ProtaStructure®

ProtaSteel®

ProtaDetails®

ProtaBIM®

Prota Software Products

New Features by Product Versions

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Yayınlayan PROTA

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Welcome

Thank you for choosing Prota as your technology partner.

ProtaStructure Suite is an engineering solution with high technical content, including powerful features that put you ahead of your competitors. ProtaStructure is actively developed, and new features are constantly introduced with each new version. Being able to follow these features is essential for you to get the most out of the new tools in the software. For this purpose, we have compiled this document comparing the new features between product versions.

This document contains only new features without focusing on all other features shared by all versions. In a sense, it also keeps a comparative history of the features added in each version.

We hope you find it helpful.

Sincerely,

Prota Software Team

New Features by Product Versions

General	2018	2019	2021	2022
Support for new languages such as Polish, Romanian, Serbian, Slovenian -2022-				+
BIM coordination and communication with other disciplines using SAF Import and Export -2022-				+
Imperial unit system in modeling, analysis, design, and detail drawings -2022-				+
Seamless transition between unit systems without repeated analysis (except for A2 report) -2022-				+
64-bit Architecture and advanced new technology platform			+	+
Modern interface with smoother user experience: Ribbon and Floatable Windows			+	+
3-D Reinforcement Window			+	+
Command-Line and Command Search Features			+	+
Search functionality in the Structure Tree			+	+
Selection-sensitive and context-sensitive ribbon tabs			+	+
Customizable modern interface including dark and light color themes			+	+
Multi-language support in UI and design reports (Turkish, English, and other supported languages)			+	+
Easy learning with in-product detailed tips			+	+
Welcome page for instant access to training resources, news, and software updates			+	+
New settings system combined in one interface (with search feature)			+	+

Physical Modeling	2018	2019	2021	2022
Free modeling with linear, arc, and arch-shaped frame members -2022-				+
Modeling of parametric steel domes -2022-				+
Retrofitting columns and beams with FRPs -2022-				+
New slab insertion method: Pick Slab Edge -2022-				+
Extended library for cold-formed and hot-rolled steel profiles -2022-				+
Splitting and joining beams and frame members -2022-				+
Improved Reference Drawing Manager			+	+
New axis-independent free frame members			+	+
Create and save custom trusses with Truss Editor (or import trusses from DXF files)			+	+
Convert free frame members to trusses			+	+
Ability to edit multiple trusses at the same time			+	+
New options to connect the truss bottom chord perpendicular to the supporting column			+	+
Defining the sloping truss top chords by specifying percentile slope value			+	+
Ability to invert trusses			+	+
Specify different heel heights for trusses with curved top chords			+	+
Ability to insert purlins on trusses with different numbers of joints			+	+
Ability to insert purlins on top or bottom chords of trusses			+	+
Ability to define a new truss type with inclined and parallel top and bottom chords			+	+
Automatic splitting of diagonal elements in trusses (for connection design)			+	+
Automatic deletion of the first and last verticals in the trusses			+	+
The new Cladding element for easy load application on purlin and girt systems			+	+
The new Retrofit Wall member type			+	+

Physical Modeling	2018	2019	2021	2022
Easier modeling of transfer columns and shearwalls with automatic rigid links			+	+
Extension of column top ends to selected members			+	+
Adjustment of the section angle for steel beams and frame members			+	+
Automatic batch insertion of ribbed and waffle slabs in all enclosed regions			+	+
Automatic merging and splitting of individual shearwalls to create corewall assemblies			+	+
Insertion of sag rods on purlins and girts		+	+	+
Creating 2D frame views from axes			+	+
Uninterrupted pass-through beams over columns and other beams			+	+
Inserting multiple braces in one go between columns, beams, and trusses		+	+	+
Inserting multiple braces in top and bottom chords of trusses		+	+	+
Modeling of Wall Coupling Beam		+	+	+
Modeling of Basement Wall		+	+	+
Graphical display of columns spanning more than one story on mezzanine plans		+	+	+

Loading System	2018	2019	2021	2022
New and Flexible Load Editor for all element loadings -2022-				+
3-D visualization and examination of all loads applied to the elements in the physical model -2022-				+
Apply member loads in any local or global direction at any load case -2022-				+
Apply point and distributed loads on truss nodes or members -2022-				+
Apply loads on curved or linear frame members in any local or global direction at any load case -2022-				+
Create any number of user-defined horizontal and vertical load cases and assign loads to them -2022-				+
Consider Live Load Participation and Live Load Reduction in user-defined vertical load cases -2022-				+
Automatic static and dynamic soil loads on shearwalls (soil profile, water table, surcharge)-2022-				+
Flexible and selective copying of assigned loads between members -2022-				+
Ability to apply loads on polyline corewalls before or after merging -2022-				+
Calculation of detailed load profiles of brick wall loads -2022-				+
Automatic adjustment of brick wall heights to story height -2022-				+
Automatic transfer of ribbed/waffle slab loads at all times in the building analysis -2022-				+
Automatic calculation of snow loads (not automatically applied to members) -2022-				+
Snow, rain, and roof Live Load cases			+	+
New user interface for selecting wind loading codes			+	+
Automatic calculation of ASCE07 compliant wind loads and creation of load cases (at floor levels)			+	+
Automatic calculation and application of wind loads at floor levels (excluding roof wind loads)		+	+	+

Automatic Analytical Modeling	2018	2019	2021	2022
Ribbed/waffle slabs are always automatically included in the analysis model -2022-				+
Compatible mesh generation between shearwalls and beams at different stories having nonzero DelZ			+	+
Compatible mesh between shearwalls and other members connecting at the middle wall region			+	+
Compatible mesh between shearwalls spanning more than one story and other members at their middle			+	+
Automated use of shell model for corewalls (Also mandatory in TBDY2018 seismic code)			+	+
Internal force diagrams for rectangular and polyline walls in analysis post-processor			+	+

Analysis Methods	2018	2019	2021	2022
Long-term creep and shrinkage effects in the Construction Stage Analysis -2022-				+
Soil-Structure Interaction in a single analytical run (Structural analysis on elastic foundation)-2022-				+
Simultaneous management of building and FE floor/foundation analyses by new Analysis Manager -2022-				+
Automated Section Cut (Group Sum) result collection for rectangular walls and corewalls			+	+

Analysis-End Processor	2018	2019	2021	2022
A single integrated post-processor developed for Building and FE Floor/Foundation Analysis Results -2022-				+
Visualization of slap strip diagrams and stations in 3-D analysis model -2022-				+
A unique display of internal force diagrams in plan view -2022-				+
Pushover Analysis results in the analysis post-processor			+	+
Display the labels and results only for selected elements in the analysis post-processor			+	+
Display of analysis results on the solid physical model			+	+
An auxiliary tool that detects and displays connectivity issues between elements in analysis post-processor			+	+
Turn on/off model grids in the analytical model display			+	+

Seismic Analysis and Design Features	2018	2019	2021	2022
Automatic calculation of forces acting on non-structural members -2022-				+
Automatic calculation of Seismic Joint Spacing -2022-				+
Enhanced Strong Column - Weak Beam Checks report and visual interrogation -2022-				+
Enhanced Joint Shear Checks report and Visual Interrogation -2022-				+
Continuity options for eccentric beam-column joints on plan and elevation for Joint shear check -2022-				+
Strong Column - Weak Beam Check for steel moment frames -2022-				+
Strong column and joint shear check accessible during the design for a single column/beam -2022-				+
Automatic calculation of static and dynamic soil pressures on basement walls per TBDY2018 -2022-				+
In-plane integrity check of flexible diaphragm floors			+	+
Earthquake load transfer checks in slab-shearwall intersection planes			+	+
Overturning moment ratio check for shearwalls at the outer edges of the buildings			+	+
Ability to use absolute values or sign of dominant mode for response spectrum analysis (RSA) results			+	+
Different behavior factors for two orthogonal directions in EQ analysis (except Eurocodes)			+	+
Automated interstorey drift check for columns spanning more than one story			+	+
Using cracked and uncracked section modifiers simultaneously in the same analysis run		+	+	+

Seismic Analysis and Design Features	2018	2019	2021	2022
Analysis of structures with basements using a Two-Stage Analysis Method		+	+	+
Automatic calculation of vertical earthquake effects		+	+	+
Overturning moment ratio checks for shearwall-frame interaction systems		+	+	+

Existing Building Assessment and Retrofitting	2018	2019	2021	2022
Retrofitting beams and columns using CFRP confinement -2022-				+
Review member damage regions by color codes on plan or 3D using the visual interrogation options -2022-				+
Review member risk status by color codes on plan or 3D using the visual interrogation options -2022-				+
Single-mode static pushover analysis and assessment			+	+
Target displacement calculation for pushover analysis (Performance Point, TBDY2018, FEMA356, EC8)			+	+
Nonlinear time-history analysis and member assessment (using OpenSees)			+	+
Automatic scaling of selected ground motions to code spectrum			+	+
Automatic post-processing of Time-History Analysis results obtained for multiple ground motions			+	+
Calculation of nonlinear force-deformation relationship of members with fiber section analysis			+	+
Performance-based analyses using the OpenSees Integration			+	+
Linear elastic building assessment (TBDY 2018)		+	+	+
Building risk assessment (TBDY 2018)		+	+	+

Reinforced Concrete Design	2018	2019	2021	2022
New enhanced rebar patterns for reinforced concrete beams -2022-				+
New beam design module and rebar editing interface -2022-				+
Use of different soil pressures under each column in mat foundation punching check -2022-				+
New user interface for the design of slabs -2022-				+
Check-Design option for manually edited column links -2022-				+
Automated end zones in corewalls with regular or irregular configurations			+	+
Improved diagrams for internal force and deflection of members		+	+	+
Mesh reinforcement design in slabs	+	+	+	+

Reinforced Concrete Detail Drawings	2018	2019	2021	2022
Unlimited number of characters in rebar labels -2022-				+
Exporting rebar quantity take-off to Excel -2022-				+
Using Imperial grade rebar labels in a metric design and detailing workflow -2022-				+
Design and detailing of pools (**Prota**Details)			+	+
Ability to preview the RC detail drawings in ProtaStructure before the final production in ProtaDetails			+	+
Improved sloping beam rebar elevation drawings			+	+
Automatic grouping and standardization of column elevations during detailing across stories			+	+
Automatic detail drawings of retrofit walls, including dowel layout (individually or across stories)			+	+
Curtailment options for horizontal web bars anchoring into shearwall end zones			+	+
Ability to sort beam rebar elevation drawings by axis or floor label			+	+

Reinforced Concrete Detail Drawings	2018	2019	2021	2022
The lapping of column longitudinal reinforcements in the middle column region		+	+	+
Special detailing for transitioning the longitudinal bars of columns with different section widths		+	+	+
Special detailing for inclined shearwalls and shearwalls with openings		+	+	+
Reinforcement details for slanting columns		+	+	+
Hydraulic Calculations Macro (**Prota**Details)		+	+	+
Unlimited UNDO/REDO steps (**Prota**Details)		+	+	+
Improved retaining wall module with Eurocode, US, and TBDY2018 Support (**Prota**Details)		+	+	+
Reinforcement details compliant with seismic codes (Column rebar laps, openings, crossties, sections, etc.)		+	+	+
Slab section views with reinforcements		+	+	+

Steel Design	2018	2019	2021	2022
Design of Steel Domes -2022-				+
Automatic Vertical Deflection Checks in Steel Elements			+	+
Transfer of member loads to ProtaSteel by grouping (for standardized connection dimensions)		+	+	+

Steel Connections and Detail Drawings	2018	2019	2021	2022
ProtaSteel: 64-bit Architecture ve modern Ribbon interface -2022-				+
Macro Gallery categorized for easy access to connection types -2022-				+
User-defined connection wizard -2022-				+
New user-defined connection placement option: On Object-2022-				+
Advanced Setting Systematics: Global, Company and Local Settings -2022-				+
Dynamic object grouping, filtering, and object selection -2022-				+
Smart Data Input Fields in connection macro interfaces -2022-				+
Model transfer to ProtaSteel without the need to analyze -2022-				+
End Plate Splice Connection -2022-				+
Shear Key Macro -2022-				+
Reverse Haunch Macro (In case the beam continues on the column continuously) -2022-				+
Base Plate Connection Macro for CHS and SHS hollow profiles			+	+
Insertion of chequered plates and gratings			+	+
Wind Column Connection Macro			+	+
Beam to Beam Fixed End Plate Connection			+	+
Castellated beams and web openings with stiffeners			+	+
2D Fitting Macro			+	+
Beam-to-column haunch connection design report			+	+
All bracing and truss connection design reports (Bolted and welded gusset plate connections)			+	+
Design reports for purlin and girt connections			+	+
Splice connection design reports			+	+
Apex-haunch connection design report			+	+
Quick insertion of stair treads with stringer holes macro			+	+
Handrails and handrail connections			+	+

Steel Connections and Detail Drawings	2018	2019	2021	2022
New IntelliConnect scenarios (RC-Steel connections, truss-column connections, and simple base plate)			+	+
Automated connection detail grouping and annotation in general arrangement drawings			+	+
Improved representation of welds in 3D model			+	+
Intelligent macro presets that can be paired with different profile types			+	+
Auto-Save feature			+	+
Display of internal forces transferred from ProtaStructure on the member property dialog			+	+
Automatic dimensioning of axes in general arrangement drawings			+	+
Automatic annotation of connection details in general arrangement drawings			+	+
Annotation of member end releases in general arrangement drawings (Pinned – Fixed)			+	+
Automatic transfer of sag rods from ProtaStructure to ProtaSteel			+	+
Ability to Zoom-Fit to Macros and Objects			+	+
Automatic label increment for detail objects and sections			+	+
Automatic grouping of anchor bolt labels in detail drawing			+	+
Insertion of shear studs by entering distance and spacing			+	+
Design reports for “Beam-to-beam End Plate“, “Stiffened End Plate”, and “Fin Plate” connections		+	+	+
Apex Haunch Connection		+	+	+
Truss Seating Connections and Apex Truss Connections		+	+	+
Embedded Steel Connections		+	+	+
Automatic insertion of handrails		+	+	+
Steel connection design reports		+	+	+

Analysis and Design of Foundations	2018	2019	2021	2022
Simultaneous management of building and FE floor/foundation analyses by new Analysis Manager -2022-				+
One integrated post-processor for building and FE Floor/Foundation analysis results -2022-				+
New pad footing module			+	+
New user interface for the batch design of pad footing and pile caps			+	+
Insertion of pedestals in pad footings under steel columns			+	+
Optional use of top reinforcement in pad footings			+	+
Automatic design for thicknesses of pad footings (previously only plan dimensions were designed)			+	+

Documentation	2018	2019	2021	2022
Improved strong column and joint shear check reports with intelligent notifications -2022-				+
New slab design report with visual tables and smart notifications -2022-				+
Integrated raft foundation design report combining all design checks and FE contours -2022-				+
Slab types and minimum slab thickness report -2022-				+
Detailed loads report listing all the loads applied on the members -2022-				+
Element property assignments report -2022-				+
Step-by-step design reports with formulas and code references (pad footings, pile caps, RC beams) -2022-				+
Detailed report with a step-by-step calculation of rebar anchorage and lap lengths (ProtaDetails)			+	+
Preliminary design summary report for geotechnical calculations			+	+

Documentation	2018	2019	2021	2022
Report windows embedded in the model display			+	+

BIM Integration, Coordination and Collaboration	2018	2019	2021	2022
Coordination with other disciplines using SAF export and import -2022-				+
Export analysis results to Excel in CSV format -2022-				+
Export building analysis and FE floor/foundation models to SAP2000 simultaneously on the same UI -2022-				+
Export 'Section Cut' definitions of regular and irregular walls to SAP2000			+	+
Export 'PIER' definitions of regular and irregular walls to ETABS			+	+
Transfer additional diaphragm master joint and EQS story loads to ETABS (normally ETABS calculates itself)			+	+
Bi-directional bespoke BIM communication with Autodesk Revit (with Family Matching Feature)			+	+
Import Revit truss family instances into ProtaStructure			+	+
Import beams and slabs from 2D DXF Drawings			+	+
Import entire model from 3D DXF Files			+	+
Export model views as 3D PDF			+	+
Export model views as poster quality raster images			+	+
BIM coordination and collaboration with other disciplines using IFC files		+	+	+

Loading and Wind Codes	2018	2019	2021	2022
TS498 - 2021 (Design Loads for Buildings – TR: September 2021 Revision) -2022-				+
Eurocode 1 (Actions on Structures - Romania, RO) -2022-				+
Peruvian Wind Loading Code (NTE030) -2022-				+
NSR-10 (Wind Loads to Colombian Seismic Code Title-B) -2022-				+
NTE.020 (Wind Loads to Peru Loading Code) -2022-				+
Eurocode 1 (Actions on Structures – Poland, PL)			+	+
DPT 1311-50 (Wind Loads - Thailand)			+	+
ASCE07 (Minimum Design Loads for Buildings and Other Structures)		+	+	+
MS 1553 (Wind Loads - Malaysia)		+	+	+
NSCP 2015 (Wind Loads - Philippines)		+	+	+

Reinforced Concrete and Steel Design Codes	2018	2019	2021	2022
Peru Design Code, NTE (RC Beams Only) -2022-				+
Indonesian Design Code, SNI (RC Beams Only) -2022-				+
Philippines Design Code, NSCP2015 (RC Beams Only) -2022-				+
Eurocode 2 (Design of Concrete Structures – Poland, PL)			+	+
ACI 318-08 (Building Code Requirements for Structural Concrete)		+	+	+
ACI 318-11 (Building Code Requirements for Structural Concrete)		+	+	+
ACI 318-14 (Building Code Requirements for Structural Concrete)		+	+	+
Eurocode 3 (Design of Steel Structures – Poland, PL)			+	+

Seismic Codes	2018	2019	2021	2022
Eurocode 8 EN1998 and P100 (Romania Seismic Code) -2022-				+
NTE.030 (Peru Seismic Code) -2022-				+
SNI1726-2019 (Indonesia Seismic Code: 2019 Revision)			+	+
DPT 1301/1302-61 (Thailand Seismic Code)			+	+
TEC2018 (Specifications for Buildings to be Built in Seismic Zones - TR)		+	+	+
UBC97 (Uniform Building Code)		+	+	+
IBC 2018 (International Building Code)		+	+	+

Thank You

Thank you for choosing the ProtaStructure Suite product family.

At Prota, it is our continual aim to provide you with user-friendly, industry-leading technology for building design and documentation

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