Peikko Designer®
Release Notes

Date of release 28.12.2022, 2.5.0

Column Connection

- BOLDA® with longer anchor bars are added under the National Annex of Germany to address the poor bonding conditions. Detection of bond condition happens automatically, and then the software automatically assigns corresponding BOLDA® model – BOLDA® Long for poor bond condition and BOLDA® standard for good bond condition. However, user has always possibility to overwrite the selection.
  For the time being, PEC® shoes are still on the product selection list for Germany.

- The yield strength now corresponds to the selected reinforcement grade in the report under ACI code.

Punching reinforcement

- Fixed the calculation of control perimeter when it is reduced by the openings next to the column/wall position.
- Bug related to number of rails giving insufficient resistance under 2/3 option is now fixed.

Anchor Plate

- Calculation of Concrete Edge utilization is being fixed when all the edges are supported.

Date of release 03.10.2022, 2.4.3

Column Connection

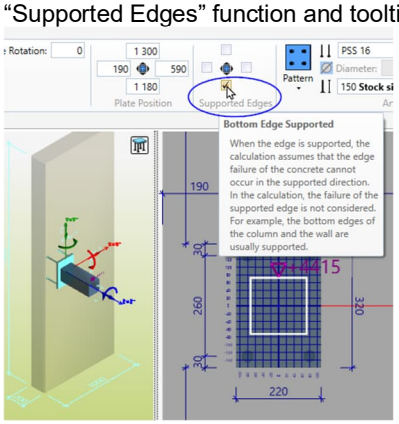
- Erection stage loads influence on results in Final stage is fixed.
- The load bearing area of the fastener's head has been slightly corrected in the calculation.

Punching reinforcement

- Slab span ratio lx/ly is now limited to the range of 0.5-2, and manual input for rd_x and rs,y was disabled.
- ARMATA is no longer offered by Peikko. Design of punching shear reinforcement according to ACI 318 is still available in Peikko Designer® with PSB® as punching shear reinforcement.
- Minor layout placement update of 2/3 elements.

Anchor Plate

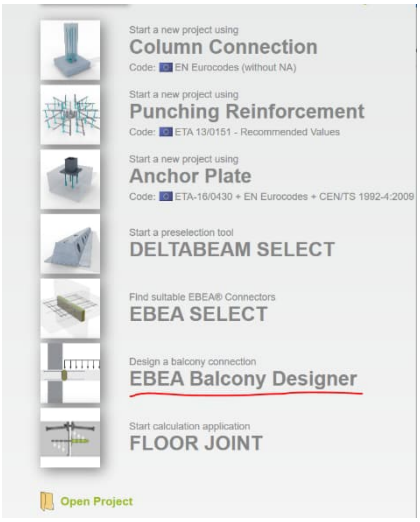
- “Supported Edges” function and tooltip has been added.



Date of release 20.04.2022, 2.4.2

General

- EBEA Balcony Designer is added to the list in the starting window.

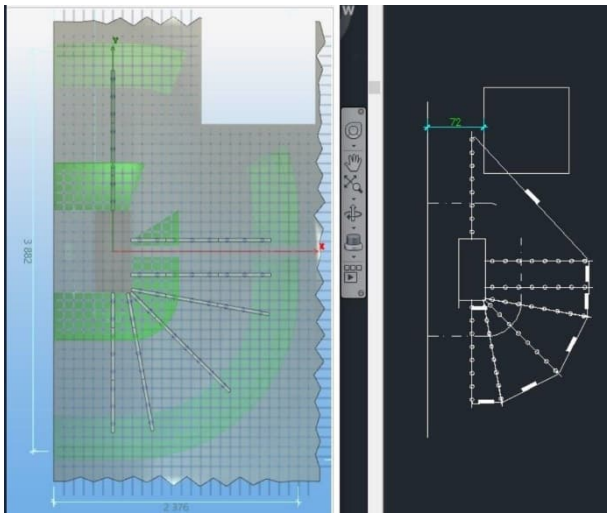


Column Connection

- Protrusion height of PPM30 in combination with PEC® Column Shoe has been corrected.
- Supplementary edge reinforcement bug was fixed.

Punching reinforcement

- The diameter of the available studs was limited according to the effective thickness of the slab under SIA code. Diameters 28mm and 32mm are removed from the list.
- The difference between opening's position in the UI and dwg file is fixed now.



Anchor Plate

- Acc.to CEN/TS 1992-4-2:2009 (E)
  6.3.5 Concrete edge failure
  6.3.5.1 General

An edge distance is now assessed in all directions c > 10 hef or c > 60 d, that a check of the characteristic concrete edge failure resistance may be omitted.
Now CEN/TS and EC2-4 concrete edge failure resistances are closer to each other.

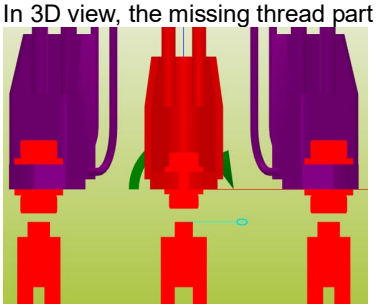
Date of release 01.11.2021, 2.4.1

General

- The most recently translated German strings have been added.

Column Connection

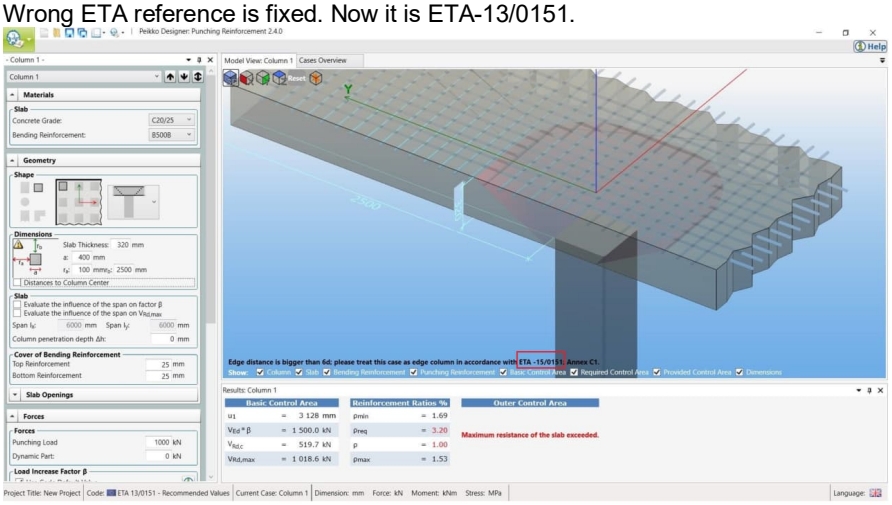
- The copy/paste/delete functionality in Loads table has been aligned in Column Connection and Anchor Plate modules.
- The BOLDA web link has been added to the Help tab.
- In 3D view, the missing thread part of PPM/S bolts has been fixed.



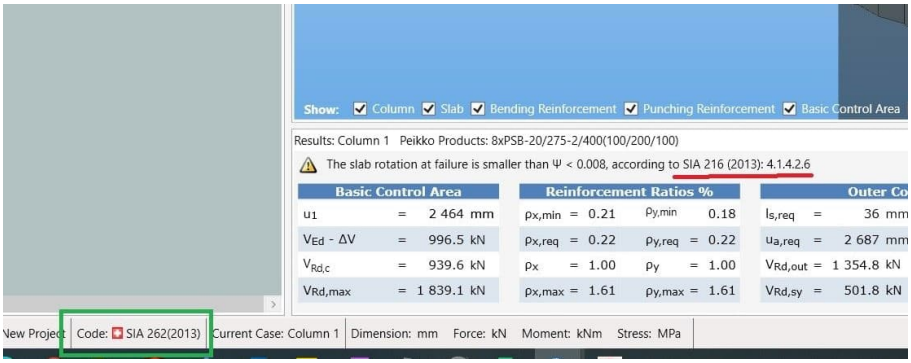
- Concrete verifications can now be dismissed by leaving tick boxes empty.
- Internal stress distribution error fixed under uniaxial bending in the Erection stage.

Punching reinforcement

- Wrong ETA reference is fixed. Now it is ETA-13/0151.



- Wrong Swiss code reference/number is fixed. Now it is SIA 262.



Date of release 08.06.2021, 2.4.0

General

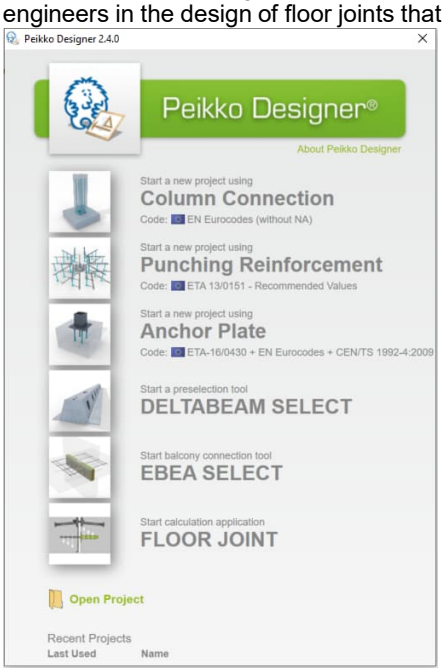
- The icons have been changed and aligned in the starting window of Peikko Designer®.

Column Connection

- PEC® Column Shoes have been removed from the selection list for newly created projects in all Annexes except German. Previously saved projects can still be designed with PEC® Column Shoes, with the caveat that PEC® Column Shoes are now discontinued and delivered on demand.
- PEC® Column Shoes are only available for design under the German National Annex (new and previously saved projects). The discontinuation of those under German flag is expected to happen in 2022.
- If PEC® and BOLDA® Column Shoes are both present in the project, the notification is displayed informing about PPM® Anchor Bolts' protrusion height differences.

Floor Joint

- The NEW Peikko Designer® Floor Joint application has been released. The application assists structural engineers in the design of floor joints that use Peikko's free-movement joints.



Punching reinforcement

- The value presented for v_{min} in printed output was 1000x smaller than it should have been. There was no effect on the calculation; it was just a matter of visualizing the values in the printed output. This error has been corrected.

Date of release 09.04.2021, 2.3.2

Column Connection

- Solved issue concerning missing pictures in the PDF-print.

Date of release 18.02.2021, 2.3.1

General

- With the software's installation procedure change there is now possible to get .msi installation file for those who want to install Peikko Designer® with company wide remote systems (in multiple user seats). Send request for msi file to peikkodesigner.support@peikko.com.

Column Connection

- Fix in iteration procedure regarding of solving bolt internal forces for columns in compression and without bending moment.
- Removed BOLDA Column Shoe selection from ACI design option.
- Solved issue concerning opening of Cases Overview window.

Punching Reinforcement

- Default setting for Approximation of slab rotation war changed from Level I to Level II in case of Swiss code SIA 262 (2013).
- Update of units in printed output in case of ETA. Data related to reinforcement, presented in printed output under centimeters was repaired. Previous version of Peikko designer presented those values in millimeters.
- Error related to β_{red} and β equal to 1.0 was repaired. When β is set to 1.0 then β_{red} is 1.0 as well.

Anchor Plate

- Fix of the wrong values of c1 in concrete edge failure.

Date of release 13.01.2021, 2.3.0

General

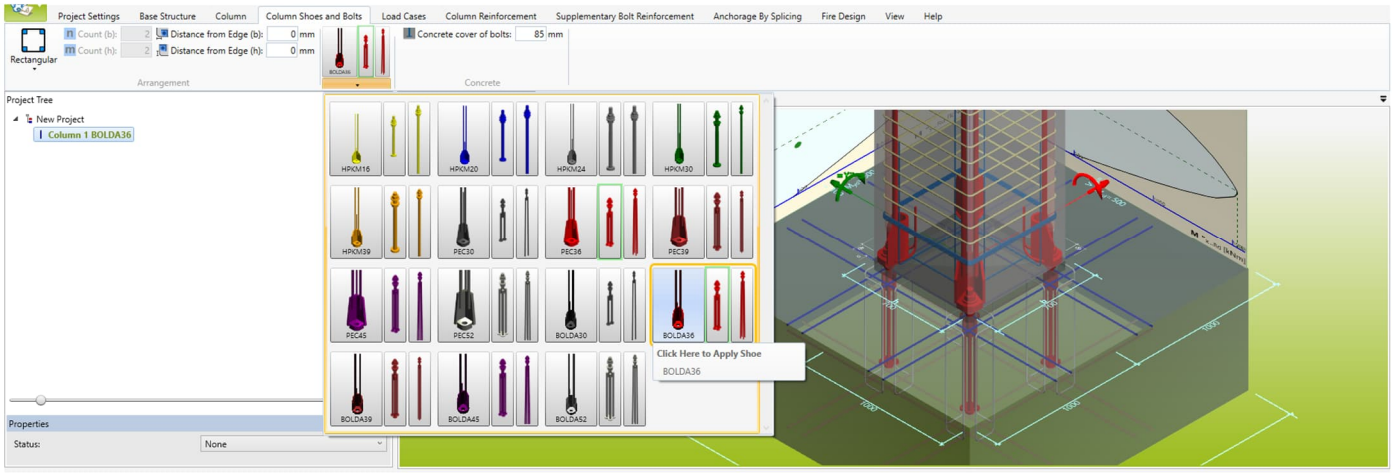
- We are working on software's installation procedure change that will affect the next version of Peikko Designer®.
- Romanian translations have been included.

Column Connection

- Main feature introduced within the 2.3.0 version is new BOLDA® Column Shoe and design of Column Connection in combination with it. BOLDA® Column Shoe is PEC® Column Shoe "successor" with several advantages over predecessor model. BOLDA® Column Connection design is more compact – required column cross-section is much smaller, comparing to same design done with PEC®. This is possible because BOLDA® Column Shoes have optimized shape, that was achieved during development phase with efficient design approach.

  Other **benefits of using BOLDA® Column Shoe** against PEC® Column Shoe can be summarized as:
  - Bending resistance factor η_d =1,0 – Design based on connection performance and resistance will not yield to smaller joint design resistance.
  - No overdesign in joint level is needed to reach aimed stiffness criteria (are at least as stiff as continuously reinforced cast-in-situ column).
  - Joint design - Friction contribution accounts for compression, arising from axial force and bending. It gives higher friction contribution, and it means there will be less combined stress for interaction check.
  - Enabled Fire Design
  - Shorter anchor bars
  - Optimized supplementary reinforcement. Also, considering installation practicality.
  - Improved shear resistance calculation - Higher shear resistance values.
  - PPM L Anchor Bolts are having higher concrete cone failure resistance, being installed deeper in the concrete body.

  Please note that "Export to Tekla Structures" operation in Peikko Designer® will be fully functional after necessary updates in PeikkoEmbeds plugin for Tekla done at the end of January.



Punching Reinforcement

- Peikko Designer® had an issue with opening of old files with filigree slabs calculated according to German approval Z-15.1-231. Software informed that this option is no longer available and switched design to calculation according to ETA 13/0151. This behavior was corrected. Peikko Designer® still allows calculation of filigree slab according to Z-15.1-231 and opening old files.

- Our knowledge about design of punching shear reinforcement has increased recently. Hence, Peikko Designer® now allows calculation of compact foundation with even lower slenderness factor than 1.25.

- Peikko Designer® had issue with calculation of reinforcement ratio in one case.
  Software makes intermediate verification of the input diameter of bending reinforcement:
  $Ø_{x/y} > Ø_{x/y,calc}$, where
  $Ø_{x/y}$ - user input bending reinforcement in x or y direction
  $Ø_{x/y,calc}$ - internal verification of diameter in x and y direction, when
  $Ø_{x/y,calc} = hd - d_{x/y} - c_{0,}$ where

hd - thickness of the slab,
$d_{x/y}$ - effective height in x or y direction,
c_0 - top concrete cover of bending reinforcement.

Issue appeared in cases where $Ø_{x/y} < Ø_{x/y,calc}$, due to too big concrete cover, and Peikko Designer® used $Ø_{x/y,calc}$ for calculation of reinforcement ratio, instead of real user input. This issue has been solved and now software calculates with user input value for $Ø_{x/y}$.

- Calculation of β_{red} has been updated due to changes in Technical report TR-060:2017 (Design background for double headed studs used as punching shear reinforcement created by EOTA).

Date of release 30.09.2020, 2.2.2

General

- Translations for Italian language are added.
- Test debugging done to prevent software crashing during calculation face.

Punching Reinforcement

- PSB-F is no longer available in product list. Due to very low demand and high costs of PSB-F there was a decision to discontinue the product and remove it from all Peikko's sources. Earlier calculated cases with PSB-F are still possible to open, edit and print.

Date of release 14.09.2020, 2.2.1

Column Connection

- Notification message for the spliced harpins is now visible only when its number more than 0.
- Blow-out verification is upgraded in order to recognize correct boundaries of base structure in case of thin pedestal.
- The 3D view is now corrected under NA of Germany code, and is showing HPM24P-1360 and PPM30P-1480 bolts in full length.
- Trigger for the notification regarding splitting bars as edge reinforcement now follows instant result table update.
- The automatically calculated number of shear reinforcement in x and y directions (Hanger and Spliced Hanger), when diameter is no selected, is now fixed to be 0.
- Concrete verification for long bolts was not performing for specific design cases in project tree. Now it's fixed.
- Many parameters were equal to 0 in detailed results' report. Now it is fixed and there are calculated actual values appearing in the report.

Punching Reinforcement

- From this version You will be able to see the calculated amount of PSB, when min spacing of the adjacent stud rails is not fulfilled.
- DSAR is no longer available in product list under ACI code. Earlier calculated cases with DSAR are still possible to open, edit and print. Newly created cases will be possible to design only with ARMATA®. ARMATA® Punching Reinforcement has higher yield strength, and design with ARMATA® rails give a smaller number of studs per column. More information is available at www.peikko.com.
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Anchor Plate

- Crashing of the software, when editing anchor plate's geometry for certain load combination, is solved.
- Display of attached section in printout is fixed and shows correct position of the section.
- Fastening capacity utilization results (concrete edge and combined tension+shear) for 40kNm torsional moment are appearing correctly now.

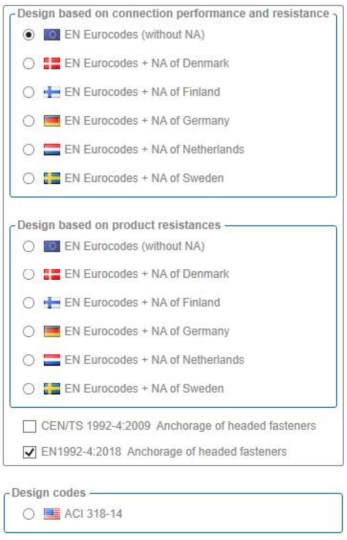
Date of release 25.06.2020, 2.2.0

General

2.2.0 release is mainly dedicated to EN 1992-4 standard implementation for Anchor Plate and Column Connection modules. This standard stands for anchorage design of headed anchors and covers concrete failure modes' verifications, combined resistance check and supplementary reinforcement calculations.
Anchorage design acc.to CEN/TS 1992-4 is still available for the selection, since the current ETA assessments are still valid. Updates of approvals with the reference to EN 1992-4 are coming in the close future. Meanwhile the Peikko Designer® software is already compliant with the new standard.
With same release we have unified the calculation methods of concrete edge failure between Anchor Plate and Column Connection modules for the new EN1992-4 part. Anchor Plate calculations for EN1992-4 selection are aligned to the method used for Column Connection in the verification of concrete edge failure.

Column Connection

- EN 1992-4 design rules are implemented.
  There is a check box available in the code selection window to manage certain design rules activation. User has freedom to choose between CEN/TS 1992-4 and EN 1992-4, when according to the selected standard anchorage to concrete verifications will be run.



- HPM16P length is corrected in the report document – it is 810mm for all the codes except German.
- The display of correct projected cone area on the edge Ac,V is now resolved in the report document.
- The reference ETA number is updated to ETA-18/0037, which is the latest valid assessment for HPKM® Column Connection.

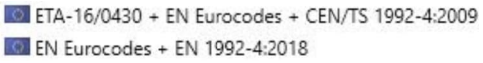
- The issue with column shoes exchanging positions, when column cross-section is reduced, was resolved. The issue was happening when column shoes were placed closer towards the center of the column to ensure bigger concrete cover.
- Print preview in the file with many design cases is now faster and is not crashing.
- The condition for the warning message appearance, when the anchor bolts are too close, is corrected.

Punching Reinforcement

- Collision of the shear rails with openings is fixed.
- The issue with opening saved project files and seeing saved information has been resolved.

Anchor Plate

- EN1992-4 design rules are implemented.
  There is a check box available in the code selection window to manage certain design rules activation. User has freedom to choose between CEN/TS 1992-4 and EN 1992-4, when according to the selected standard anchorage to concrete verifications will be run.



EBEA SELECT

- EBEA SELECT icon is added to the starting window of Peikko Designer®. This icon creates a path between Peikko Designer® standalone application and newly released online selection module for EBEA Balcony Connectors.

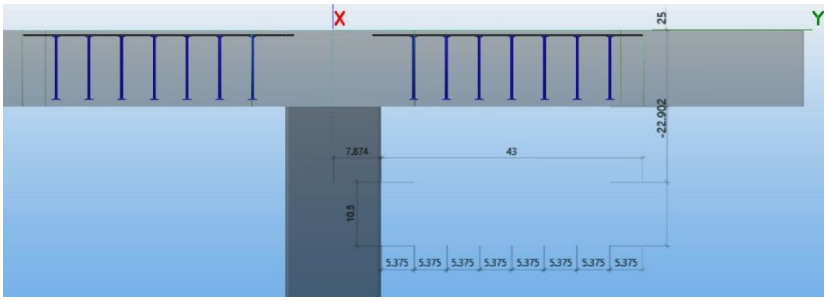
Date of release 16.01.2020, 2.1.5

Anchor Plate

- Mismatch in anchor's height value and 3D view is now resolved. When changing anchor type the height value of the anchor was different form visually depicted in 3D view.

Punching Reinforcement

- Negative and unattached dimensions of the stud rail cross-section are no more appearing under ACI design code.



- A new warning message implemented with regards to ETA-15/0151, Annex C1, to inform user that in the cases of edge distance equal or bigger than "6d" edge columns should be treated as inner columns in punching

reinforcement design, but corner columns – as edge or inner depending on which distance fulfils this requirement r_a, r_b or both.
- The problem causing smaller maximum resistance of slab $V_{Rd,max}$ above corner columns, when at least one of edge distances was bigger than 999mm, is now resolved.

Date of release 13.11.2019, 2.1.4

General

- Missing translations of software's user interface are now implemented.

Date of release 17.10.2019, 2.1.3

Column Connection

- Resistance domains of rectangular cross-sections with high aspect ratio (e.g. wall cross sections) are now calculated correctly in ACI design.

Punching Reinforcement

- The problem with wrong partial factors GAMA when switching ETA local annexes during ongoing case is fixed.
- Limitation condition for circular column diameter 12d is removed.
- The problem with unrealistic user input and resultant insufficient and unrealistic reinforcement has been resolved.
- Incorrect layout of PSB studs in 3D view has been eliminated. Bug had no effect to the calculation procedure.

Date of release 26.06.2019, 2.1.2

Punching Reinforcement

- The fix is related to the sudden change of effective height of slab entered "by ratios" in already saved cases.

Date of release 11.06.2019, 2.1.1

- Right after release of 2.1.0 we had to fix a problem that prevented opening some of the old Peikko Designer® Customer projects correctly.

Date of release 10.06.2019, 2.1.0

Column Connection

- There has been corrected the design equation for the minimum total area of joint reinforcement in ACI design code selection for Column Connection module. Now the "A_{joint} "set to be equal to "b*h" regardless column axial load to be conservative.

- Problem in printing with PDF-Xchange and PDFCreator is now resolved.

Punching Reinforcement

- During upgrade of Peikko Designer® to version 2.1.0 orientation of bending reinforcement has been updated. This update will require cross-check of ongoing cases done with input of bending reinforcement "by actual". Cases that are already installed and designed in versions up to 2.1.0 are not affected and need no attention from User's side.

- PSB PLUS® informational pop-up message is no more appearing when ACI design code selected in Punching Reinforcement module. PSB PLUS solution is available under ETA and SIA design codes' selection only.

- German PSB PLUS® warning message text is now fitting to the window of 3D view.

- In some design cases printed output for Punching Reinforcement module was missing $V_{Rd,max}$ value and verification to V_{Ed} as well. The cases were studied, and the issue was resolved.

Anchor Plate

- WELDA 200x200-112 and -R/Rr/A/Ar other types of it were having wrong anchor's diameter. Now it's corrected to be 13mm.

Date of release 5.4.2019, 2.0.0

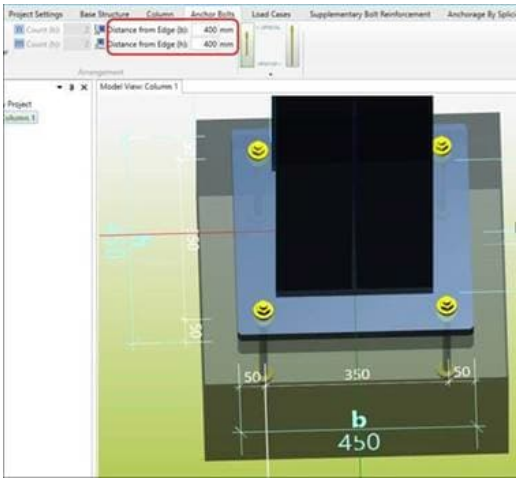
General

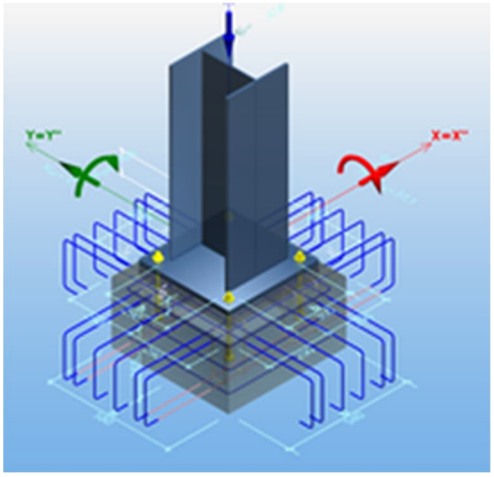
To streamline account handling process, Peikko has refreshed user registration page providing further user account manipulation possibilities. User will see: a) new registration page, b) account information form. Please fill in the contact information to help us to be precise in what we are supplying for you. Since only you are responsible for the accuracy and the completeness of the data entered in the form, do it once and benefit from having always latest information at your fingertips.
If you are already using Peikko Designer®, it's the right time to fix your missing data. Access and complete the form from here https://myaccount.peikkodesigner.com/.
Our support channel remains same – peikkodesigner.support@peikko.com. Please use it if you need to ask us anything related to Peikko Designer®.

Column Connection

- Joint rotational stiffness criteria have been dismissed under selected ETA design code with German NA for cases when connection is controlled by compression. The problem had revealed itself when the whole cross-section was compressed (all the anchor bolts were compressed) and design according to the product resistances was sufficient but failed with ETA design.

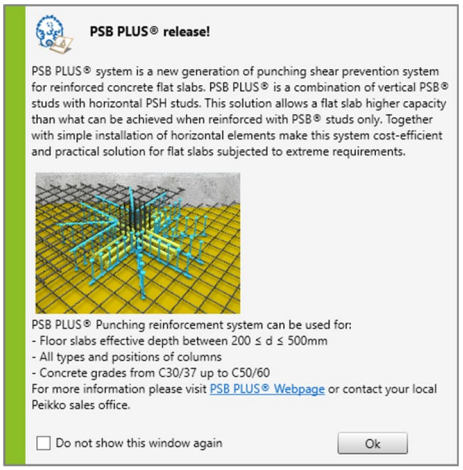
- The maximum Distance from base plate's edge to the center of the anchor bolt is now limited to $\frac{base\ plate\ dimension}{2} - M$, where "M" is size of the anchor bolt thread. The limitation is in force for the applications with steel columns. Previously when the distance value was not limited and was defined bigger than the half size of the base plate, sequence of design parameters became corrupted which resulted in the supplementary bolt reinforcement and/or bolt group to be placed outside of the foundation.





Punching Reinforcement

New version of Peikko Designer® is giving a hint about brand new solution to make slim floors possible under extreme forces. User can get to know more from notification window that pops-up when starting Punching Reinforcement module.
The implementation of PSB PLUS® design principles in Peikko Designer® will follow. Meanwhile contact Local Sales representative to support you on this matter.



To reach more information about new solution is also possible from Peikko Designer® Help section.

Date of release 8.3.2019, 1.2.5

Column Connection

- Crashing of the software during physical printing of the case(-s) document has been eliminated.

Punching Reinforcement

- Users saw stud diameter given in centimeters for the product code, if the unit system was selected in centimeters. This will not happen anymore, and you will see all parameter defined in millimeters for product code as usually it was.

Date of release 1.3.2019, 1.2.4

General

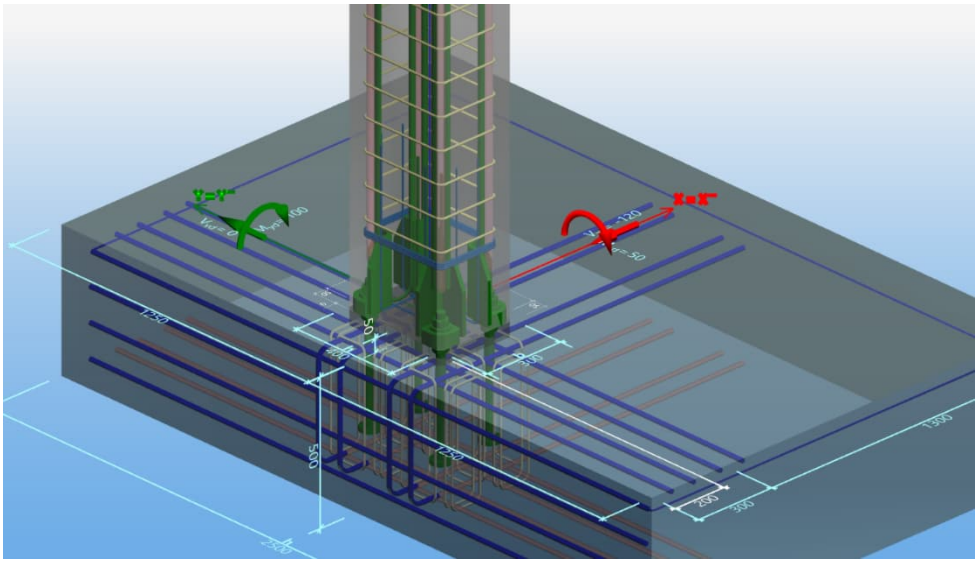
- Solved Error message that appeared during sending process of filled Peikko Designer® Feedback form.

Column Connection

- Bug is fixed in name generation of PPL Bolt Installation Template when it is used for casting of two Anchor bolts with steel column. Instead of center distance zero value appeared in the name of Bolt Installation Template.

- Bug is fixed with appearance of middle shoes' ties in setup of steel column on concrete foundation.

- Capacity of edge reinforcement from the surface bars that are not bent has been fixed. Fix is related to the scenario when user decides to force surface reinforcement on one direction only (meaning, V_{xd} or V_{yd}) by selecting “Cover all edges” option. For other direction (let’s call it direction 2) this option isn't chosen, hence surface bars aren't elongated till the edge(s) of direction 2 and bent to enclose perimeter bar. Because of unbent bars contributing edge reinforcement resistance should be 0kN in direction 2. Prior to fix the resistance was given regardless the choice whom followed imperfection in reinforcement detailing.



Punching Reinforcement

- Error in calculation with zero cross-section area of bending reinforcement under ETA code has been fixed. When Bending reinforcement of the slab was selected "By areas" with 0 value, 1% of ratio of the reinforcement appeared by default in calculation.
- Reinforcement ratio of slab was not calculated properly in case when user entered column penetration Δh. Reduced effective height of slab by column penetration Δh has been wrongly used in reinforcement ratio

calculation instead of standard effective height of slab d_x and d_y. Due to the penetration effective height of slab was smaller and therefore reinforcement ratio became bigger than it should be. It resulted in higher resistance of the slab. This is solved.

Date of release 10.1.2019, 1.2.3

Column Connection

- User interface errors fixed
- Adjustments made for surface reinforcement

Punching Reinforcement

- Update to references

Date of release 19.12.2018, 1.2.2

Column Connection

- Improvements for report printing: bolt reinforcement sketch with leader lines and position numbers are now more clear
- Eurocode design: Surface reinforcement is now always required with hanger reinforcement
- ACI design: bi-axial bending load cases has been improved. Calculation of both interaction curves for resultant direction and anchor bolt forces has been changed in order to provide correct results.
- Imperfection corrected in calculation of bolt forces in case of pure compression in connection

Anchor Plate

- New anchor diameters PSS 22, PSS 25, PSSr 19 and PSSr 22 added to stud selection
- Imperfection corrected in calculation of concrete compression in case of pure compression

Date of release 20.11.2018, 1.2.1

Column Connection

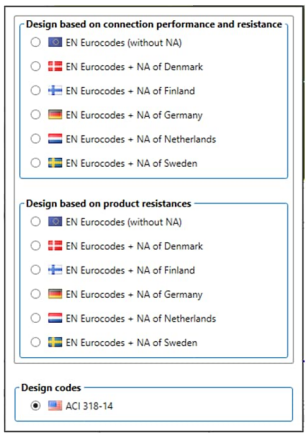
- Corrections to calculation of neutral axis inclination in ACI design
- User interface errors fixed

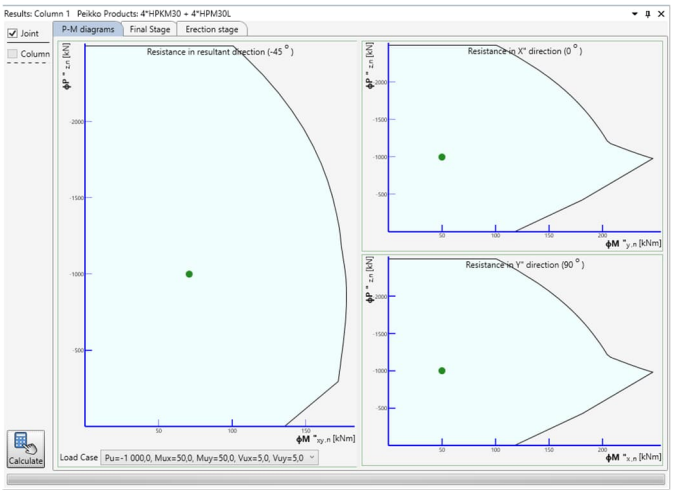
Splitting failure check revised in Column Connection and Anchor Plate modules.

Date of release 27.9.2018, 1.2.0

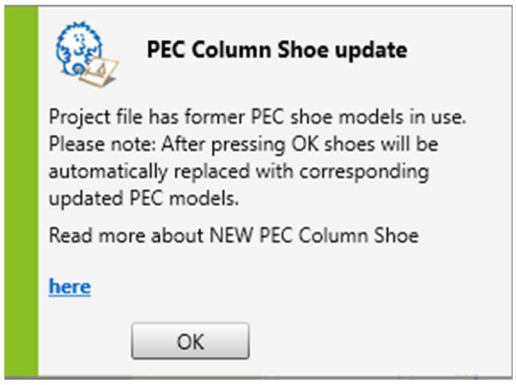
Column Connection

- Design according to ACI standard 318-14
    - Connection calculation and checking of Peikko Column Shoe and Anchor Bolt capacities
    - Metric units in design





- Updated PEC® Column Shoe properties. Read more [Minor changes in PEC® Column Shoe properties – changed lengths of anchorage bars, calculation according to Eurocode]
    - When opening existing design file, you will see following information. New updated PEC Column Shoes are changed automatically to your design.



- Correction to calculation of edge failure loads
- Printing improved

Anchor Plate

- Minimum edge distances of anchors updated

Date of release 25.6.2018, 1.1.1

Column Connection

- Bug fixed regarding crashing of software

Date of release 18.6.2018, 1.1.0

General

- Peikko Designer DELTABEAM SELECT button added to Start window. You can use same username and password to login and then you are able to save and print your plans.

Column Connection

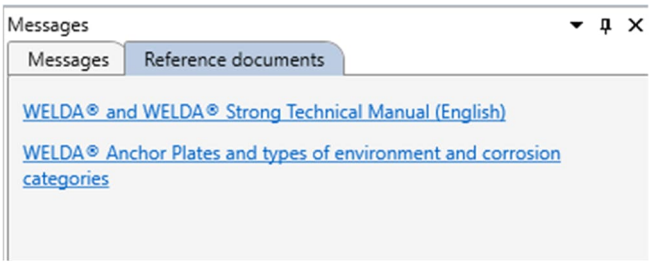
- New concrete strength C32/40 added to EN Eurocodes (without NA).
- Presentation of middle shoes in dwg fixed
- Bending radius for straight rebars is not shown anymore in rebar table
- Small adjustments and fixings

Punching Reinforcement

- Calculation of openings according to ACI design fixed
- Small adjustments and fixings

Anchor plate

- New concrete strength C32/40 added.
- Message box for extra information and warnings added. Now all warnings are shown more easily in message box instead of in 3D view. Also two document links were added to Reference documents tab.



- Small adjustments and fixings

Date of release 15.2.2018, 1.0.2.79

Punching Reinforcement

- Fix related to opening of old projects

Date of release 2.2.2018, 1.0.2.78

Anchor Plate

- Fastening Plate -module is now named as Anchor Plate -module.
- WELDA® Strong Anchor Plate and long WELDA® Anchor Plate selection updated. You can find more information about WELDA® Strong Anchor Plate from www.peikko.com/news/welda-r-strong-anchor-plates-are-here

Punching Reinforcement

- Minor fixes for 3D view

Date of release 16.1.2018, 1.0.2.77

General

- Software certificate has been updated. Because of the certificate update, a security warning is shown during the update procedure. The certificate ensures that the software is published by a reputable software publisher and it protects the software from alteration after publication. When you get the security warning, just click Install. Your Windows might also show a note "Windows protected your PC". In that you should click Run anyway - button after selecting See more.

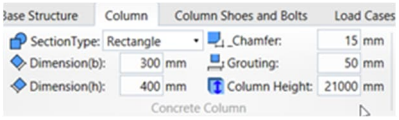
Column Connection

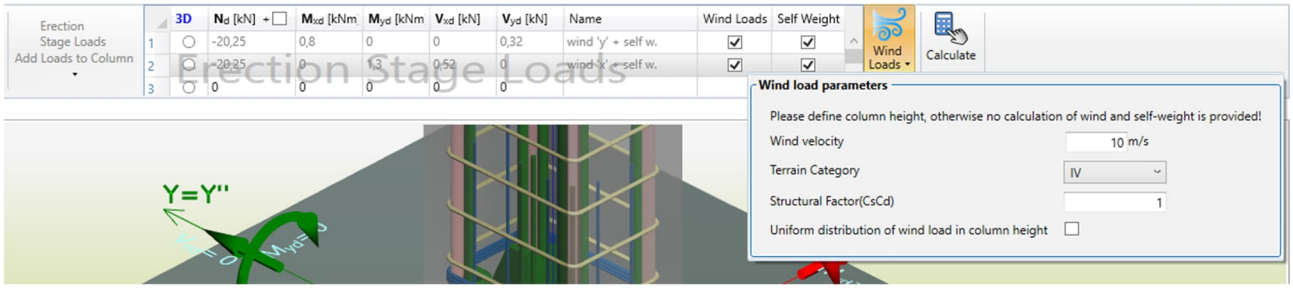
- Minor fixes for particular cases in dwg-export and reinforcement table

Date of release 24.11.2017, 1.0.2.76

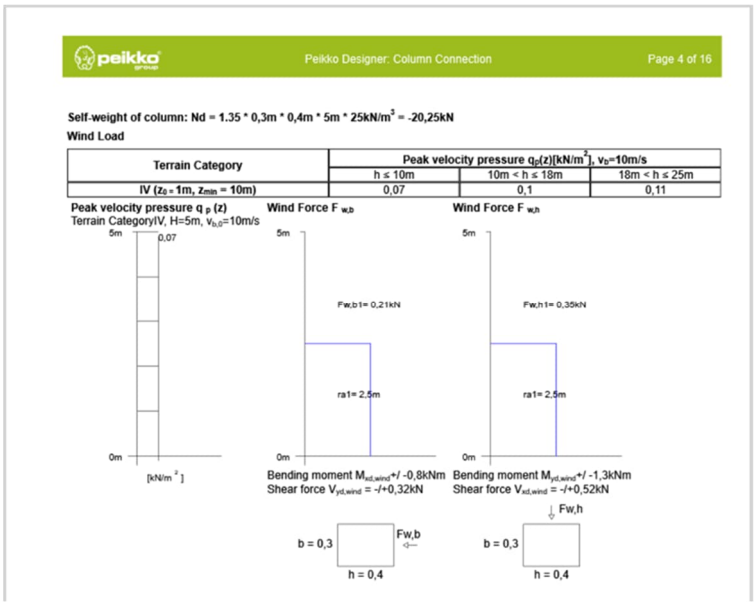
Column Connection

- Wind load calculation added
  Loads caused by wind action and self-weight of the column can be now added to erection stage loads. The user needs to define first the height of the column (25m max) and then using the new “Wind Loads” button found under the load cases tab, wind load parameters. These parameters are wind velocity of the area, terrain category and structural factor.

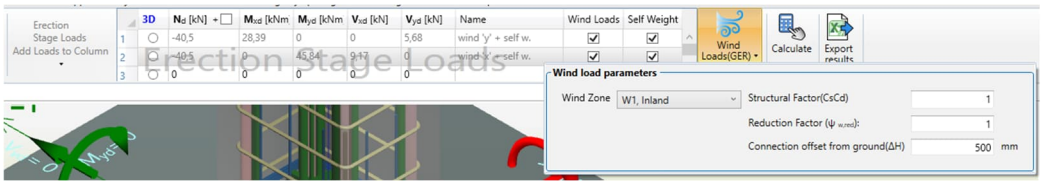




Additionally, the user can tick the Uniform distribution of wind load in column height box. With this option, Peikko Designer® calculates the wind loads considering the highest value of peak velocity pressure acting on the column. This gives higher wind loads for columns higher than 10 m.
After calculating there will be four load cases related to wind actions under the erection stage tab of the results section, one for each possible wind direction (+x,-x,+y,-y). More details about the calculations done can be seen in the long report. These calculations are made based on plain Eurocode (EN 1991-1-4).



When using EN + NA of Germany the calculations are done with a simplified method where the wind load distribution is by default acting with the same intensity along the whole column. The selection of wind zone determines the wind velocity. User needs to define the structural factor and the value of the reduction factor $\Psi_{w,red}$ .The reduction factor is used because the column is considered as a temporal element during erection stage.



The connection offset from the ground can be defined as well. The sum of the column height and the connection offset cannot exceed 25 m.

You can also check video about how to use wind load calculation:
https://dreambroker.com/channel/lytih4g8/eeo6isct

- Mistake in summary table fixed. Table showed sometimes wrong percentages.
- Bending forms are again shown in reports.
- Wrongly shown design warnings regarding concrete cover and concrete failure checks fixed.
- Stiffness factor of German NA for compressed cross-sections in one particular case is fixed.

Punching Reinforcement

- In case of bottom installation of stud rails dwg-export created case with top installation. This is now working correctly. Also placement of dimension lines adjusted.

- Optimizations of stud rails is now kept in case when other case is checked and come back to first one.
- Seismic design according to ACI adjusted.

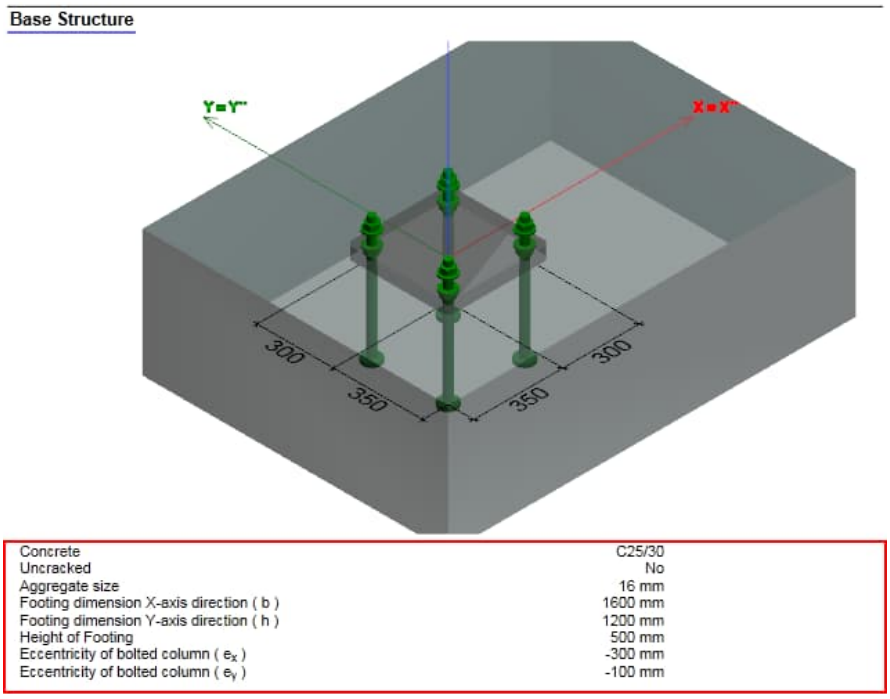
Fastening Plate

- Printing problem causing Peikko Designer® crash in one particular case is now fixed

Date of release 4.10.2017, 1.0.2.75

Column Connection

- Nut heights attribute updated according to ISO 4032.
- Missing translations updated.
- Report section: Base Structure (long) with geometrical characteristics listed in written form



Concrete	C25/30
Uncracked	No
Aggregate size	16 mm
Footing dimension X-axis direction (b)	1600 mm
Footing dimension Y-axis direction (h)	1200 mm
Height of Footing	500 mm
Eccentricity of bolted column (e_x)	-300 mm
Eccentricity of bolted column (e_y)	-100 mm

- The mistake in the summary table of report regarding maximum utilization ratios of calculation cases has been fixed.
- Other general performance improvements

Punching Reinforcement

- Translation updates
- General performance improvements

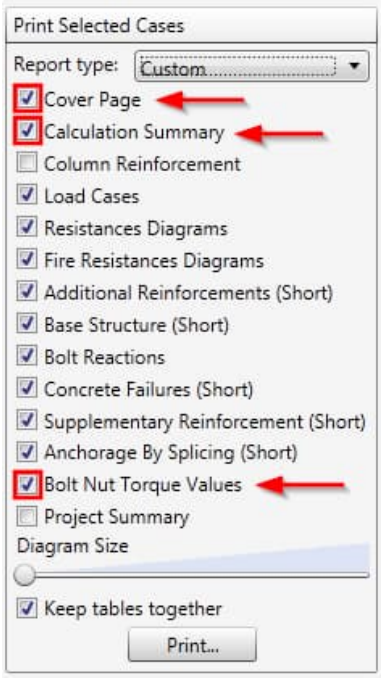
Fastening Plate

- Update of WELDA ETA

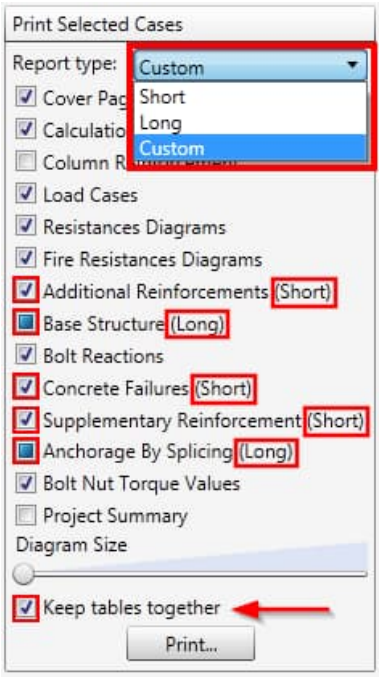
Date of release 4.8.2017, 1.0.2.74

Column Connection

- Printing preferences. Report supplemented with three new optional chapters: **Cover Page, Calculation Summary, Bolt Nut Torque Values**
- Printing preferences. Added paging option "**Keep tables together**" – what secures that tables aren't split into parts due to page break. Tables and their headings located on same page
- Printing preferences. Possibility to print **Short, Long, Custom (Short), Custom (Long)** type reports selectable from the drop-down. Short and Long repots have predefined content. Custom report allows to compose content by choosing which chapters to include. In addition custom report has 5 chapters with alternative (■ = long) or (☑ = short) version

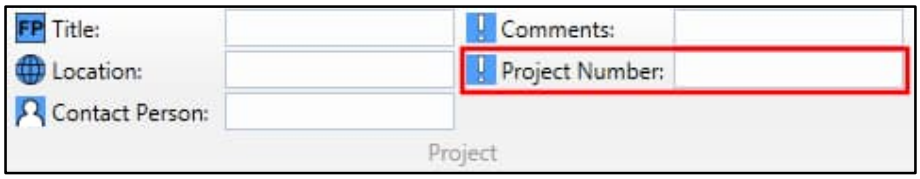


Innovations to report content



Innovations to report format

- Field "**Project Number**" added to ribbon under group Project Settings

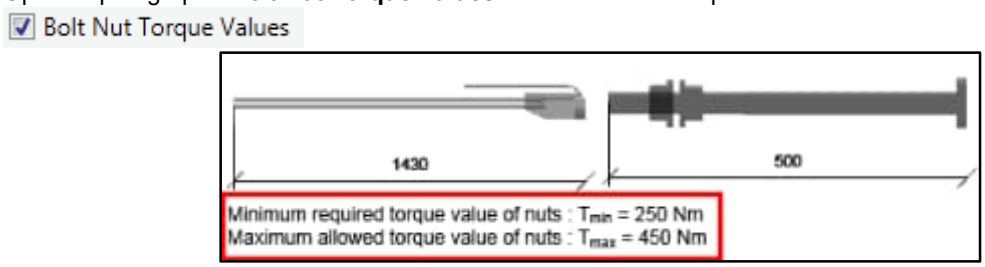


- Report supplemented with **cover page**

- Report content (Page 2) supplemented with overall **Summary**

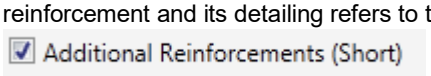
Name	Stage	#	Load Case	Page No.	Max Utilization	Status
Column 1	Final	1	Static-Combination 1	5	26%	OK
	Final	2	Static-Combination 2	6	45%	OK
	Final	3	Dynamic	7	45%	OK
	Erection	4	Wind Load	10	59%	OK
	Erection	5	High-impact	11	297%	Failed
Steel column, axis A	Final	1	Dead Load + Live Load	15	40%	OK
Footing	Erection	1	Short term, strong wind	20	39%	OK

- Optional paragraph: "**Bolt Nut Torque Values**" can be added to report via check-box



- Improvements in report layout related to page breaks

- Report content specifics. Chapter **Additional Reinforcement** in short version for amount of the column shoe reinforcement and its detailing refers to technical manual.



Supplementary Column Shoe Reinforcement

Concrete Cover:	30	mm
Reinforcement: B500B	f_{yd} = 434,8	N/mm²

Reinforcement according to Technical Manual of Column Shoes

- Report content specifics. Chapter **Base Structure** in short version shows relevant information in written way. Base structure picture with dimension lines present in long version.

☑ Base Structure (Short)

Base Structure

Concrete :	C25/30	
Uncracked :	No	
Aggregate size :	16	mm
Footing dimension X-axis direction	b = 3000	mm
Footing dimension Y-axis direction	h = 1800	mm
Height of Footing	= 500	mm
Eccentricity of bolted column	e_x = 0	mm
Eccentricity of bolted column	e_y = 0	mm

- Report content specifics. Chapter **Concrete Failures** in short version includes only proof table without result breakdown. Intermediate results and calculation parameters are available in long version of this chapter.

Proof	Load [kN]	Capacity [kN]	Utilization [%]	Status
Pull-Out Failure	134,5	365,3	37	Ok
Cone failure				Ok
Covered with reinforcement:				
1) Foundation (Plain Concrete)	494,3	355,3	139	
2) Assigned Hanger Reinforcement	134,5	174,8	77	
3) Requirement of Strut and Tie Model	10,5	24,6	42,6	
Splitting Failure				Ok
Concrete decisive:				
1) Foundation (Plain Concrete)	494,3	292,3	n/r	
2)Assigned Splitting Reinforcement || X	0	73,8	n/r	
3)Assigned Splitting Reinforcement || Y	0	73,8	n/r	
Blow-Out Failure	0,0	0,0	n/r	Ok
Pry-out failure	30,0	754,4	4	Ok
Edge failure				Ok
Concrete decisive:				
1) -X (Left) Edge (Plain Concrete)	0,0	0,0	n/r	
2) +X (Right) Edge (Plain Concrete)	30,0	114,4	26	
3) +Y (Top) Edge (Plain Concrete)	30,0	439,0	7	
4) -Y (Bottom) Edge (Plain Concrete)	30,0	439,0	7	
5)Assigned Edge Reinforcement (-X)	0	0	n/r	
6)Assigned Edge Reinforcement (+X)	15,45	0	n/r	
7)Assigned Edge Reinforcement (+Y)	9,406	0	n/r	
8)Assigned Edge Reinforcement (-Y)	9,406	0	n/r	
Combined Resistance	$\beta_N^{2/3}+\beta_V^{2/3}\leq 1$		92	Ok

Shown in short and long version of chapter

Concrete cone Failure	
h_{ef}	335,0 [mm]
$f_{ck,cube}$	30,0 [N/mm²]
k_{cr}	8,5
$s_{cr,N}$	1005,0 [mm]
$c_{cr,N}$	502,5 [mm]
$s_{min,N}$	200,0 [mm]
$c_{min,N}$	700,0 [mm]
$A0_{c,N}$	1010025 [mm²]
$A_{c,N}$	2039775 [mm²]
$\Psi_{ec,N}$	0,92
e_N	41,12
$N_{0Rkc,c}$	285,46 [kN]
$\gamma_{M,c}$	1,50
$N_{Rd,c}$	355,3 [kN]
$Ng_{E,d}$	494,3 [kN]

Shown only in long version

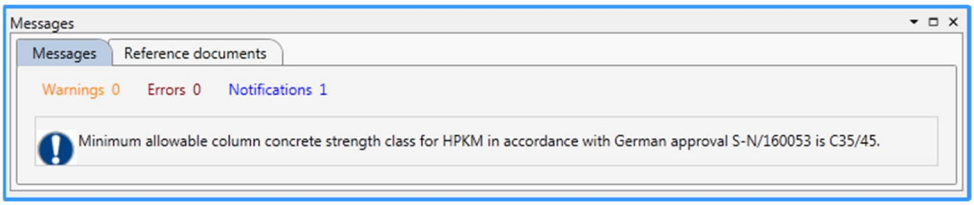
- Report content specifics. Chapter **Supplementary Bolt Reinforcement** in short version describes needed reinforcement and its placement rules in written form and refers to technical manuals and CEN/TS 1992-4-2 for more information. Reinforcement drawing and table is available in long version of this chapter.

☑ Supplementary Reinforcement (Short)

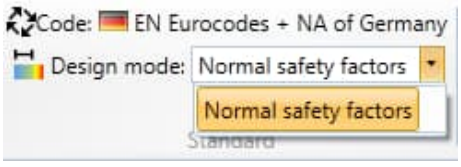
Supplementary Bolt Reinforcement		
Concrete side cover:	25	mm
Concrete top cover:	25	mm
Concrete bottom cover:	50	mm
B500B	f_{yd}= 434,8 N/mm²	
Hanger reinforcement for tension force		
Calculated stirrups per bolt:	4 Ø8	
The stirrups are located with a radial distance to the leg not further than R=85		mm
Splitting reinforcement parallel to X:	$A_{sp,x}$=170	mm²
Splitting reinforcement parallel to Y:	$A_{sp,y}$=170	mm²
Perimeter rebar:	1Ø6	mm
Detailing of required reinforcement must be executed according to product technical manual. See also CEN/TS 1992-4-2, Figure 2		

- Implemented HPKM German approval **S-N/160053**

  - Updated minimum required transverse reinforcement along lap splice of anchor bars
  - Updated limit for minimum concrete grade of column



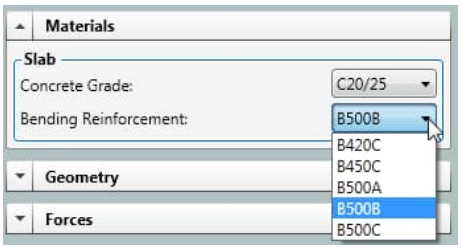
- Translation checks/updates done for languages: German, Hungarian, Finnish, Polish, Lithuanian, Russian, Norwegian, Greek, Turkish, Serbian, Croatian
- Design mode under NA of German – only “Normal safety factors” kept. Optional modified partial factors (based on EN 1992-1-1, Annex A) removed from the drop-down. When reopening old project with initially different saved factor mode than “Normal safety factors” notification will be displayed: ***(Partial safety factors for materials have been reset to normal design mode. Please check initial data - Project Settings/Standard/Design mode)***



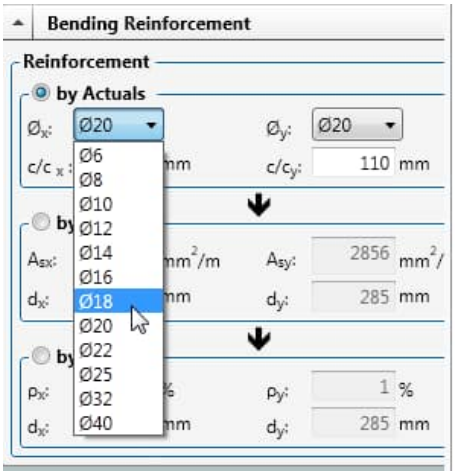
- Other general performance improvements

Punching Reinforcement

- Updated flexural reinforcement steel grade list for Turkey



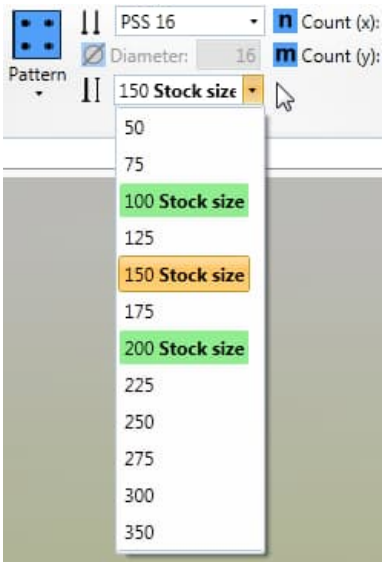
- Defined limits for minimum lengths of studs
- Rebar diameter Ø18 added for flexural reinforcement



- Other general performance improvements

Fastening Plate

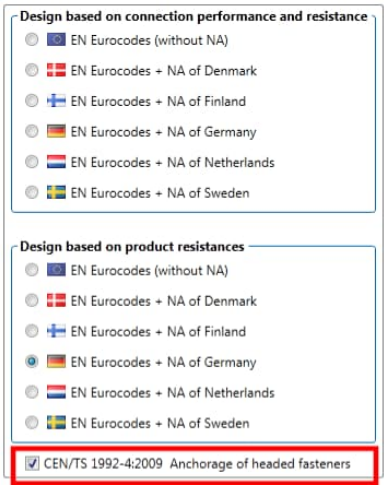
- Calculation of rotated fastening plate is disabled for other than 0, 90, 180 and 270 degrees
- WELDA smooth stud stock sizes marked in drop-down



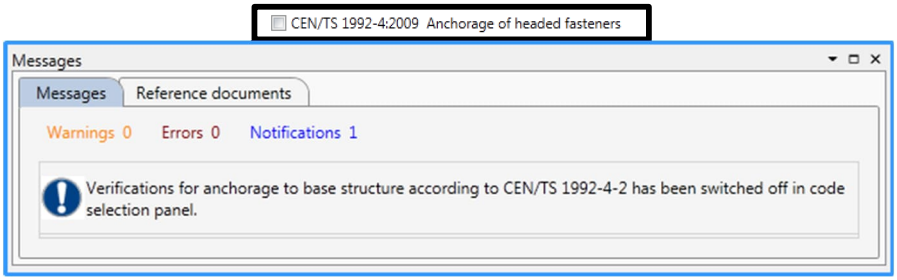
Date of release 1.6.2017, 1.0.2.73

Column Connection

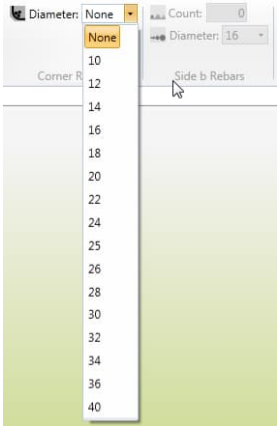
- CEN/TS specification ticked as default when starting a new project



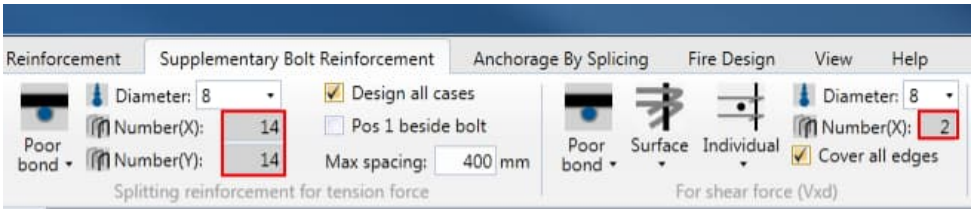
Also note is added to inform if CEN/TS is unchecked =>



- Under plain Eurocode new rebar sizes added to column reinforcement. A list of available reinforcement sizes is shown in picture:



- Supplementary bolt reinforcement. Informative fields showing number/quantity of automatically calculated reinforcement made to appear grey – that indicates that those values can't be changed.

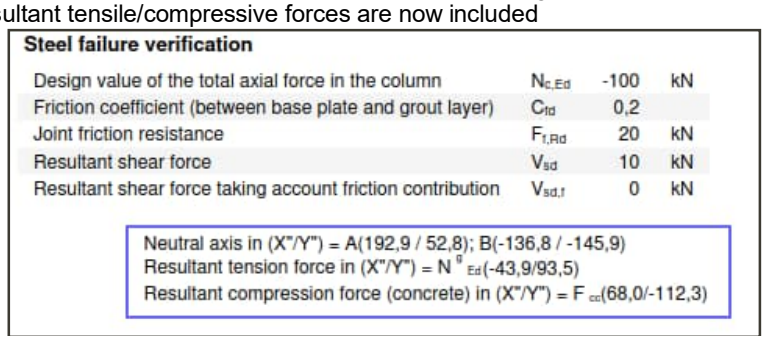


- DWG Export. Connections where middle shoes and bolts are changed to smaller sizes, those were not drawn correctly in AutoCAD (i.e. same size shoes/bolts were used in all views) – now fixed.
- Other minor fixes

Date of release 12.5.2017, 1.0.2.72

Column Connection

- Missing information about cross-section added to the report, meaning, coordinates of neutral axis and coordinates of resultant tensile/compressive forces are now included

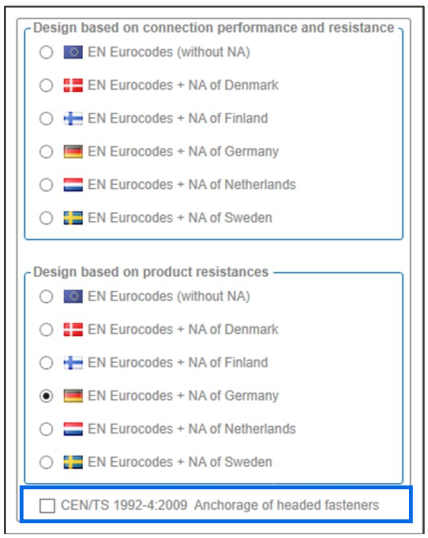


Steel failure verification

Design value of the total axial force in the column	$N_{c,Ed}$	-100	kN
Friction coefficient (between base plate and grout layer)	C_{fd}	0,2	
Joint friction resistance	$F_{f,Rd}$	20	kN
Resultant shear force	V_{sd}	10	kN
Resultant shear force taking account friction contribution	$V_{sd,f}$	0	kN

Neutral axis in (X"/Y") = A(192,9 / 52,8); B(-136,8 / -145,9)
Resultant tension force in (X"/Y") = N^{g}_{Ed}(-43,9/93,5)
Resultant compression force (concrete) in (X"/Y") = F_{cc}(68,0/-112,3)

- Functionality of CEN/TS check-box in code selector default changed to be un-ticked

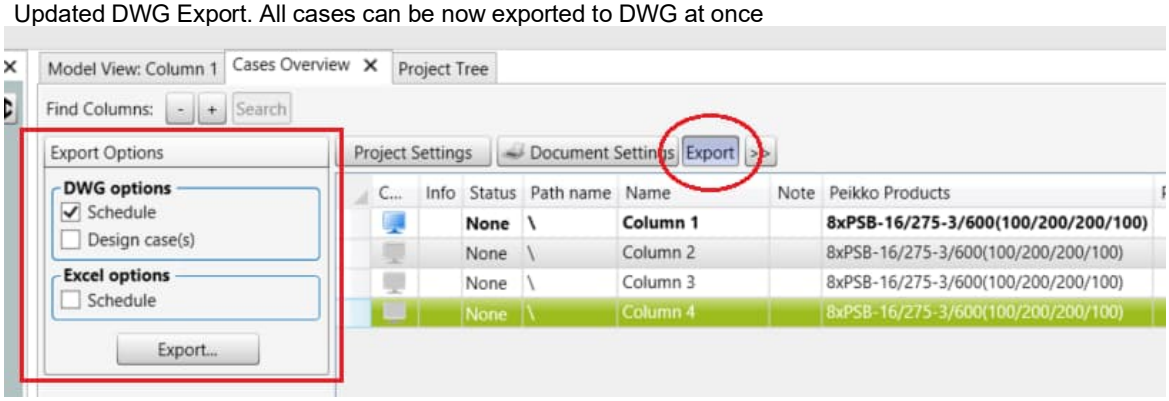


- Concrete failure verification calculation parameters and table removed from report when anchorage checks are not executed by software
- Several minor fixes

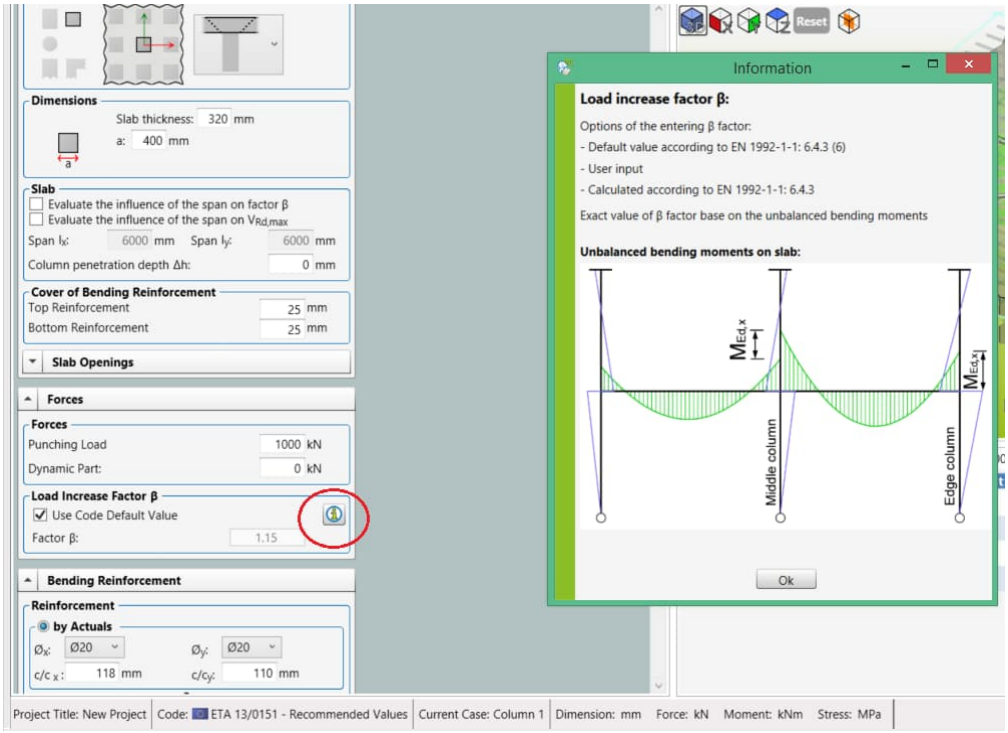
Punching Reinforcement

- Update of “List of Codes”. Codes are divided to three groups: ETA approvals, Design codes and Former national approvals.
- Expiration date set for EN 1992-1-1 calculation. Calculation according to EN 1992-1-1 hasn’t been updated for a time. Therefore it will be removed after expiration date.
- B500A and B500C have been added to list of bending reinforcement in ETA calculation
- ETA for Turkey has been added to Peikko Designer

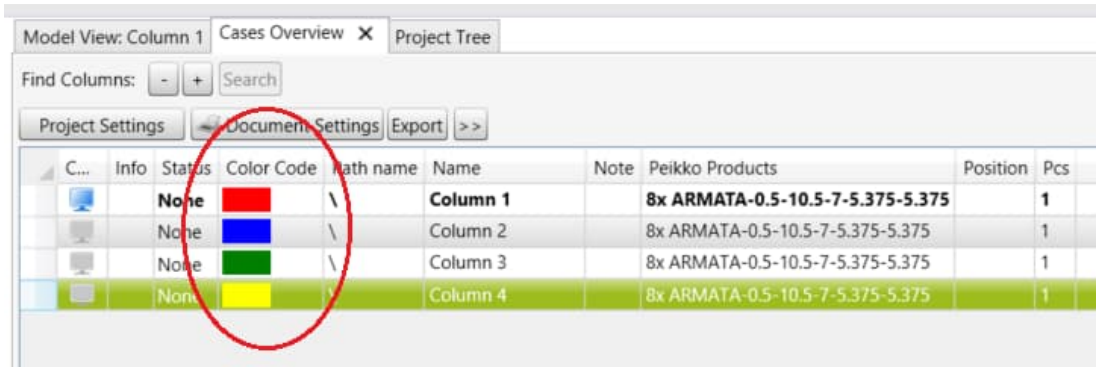
- Updated DWG Export. All cases can be now exported to DWG at once



- Export of schedule of items to excel file, DWG and printed output.
- Small help for ETA based design. Information window provides basic information about unbalanced bending moments and options how to calculate β-factor.



- Bending reinforcement “by actuals” sets as default.
- Colour coding or for ACI module: user can select colour marking for shear rails that simplify orientation at building site.



Fastening Plate

- Calculation of extreme cases with extra high tension forces and small moments has been revised.

Date of release 9.3.2017, 1.0.2.71

Column Connection

- Print out has information in correct order

Date of release 2.3.2017, 1.0.2.70

Column Connection

- Calculation of supplementary reinforcement is optimized to reduce amount of needed reinforcement
- Note window added to user interface. There is displayed design warnings, errors, notification which encountered during modelling and calculation phases.
- Position of neutral axis is shown with coordinates

Date of release 7.12.2016, 1.0.2.68

Punching Reinforcement

New in ACI design

- user can now decide how studs are arranged

Column Connection

- PPM22 and PPM27 are removed from bolt selections, because the production has ended
- Concrete and grouting strengths are now following selections
- Big structure fits now to print out
- Results window can be again “Dock as Tabbed Document”
- Paste to cell in “Cases Overview” works again

Date of release 28.10.2016, 1.0.2.67

Column Connection

- Several erection stage loads can be given again

Fastening Plate

- Data from old files is now moved fully, e.g. loads are shown correctly in load table and in calculation results
- Modifications for design case are again possible

Date of release 25.10.2016, 1.0.2.66

Peikko Designer® Column Connection link to Tekla

Now it is easy and reliable to export Peikko Designer® Column Connection design to Tekla:

1. Make your design in Peikko Designer® Column Connection.
2. Click *Export Selected Case(s)* in *Cases Overview* window
3. Save export file
4. Open *PeikkoColumnConnection* -plugin in Tekla
5. Select file location in dropdowns and click *Apply* and *OK*
6. Click footing and column in your Tekla model, and click two point showing x-direction

You will have Anchor Bolts and Column Shoes with needed supplementary reinforcement and grouting into your model according to design case. You can have several design cases in one file. The selection of which of the cases is applicable to model, can be selected in plugin. Plugin includes also tutorial video.

Tekla plugin can be downloaded from Tekla Warehouse. This is the first step of link and it includes concrete parts, so steel columns with supplementary reinforcement for bolts is excluded.

Date of release 8.7.2016

Column Connection

- It is again possible to calculate and see M-N resistance diagrams without inputting loads.

Fastening Plate

- Stud head thickness of JPL fastening plates has been changed. Also the stud heads are now correctly drawn in printouts.

Punching Reinforcement

- The calculation of reinforcement ratio has been changed.

Date of release: 11.4.2016

General

- Croatian language added

Column Connection

- ETA design: calculations without bending moment, but internal forces occur, and using National Annexes of Finland or Germany, are now calculated correctly

Punching Reinforcement

- ACI design: calculation of studs adjusted
- ETA design: calculation of minimum reinforcement ratio adjusted

Date of release: 4.2.2016

Column Connection and Fastening Plate

- Pasting load combinations to load table is no more crashing the software.

Date of release: 3.2.2016

Column Connection and Fastening Plate

- Decimal separator in load table is usable again.

Date of release: 29.1.2016

Technical Update

Release includes change to use .NET Framework 4.6 -version and a certificate update.

We ask you to pay attention that you'll have required Framework version in your computer to run Peikko Designer® after coming technical update. You can find more information from our newsletter.

General

- Links to Peikko web page updated
- General behavior improved

Column Connection

- Coordinate and load axes are shown more clearly
- If status Chosen is selected, load cases cannot be added
- When steel column has eccentricity, N-M diagrams are visible in results
- Error regarding amount of bolts is dwg is corrected
- Calculation –button in *Fire Design*-tab calculates everything also from *Load Cases*-tab
- Old design files with Dutch design can be opened

Fastening Plate

- Coordinate and load axes are shown more clearly

Punching Reinforcement

- DSA product code modified to be more user friendly
- ACI based calculation with openings improved
- Improvement on how Imperial and metric units are shown

Date of release: 24.4.2015

Punching Reinforcement
Design based on ACI 318-14 including design with openings.

Date of release: 2.2.2015

Punching Reinforcement
Design based on ACI 318-11: Design of DSAR is now available with imperial units.

Date of release: 28.5.2014

General

- **Help tab**
  From Help tab you can find additional information regarding products, link to this page and feedback form to contact Peikko.

Column Connection

- **Design codes**
  You can select from two different design methods to find best solution for your design case:

  1. Design based on connection performance and resistance
  This design method refers to both EN-standards and test results (ETA13/0603). It offers fire design for cases where HPKM Column Shoes are used and takes account stiffness of the joint. In large experimental test series behavior of the whole column connection with several anchor bolts, column shoes and casted joint was verified:
    - stiffness
    - normal force resistance
    - bending moment resistance
    - shear force resistance
    - fire resistance

  2. Design based on product resistances
  This design method refers to local standards/EN-standards with resistances based on local product approvals. Column Connection can be designed using these, but it doesn't allow e.g. fire design for HPKM Column Shoes. Netherland national design included.
  If you are opening old project file which is made using previous Peikko Designer version, you can make selection do you want use previous or new design method.

- **HPKM Shoe type update**
  HPKM Shoe pictures are updated to be according to ETA. Picture does not affect to the design results of old or new project.

- **Concrete failure check table**
  There is now only one result table instead of two tables. The content is improved to be more informative.

- **Splitting reinforcement arrangement**
  It is possible to add bars on side of the foundation to prevent splitting crack. Also additional top surface bars can be added.

- **Anchorage of long bolts**
  As a default stirrups are calculated for full resistance of bolt and using current lap length with concrete grade C25/30. Usage ratio of current lap length is shown and it can be increased by reducing stirrups.

- **Short bolts**
  Anchoring stirrups of short bolts in foundations are from top to bottom of the foundation. And grouting thickness default follows Technical Manuals.

- **Fire design**
  Fire design is possible when using Connection design and HPKM Column Shoes.

Punching Reinforcement

- **Design based on ETA-13/0151**
  Design of PSB for footings is now available. Automatic evaluation of soil pressure effects for footings and ground slabs is also available.

  The effect of slenderness on the punching resistance of the slabs has been demonstrated by our experimental research. Research results can be taken into account in design by selecting the option “Evaluate the influence of the span on $V_{Rd,max}$”.

- **New design codes added**
  Design following Swiss SIA 262:2013 and the Lithuanian National Annex of EN 1992-1-1 is available.

- **New report**
  You can print report with equations and references to relevant design norms.

Fastening Plate

- **Calculation result table**
  It is now clearer to get over all look at the results before printing report.

- **Several small improvements**
  We have made several small improvements to this module to make it more comfortable to use.