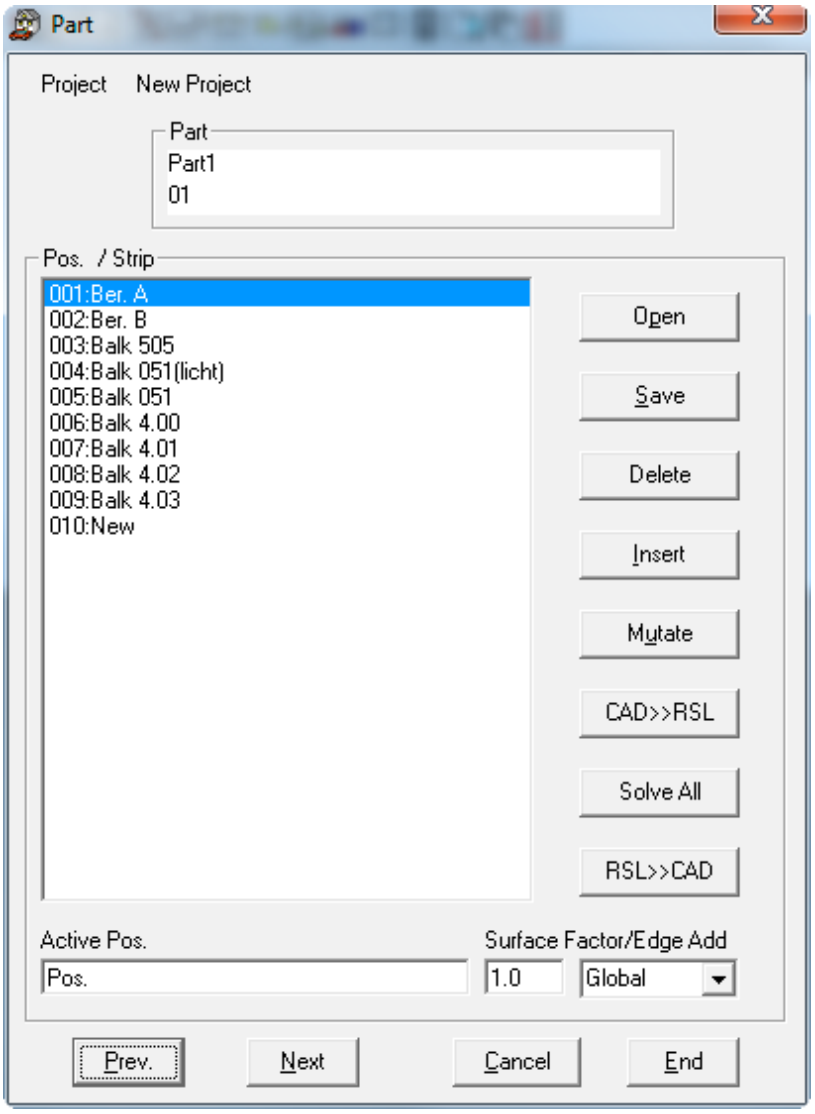
The name of an open file may not be changed, just close first. The button 'Close' is to be used, or else open another file.

Note:

The name under "Opened:" is the project name (without "RSLG" and ".mdb") that applies if the batch processing command is entered after RSLigR, for example, "RSLigR AB-FAB / O001". The "/ O001" option stands for Part 1. The "/ B0" option is "the same as the full file name, not actually batch processing." The "/ B1" option is default, that is, with the intervention of the <AccountAll> menu, the "/ B2" option is without this menu. (see: 11. Calculating) Start the assignment from the active folder

2. Part

In 'Part' all the components (strips) are represented. They can be opened (Open), saved (Save) and removed (Delete). First select the component (strip), next press the button The selection on 'New' will store the active one to be added.
The description of the strip or beam can still be edited or inputted if omitted in <General>.



'Save as' of an active strip is done by selecting '00#:New' and then press the 'Save' button.

Overwriting an existing strip/girder is done by selecting the concerning one instead. Pressing on 'Insert' moves the rear ones to insert the active one. To delete act analogous. (select, do)

< Delete > in the same way .

< Insert> sets the active beam at the selected spot and the following lines will shift a place down .

< Mutate > ables to modify all or selected beams of a part on a single action.

< Solve All> is a button that calculate all of the beams in a part and reports it outcome with a cover, content and adds a page list.

<CAD>>RSL> <RSL>>CAD> These are interface options to read and write information of a current drawing with RSLigR.

The description of the beam can be changed or provided if omitted..

The suface factor multiplies the strip width up to a total surface area for the determination of the average amount of reinforcement. Input options: edge or between allowance: <Global>, <N>, <Single>, <Double>. See <Settings>.

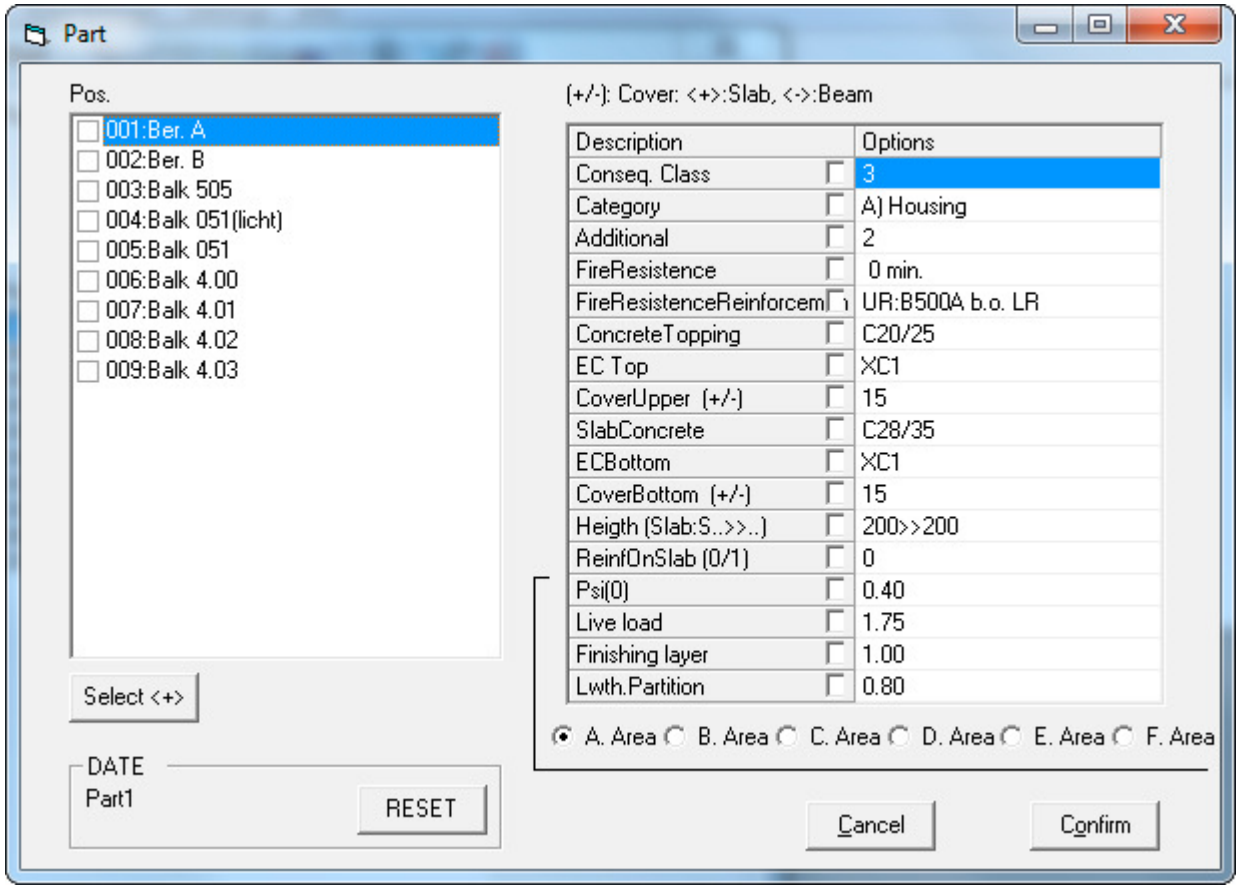
<Mutate> leads to the screen (next page) with an overview of the beams in this part with the options. The options provide to modify most of the the data in the database.

The <Select ()> button resets all beam on or off which can also be selected individually. Every option must be explicitly checked.

Date <RESET> allows to erase the status dates of the output. Of all selected beams the dates of creation will be erased, that is to say, changed into the current date.

Note:

Options Cover Up +/- and Coverage Under +/- the positive value only changes the cover of floor plates and a negative value only changes beams. The option height changes the height of the floor and if 'P' preceding, only the floor/beam thickness of a floor plate system.



3. General

Deflection (max):
The specified 'Additional' (w2 + w3) deflection rate is used to calculate a desired value and will add reinforcement if necessary in order to achieve selected rate. The 'End' rate (w-max) effectuates to obtain a max of deflection measured from the zero line. The exceeding of the 'End' value results by showing the needed sheer (WC).

Tension Stiffening with M/Kappa assumes a linear relationship between crack moment (Mr) and flow moment (Me) in contrast to EC2 7.4.3. The "Creep value coefficient, if chosen the M/Kappa method, is to reduce creep at end, and in case of EC2 formulation: 7:18/19 to place the start time (older) e.g. 60 days, which equates to approximately 0.5.

Additional deflection causes the adjustment of the reinforcement amount to the chosen deflection requirements. If only the deflection is to be calculated as a result of the strength (ULS) calculation then input a higher figure.

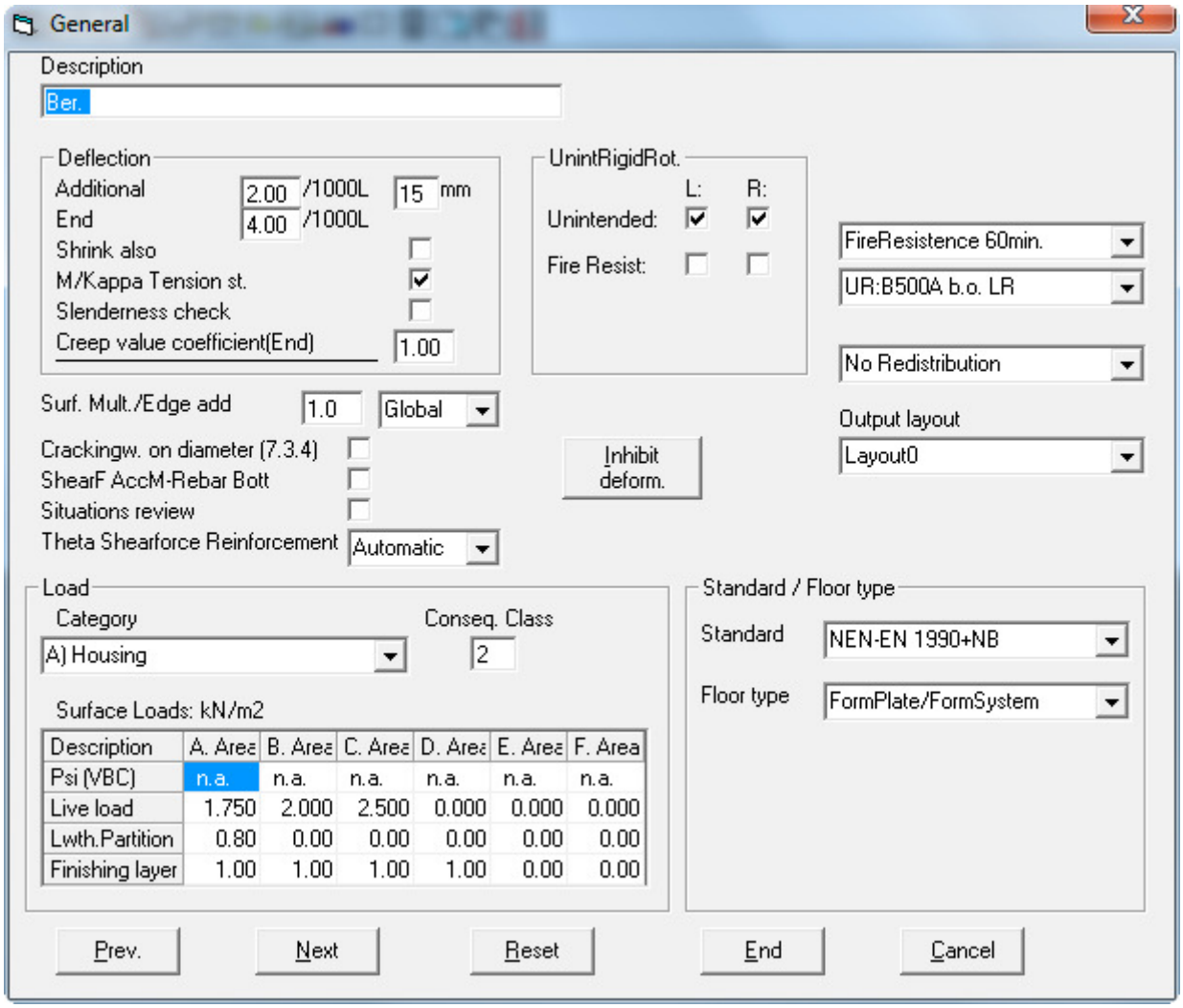
If the slenderness check is chosen then additional deflection is put to 9/1000L which means that the desired value is turned off.

Note:

Additional Deflection: (BAC) #. # / 1000 is the value that determines whether reinforcement should be added to this criterion. 2.0 provides that the maximum deflection 15mm should be achieved, in contrast to e.g. 2.01

Area factor multiplies the strip width (s) to a total surface area for determining the average amount of reinforcement.

'Crackingw. on diameter' is an setting for the diameter of the bar to be in control of the cracking width.



Floor type: In-situ, Concrete General (depending on license)
Floor plate for floor systems, Wide Plate
Equally with profile/bar pattern
Hollow core slabs
Ribbed floors
Beam and Block floors

FP/FS with profile allows sections prior to enter, with or without prestressed reinforcements

Redistribute moments: Always with up to 20 % reduction upper reinforcement above support. Only when choosing section out of redefined profile with using bottom reinforcement .Using profiles the selected reinforcement pattern often provide more capacity then needed which is compensated on the upper reinforcement up to 80%.

‘UnintRigidRot.’ provides the ability to specify per left or right side a certain degree of accidental cantilevered, standard EC2: 7% of the moment in fields. If the floor slab types are Ribbed or Beam/block then 30% M-field minus Mow is calculated in case of mounting without yoke. Also with these floor types is it possible to generate a partial cantilevered support up to 40%.

The <Profile-Update> button replaces the prof???.mdb of the project opened by the parent RSLProf.mdb file from the program folder. ***NOTE**: Changes may create other profile references.*

Floor types which normally are installed without temporary support such as Beam/Block floors, ribbed floors and hollow core slabs a selection 'Supported ', 'Assembly' , or '(upper) Propping' is provided. The first choice will usually only be the matter using Beam/Block floors. The second choice is important at applications wherein higher requirements with respect to crack formation (environment) due the loss capacity while assemble.
Fire resistance can be determined from 0, 'n.a.' to 240 min. This speaks for itself, the additional options will be explained:

UR: B500A (cold def.) ; Redistribution < 15% not recommended. Plastic hinge on support must contain over 0.5% of concrete section reinforcement. By reducing the moment on support with at least 15% and γs = 1:15 stretch in the UR remains limited.

UR: B500A related on BR ; 0.5%*C.S., UR is not applied. BW is determined γs : 1.15 on steel bases with calculated values.

UR: B500B / C (warm def.) ; 2 field : wap 0.5 % . is applied to NEN-EN if redistribution <15 %*c.s By reducing the moment on support with at least 15% and γs = 1:15 stretch in the BW remains limited.

UR: B500B / C obv BR ; 0.5% *c.s. is never applied. BW is determined γs : 1.15 on steel bases with calculated values.

Note:

Only Dutch NEN: Initially determine the live load to be applied combinations. For less than 4.00kN/m2 the extreme combination of real time (6.4.1.4) applied and later the pair extremely congested fields 6.4.2.3) applied.

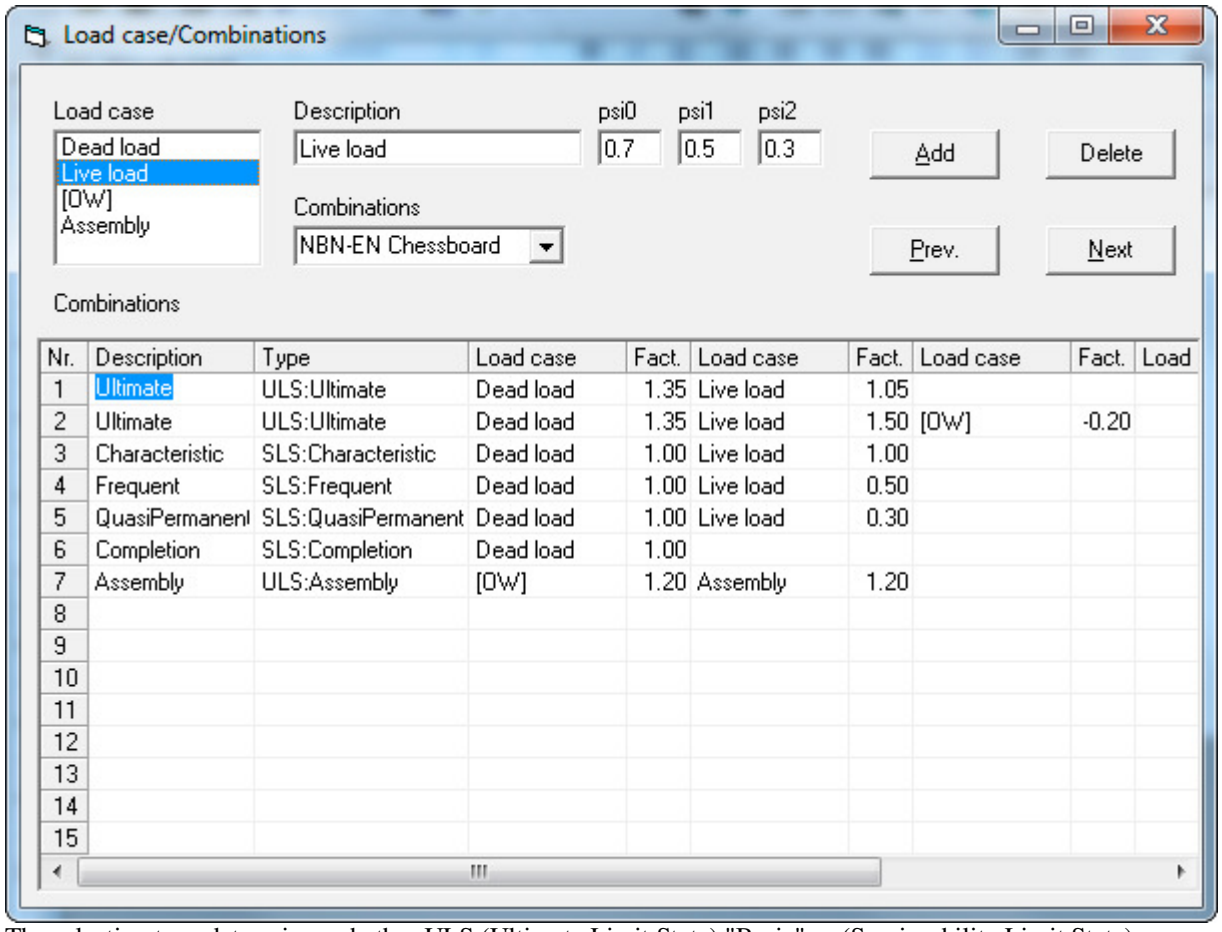
The psi factor is copied related to the live loads input and may be changed if needed.

Note:

The live load is applied to different combinations. This means that if such an additional load case is added with checkerboard alternating loads it also applies thereto. To avoid a load case, the live load be filled with the desired combinations as reported in Note 1. Listed here live load is 0.

4. Combination

The screen 'Combinations' allows to add and modify them and load cases as well. By choosing to 3.0 General NEN6702 TGB, the following load cases and combinations are created.



Nr.	Description	Type	Load case	Fact.	Load case	Fact.	Load case	Fact.	Load
1	Ultimate	ULS:Ultimate	Dead load	1.35	Live load	1.05			
2	Ultimate	ULS:Ultimate	Dead load	1.35	Live load	1.50	[OW]	-0.20	
3	Characteristic	SLS:Characteristic	Dead load	1.00	Live load	1.00			
4	Frequent	SLS:Frequent	Dead load	1.00	Live load	0.50			
5	QuasiPermanent	SLS:QuasiPermanent	Dead load	1.00	Live load	0.30			
6	Completion	SLS:Completion	Dead load	1.00					
7	Assembly	ULS:Assembly	[OW]	1.20	Assembly	1.20			
8									
9									
10									
11									
12									
13									
14									
15									

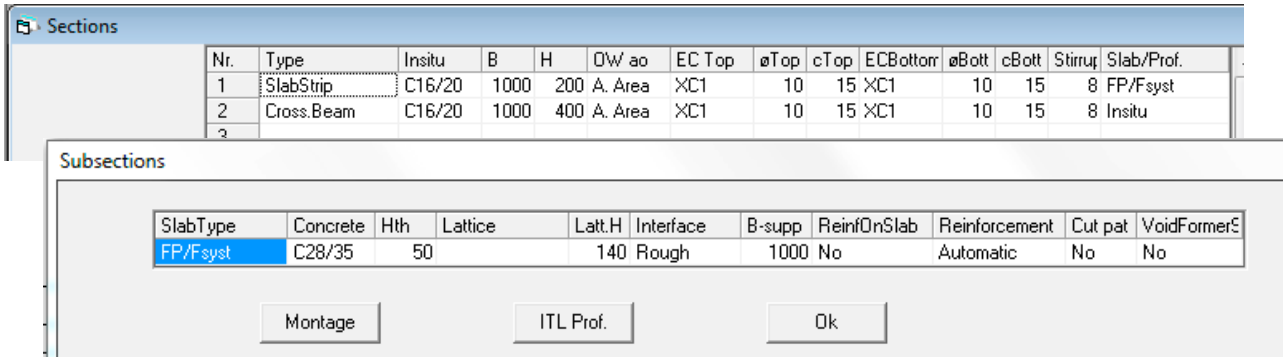
The selection type determines whether ULS (Ultimate Limit State) "Basic" or (Serviceability Limit State) , 'characteristic', 'instantaneous' or 'Immediate' classification. The load case determines whether more load situations are created. The type determines the set of the envelope. Eg, the first combination has one situation with multiple cases of the second combination will be made until at least common multiple of all resulting in the envelope for the strength calculation.

The frequent combination is used to determinate the crack width of the concrete. For determination of the additional deflection with creep the Quasi is of interest while generally the Frequent, except at roofs the Characteristic, combination is applied to calculate the deflection.

Making a new load case, if chosen a variable type, the shown psi factors can be adapted for this load case.

5. Section

Most parts of the screen speak for themselves. However, two input choices are given, ie 'Type' and 'OW ao.



The first determines features section:

- ‘SlabStrip’ has the properties of a plate with a slab part.
- 'TrimmerStrip’ is one that will put the reinforcement on the plate instead of in it.
- "BeamSlab" means stirrups in stead of lattice girders. The interface reinforcement of the connection is calculated using the stirrups.
- 'Cross.Beam’ has the same properties as ‘SlabStrip’ and is used to design the connection with a crossing beam. De amounts are default added to the Slabstrip.

‘OW and others' applies the area loads to be calculated automatically. ‘OW’ with only the own weight and 'All' means with all loads. 'None' means that one must add the loads by themselves. If chosen TrimmerStrip or BeamSlab they would-be provided by input. At the section 'distance', the auto load provision might be changed again.

Note:

If in <General > extra load planes (A-Area, B-Area, etc.) are entered then here you may choose instead i.e. ' All' .

The column ‘Slab/Prof.’ provides access to ‘Subsection’ using form plate type of floor.
B-supp. bearings allows the width to change just for the shear and shear control.

VoidFormerSlabs CUR Recommendation 86 following a reduction in the shear capacity to 30%, the time for crack deflection at 80% and 75% for the cracking. Additionally 's own weight is reduced to 80%.

Reinforcement may be designed into the plate or on the slab part. In case of license 'FP/Fs Pre set': With Slab type a profile is chosen and a pattern of the predefined reinforcement. Automatic means that the program is looking up to calculate the required amount (pattern), else the chosen one is calculated with adding the needed supplemented FeB500.

Note:

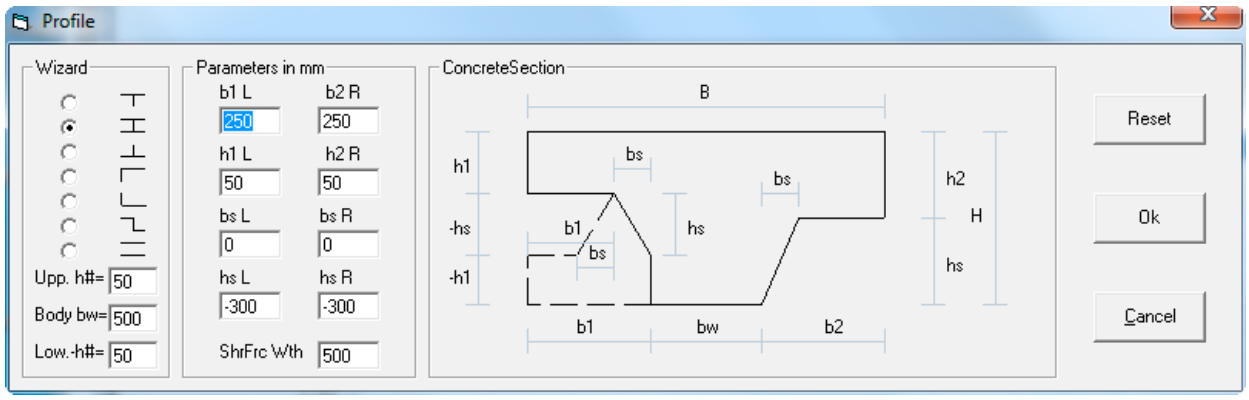
The option’Yes ext slab’, enables to calculate the addition reinforcement if a chosen pattern of reinforcement is to low, only in the first layer with A500 reinforcement. In 'Part' This profile should be chosen.

‘Cut pat' allows to truncate to floating number of bars per width if the exact integer number is to be used.

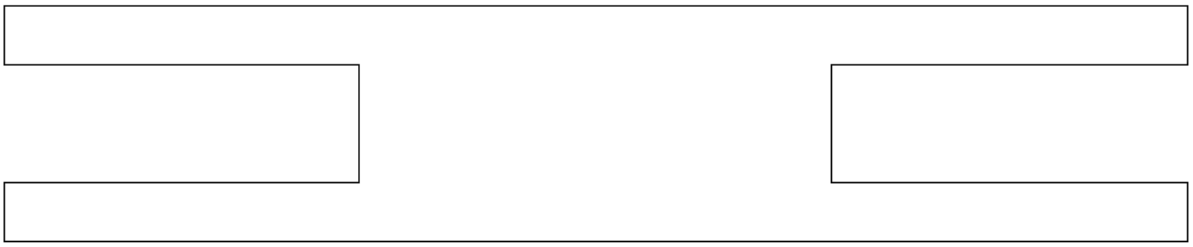
Note:

In mechanics calculation, the E-modulus of both components in the moment of inertia, weighed, settled. The prefab delivers the applied accounting value of the E-modulus, the concrete in-situ is related. The E-modulus is: E = E (C-class) / (1 + ϕ).

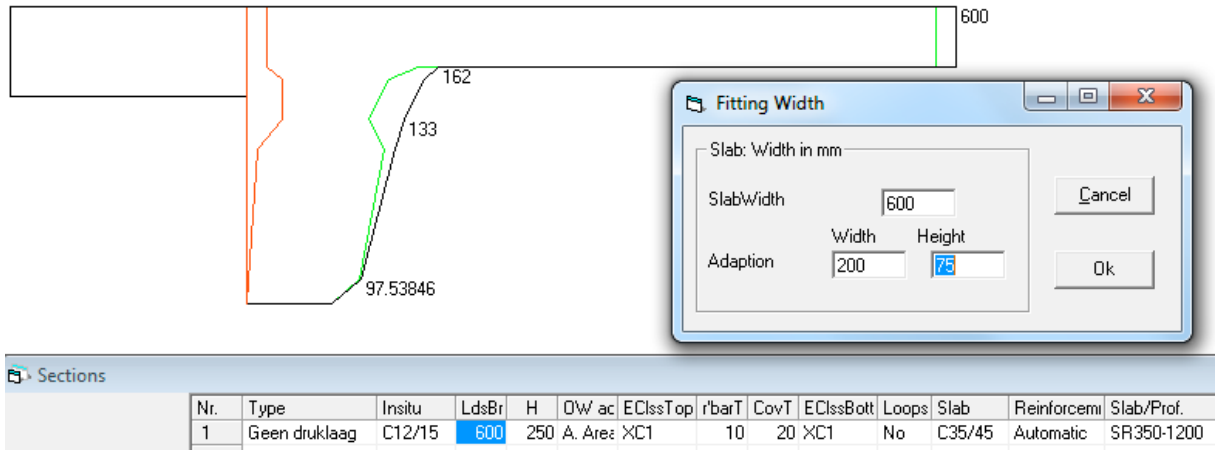
T and L according to section 5.3.2.1 is possible with or without reinforcement patterns. If the negative value for LdsB the width (Breadth) is used to determine the load per m1. Underlying function allows the width to be adjusted and also adding in-situ application.



h1 Or h2 is chosen then the rebate is at the top. In the calculation, and on paper, the intersection will be compressed at the Y-axis which presents the view slightly different. An H-profile seems impossible but isn't, eg H = 300, B = 1000, h1 = 100, b1 = 300, h2 =- 100, b2 = 300



If chosen Ribbed Floor the screen is slightly different:
A choice can be made for 'Type', which is a collection of profiles such as 'Concrete topping. In the last column can be chosen for a particular section and the up-to-last one can determine whether it chooses the reinforcement program or user.

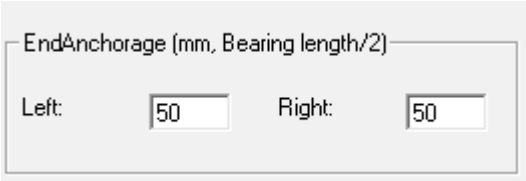


Note:

The height of the adjustment slab may be entered in the program Profiles as a default.

6. Fields

The end anchorage is needed to determine the effect on the prestress in the section near to the bearing.

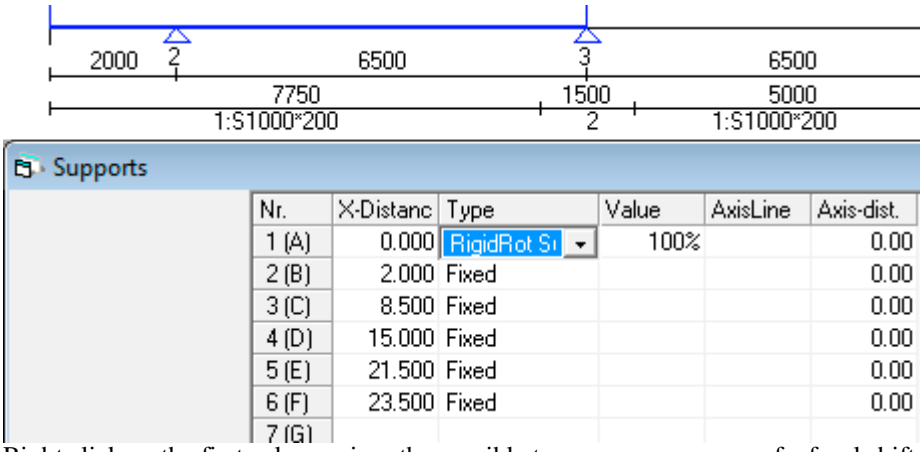


Note:

An overhang is a field. If entering '0 ' the right part of the system will be deleted. Intermediate field lengths may be removed by deleting a support.

7. Supports

The type 'None'; meants Overhang, 'Fixed' is a 'normal' support. 'RigidRot supp' can be selected for 100%, enter '1', '.5' given 50%, is applied to a rotational spring while with 'Spring Rotation' in kNm is to done. With 'Elastic Support' a support stiffness may be entered in kN/m.



Nr.	X-Distanc	Type	Value	AxisLine	Axis-dist.
1 (A)	0.000	RigidRot Si	100%		0.00
2 (B)	2.000	Fixed			0.00
3 (C)	8.500	Fixed			0.00
4 (D)	15.000	Fixed			0.00
5 (E)	21.500	Fixed			0.00
6 (F)	23.500	Fixed			0.00
7 (G)					

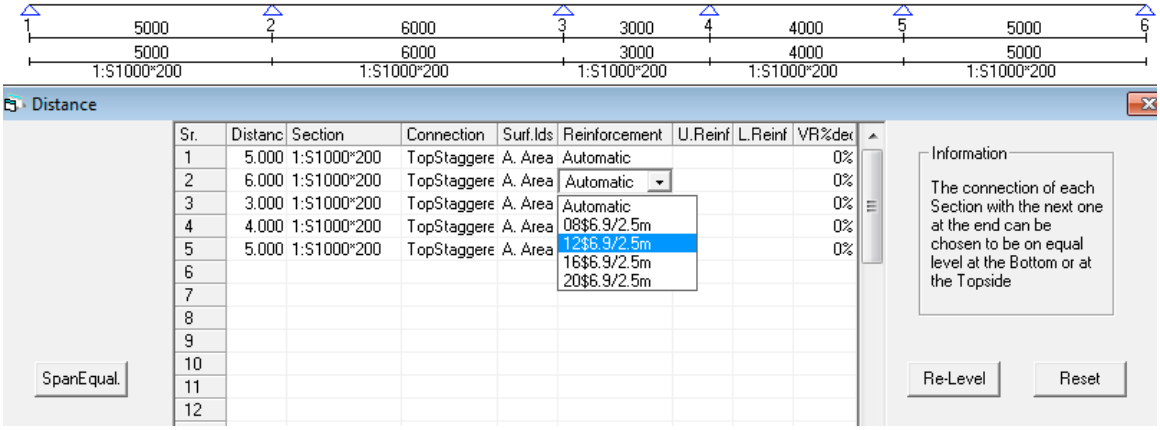
Right click on the first column gives the possible to use a popup menu of a focal shift, delete or insert.

Note:

With the partial rotation spring it's rate is empirically determined compared to the first bar, not the underlying structure (mirror). Therefore a thickened floor or beam, at the support in this field, will become a virtually 100% result.

8. Distances

In this section, the distances of the created sections distributed throughout the system.



The first two columns speak for themselves, the column 'Connection' is explained: providing a choice to be with equal flat topside 'Hinged joint' or fixed, and also at the bottom. Using the feature will show the working of it in graphic displayed.

If the bottom is staggered then, in case a positive moment, the reinforcement is implemented on the slab, otherwise in the slab part.

With the button 'Re-Level', all 32 ends are reversed, e.g. crossing beams with top extension or underlying.

Note:

If in the case Ribs Floor the button <Oz/Bz> the connections are selected as TopStaggered a design with more than two points of support will be calculated statically indeterminate instead of the 40% M-field according to standard.

The button <SpanEqual> equals distances to spans which enables each span to have a different section.

The button 'Reset' reduces all distances up to one value from left to right.

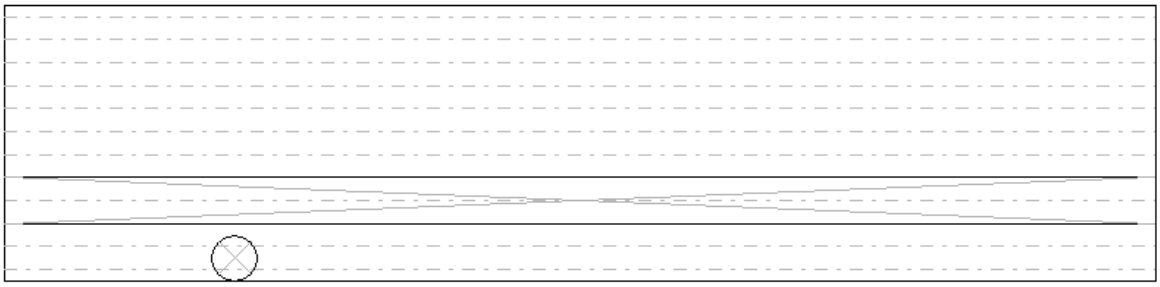
The column "OW and others' and Reinforcement is explained in Section 5.0, here the may be overruled.

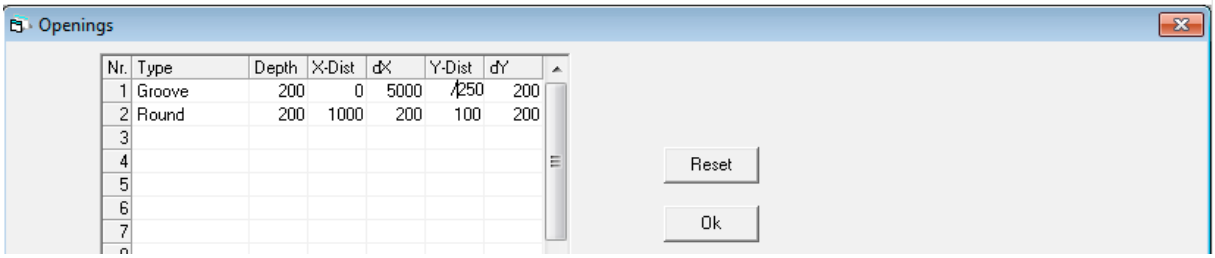
The columns 'U.reinf.' and 'B.reinf' allow applied reinforcement e.g. to reduce deflection. The location of the reinforcement is provided by section details of the designated section. Interpretation of cross section in mm2 or '#-###', the minus sign specifies that the term is converted to mm2. ([ϕ]8-100 > 500)

The last column allows a reduction of the concrete shear resistance in a % with a maximum of 80%. The output will show the distance in the shear force diagram from the support. E.g. an opening of 70mm with a d = 175, 70/175 = 40%.

9. Openings

In RSLigR openings wil be handled as distances solving the design.





The input is sorted at distances from the left. A mouse click in the drawing on the opening leads to the input line. Chose blanc in pop-down to remove one, or press <Reset> button to remove all. In case of a groove the field X-Dist and Y-Dist may be preceded by a '/' slash making a groove (X) across or along (Y). They are generated with the entered distance.

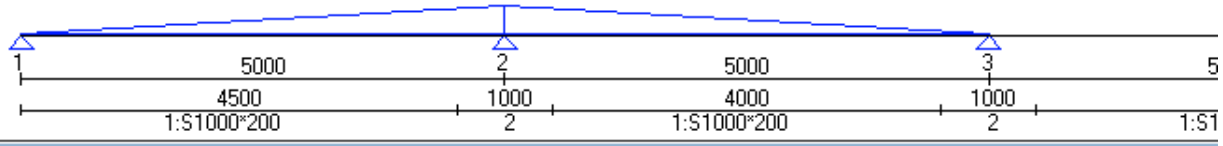
Note:

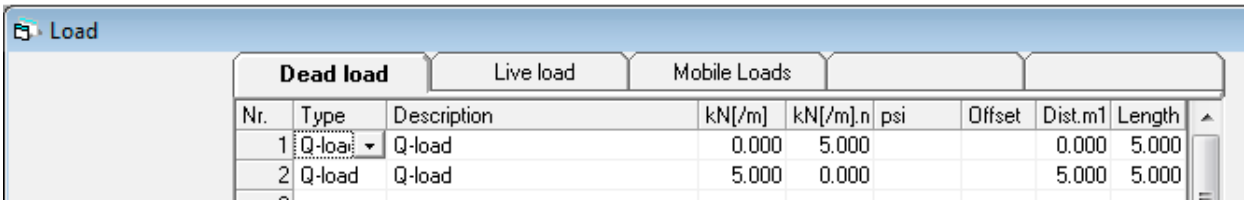
Overlapping the openings is not allowed, they will be moved automatically. If correction is absent then process may not be reliable.

The positions of the reinforcement bars or stands are showed to asses. If choosen a particular pattern the not-filled positions will be in color grey.

10. Loads

The input of loads is highly graphically designed. This means that each entry of a load or part immediately is showed. Conversely, this means that a mouse click on a load figure will lead you to the conscious row.

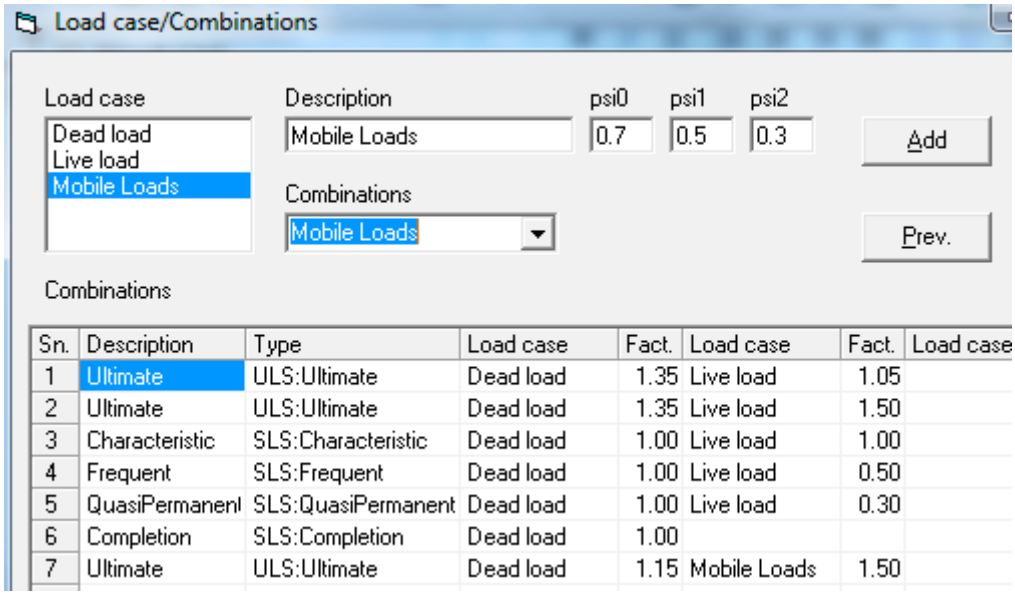




A line with a load can be removed, added or copied and pasted using the right mouse button by clicking on the first line.

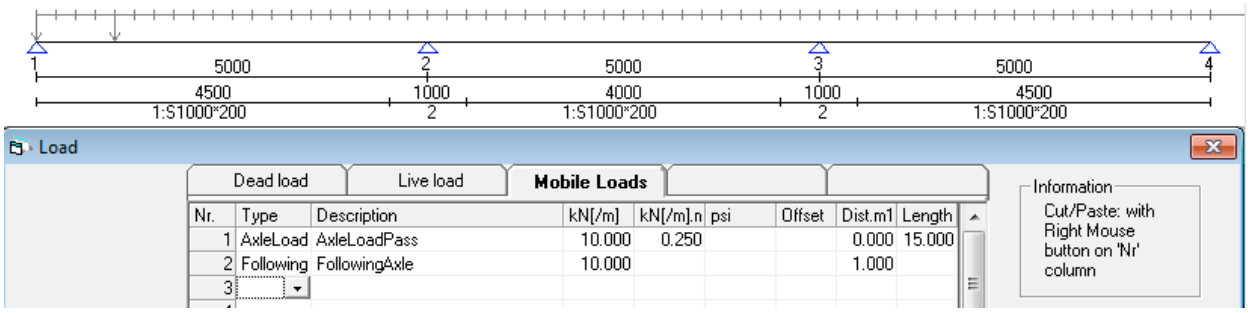
Note:

If the linear loading reaches the end then a great value automatically results in a truncated distance.



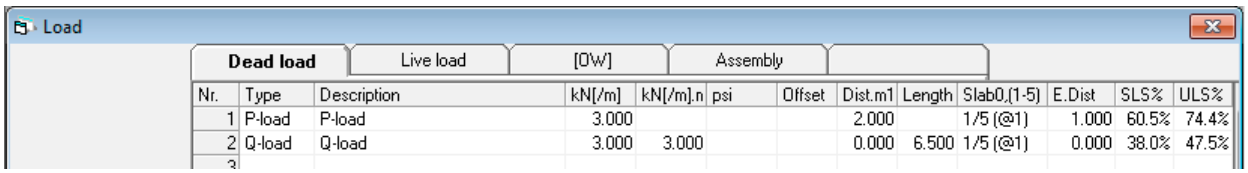
Sn.	Description	Type	Load case	Fact.	Load case	Fact.	Load case
1	Ultimate	ULS:Ultimate	Dead load	1.35	Live load	1.05	
2	Ultimate	ULS:Ultimate	Dead load	1.35	Live load	1.50	
3	Characteristic	SLS:Characteristic	Dead load	1.00	Live load	1.00	
4	Frequent	SLS:Frequent	Dead load	1.00	Live load	0.50	
5	QuasiPermanent	SLS:QuasiPermanent	Dead load	1.00	Live load	0.30	
6	Completion	SLS:Completion	Dead load	1.00			
7	Ultimate	ULS:Ultimate	Dead load	1.15	Mobile Loads	1.50	

If a mobile loading is entered Tab Mobile Loads is shown. Passing Axle load is an option in the pull down menu and a following axle load. The are moved with a displacement value in the column after the load value. Each passing hindrance to one or more axes are added next. Q- and P-loads are only single state treated.



Nr.	Type	Description	kN[/m]	kN[/m].n	psi	Offset	Dist.m1	Length
1	AxleLoad	AxleLoadPass	10.000	0.250			0.000	15.000
2	Following	FollowingAxle	10.000				1.000	
3								

The combination is automatically created to be a ULS one, e.g. serving a fire vehicle. If this combination for the cracking width also should be checked then add the occasional combination.

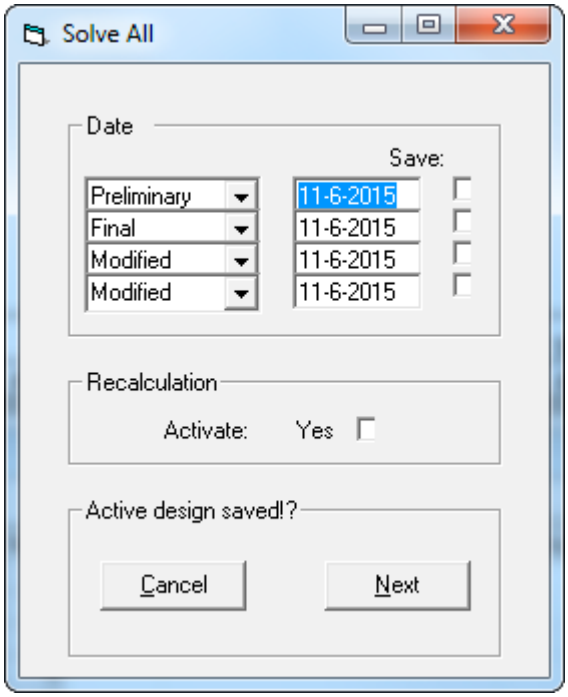


Nr.	Type	Description	kN[/m]	kN[/m].n	psi	Offset	Dist.m1	Length	Slab0,(1-5)	E.Dist	SLS%	ULS%
1	P-load	P-load	3.000				2.000		1/5 (@1)	1.000	60.5%	74.4%
2	Q-load	Q-load	3.000	3.000			0.000	6.500	1/5 (@1)	0.000	38.0%	47.5%
3												

Loads sharing with slab floors is possible under NEN - EN 1168 (Annex C). The button on the left will add 4 columns to do so. The columns relate succ. the edge distance and the calculated plate α1 t/m α5 for determining V/H share on usability and ultimate limit state . The proportion may be adjusted.

.

11. Solve (compute)



After computing a screen is shown with brief results and a button for cost calculation purposes. The amount of reinforcement is determined considering the reductions and therefore provides a lean budget.

Note:

<Calculate All> can also be started as a Batch in a script; e.g. "RSLigR AB-FAB / O01".
The options are:
"/ O #" for Part number.,
"/ B #" for Batch processing with "0" for actual non-batch processing, "1" is default, i.e. with the intervention of "t menu <Calculate All>" and "2" is without this menu. Start the command from the active folder. (see also 1. Project)
"/ L #" for Beam number with or without interaction determined with "/ B #"

12. Print Preview

The preview is prepared to sent to the printer. Zoom in can be done by double click on left mouse button left and right to zoom out or at the pull-down menu on top. Holding the left mouse button will activate the moving of the preview.

Browse with the keys and PageUp PageDown.

Export a PDF document can be made:
[PDG 1:1] stored in one file RSLGnaam_ # #. Pdf. (# # Is part no.)
[PDG 1:2] divided in cover sheet and explanation sheet with RSLGnaam_ # # A.pdf,
Other part with RSLGnaam_ # # C.pdf.
RSLGnaam_ ##B.pdf is reserved for the floor view, if necessary. B1, B2 etc
[PDG 1:3] 1st cover sheet and explanation sheet RSLGnaam_ # # A.pdf,
RSLGnaam_ ##B.pdf reserved for the floor view
Contents table in RSLGnaam_ # # C.pdf.
Other part RSLGnaam_ # # D.pdf.
With a program such as A-PDF Merger or PDFEDIT995 they can be combined to one pdf such as RSLGnaam_ # #. Pdf

13. All beams of an element count and print

This will read all the beams from the database, calculated and presented in the preview.

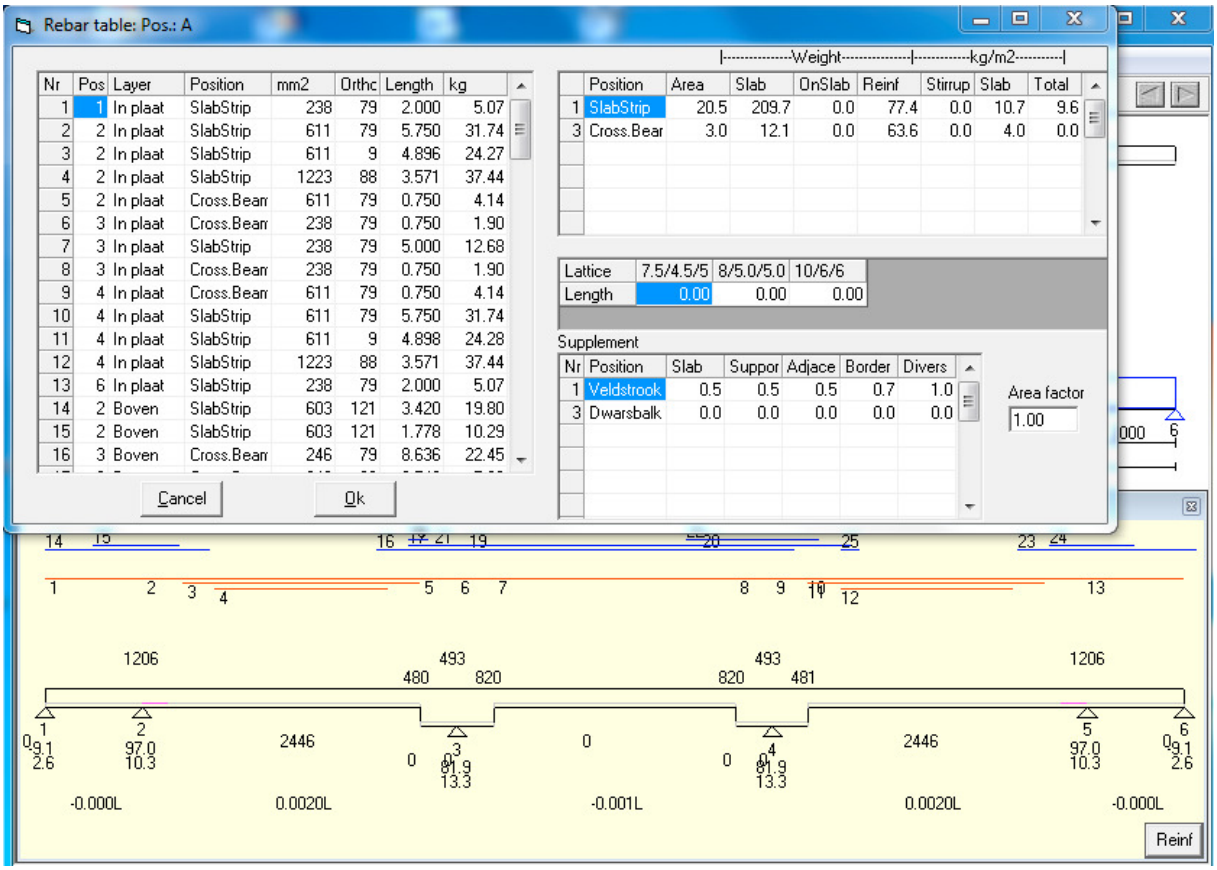
The cover sheet can be provided with an image, for example a logo with possibly. text. Also t.p.v. "Check:" a initial will be displayed. Both files must be present in the program folder of RSLigR.exe. The names are resp. RSLVoorblad.wmf or RSLTopA4 for full A4, RSLPar ###. Wmf; or type .bmp, .jpg or .gif. ### is initial "AvB". For the reference to the file with initials see 1.0 Project, "Calculated by".
It is also possible to immediately include a map in a report. This then becomes page 3. The file must be of the aforementioned types and be stored in the workbook under the name RSL name _ ##, e.g. RSL0_01 i.g.v. project "0" and part 1.

Note:

Notice that the active design is lost unless it is saved before activated.

14 (Cost) Calculations (Option)

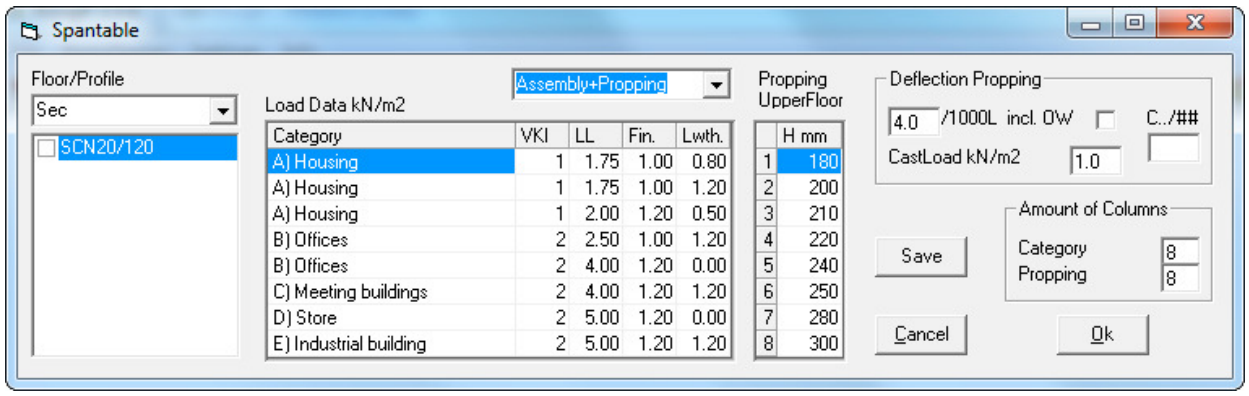
The button <Wap>, bottom right, opens the calculation screen. Each beam may be changed regarding its rebar length and supplements.



Button to start Calculation of the totals of all beams in a project part.

Chosing <YES> of recalculation activates the process to rewrite all values and all changes of beams will get lost.

15 Tables (Beam-Block-Floorsystems)



Now floor types with matching profiles are to be selected. The profiles in the table are defined in its profile file that may be customised with RSProf.exe. Choose the way the table is to be made: with or without mounting support, and with load of an overhead concrete floor while assembling it.

All values are adjustable by changing the category and then each load property.

16. Settings

At the start of the program some variables are provided default values. These values can be edited or added. For each component.

BUTTONs:

[OK]	to apply settings program quits.
[Cancel]	changes are ignored.
[Save]	Changes are saved to start new programs or open project.
[Defaults]	original settings (as part of program) are restored.
[Export] and [Import]	to save and restore the content of the settings as backup.

Note:

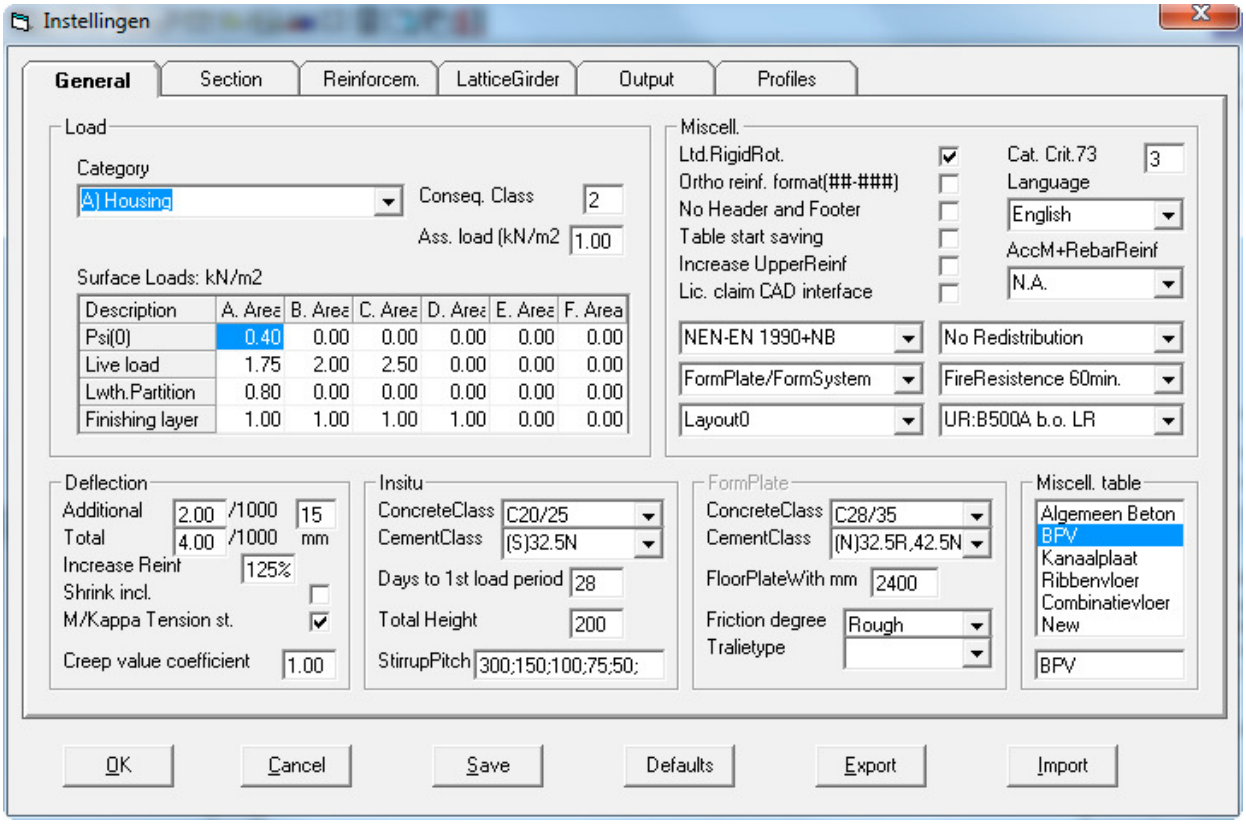
When saving currently also the 'Designer name' in the initial project database or project leader is saved. This name is automatically entered as Designer with each new project.

Note:

On the frontpage the letterhead with logo may be inserted. The name must be RSLcover, the extension; .wmf, bmp,jpg or gif and must be in the RSLigR directory.

16.1. General

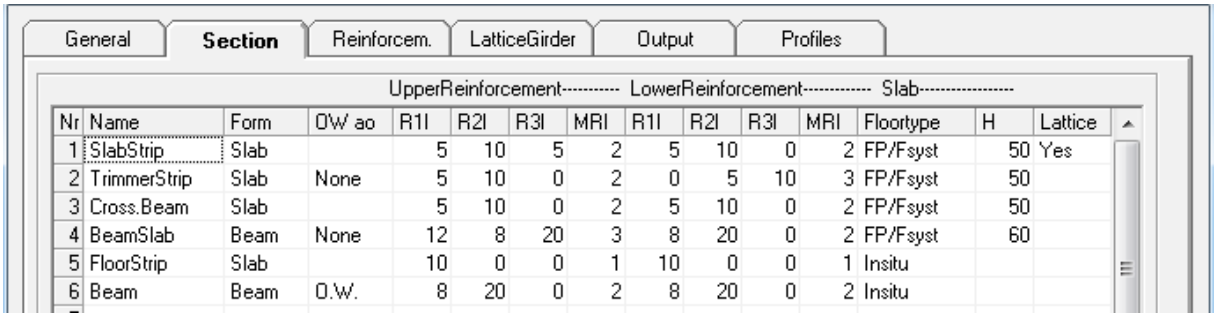
The value 'Increase max. %" given sets the limit to the reinforcement adjustment on deflection reduction to the maximum allowable concrete compression level.



Clicking on the option button 'OrthoReinfFormat vw ;##-###' is set to divide the reinforcement in diameter with center distance is displayed instead of mm2/m1 / width in prestressed Floor plate for floor systems.

'Situation Review' offers the output option to print all situations generated bij the program. It is directly represented the way it is handled in the mechanics engine.

16.2. Section



Sections may be configured to form a 'plate' or 'beam', the name is free to fill out. The flooring choice may be with slab part 'FP/Fs or 'in-situ'.

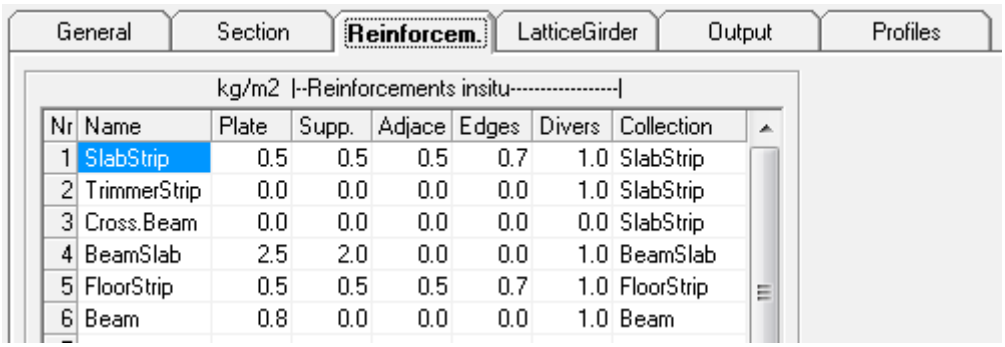
Trimmer strips with reinforcement on the slab part plate are defined by locating the bars in the third layer (MRl=3). 'R#l' directs the bar respectively to the 1,2,3't layer.

Lattice, selection "No, Yes, Support", respectively.; None, apply lattice or being used as bar strainer which will

affect the top cover.

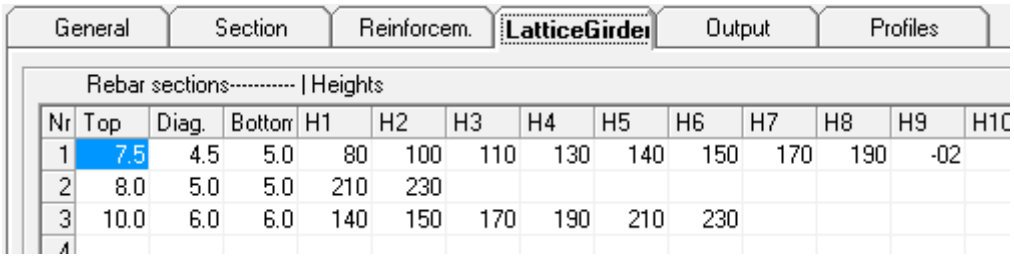
16.3. Reinforcement

Basic added values for determining reinforcement amounts for cost calculation. ‘Collection’ allocation determines to which the amount of reinforcement is of the strip or beam type is added.



Nr	Name	Plate	Supp.	Adjace	Edges	Divers	Collection
1	SlabStrip	0.5	0.5	0.5	0.7	1.0	SlabStrip
2	TrimmerStrip	0.0	0.0	0.0	0.0	1.0	SlabStrip
3	Cross.Beam	0.0	0.0	0.0	0.0	0.0	SlabStrip
4	BeamSlab	2.5	2.0	0.0	0.0	1.0	BeamSlab
5	FloorStrip	0.5	0.5	0.5	0.7	1.0	FloorStrip
6	Beam	0.8	0.0	0.0	0.0	1.0	Beam

16.4. Lattice Girders

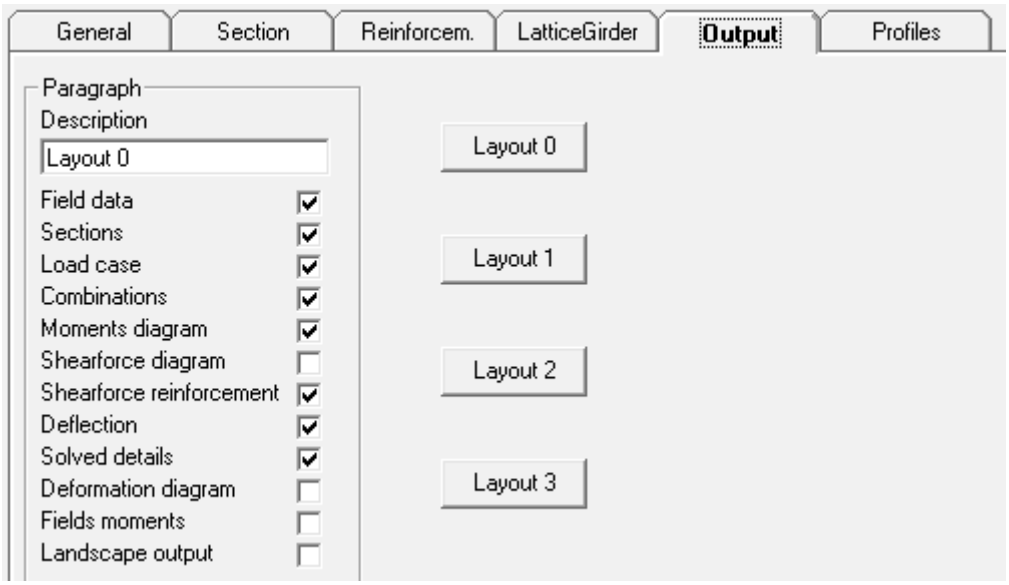


Nr	Top	Diag.	Bottom	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10
1	7.5	4.5	5.0	80	100	110	130	140	150	170	190	-02	
2	8.0	5.0	5.0	210	230								
3	10.0	6.0	6.0	140	150	170	190	210	230				

The lower bars of the lattice girders may be used as reinforcement but they are not applied as such in the program. The diagonal ‘lattice’ bars may be used for connection, shear interface, and will be used to calculate the number of girders. The height is only used if 'Sections' to 'support' is selected instead of 'stirrup'. Rows can be linked to the next one by entering in the last column instead of 'height' a negative value. (E.g. -2 or -3).

16.5. Output

A maximum 4 pcs. layouts are created with a name.



Note.

The cover may have a picture or logo to appear. The size of this field is set at approximately 150 x 50mm. The name is RSLCover with the extension. wmf, bmp, jpg or poison and should be at the RSLigR directory.

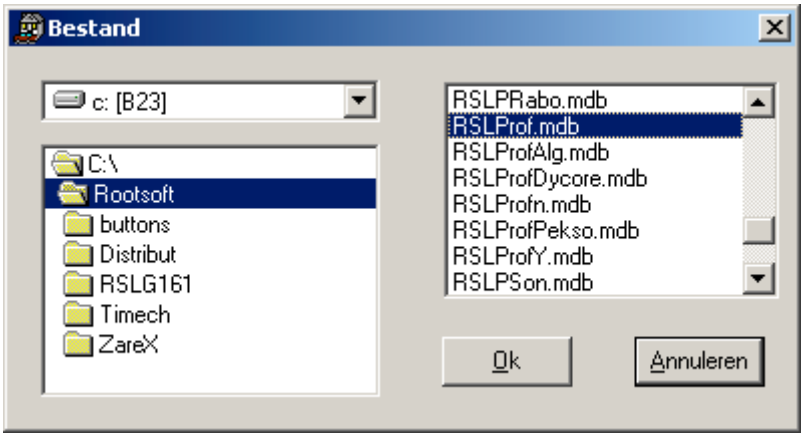
16.6. Profiles

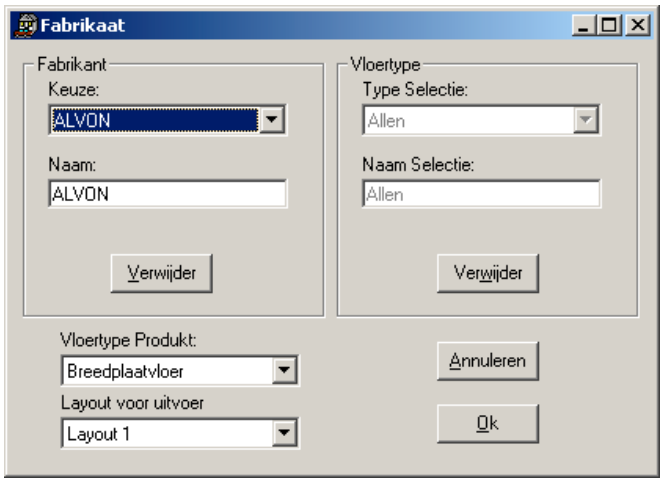
Normally the profile name is RSProf.mdb. The assignment may be changed to another one.

RSProf Explination

The file menu consists of the option "Location" with which a profile file can be opened and "Manufacturer" where the choice for a floor can be made.

The floor type must be determined at manufacturer / manufacture and when choosing other than Insitu and Floor System Floor Plates with(out) profile, also selection groups can be made. This is necessary when choosing a section in RSLigR. For example, a group of profiles "Without concrete cover" and "With Cover" or "H180" and "H200".





The first choose leads to "Bestand (File)" and "Data". With “File” a list of RSLP*.mdb files is shown. Within the structure of "Data" you can always choose "Continue" and "Back" or by using the button bar.

In addition to the drop-down menu, there is also a toolbar available.

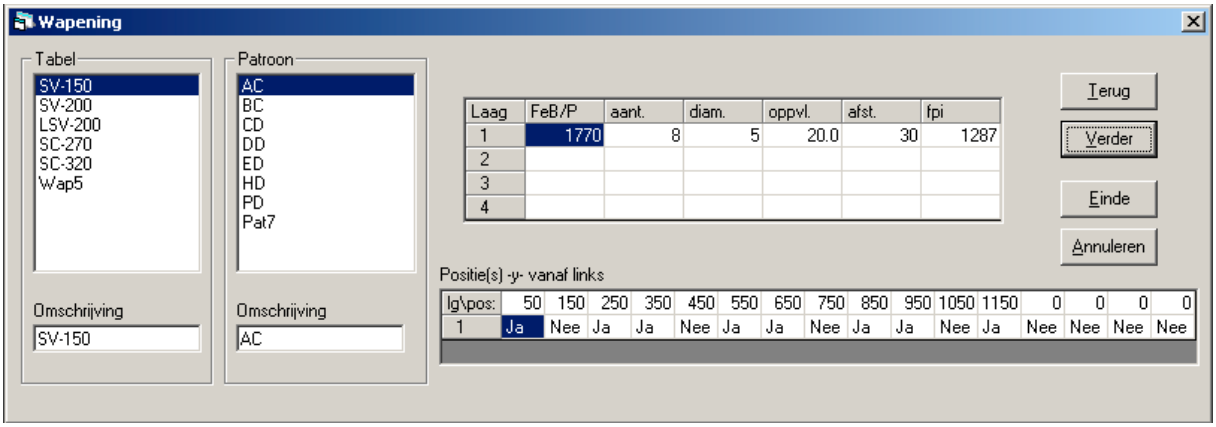
First the File and the selection of Floor Type, after that in order; Reinforcement, Prefab part and Insitu assembly.

Reinforcement

With the option "Reinforcement" reinforcement can be entered and changed in multiple patterns. Patterns can also be grouped as tables. The patterns must be entered ascending to capacity because when used by RSLigR, the first value is checked to see if the first value is adequate and then the next value if not sufficient.

‘afst.’(Distance) Is from bottom to center bar. Start with the bottom layer and up with the largest cross-section in the first "layer". (number * mm2)

"Fpi" Is the initial pre-stress, of course only applicable for pre-stress reinforcement.



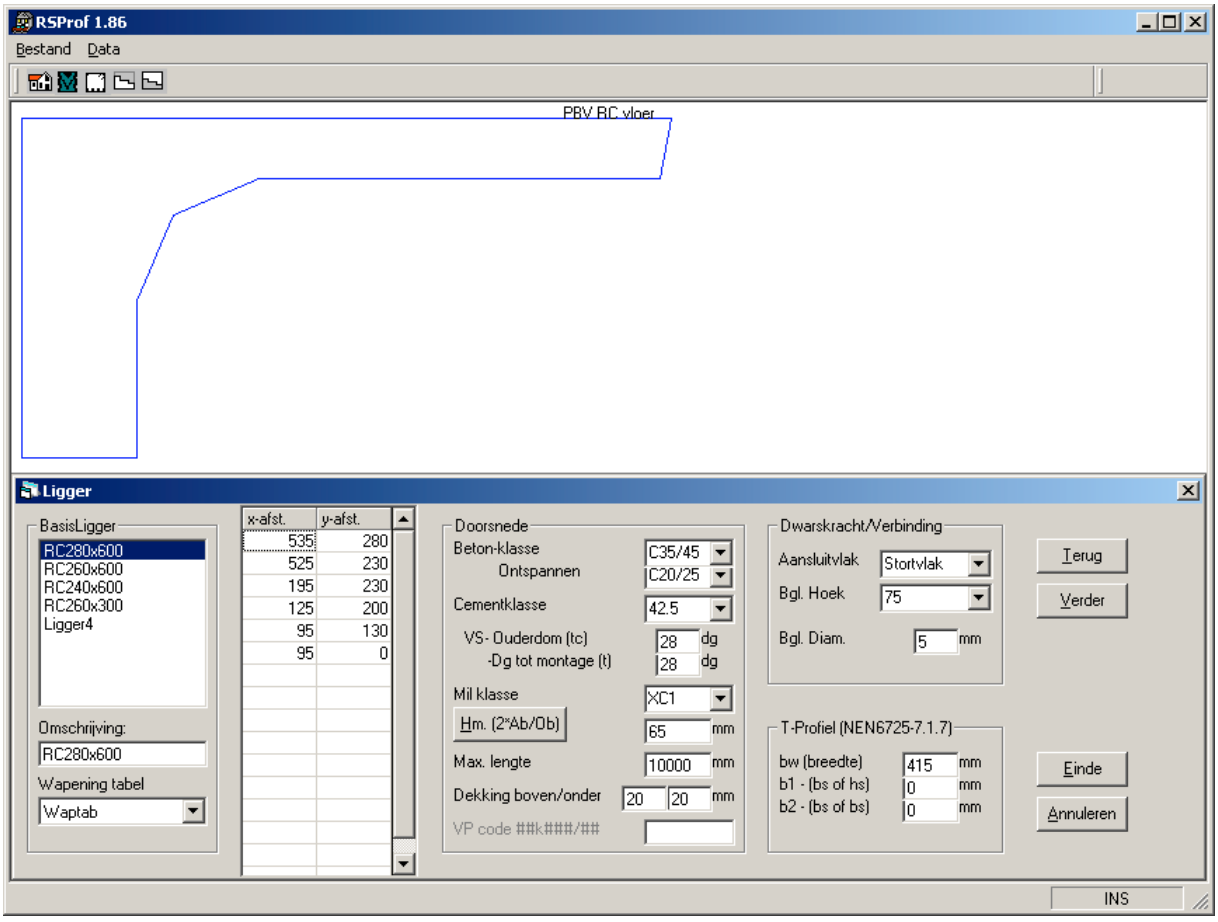
NOTE:

After entering a pattern, this screen must be closed and reopened if necessary. create another pattern.

Patterns and tables can be deleted, copied, moved and inserted by selecting the relevant line and making the right action for the intended action. When inserting, stand at the location of the new value, so that the relevant one moves backwards.

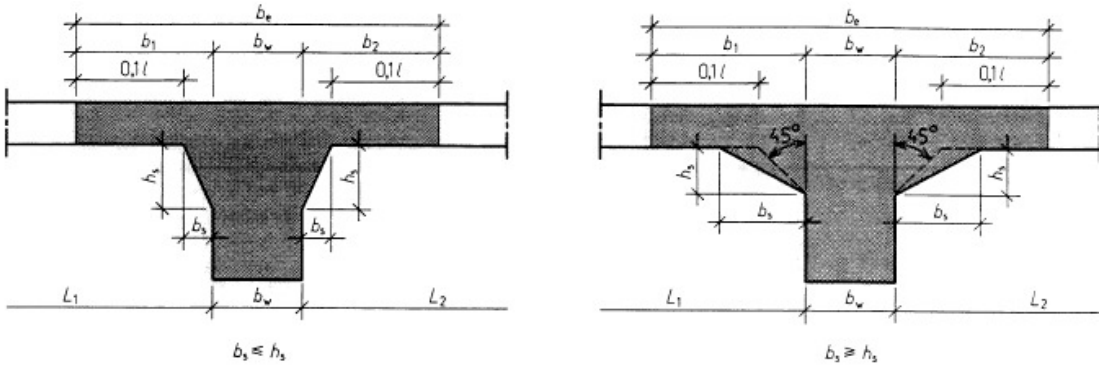
LIGGER (Beam)

This is the Prefab part of a Section.



Because only the x-axis is relevant when solving, the cross-section can be compressed on the y-axis.
The coordinates start at the top right and end with a 0 value on the y-axis. The lower x distance may also be 0 with a sharp bottom.

Because the cross-section, due to the shift to the y-axis, does not have to be the actual cross-section, for a T-bar and an edge bar the cooperating width must be d.m.v. the parameters bw, b1 and b2 are specified according to figure 5.2 and 5.3 NEN-EN 1992.



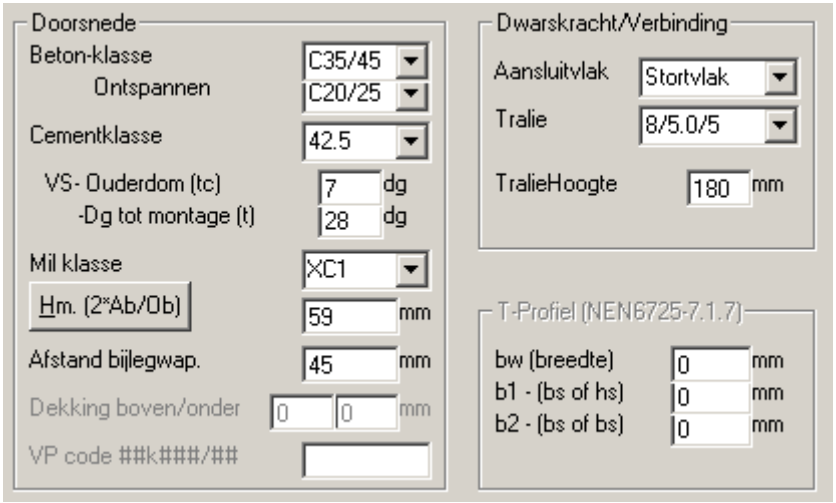
Figuur 15 – T-balken met afschuining

NOTE:

A Reinforcement table is necessary the opereate!.

NOTE:

After entering a pattern, this screen must be closed and reopened if necessary. create another pattern.



NOTE:

If no pre-stress reinforcement in the reinforcement pattern, the concrete class will be ignored when relaxed.

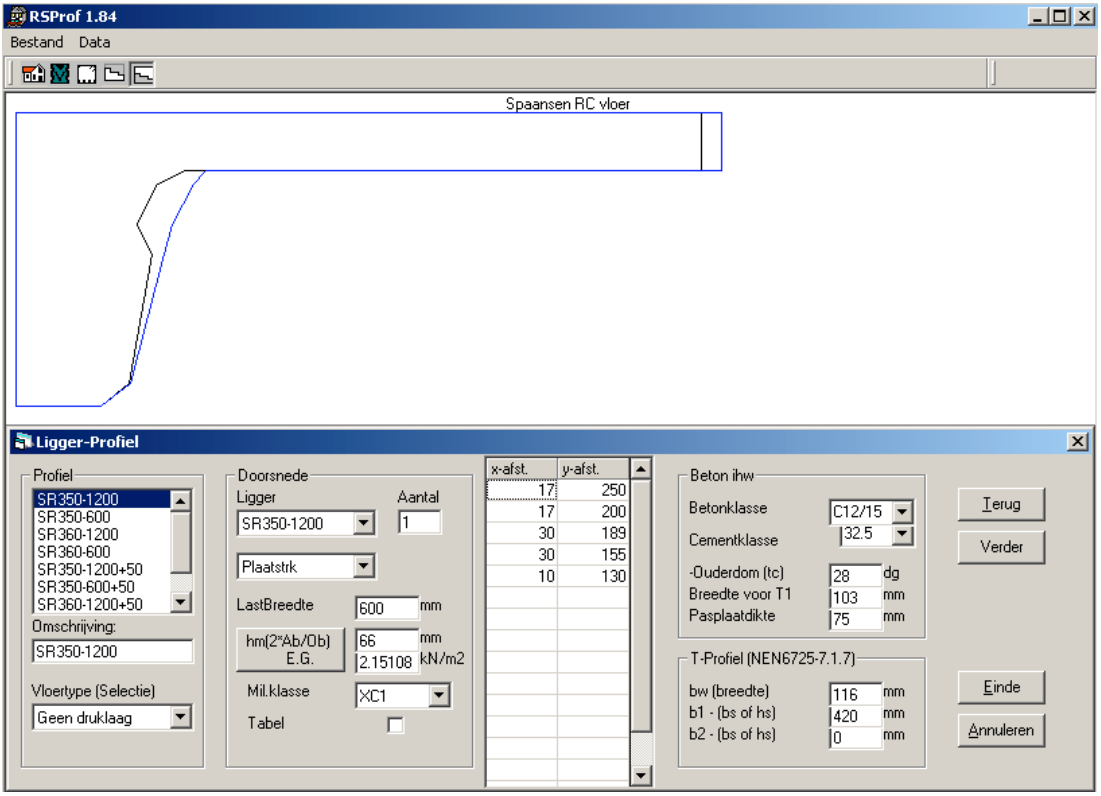
Distance of “Afstand bijlegwapening” is the reinforcement added to basic pattern to the center distance of the reinforcement FeB500 that must be added if the pattern is too low. If no value is entered, then the coverage with the reinforcement structure is chosen corresponding to the cross-section.

For sheet floors, ribs and combination floors, the upper and bottom cover may be entered These values will be copied in section for the additional upper and lower reinforcement for example accidental clamping.

"VP code ##k###/##" is needed to build the pattern of the channels in a slab floor. The first 2 positions are for the number of channels, then the width of the channel and the size between the channels. For example 11k60/40 means 11-channel plate with channels of 60mm separated with 40mm solid webs.

LIGGERPROFIEL: (Beam assembly)

First the prefabricated part must be chosen and the number of pieces per section. Next, it is a "Slab Strip", "Floor Strip" or, for example, "Beam Slab". Based on this, the reinforcement structure is selected in RSLigR. The "LastBreedte" (Load width) must be specified for the determination of the global taxes and the OW determination per m2.



If something is changed that causes the factor h0=(2A$_c$/u) and OW (may be overruled), to change the amounts the values will be colored red. With the button next to the red values, a recalculation is made and the relevant values are entered in 't black.

To input/change the coordinates is similar to that for the girder accept there will almost always be ended at the bottom with a 0 on the x-axis and a value on the y-axis.

If more than one basic girder is included in a cross-section to, for example, combination floors, then the full cross-section is naturally calculated, but the cross-sectional representation in that case is based on one beam. This is reflected in the fact that the part to be deposited or to be deposited is reduced in size, namely the scaling in proportion to the number of basic members.

The "Table" switch is for future expansion for printing out tables.

“Mil.Klasse’ means Envirement Classe.