

midas Gen / Design+

2026 (v1.1)



Release Note (July 2025)

Pre-processing

- Added New Cross-section to Database.
 - NB/T 10115-2018 (CH) : Cold-formed section
 - I-shape DB (3 new section) as per UNI
 - T-shape DB as per UNI
 - 8 new **cross-section types** as per **CNS-2020**
型鋼DB更新到CNS 2020年版本，並加入中龍鋼鐵特規尺寸。
- Added new material DB.
 - Aluminum DB as per EN 2023
 - Timber DB as per EN 338
- Added new rebar DB.
 - Rebar Dia. and Material as per TS (Turkish Standard)
- Improved GTS & Gen Interface .
(Handling when the slope of spring stiffness is negative.)
- Copying of Load Profile table data for wind/earthquake
- Added to Input Finishing Material Load
- Add Importing of Ground Motion Records from PEER Database

Design

- [Gen/Design+]Added Steel Design as per AISC 2022.
- Added 6 Design Codes to Shell Design
- Added **RC Meshed Slab/Wall Design** as per **TWN-USD112**.
TWN-USD112 筏基版牆設計
- Added “Wall End Rebar Design Method by Member” feature in Conc. Design Parameters
- Added Load Combinations as per Thailand (2021).
- Improved Seismic Design as per EC8-3
- [Design+] Improved Gen-Design+ link.
(Automatically set to Gen's design and material code)

Add New Section and Material DB (1)

Section Standard

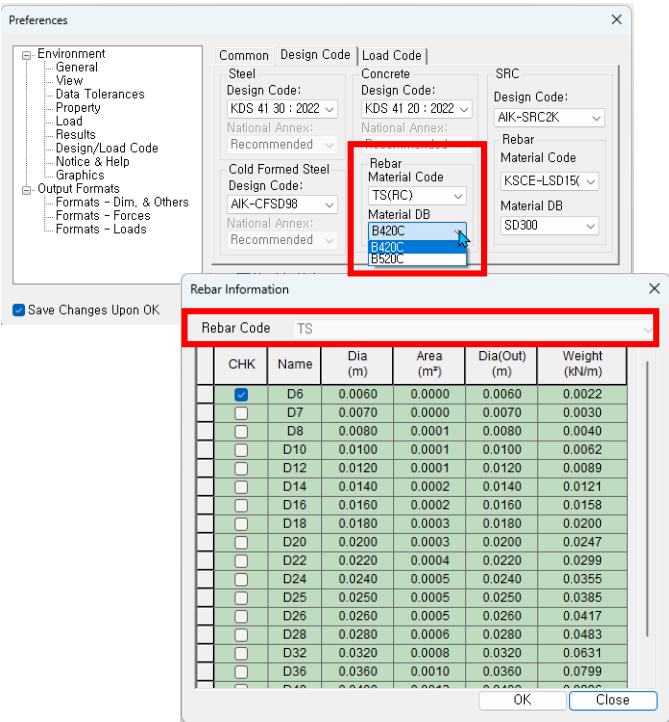
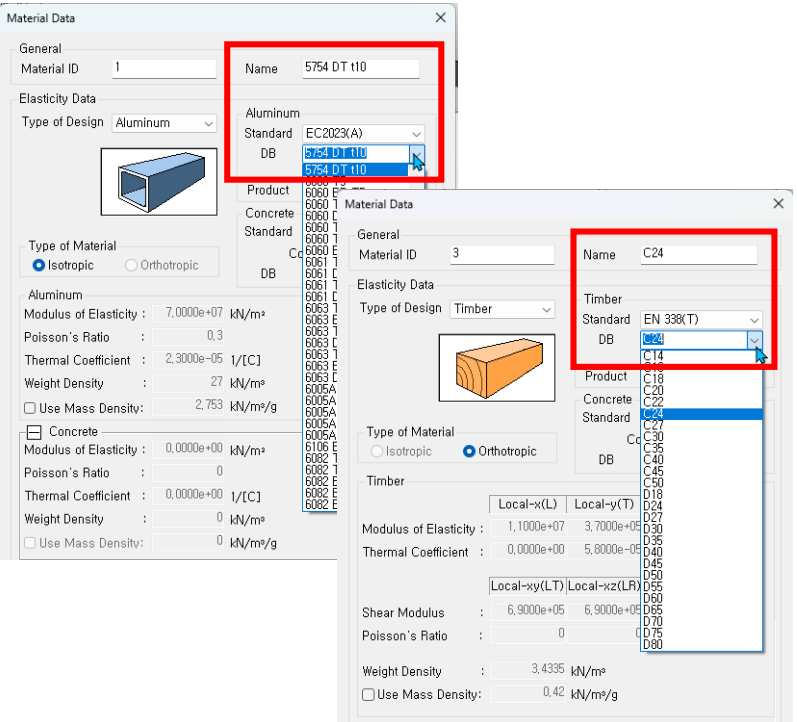
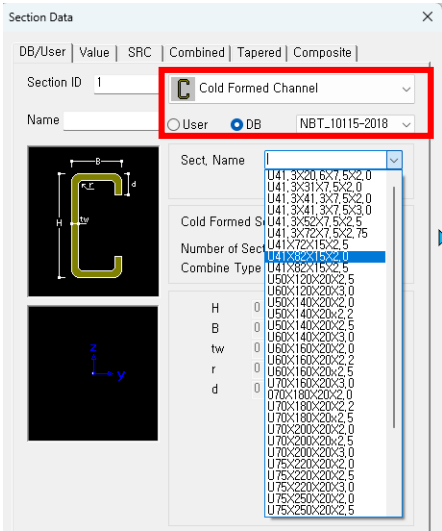
Code Name	Detail
NB/T 10115-2018 (CH)	Cold formed section
UNI (IT&Euro)	I shape (3 sections)
	T shape

Material Standard

Code Name	Detail
EN-2023 (Euro)	Aluminum materials
EN 338, EN 14080 (Euro)	Timber materials (Structural timber, glulam)

Rebar Standard

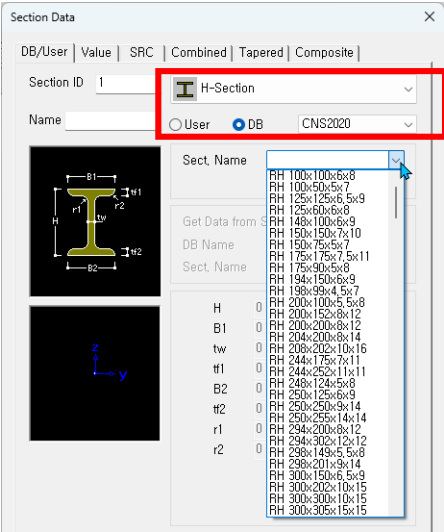
Code Name	Detail
TS (Turkish Standard)	17 Diameters



Add New Section and Material DB (2)

Section Standard

Code Name	Detail
CNS-2020 (TW)	I-shape, L-type, C-type, T-type, Box, Pipe, Cold formed Channel



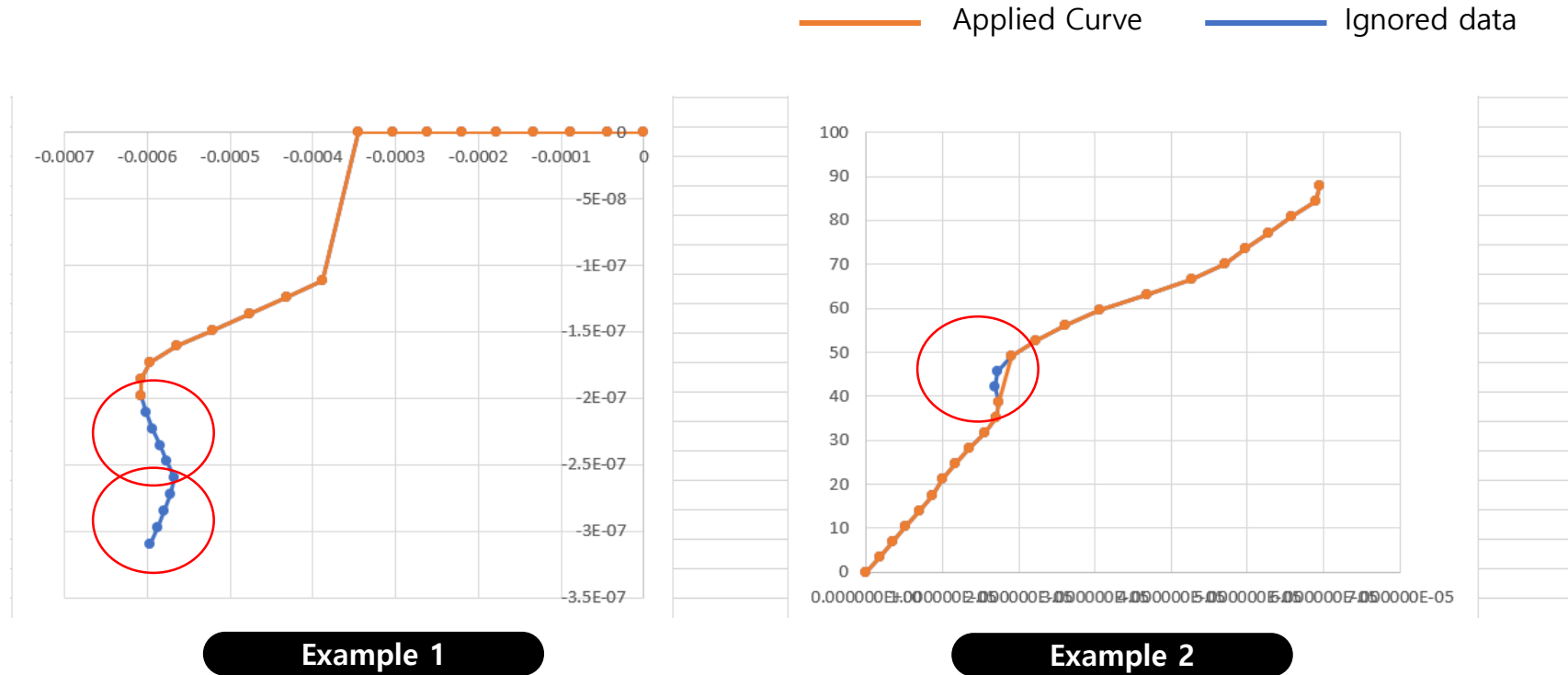
型鋼DB更新到CNS 2020年版本，並加入中龍鋼鐵特規尺寸。

ID	Type	Shape	Name	Area (cm²)	Asy (cm²)	Asz (cm²)	Ixx (cm⁴)	Iyy (cm⁴)	Izz (cm⁴)	Cyp (cm)	Cym (cm)	Czp (cm)	Czm (cm)	Qyb (cm³)	Qzb (cm³)	Peri.(Out) (cm)	Peri.(In) (cm)
1	DB/User	I	RH 200x152x8x12	51.1100	30.4000	16.0000	20.7189	3630.000	703.0000	7.6000	7.6000	10.0000	10.0000	253.0400	28.8800	97.8265	0.0000
2	DB/User	I	RH 204x200x8x14	71.5300	46.6667	16.3200	39.8293	5530.000	1870.000	10.0000	10.0000	10.2000	10.2000	371.2200	50.0000	116.9681	0.0000
3	DB/User	I	RH 208x202x10x16	83.6900	53.8667	20.8000	61.5595	6530.000	2200.000	10.1000	10.1000	10.4000	10.4000	348.9920	51.0050	118.1681	0.0000
4	DB/User	I	RH 244x252x11x11	81.3100	46.2000	26.8400	32.6982	8700.000	2940.000	12.6000	12.6000	12.2000	12.2000	355.1850	79.3800	145.1681	0.0000
5	DB/User	I	RH 298x201x9x14	82.0300	46.9000	26.8200	43.6708	13100.000	1900.000	10.0500	10.0500	14.9000	14.9000	535.1116	50.5012	135.9681	0.0000
6	DB/User	I	RH 300x202x10x15	89.0500	50.5000	30.0000	54.9500	14200.000	2060.000	10.1000	10.1000	15.0000	15.0000	522.9000	51.0050	136.5681	0.0000
7	DB/User	I	RH 352x350x12x20	178.9000	116.6666	42.2400	205.7898	42000.000	14300.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
8	DB/User	I	RH 356x352x14x22	200.0000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
9	DB/User	I	RH 424x207x15x25	161.1000	100.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
OCNS 1490 / JIS G3192 Metric Series																	
10	DB/User	I	RH 408x305x15x25	207.7000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
11	DB/User	I	RH 406x403x16x24	254.9000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
12	DB/User	I	RH 408x402x15x25	258.9000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
13	DB/User	I	RH 408x406x19x25	275.2000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
14	DB/User	I	RH 500x302x13x24	205.2000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
15	DB/User	I	RH 546x200x10x16	116.8000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
16	DB/User	I	RH 550x200x10x18	124.8000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
17	DB/User	I	RH 688x254x13x21	192.6000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
18	DB/User	I	RH 702x300x13x25	237.5000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
19	DB/User	I	RH 714x303x16x31	295.0000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
20	DB/User	I	RH 720x306x19x34	334.7000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
21	DB/User	I	RH 730x307x20x39	372.6000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
22	DB/User	I	RH 794x300x14x23	245.5000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
23	DB/User	I	RH 804x300x14x28	275.5000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
24	DB/User	I	RH 804x302x16x28	291.6000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
25	DB/User	I	RH 808x304x18x30	319.8000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
26	DB/User	I	RH 808x306x20x30	336.0000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
27	DB/User	I	RH 812x302x18x32	330.7000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
28	DB/User	I	RH 818x304x18x35	350.2000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
29	DB/User	I	RH 820x306x20x36	372.7000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
30	DB/User	I	RH 824x306x20x38	384.9000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
31	DB/User	I	RH 824x308x22x38	401.4000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
32	DB/User	I	RH 841x295x14.5x22	248.1000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
33	DB/User	I	RH 846x296x15.5x24.5	271.4000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
34	DB/User	I	RH 850x297x16x27	290.5000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
35	DB/User	I	RH 926x307x19x32	363.4000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
36	DB/User	I	RH 943x308x22x40	439.4000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
37	DB/User	I	RH 950x312x26x43.5	498.9000	120.0000	46.8000	208.1898	47100.000	15000.000	17.5000	17.5000	17.6000	17.6000	1090.013	153.1250	205.7681	0.0000
* 1																	

項次	系列尺寸 (Division)	單重 (kg/m)	截面尺寸(mm)						截面積 (cm²)	慣性矩 (cm⁴)	迴轉半徑 (cm)	截面模數 (cm³)	塑性截面模數 (cm³)			
			H	B	t₁	t₂	r		I _x	I _y	i _x	i _y	S _x	S _y	Z _x	Z _y
1	200X150	40.1	200	152	8	12	8	51.11	3630	703	8.43	3.71	363	92.6	410	142
2	200X200	56.2	204	200	8	14	13	71.53	5530	1870	8.79	5.11	542	187	606	284
3	200X200	65.7	208	202	10	16	13	83.69	6530	2200	8.83	5.13	628	218	710	332
4	250X250	63.8	244	252	11	11	13	81.31	8700	2940	10.3	6.01	713	233	797	358
5	300X200	64.4	298	201	9	14	13	82.03	13100	1900	12.6	4.81	878	189	982	290
6	300X200	69.9	300	202	10	15	13	89.05	14200	2060	12.6	4.81	947	204	1065	314
7	350X350	140	352	350	12	20	13	178.9	42000	14300	15.3	8.94	2390	817	2640	1240
8	400X200	157	356	352	14	22	13	200.0	47100	16000	15.4	8.94	2650	909	2950	1380
9	400X300	126	424	207	15	25	13	161.1	48300	3710	17.3	4.80	2280	358	2620	559
10	400X300	163	408	305	15	25	13	207.7	62200	11840	17.3	7.55	3050	776	3430	1180
11	400X300	200	406	403	16	24	22	254.9	78000	26200	17.5	10.1	3840	1300	4280	1980
12	400X400	203	408	402	15	25	22	258.9	80800	27100	17.7	10.2	3960	1350	4400	2050
13	500X300	216	408	406	19	25	22	275.2	83100	27900	17.4	10.1	4070	1380	4570	2100
14	500X300	161	500	302	13	24	13	205.2	92900	11030	21.3	7.33	3720	730	4150	1115
15	550X200	91.7	546	200	10	16	13	116.8	57200	2140	22.1	4.28	2100	214	2390	335
16	550X200	98.0	550	200	10	18	13	124.8	63200	2410	22.5	4.39	2300	241	2610	375
17	700X250	151	688	254	13	21	15	192.6	150000	5750	27.9	5.46	4360	453	4980	707
18	700X300	186	702	300	13	25	18	237.5	205000	11300	29.4	6.89	5840	751	6550	1160
19	700X300	232	714	303	16	31	18	295.0	259000	14400	29.6	6.99	7260	951	8210	1470
20	700X300	263	720	306	19	34	18	334.7	292000	16300	29.5	6.97	8100	1060	9250	1660
21	700X300	292	730	307	20	39	18	372.6	335000	18900	30.0	7.1				

Improvement of GTS & Gen Interface

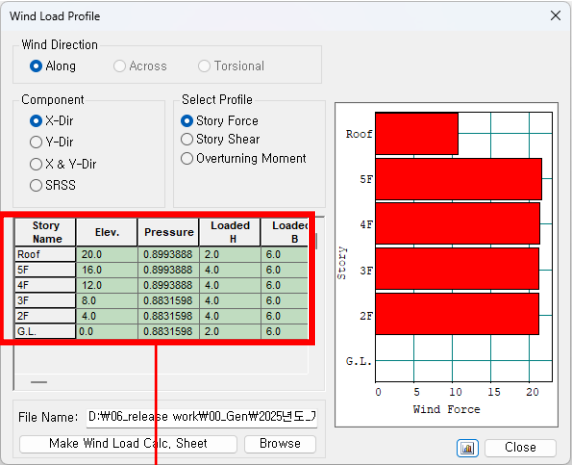
Handling when the slope of spring stiffness is negative



- There was a case where spring data with negative slope and deformation from GTS could not be loaded.
- Data that causes negative slope and deformation is ignored to generate a spring stiffness curve that can be imported into Gen..

Copying of table data for wind/earthquake Load Profile

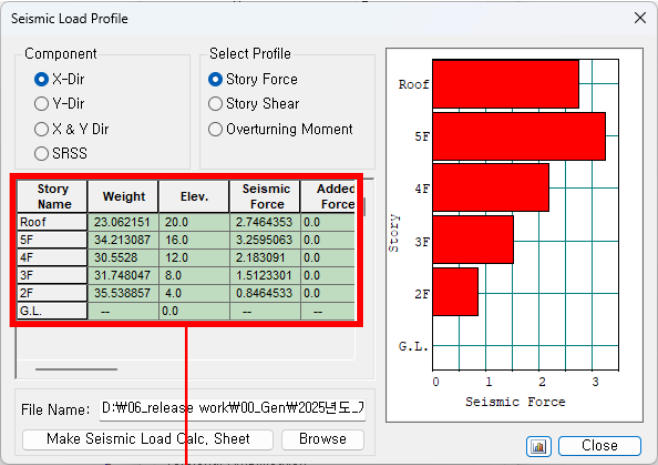
Wind Load



The Excel spreadsheet shows the copied data from the Wind Load Profile dialog. The data is organized in a table with columns for Story Name, Elev., Pressure, Loaded H, and Loaded B. The data is as follows:

Story Name	Elev.	Pressure	Loaded H	Loaded B
Roof	20	1.480841	2	6
5F	16	1.480841	4	6
4F	12	1.480841	4	6
3F	8	1.376394	4	6
2F	4	1.297603	4	6
G.L.	0	1.243907	2	6

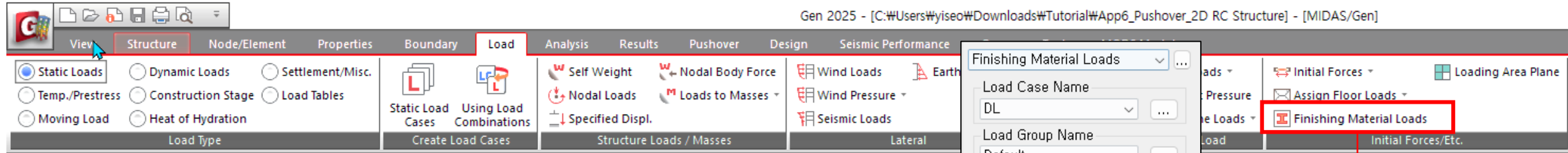
Static Seismic Load



The Excel spreadsheet shows the copied data from the Seismic Load Profile dialog. The data is organized in a table with columns for Story Name, Weight, Elev., Seismic Force, and Addec Force. The data is as follows:

Story Name	Weight	Elev.	Seismic Force	Addec Force
Roof	23.06215	20	2.746435	0
5F	34.21309	16	3.259506	0
4F	30.5528	12	2.183091	0
3F	31.74805	8	1.51233	0
2F	35.53886	4	0.846453	0
G.L.	--	0	--	--

Add Feature to Input Finishing Material Load



Input or modify the load due to the member's finishing, such as a fireproofing.

- Covering Type**
Specify the method of applying the covering (refer to the guide image).
- Covering Range**
Refer to the guide image to specify the range of covering material applied to each face of the element.
- Covering/Filling Property**
d: Thickness of the covering.
Density: Unit weight of the covering material.
- Direction**
Direction of the covering load application (choose from Global X, Y, or Z).
- Scale Factor**
Scale factor for increasing or decreasing the covering load.

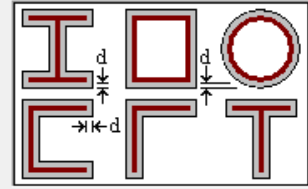
Finishing Material Loads

Load Case Name: DL

Load Group Name: Default

Options: ☒ Add ☐ Replace ☐ Delete

Covering Type: ☒ Envelop ☐ Fill ☐ Surround

Covering Range: 

Covering/Filling Property:

	Full	Half
Face 1	☒	☐
Face 2	☒	☐
Face 3	☒	☐
Face 4	☒	☐

d : 0 m

Density : 0 kN/m³

Direction : Global Z

Scale Factor : -1

Apply Close

Added Importing of Ground Motion Records from PEER Database

Midas Gen be able to read directly the ground motion database from PEER NGA.

Function Name
RSN3870_TOTTORI_HRS001EW (1) i

Import

Earthquake

Heel Drop

	Time (sec)	Function (g)
1	0.0100	-0.0002
2	0.0200	-0.0000
3	0.0300	0.0000
4	0.0400	0.0000
5	0.0500	-0.0000
6	0.0600	0.0000
7	0.0700	-0.0000
8	0.0800	0.0000
9	0.0900	-0.0000
10	0.1000	0.0000
11	0.1100	0.0000
12	0.1200	0.0000
13	0.1300	0.0000
14	0.1400	0.0000

Description
Generate Earthquake Response Spectrum...

Time Function Data Type
☒ Normalized Accel. ☐ Acceleration

Scale Factor
☒ Scale Factor 1 ☐ Maximum Value 0 g

개열기

다운로드

다운로드 검색

구성 새 폴더

영일 - MIDAS

이름 수정한 날짜 유형 크기

오늘

RSN3870_TOTTORI_HRS001EW (1) (1).at2 2025-06-25 오전 11:55 AT2 파일 452KB

CaptureScene 2025-06-25 오전 11:24 파일 폴더

Temp 2025-06-25 오전 11:19 파일 폴더

backup 2025-06-25 오전 11:18 파일 폴더

Design_Plus_2025_(v1.1)_Installer 2025-06-25 오전 9:43 파일 폴더

Gen_2025_(v1.2)_US_Installer 2025-06-25 오전 9:38 파일 폴더

어제

Tutorial 2025-06-24 오후 3:55 파일 폴더

이번 주 초

파일 이름(N): RSN3870_TOTTORI_HRS001EW (1) (1).at2

SGS or THD or AT2 File (*.sgs, *.thd, *.at2)

ANSI/AISC 360-22
An American National Standard

Specification for Structural Steel Buildings

August 1, 2022
Supersedes the
2010 Edition, June 7, 2010
Approved by AISC

ANSI/AISC 341-22
An American National Standard

Seismic Provisions for Structural Steel Buildings

September 28, 2022
Supersedes the Seismic Provisions for Structural Steel Buildings,
dated July 10, 2016, and all previous versions
Approved by the Committee on Specifications

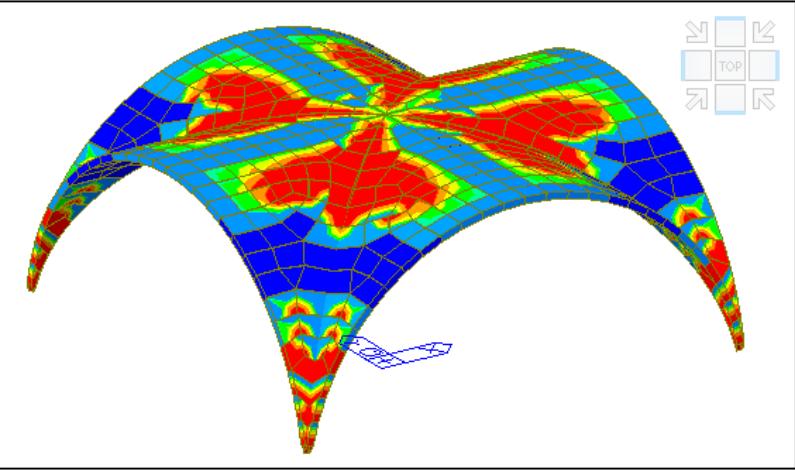
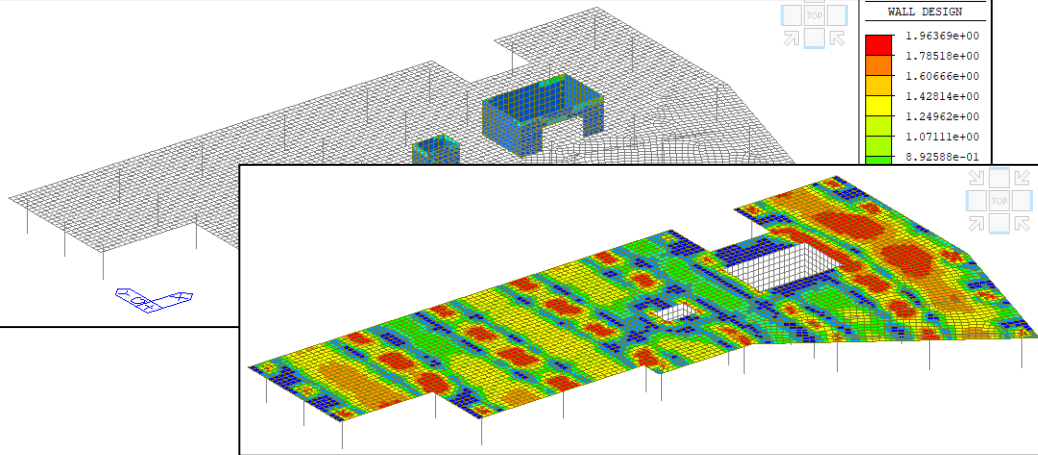
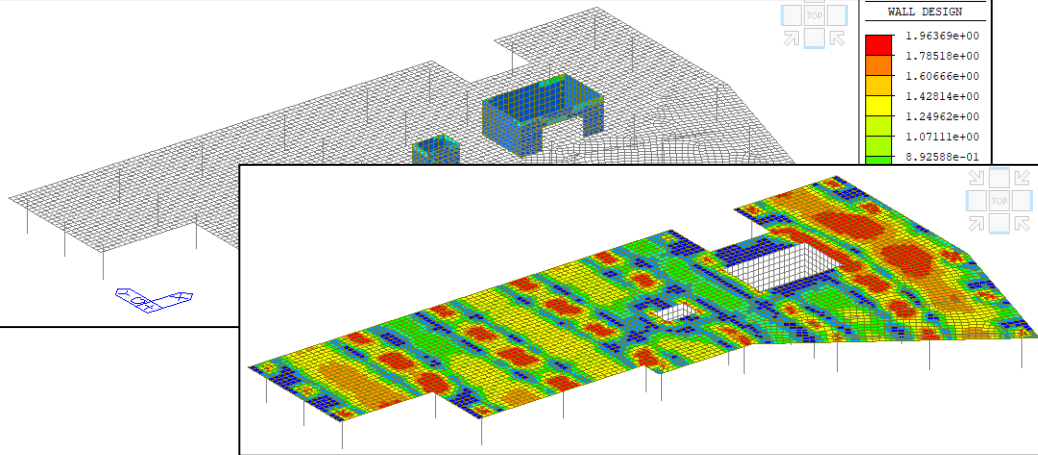
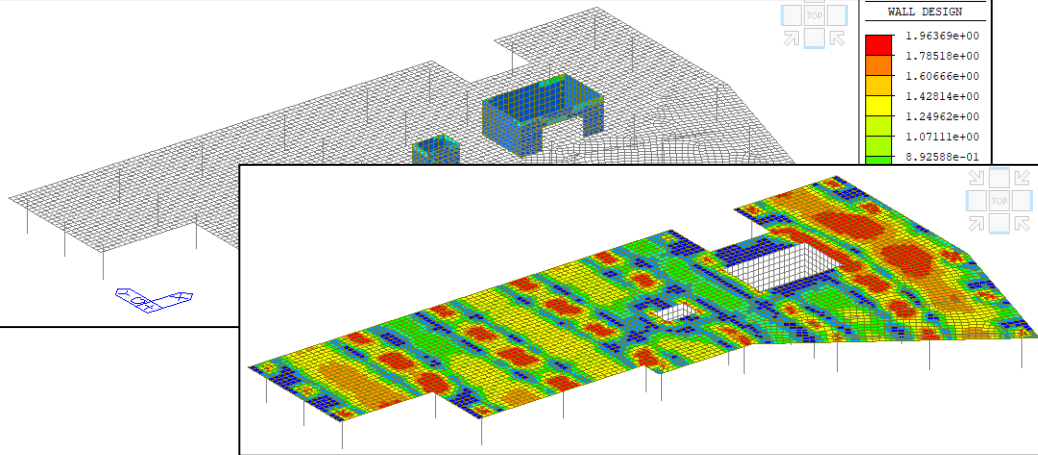
 **Smarter.
Stronger.
Steel.**

The screenshot illustrates the MIDAS/Gen software environment used for structural engineering analysis and design. The primary focus is on the design verification of a steel frame structure.

- Main Window:** Displays a 3D visualization of a multi-story building frame, color-coded by member type or load.
- AISC(16th)-LRFD22 Code Checking Result Dialog:** Provides a detailed overview of the design check process, including unit settings (kN, m) and sorting options.
- Table Result:** Summarizes key design parameters for selected members, such as:
 - Axial Strength:** $P_r / P_c = 2178.90 / 8055.35 < 0.270 < 1.000$
 - Bending Strength:** $M_r / M_p = 467.07 / 1568.70 > 0.291 < 1.000$
 - Shear Strength:** $V_r / V_p = 0.007 < 1.000$
 - Torsion Strength:** $T_r / T_e = 0.00000 / 0.00000 < 0.000 < 1.000$
- Design Check Results (Right Panel):**
 - Member Forces:** Lists internal forces like $F_{xx} = -2178.9$, $M_y = -457.07$, etc.
 - Design Parameters:** Shows unbraced lengths ($L_y = 6.00000$) and effective length factors.
 - Check Results:**
 - Slenderness Ratio:** $\lambda_r = 58.76 < \lambda_{r1} = 200.0$ (OK).
 - Width-Thickness Ratios:** $\lambda_{flange} = 13.49$, $\lambda_{web} = 15.18$ (Both OK).
 - Flexural Buckling Stress:** $F_n = 571.52 \text{ kN/m}^2$.
 - Elastic Section Modulus:** $S_x = 0.0046 \text{ m}^3$.
 - Limiting Width-Thickness Ratios:** $\lambda_{flange} = 9.152$, $\lambda_{web} = 24.08$.
 - Yielding Strength:** $F_y = 267.82 \text{ kN/m}^2$.

Graphic Report

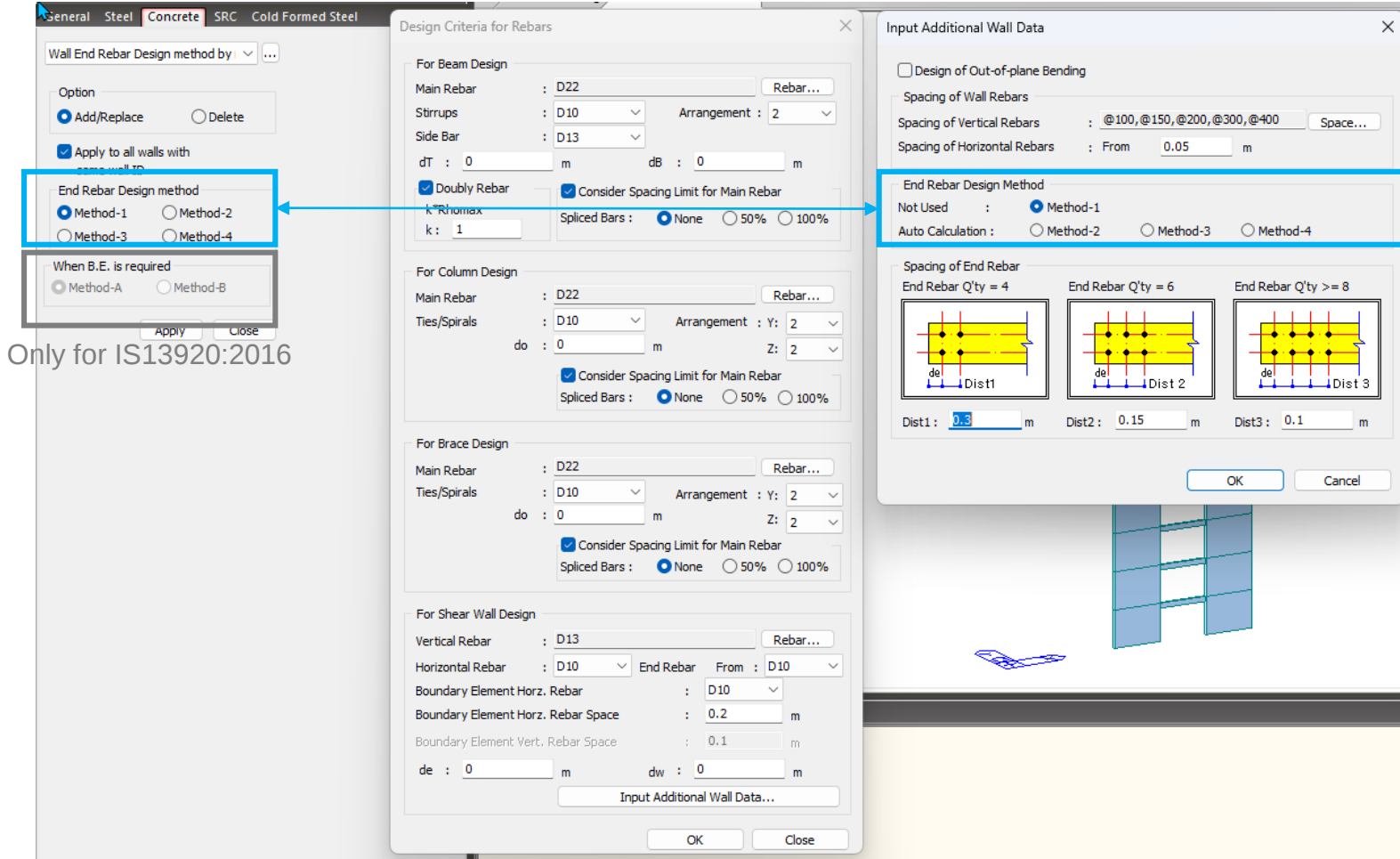
Added Design Codes to Meshed Member Design

Items	Detail		
RC Shell Design	Add a design as per ACI318-14, ACI318-19, NSR-10, TWN-USD112, NTC-DCEC(2023) and NSCP 2015 ACI318M-19 SSRC79 RC Design SRC Design Mesched Design Serviceability Load Combination Type... Slab/Wall/Shell Load Combinations... Design Criteria for Rebars... Slab/Wall/Shell Rebars for Checking... Slab Serviceability Parameters... Mesched Design Tables Slab Flexural Design... Slab Flexural Checking... Slab Shear Checking... Slab Serviceability Checking... Cracked Section Analysis Control... Perform Cracked Section Analysis Wall Design... Wall Checking... Shell Flexural Design... Shell Flexural Checking... Shell Shear Checking...  midas Gen POST-PROCESSOR SHELL DESIGN F12@300, F12@100 F12@300, F10@100 F12@300, F12@150 F12@300, F12@200 F12@300, F10@150 F12@300, F10@200 F12@300, F12@300 F12@300, F12@400 F12@300, F10@300 F12@300 None <tr><td>RC Meshed Slab/Wall Design TWN-USD112筏基版牆設計</td><td> Add a design as per TWN-USD112 NSCP 2015 SSRC79 RC Design SRC Design Mesched Design Serviceability Load Combination Type... Slab/Wall/Shell Load Combinations... Design Criteria for Rebars... Slab/Wall/Shell Rebars for Checking... Slab Serviceability Parameters... Mesched Design Tables Slab Flexural Design... Slab Flexural Checking... Slab Shear Checking... Slab Serviceability Checking... Cracked Section Analysis Control... Perform Cracked Section Analysis Wall Design... Wall Checking... Shell Flexural Design... Shell Flexural Checking... Shell Shear Checking...  WALL DESIGN 1.96369e+00 1.78518e+00 1.60666e+00 1.42014e+00 1.24962e+00 1.07111e+00 8.92588e-01 POST-PROCESSOR SLAB DESIGN #5@101 #5@152 #4@101 #5@203 #4@152 #5@204 #4@203 #5@406 #4@204 #4@406 None </td></tr>	RC Meshed Slab/Wall Design TWN-USD112 筏基版牆設計	Add a design as per TWN-USD112 NSCP 2015 SSRC79 RC Design SRC Design Mesched Design Serviceability Load Combination Type... Slab/Wall/Shell Load Combinations... Design Criteria for Rebars... Slab/Wall/Shell Rebars for Checking... Slab Serviceability Parameters... Mesched Design Tables Slab Flexural Design... Slab Flexural Checking... Slab Shear Checking... Slab Serviceability Checking... Cracked Section Analysis Control... Perform Cracked Section Analysis Wall Design... Wall Checking... Shell Flexural Design... Shell Flexural Checking... Shell Shear Checking...  WALL DESIGN 1.96369e+00 1.78518e+00 1.60666e+00 1.42014e+00 1.24962e+00 1.07111e+00 8.92588e-01 POST-PROCESSOR SLAB DESIGN #5@101 #5@152 #4@101 #5@203 #4@152 #5@204 #4@203 #5@406 #4@204 #4@406 None
RC Meshed Slab/Wall Design TWN-USD112 筏基版牆設計	Add a design as per TWN-USD112 NSCP 2015 SSRC79 RC Design SRC Design Mesched Design Serviceability Load Combination Type... Slab/Wall/Shell Load Combinations... Design Criteria for Rebars... Slab/Wall/Shell Rebars for Checking... Slab Serviceability Parameters... Mesched Design Tables Slab Flexural Design... Slab Flexural Checking... Slab Shear Checking... Slab Serviceability Checking... Cracked Section Analysis Control... Perform Cracked Section Analysis Wall Design... Wall Checking... Shell Flexural Design... Shell Flexural Checking... Shell Shear Checking...  WALL DESIGN 1.96369e+00 1.78518e+00 1.60666e+00 1.42014e+00 1.24962e+00 1.07111e+00 8.92588e-01 POST-PROCESSOR SLAB DESIGN #5@101 #5@152 #4@101 #5@203 #4@152 #5@204 #4@203 #5@406 #4@204 #4@406 None		

Added "Wall End Rebar Design Method by Member" feature

Wall design (Vertical rebar arrangement) method can be set for each wall individually.

Define the design method locally



Define the design method globally

Add load combinations as per Thailand (2021)

Automatic Generation of Load Combinations

Option
☒ Add ☐ Replace

Code Selection
☐ Steel ☒ Concrete ☐ SRC
☐ Cold Formed Steel ☐ Footing
☐ Aluminum
 Design Code : Thailand(2021)

☐ Scale Up of Response Spectrum Load Case
 Scale Up Factor : 1

Factor	Load Case

 Add
 Modify
 Delete

Manipulation of Construction Stage Load Case
 ST : Static Load Case
 CS : Construction Stage Load Case
☒ ST Only ☐ CS Only ☐ ST+CS

☐ Consider Orthogonal Effect
 Set Load Cases for Orthogonal Effect, ...
☒ 100 : 30 Rule
☐ SRSS(Square-Root-of-Sum-of-Squares)

Generate Additional Load Combinations
☐ for Special Seismic Load
☐ for Vertical Seismic Forces
 Factors for Seismic Design, ...

☐ Will Execute Construction Stage Analysis
☐ Consider Losses for Prestress Load Cases
 Transfer Stage : 1
 Service Load Stage : 1
 Define Factors

OK Cancel

Steel Design (LRFD)// RC Design (SDM)

- Only Structure Case
 - 1.4D
 - 1.40D+1.70L
- Wind Load Case
 - 0.75(1.40D+1.70L)+1.60W
 - 0.90D+1.60W
- Earthquake/Seismic case
 - 0.75(1.4D+1.7L)+1.00EQ
 - 0.90D+1.00EQ
- Earth Pressure/Vertical Water Pressure Load/Fluid Pressure
 - 1.40D+1.70LL+1.70EP
 - 0.9D+1.7EP
 - 1.4D+1.7LL+1.4FP
 - 0.90D+1.4FP
 - 0.75(1.40D+1.40T+1.70L)
- Thermal Force Case
 - 1.40D+1.40T

Steel Design (ASD) / RC Design (WSD)

- Only Structure Case
 - 1.00D
 - 1.00D+1.00L
- Wind Load Case
 - 1.00D+0.75L+0.75W
 - 0.60D+1.00W
- Earthquake/Seismic case
 - 1.00D+0.70EQX
 - 1.00D+0.75L+0.525EQ
 - 0.60D+0.70EQ
- Earth Pressure/Vertical Water Pressure Load/Fluid Pressure and Thermal Force Case
 - 1.00(D+L+WP+FP+T)

Improved Seismic Design as per EC8-3

Added the option to consider no confinement effect (Apply $\alpha=0$)

- Calculation of θ_{um} in Safety Verification Check
- Calculation of θ_{um} in Cyclic Shear Resistance Check
- Calculation of θ_{um} in Nonlinear Hinge Curve

A.3.2.2 Limit State of near collapse (NC)

(1) The value of the total chord rotation capacity (elastic plus inelastic part) at ultimate, θ_{u} , of concrete members under cyclic loading may be calculated from the following expression:

$$\theta_{um} = \frac{1}{\gamma_{cl}} 0,016 \cdot (0,3^v) \left[\frac{\max(0,01;\omega)}{\max(0,01;\omega)} f_c \right]^{0,225} \left(\min \left(9; \frac{L_v}{h} \right) \right)^{0,35} 25^{\alpha \rho_s \frac{f_{yw}}{f_c}} (1,25^{100 \rho_s}) \quad (A.1)$$

α is the confinement effectiveness factor, that may be taken equal to:

$$\alpha = \left(1 - \frac{s_h}{2b_o} \right) \left(1 - \frac{s_h}{2h_o} \right) \left(1 - \frac{\sum b_i^2}{6h_o b_o} \right) \quad (A.2)$$

Safety Verification

Set Safety Verification Parameters

Pushover Load Case: PL

Step for Demand: ☒ Damage Limitation (DL), ☒ Significant Damage (SD), ☐ Near Collapse (NC), ☐ User Defined

Step for Capacity: ☐ Damage Limitation (DL), ☒ Significant Damage (SD), ☐ Near Collapse (NC)

Confidence Factor: 1.0

Component: Ductile Failure ☒ My ☒ Mz, Brittle Failure ☒ Fy ☒ Fz

☐ Not Consider Confinement Effect

Cyclic Shear Resistance

Set Cyclic Shear Resistance Parameters

Pushover Load Case: PL

Step for Demand: ☒ Damage Limitation (DL), ☐ Significant Damage (SD), ☐ Near Collapse (NC), ☐ User Defined

Cyclic Shear Resistance Table Type: ☒ Show Selected Elements, ☐ Show All Elements

Confidence Factor: 1.0

☒ Not Consider Confinement Effect

Nonlinear Hinge Curve

Directional Properties of Pushover Hinge : Eurocode 8 : 2004

Input Method: ☒ Auto-Calculation, ☐ User Input

Shape of FEMA Curve: ☒ General Type, ☐ Perfect Plastic Type

Strength Loss: ☒ Yes, ☐ No

Total Strength Loss at Point E, -E: ☐ No, ☒ Figure

Yield Rotation Analysis Option: ☐ Dy Update, ☒ Du Update

☒ Confinement Effect

Properties: Type: ☐ Symmetric, ☒ Asymmetric

Class of cross section: ☐ Auto, ☒ Class1, ☐ Class2, ☐ Class3

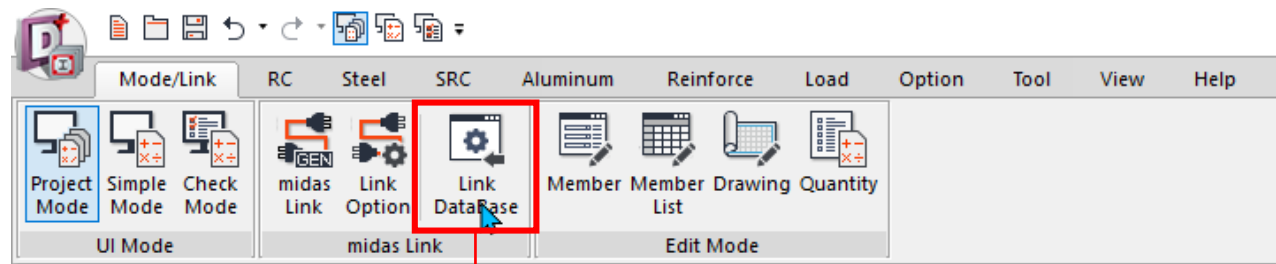
Primary Curve:

Compliance Criteria: Damage Limitation (DL) 1 +DY 1 +DY [rad], Significant Damage (SD) 0,75 +DU 0,75 +DU [rad], Near Collapse (NC) 1 +DU 1 +DU [rad]

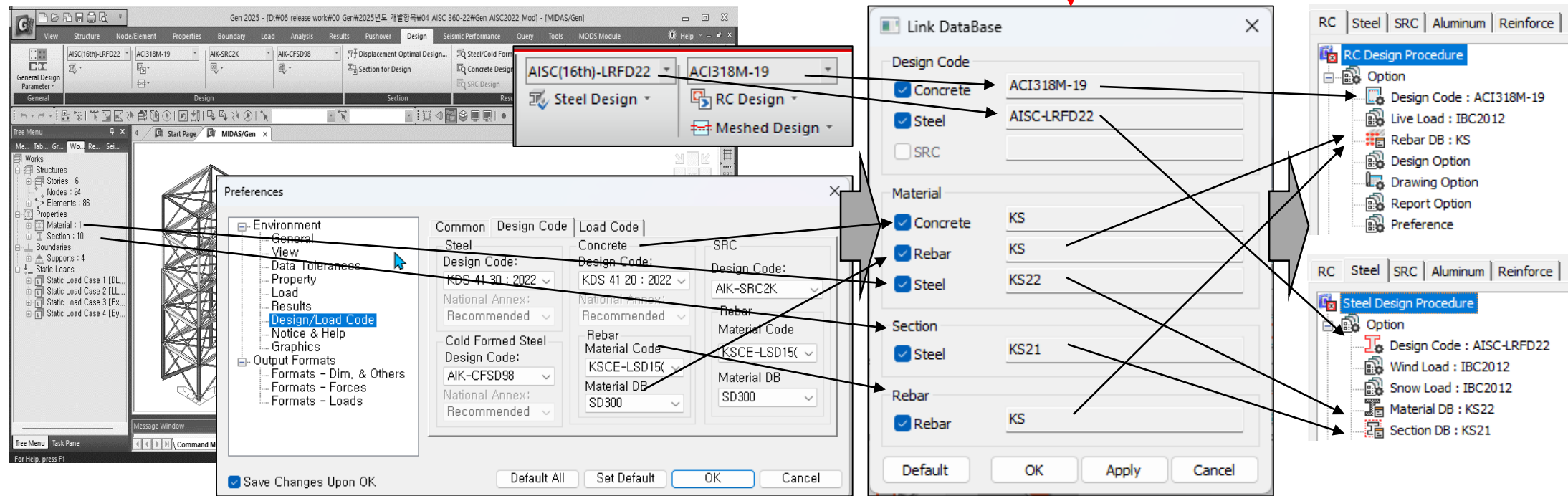
Initial Stiffness: ☐ 6EI/L, ☐ 3EI/L, ☐ 2EI/L, ☒ User (+) 1 (-) 1 kN·m

[Design+] Improvement of Gen-Design+ link

Automatically set the design and material code of midas Gen to Design+



The “Link Database” function loads design setting information from Gen to configure the design environment in Design+.



Thanks

