



Integrated structural analysis system v. 25.1



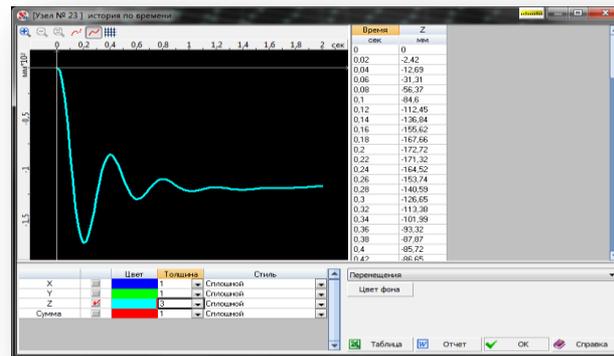
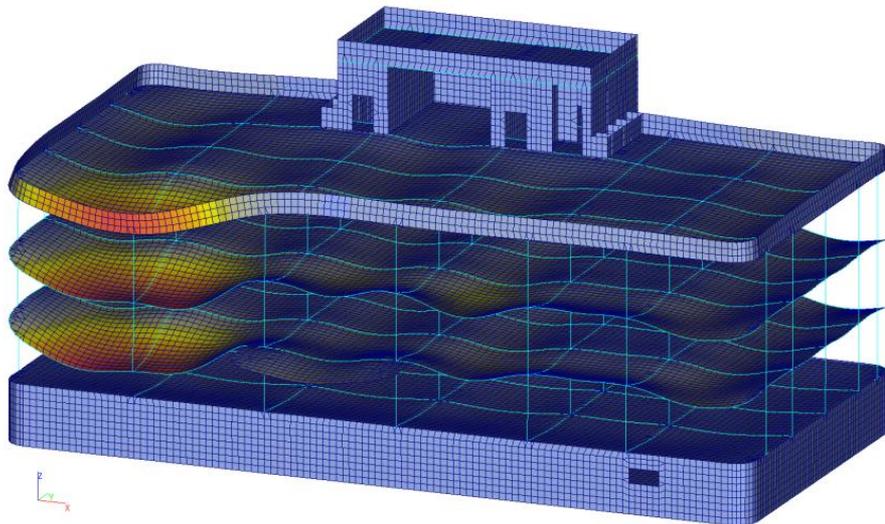
www.scadsoft.com



Integrated System SCAD Office 25.1

Structural FEA Software SCAD++

New Functionality



Accounting for the time of failure initiation and failure duration of elements that triggered the collapse during nonlinear dynamic progressive collapse analysis

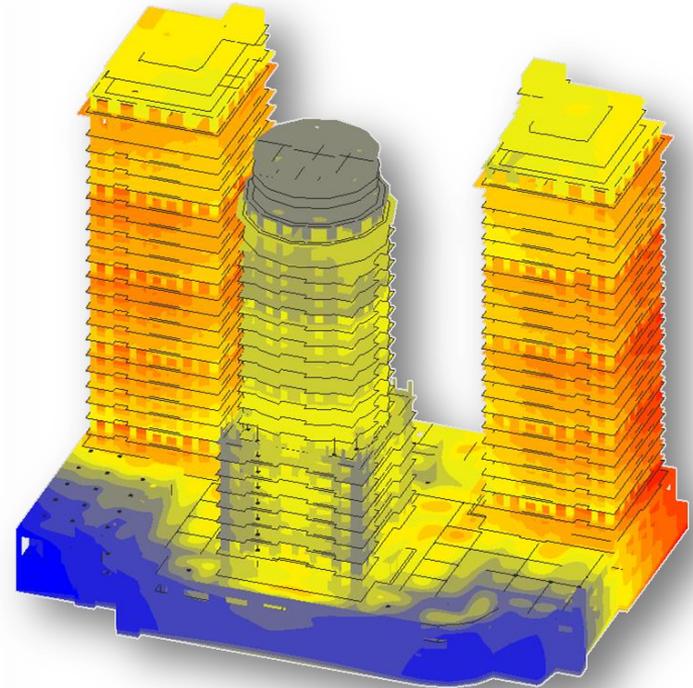
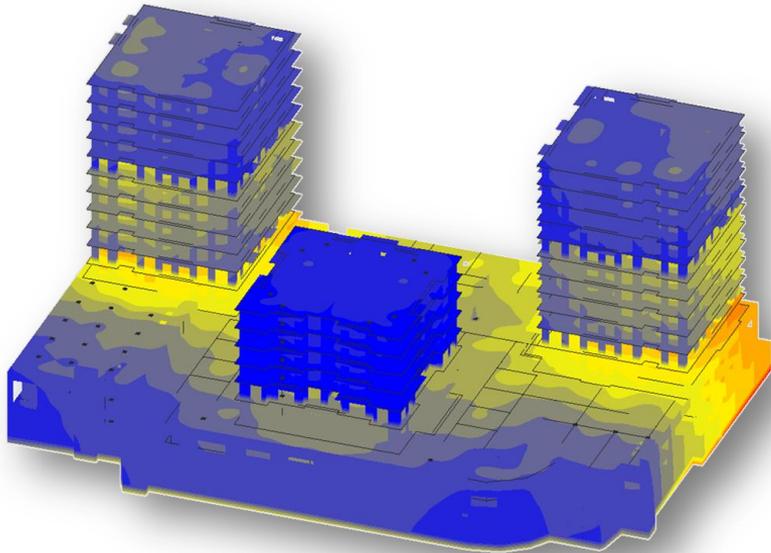


Integrated System SCAD Office 25.1

Structural FEA Software SCAD++

New Functionality

Structural analysis with a variable design model (ERECTION) taking into account nonlinear behavior



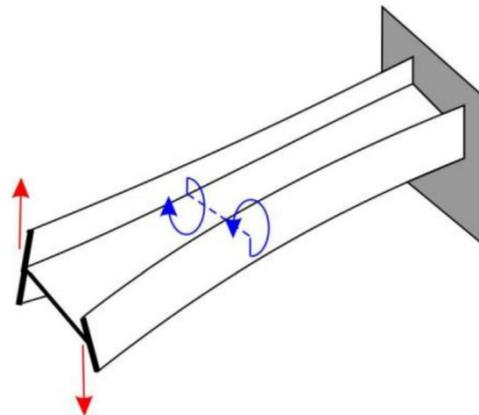


Integrated System SCAD Office 25.1

Structural FEA Software SCAD++

New Functionality

A new load type, bimoment, has been implemented for the analysis of thin-walled members. The load may be applied as concentrated, uniformly distributed, or trapezoidal.



Magnum (64-bit) - Geometric Properties

File Mode Settings Tools Help

Section Geometric Properties

Parameter	Value	Unit of measurement
A	Cross-sectional area	24,34 cm ²
A _{v,y}	Conventional shear area	16,286 cm ²
A _{v,z}	Conventional shear area	7,815 cm ²
α	Angle of principal axes	-90 degree
I _y	Moment of inertia	1839,162 cm ⁴
I _y	Moment of inertia about	2334,148 cm ⁴
I _t	Torsional moment of line	0,723 cm ⁴
I _p	Radius of gyration about	8,693 cm
I _p	Radius of gyration about	9,793 cm
Y _{cs}	Distance between mas:	0 cm
Z _{cs}	Distance between mas:	0 cm
W _{y,sa}	Maximum section moduli	182,355 cm ³
W _y	Minimum section moduli	182,355 cm ³
W _{z,sa}	Maximum section moduli	153,363 cm ³
W _z	Minimum section moduli	153,164 cm ³
I _u	Maximum moment of line	2334,148 cm ⁴
I _v	Minimum moment of line	1839,162 cm ⁴
I _u	Maximum radius of gyration	9,793 cm
I _v	Minimum radius of gyration	8,693 cm
a _{u+}	Core size along positive	6,301 cm
a _{u-}	Core size along negative	6,293 cm
a _{z+}	Core size along positive	7,492 cm
a _{z-}	Core size along negative	7,492 cm
M	Mass per running meter	19,107 kg

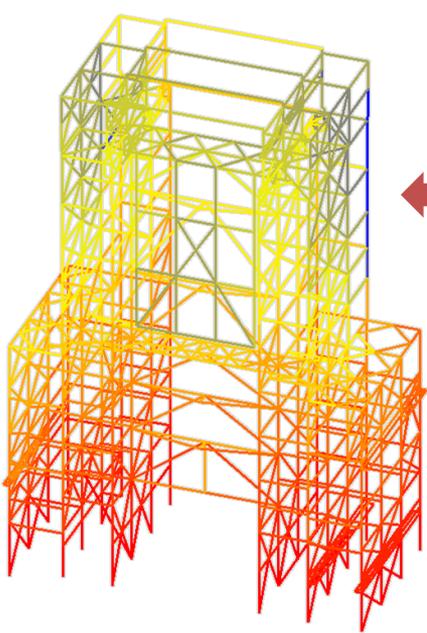
Menu

Report Help

Analysis of cold-formed steel lattice sections

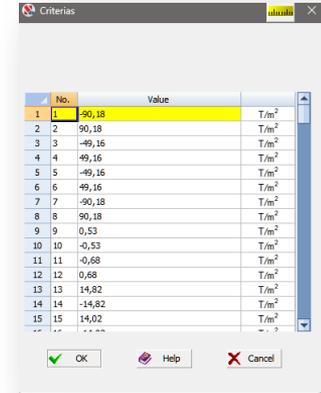
New Functionality

The Information on the Element dialog box provides the values of all criteria obtained during the analysis of design combinations of forces.



Color indication of deflections in the postprocessor for design combinations

Determination of unfavorable combinations of forces when calculating the tilt of a structure and the foundation slab



A screenshot of the 'Criteria' dialog box in SCAD Office. The dialog box contains a table with columns for 'No.', 'Value', and 'Unit'. The table lists 15 design combinations. A red arrow points from the text 'The Information on the Element dialog box provides the values of all criteria obtained during the analysis of design combinations of forces.' to the table.

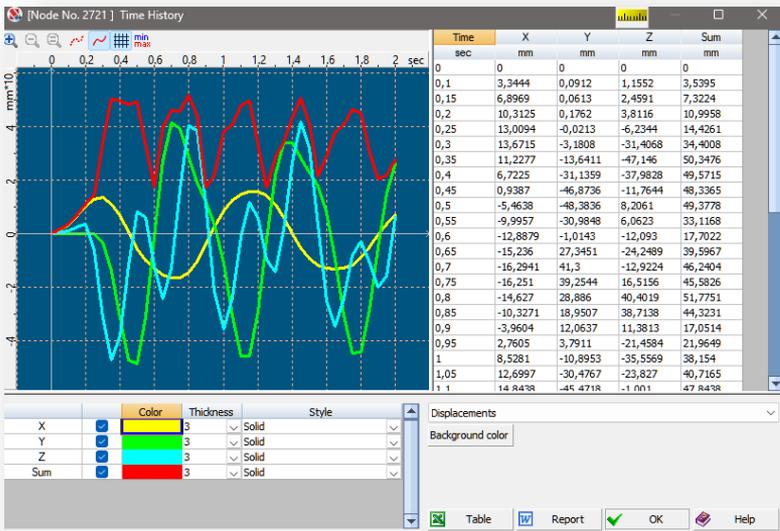
No.	Value	Unit
1	-90,18	T/m ²
2	90,18	T/m ²
3	-49,16	T/m ²
4	49,16	T/m ²
5	-49,16	T/m ²
6	49,16	T/m ²
7	-90,18	T/m ²
8	90,18	T/m ²
9	0,53	T/m ²
10	-0,53	T/m ²
11	-0,68	T/m ²
12	0,68	T/m ²
13	14,82	T/m ²
14	-14,82	T/m ²
15	14,02	T/m ²



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Structural FEA Software SCAD++

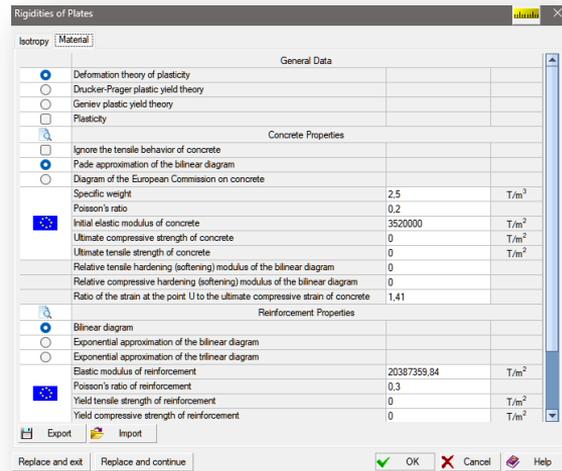
New Functionality



Display of min/max values of displacements, forces, and stresses for each time step using color scales during direct integration of the equations of motion.

Specification of elastic and inelastic subgrade for physically nonlinear plates.

Import/export of characteristics of physically nonlinear materials.





Integrated System SCAD Office 25.1

Structural FEA Software SCAD++

New Functionality

The overturning analysis has been implemented.

Design Combinations of Forces and Displacements

Active loading	Active loading in DCF	Name	Type of loading	Type of load	Alternating	Involvement in group operations	Safety factor	Fraction of duration	K_1	K_2	
L1	<input checked="" type="checkbox"/>	erection stage 1, m Permanent load	Weight of concr...		<input type="checkbox"/>	<input type="checkbox"/>	1,1	1	1	0	0
L2	<input checked="" type="checkbox"/>	erection stage 1, n Long-term load	Weight of tampr...		<input type="checkbox"/>	<input type="checkbox"/>	1,2	1	1	0	0
L3	<input checked="" type="checkbox"/>	erection stage 2, m Short-term load	Full snow loads		<input type="checkbox"/>	<input type="checkbox"/>	1,14	0,4	1	0	0
L4	<input checked="" type="checkbox"/>	erection stage 2, n Short-term load	Wind loads		<input type="checkbox"/>	<input type="checkbox"/>	1,14	0	1	0	0
L5	<input checked="" type="checkbox"/>	erection stage 3, m Short-term load	Wind loads		<input type="checkbox"/>	<input type="checkbox"/>	1,14	0	1	0	0
L6	<input checked="" type="checkbox"/>	erection stage 3, n Short-term load	Wind loads		<input type="checkbox"/>	<input type="checkbox"/>	1,14	0	1	0	0
L7	<input checked="" type="checkbox"/>	erection stage 4, m Short-term load	Wind loads		<input type="checkbox"/>	<input type="checkbox"/>	1,14	0	1	0	0
L8	<input checked="" type="checkbox"/>	erection stage 4, n Long-term load	Weight of tampr...		<input type="checkbox"/>	<input type="checkbox"/>	1,2	1	1	0	0
L9	<input checked="" type="checkbox"/>	erection stage 5, m Permanent load	Weight of concr...		<input type="checkbox"/>	<input type="checkbox"/>	1,1	1	1	0	0
L10	<input checked="" type="checkbox"/>	erection stage 5, n Long-term load	Weight of tampr...		<input type="checkbox"/>	<input type="checkbox"/>	1,2	1	1	0	0

Deactivate loading: DCF tree Loadings cannot be included in combinations without loadings Delete DCF

Step of viewing loadings on plates: 15 degree Report

Parameters: List of elements Unification Groups Groups of Nodes Create "anchor" DCF combinations

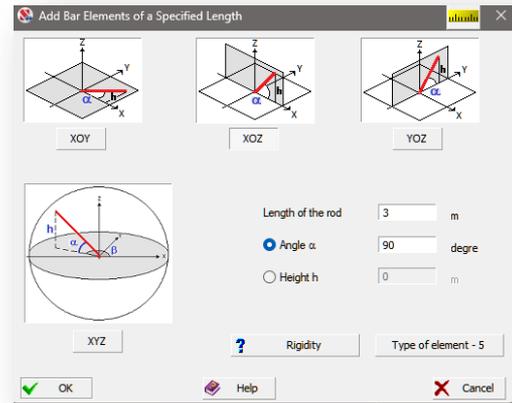
Relations between loadings: Combination Related Mutual exclusion Cranes

Mutual exclusions between loadings of the erection stages are set automatically

Types of structures (accounting for seismic loads): Civil and industrial Transport Steel

OK Help Cancel

Input of bar elements of a given length



Using groups of nodes in the initial data for design combinations

Display of bar segments with tensile reinforcement using color scales

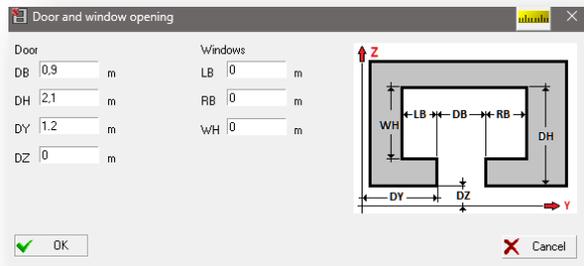
Specification of the calibration frequency during direct integration of the equations of motion



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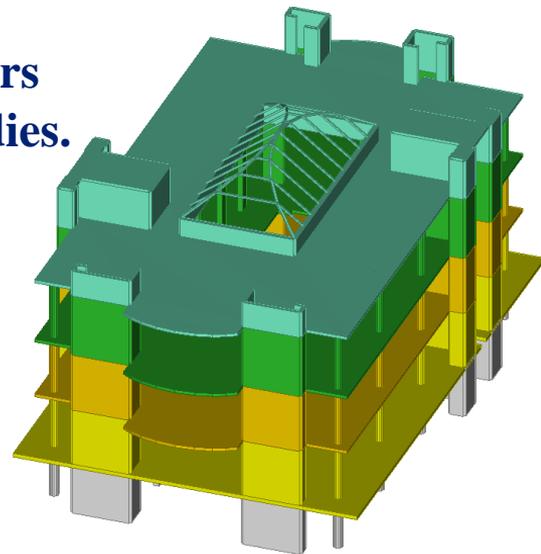
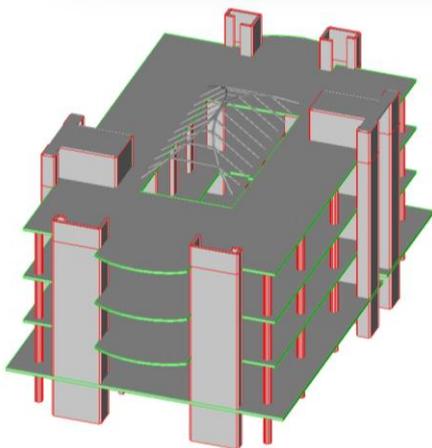
New functionality of the FORUM preprocessor



Generation of parametric door and window openings (balcony blocks) has been implemented.

When generating a project file, adjacent bars and plates can be connected using rigid bodies.

Selected structural elements can be divided by cutting planes defined by one or three nodes.





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Structural FEA Software SCAD++

New Functionality

When setting up the SCAD++ interactive graphical environment, you can use default settings or assign the active project's settings as the defaults.

Selecting an encoding when importing a text document.

Implemented Design Codes

SCAD++ now supports analysis according to the following design codes:

NTP RK-08-01.2-2021, NTP RK-08-01.7-2021,

SN KR 20-02:2024*, SN KR 53-01:2024, SN KR 52-02:2024

EN 1993

Analysis of continuous steel beams considering the type of torsional restraint (hinged or rigid) at the design sections in each span



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Structural FEA Software SCAD++

New Functionality

EN 1993

Additional settings allow specifying whether a member belongs to a non-sway frame.

EN 1993-1-1

The calculation for bending moment and shear force has been refined.

Section class has been added to the list of design factors.

Steels from the national annexes of Ukraine and Kazakhstan have been added.

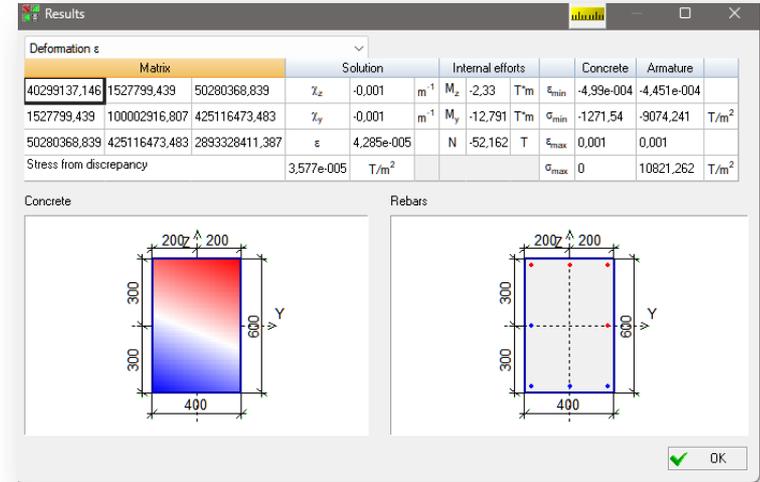
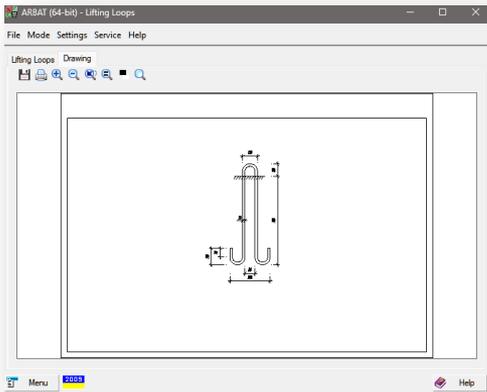
DBN

European steels are now supported.

Satellites. New Functionality

ARBAT

In the Strength of Reinforced Concrete Sections mode, double-clicking the load case number opens a dialog box showing the solution to the system of equations for the nonlinear deformation model.



The generation of rafter loop drawings has been implemented.



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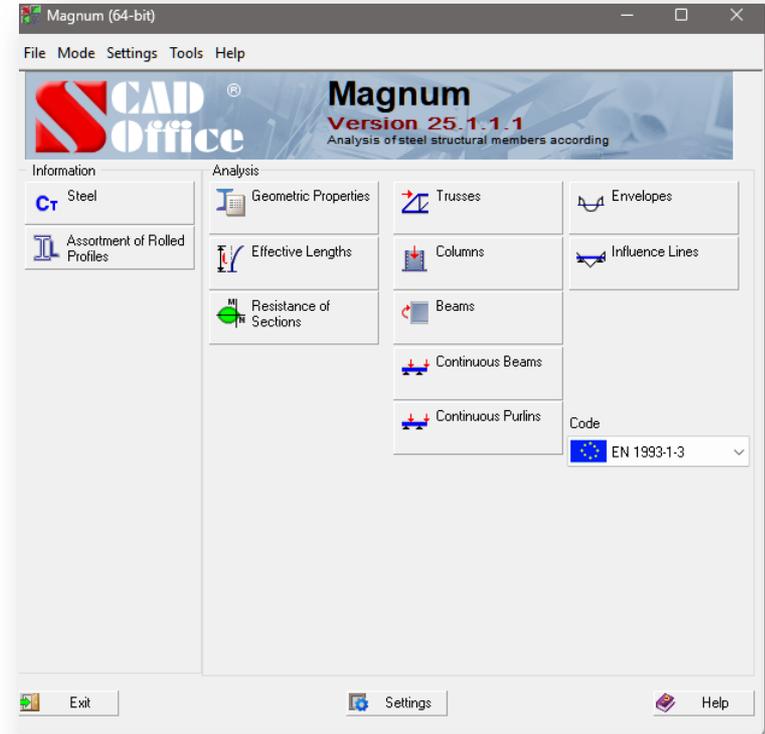
Satellites. New Functionality

MAGNUM

Calculation considering perforation

Analysis of continuous steel beams and purlins considering the type of torsional restraint (hinged or rigid) at the design sections in each span

Automatic consideration of protective cover thickness



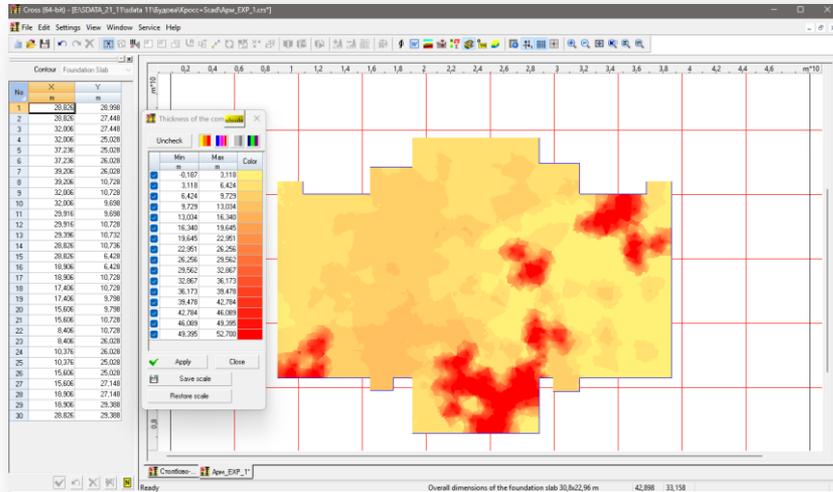


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Satellites. New Functionality

DÉCOR

The calculation of beam deflections has been refined.



CROSS

Generation of color fields representing the thickness of the compressible stratum.



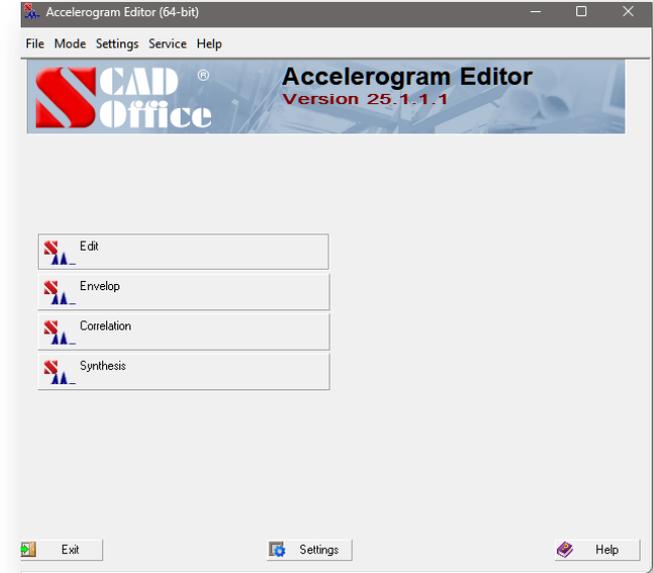
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Satellites. New Functionality

ACCELEROGRAM EDITOR

Synthesis mode now features a preview of balancing, baseline adjustment, and filtering.

Selecting an encoding when opening a file.



KUST

Calculation of the pseudoinverse matrix



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New Functionality

Added assortments of rolled steel profiles:

Europe, Canada, TU 25.11U23-002-97638531-2025, Channels DIN 1026-2^2002-10

Sort (Don't set)

	h	b	s	t	r ₁	d	A	I _x	I _y	I _x	I _y	S _x	S _y	W _x	W _y	W _{pl}	W _{pl}	W _{pl}	W _{pl}	P
1	30	30	3.000	1.000	7.000	3.000	1.000	4.470	6.390	4.250	10.800	5.330	2.680	8.900	13.100					
2	40	40	3.500	1.000	7.000	3.500	1.000	6.310	8.470	5.690	14.100	6.880	3.680	10.400	13.800					
3	50	50	4.000	1.000	7.000	4.000	1.000	8.440	10.600	7.850	18.500	9.130	4.750	11.900	15.300					
4	63	63	4.500	1.000	7.000	4.500	1.000	10.890	13.270	10.000	23.000	11.100	5.850	13.400	17.000					
5	80	80	5.000	1.000	7.000	5.000	1.000	13.840	16.800	12.800	28.500	13.100	7.100	15.000	18.800					
6	100	100	5.500	1.000	7.000	5.500	1.000	17.400	21.500	16.500	35.000	15.400	8.500	16.800	21.000					
7	120	120	6.000	1.000	7.000	6.000	1.000	21.500	26.500	20.000	42.000	17.800	9.900	18.500	23.000					
8	140	140	6.500	1.000	7.000	6.500	1.000	26.000	32.000	24.000	49.000	20.000	11.300	19.800	24.000					
9	160	160	7.000	1.000	7.000	7.000	1.000	30.500	37.500	28.000	56.000	22.000	12.700	20.800	25.000					
10	180	180	7.500	1.000	7.000	7.500	1.000	35.000	43.000	32.000	63.000	24.000	14.100	21.800	26.000					
11	200	200	8.000	1.000	7.000	8.000	1.000	39.500	48.500	36.000	70.000	26.000	15.500	22.800	27.000					
12	220	220	8.500	1.000	7.000	8.500	1.000	44.000	54.000	40.000	77.000	28.000	16.900	23.800	28.000					
13	240	240	9.000	1.000	7.000	9.000	1.000	48.500	59.500	44.000	84.000	30.000	18.300	24.800	29.000					
14	260	260	9.500	1.000	7.000	9.500	1.000	53.000	65.000	48.000	90.500	32.000	19.700	25.800	30.000					
15	280	280	10.000	1.000	7.000	10.000	1.000	57.500	70.500	52.000	97.000	34.000	21.100	26.800	31.000					
16	300	300	10.500	1.000	7.000	10.500	1.000	62.000	76.000	56.000	103.500	36.000	22.500	27.800	32.000					
17	320	320	11.000	1.000	7.000	11.000	1.000	66.500	81.500	60.000	110.000	38.000	23.900	28.800	33.000					
18	340	340	11.500	1.000	7.000	11.500	1.000	71.000	87.000	64.000	116.500	40.000	25.300	29.800	34.000					
19	360	360	12.000	1.000	7.000	12.000	1.000	75.500	92.500	68.000	123.000	42.000	26.700	30.800	35.000					
20	380	380	12.500	1.000	7.000	12.500	1.000	80.000	98.000	72.000	129.500	44.000	28.100	31.800	36.000					
21	400	400	13.000	1.000	7.000	13.000	1.000	84.500	103.500	76.000	136.000	46.000	29.500	32.800	37.000					
22	420	420	13.500	1.000	7.000	13.500	1.000	89.000	109.000	80.000	142.500	48.000	30.900	33.800	38.000					
23	440	440	14.000	1.000	7.000	14.000	1.000	93.500	114.500	84.000	149.000	50.000	32.300	34.800	39.000					
24	460	460	14.500	1.000	7.000	14.500	1.000	98.000	120.000	88.000	155.500	52.000	33.700	35.800	40.000					
25	480	480	15.000	1.000	7.000	15.000	1.000	102.500	125.500	92.000	162.000	54.000	35.100	36.800	41.000					

Sort (Don't set)

	h	b	s	t	r ₁	d	A	I _x	I _y	I _x	I _y	S _x	S _y	W _x	W _y	W _{pl}	W _{pl}	W _{pl}	W _{pl}	P	
1	100x10	106	100	7	10	8	8,200	69,000	24,800	477,000	161,000	44,000	26,000	51,500	11,500	89,900	31,200	6,360	103,000	40,000	19,500
2	W 150x24	127	120	6	11	9	10,900	91,000	30,200	984,000	317,000	54,000	32,000	78,500	18,000	139,000	40,000	7,910	157,000	74,600	23,700
3	W 150x28	131	128	6	10	9	10,900	91,000	31,900	1,100,000	381,000	55,000	33,000	95,500	21,900	168,000	45,000	8,310	191,000	90,800	28,200
4	W 150x13	148	100	4	9	11	11,100	115,000	16,100	613,000	81,800	62,000	23,000	46,500	6,140	82,800	16,400	1,360	93,000	25,300	12,600
5	W 150x14	150	100	4	9	11	11,500	116,000	17,300	687,000	91,800	63,000	23,000	51,500	6,870	91,600	18,400	1,710	103,000	28,300	13,600
6	W 150x18	153	102	5	8	10	11,900	116,000	22,900	917,000	126,000	63,000	24,000	68,000	9,190	120,000	24,700	3,740	136,000	38,300	18,000
7	W 150x24	160	102	6	10	11	12,700	116,000	30,600	1,040,000	181,000	66,000	24,000	96,000	13,170	168,000	35,800	9,310	192,000	55,300	24,000
8	W 150x22	152	102	5	8	10	11,400	116,000	28,600	1,210,000	387,000	65,000	27,000	88,500	18,870	160,000	30,900	4,340	177,000	77,600	22,500
9	W 150x30	157	103	6	9	11	11,700	115,000	38,100	1,230,000	356,000	67,000	28,000	122,500	26,930	218,000	72,600	10,300	245,000	111,000	29,900
10	W 150x27	162	104	6	11	11	11,400	116,000	47,500	2,230,000	707,000	69,000	39,000	155,500	33,890	275,000	91,800	19,700	311,000	140,000	37,300
11	W 200x15	200	100	4	8	10	11,800	167,000	19,000	1,270,000	86,900	82,000	21,000	72,500	6,510	127,000	17,400	1,700	145,000	27,100	14,900
12	W 200x19	203	102	5	8	10	11,500	167,000	24,800	1,960,000	115,000	82,000	22,000	99,300	8,430	164,000	22,600	3,620	187,000	35,600	19,500
13	W 200x22	206	102	6	8	10	12,000	167,000	28,800	2,000,000	142,000	84,000	22,000	111,000	10,320	194,000	27,800	5,660	222,000	43,700	22,500
14	W 200x27	207	103	6	9	10	11,600	167,000	33,900	2,580,000	330,000	87,000	31,000	139,500	18,390	249,000	49,600	7,130	279,000	76,100	26,000
15	W 200x31	210	104	6	10	11	12,000	167,000	40,000	3,140,000	410,000	89,000	32,000	167,500	22,580	299,000	61,100	11,900	335,000	93,800	31,600
16	W 200x36	201	105	6	10	12	12,000	155,000	45,700	3,440,000	784,000	87,000	41,000	189,500	34,330	342,000	82,600	14,500	379,000	114,000	35,900
17	W 200x42	205	106	7	11	12	12,200	156,000	53,100	4,090,000	900,000	88,000	41,000	222,500	40,080	399,000	108,000	22,200	445,000	165,000	41,700
18	W 200x48	203	103	7	11	12	11,700	143,000	58,000	4,540,000	1,150,000	90,000	51,000	247,500	50,220	448,000	131,000	22,600	495,000	239,000	48,000
19	W 200x52	206	104	7	12	12	12,600	144,000	66,500	5,170,000	1,290,000	89,000	52,000	284,500	64,860	518,000	179,000	32,000	569,000	266,000	52,300
20	W 200x59	210	105	8	11	14	12,400	148,000	75,000	6,210,000	1,400,000	90,000	52,000	328,500	73,670	582,000	199,000	46,300	653,000	303,000	59,200
21	W 200x71	216	106	10	12	14	16,600	148,000	91,000	7,660,000	2,540,000	92,000	53,000	401,000	90,740	709,000	246,000	81,000	803,000	375,000	71,400
22	W 200x84	222	109	13	13	16	16,400	147,000	110,000	9,470,000	3,140,000	93,000	53,000	496,500	110,160	853,000	300,000	139,000	981,000	458,000	86,400
23	W 200x108	229	110	14	14	16	18,300	148,000	127,000	11,930,000	3,960,000	95,000	54,000	575,000	127,450	980,000	340,000	209,000	1,156,000	533,000	99,700
24	W 250x18	253	101	6	8	10	12,700	215,000	22,700	2,240,000	91,300	99,000	20,000	103,500	6,800	179,000	18,100	2,240	207,000	28,600	17,800



Integrated System SCAD Office 25.1

New Functionality

Data Exchange with BIM Software

Expanded IFC import/export capabilities

Added Add-in for data exchange with Revit 2026

Added Add-in for data exchange with Tekla 2024, Tekla 2025

Implemented import of SAF 2.2.0 files