midas GEN / DESIGN +

2026 (v1.1)

Release Note (June 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
- 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.
- 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

Section Standard

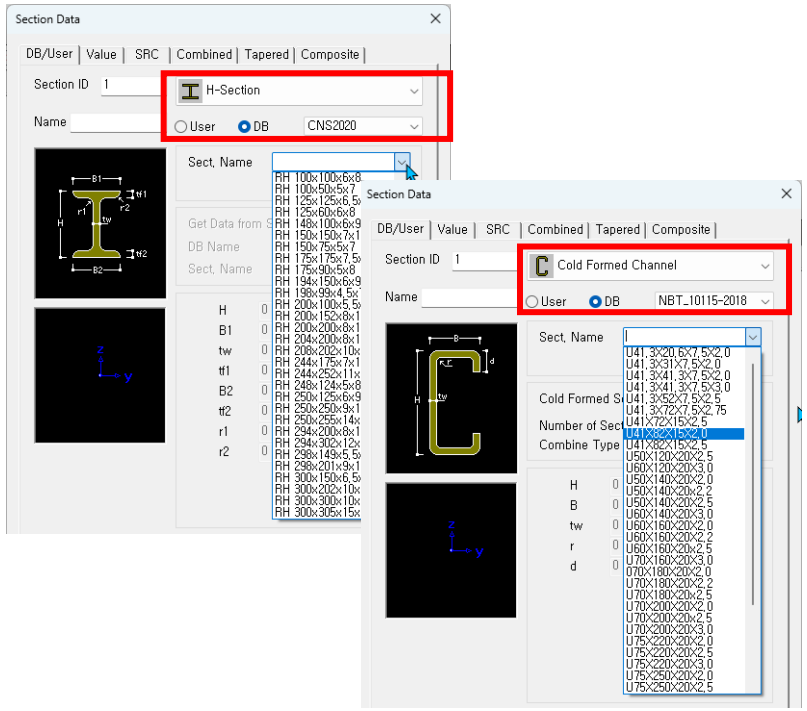
Code Name	Detail
NB/T 10115-2018 (CH)	Cold formed section
UNI (IT&Euro)	I shape (3 sections)
	T shape
CNS-2020 (TW)	I-shape, L-type, C-type, T-type, Box, Pipe, Cold formed Channel

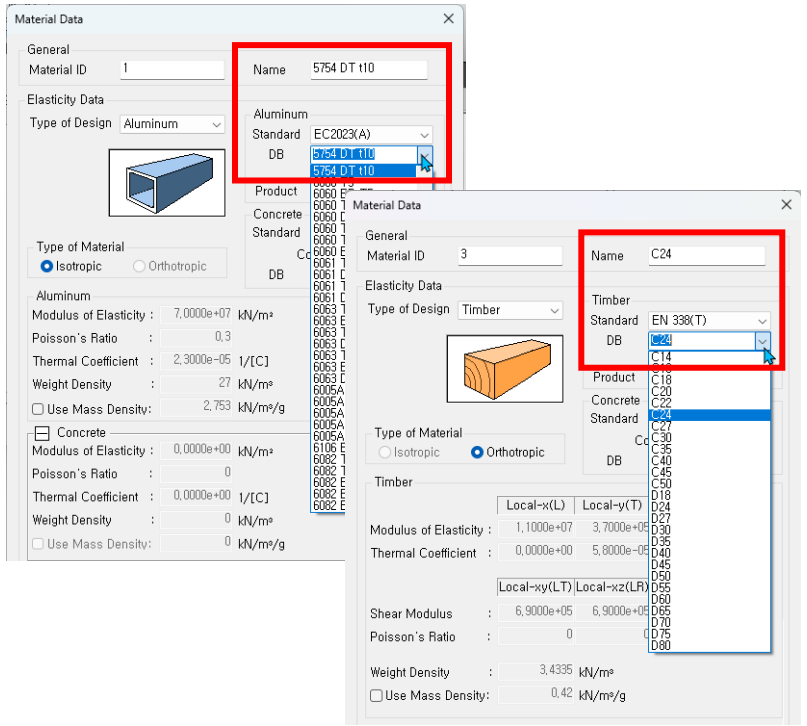
Material Standard

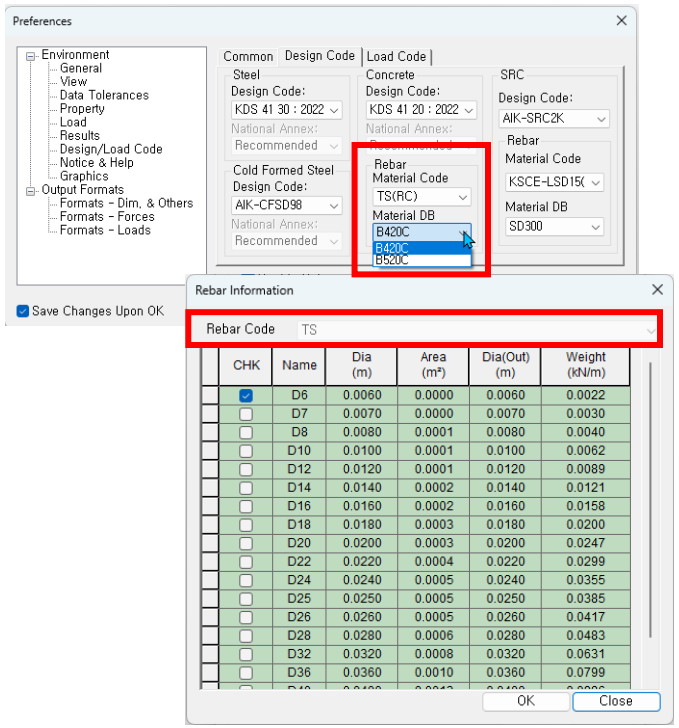
Code Name	Detail
EN-2023 (Euro)	Aluminum materials
EN 338, EN 14080 (Euro)	Timber materials (Structural timber, glulam)

Rebar Standard

Code Name	Detail
TS (Turkish Standard)	17 Diameters

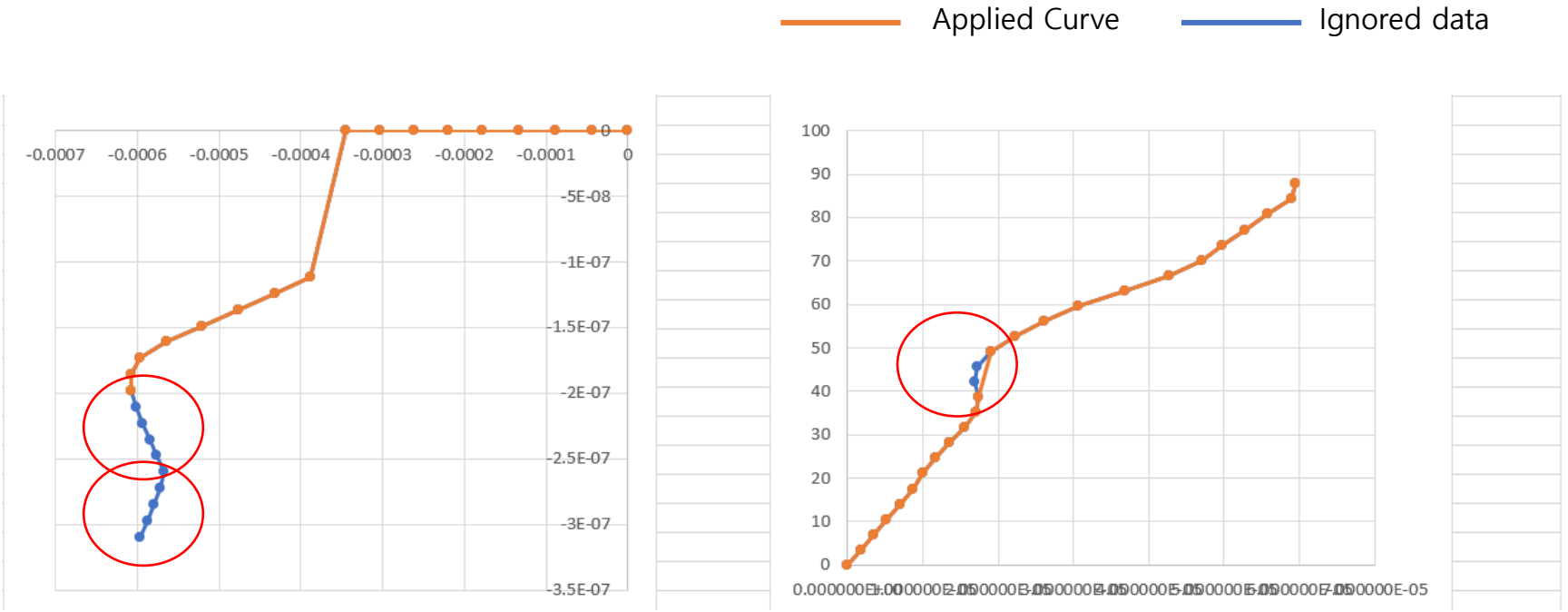






Improvement of GTS & GEN Interface

Handling when the slope of spring stiffness is negative



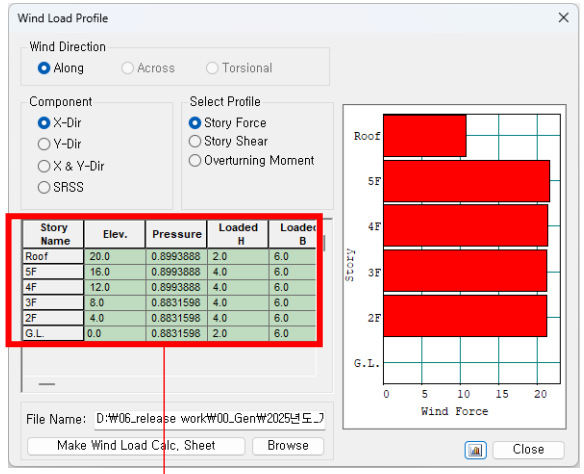
Example 1

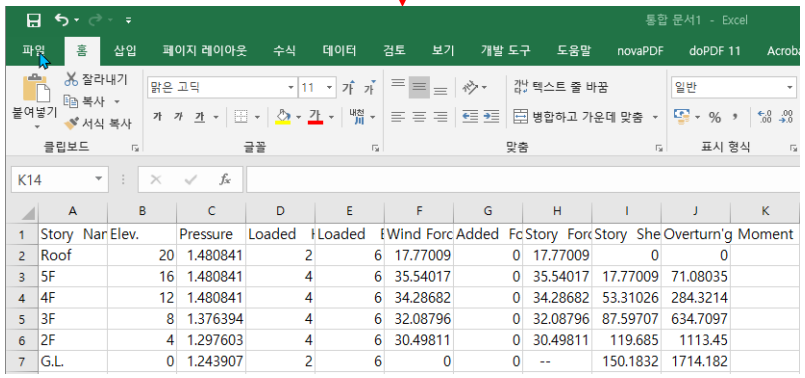
Example 2

- 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.

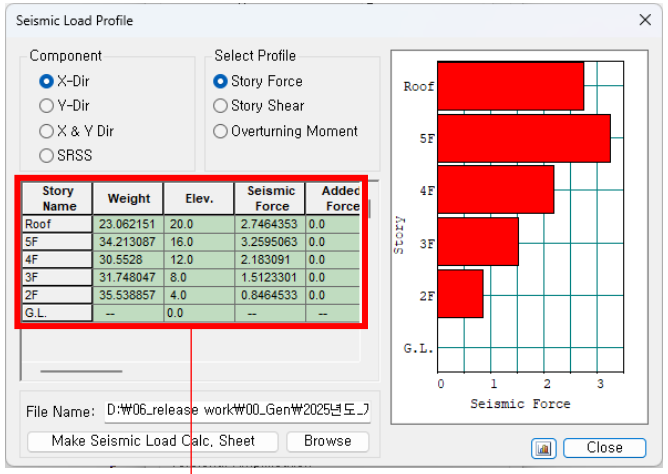
Copying of table data for wind/earthquake Load Profile

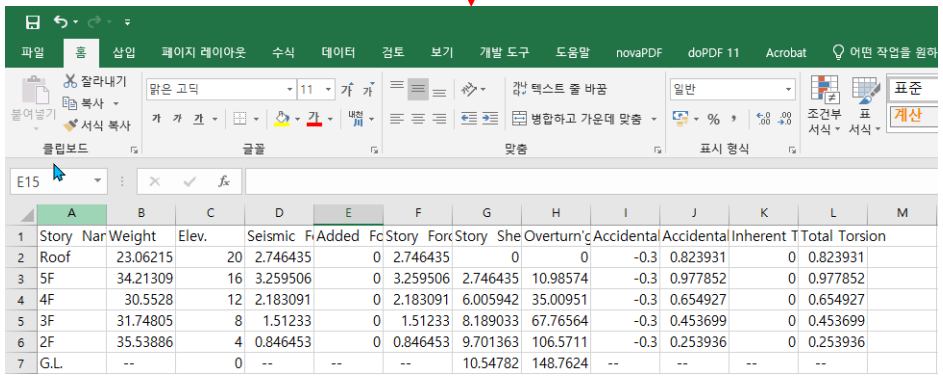
Wind Load



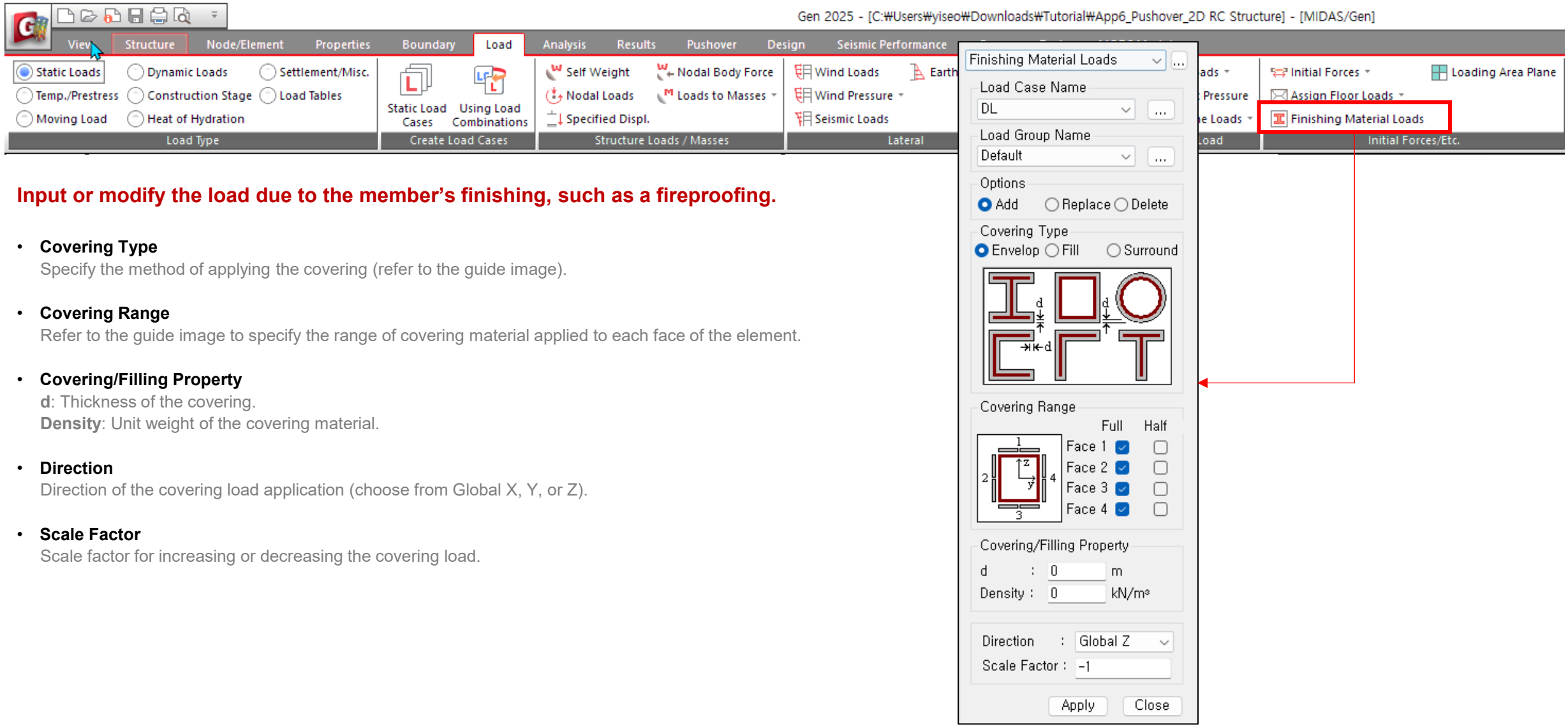


Static Seismic Load





Add Feature to Input Finishing Material Load

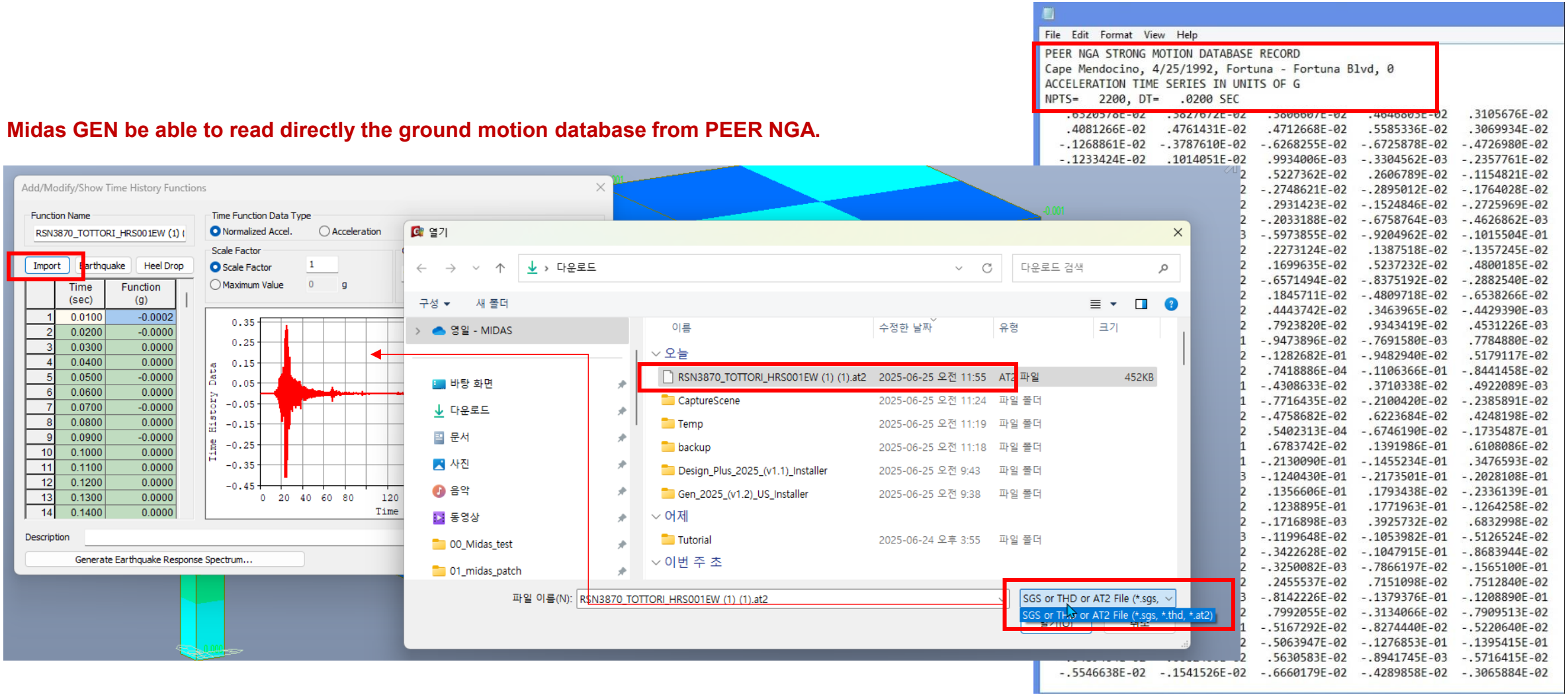


Input or modify the load due to the member's finishing, such as a fireproofing.

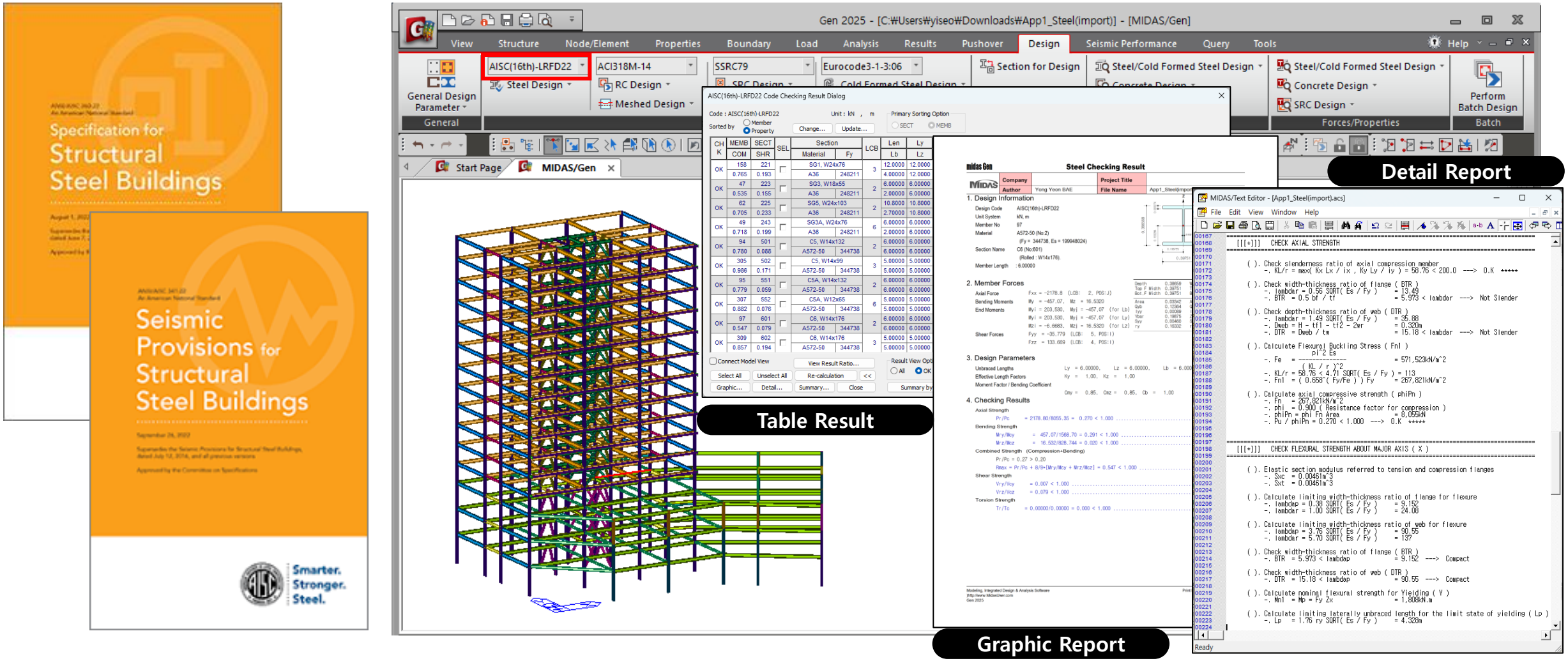
- **Covering Type**
  Specify the method of applying the covering (refer to the guide image).
- **Covering Range**
  Refer to the guide image to specify the range of covering material applied to each face of the element.
- **Covering/Filling Property**
  d: Thickness of the covering.
  Density: Unit 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.

Added Importing of Ground Motion Records from PEER Database

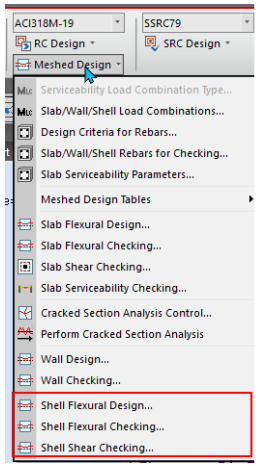
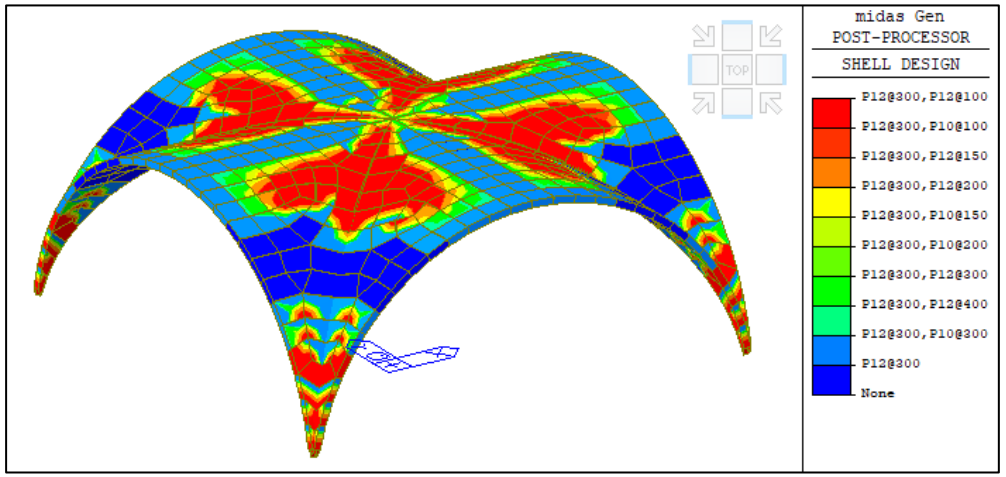
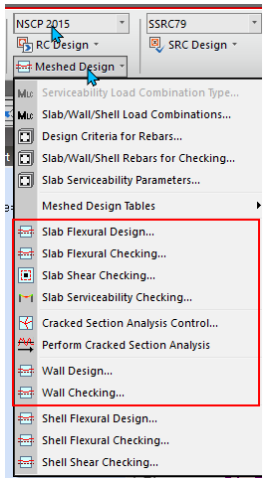
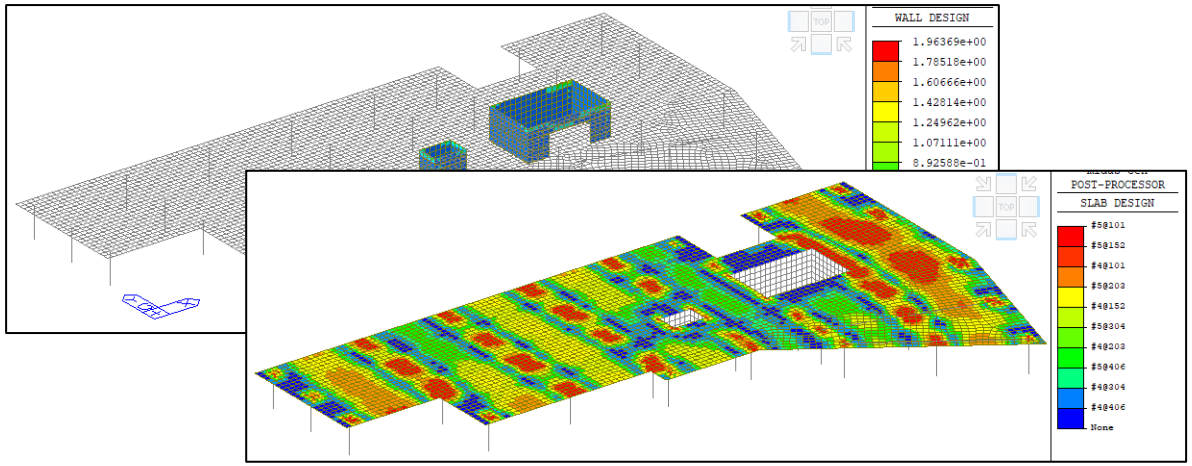
Midas GEN be able to read directly the ground motion database from PEER NGA.



[GEN/DESIGN+] **Steel design as per AISC-LRFD2022 & AISC-ASD2022**



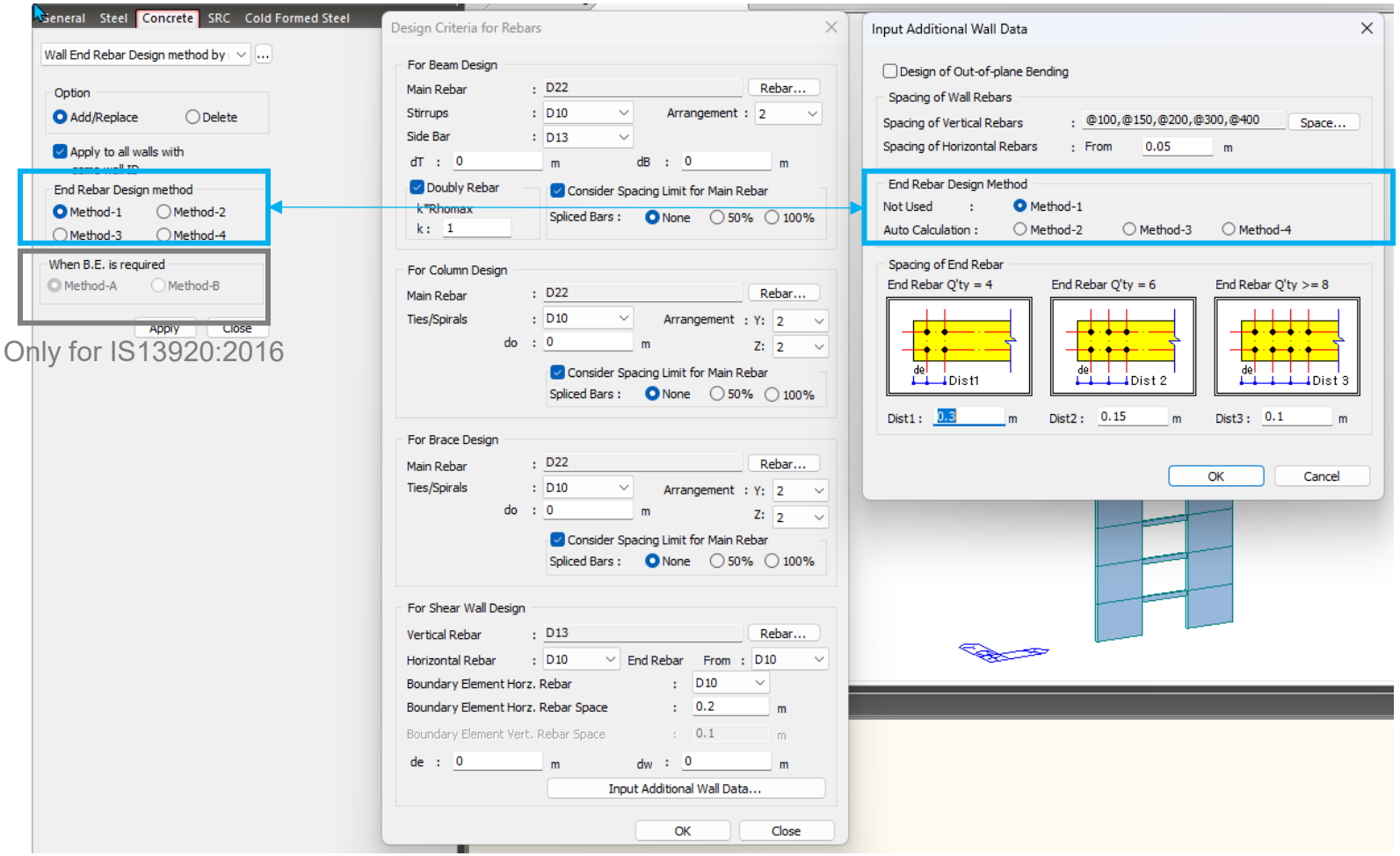
Added Design Codes to Meshed Member Design

Items	Detail
RC Shell Design	Add a design as per ACI318-14, ACI318-19, NSR-10, TWN-USD112, NTC-DCEC(2023) and NSCP 2015  
RC Meshed Slab/Wall Design	Add a design as per TWN-USD112  

Added “Wall End Rebar Design Method by Member” feature

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

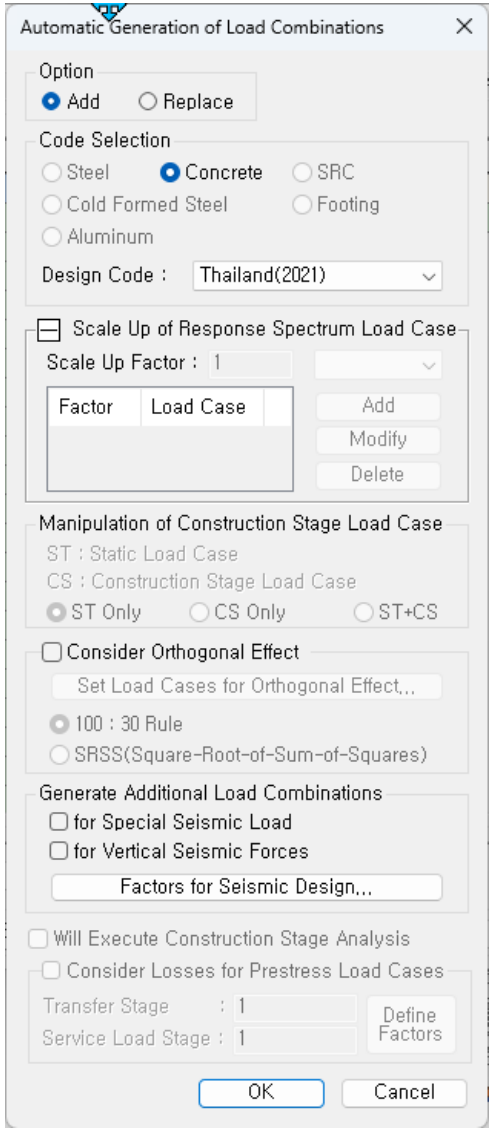
Define the design method locally



Only for IS13920:2016

Define the design method globally

Add load combinations as per Thailand (2021)



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 α=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:

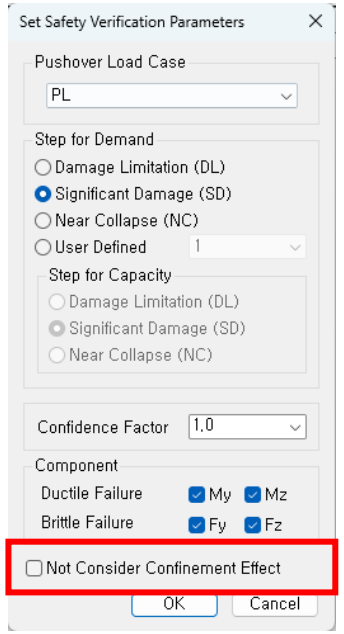
$$\theta_{um} = \frac{1}{\gamma_{el}} 0{,}016 \cdot (0{,}3^{\nu}) \left[\frac{\max(0{,}01;\omega')}{\max(0{,}01;\omega)} f_c\right]^{0{,}225} \left(\min\left(9;\frac{L_V}{h}\right)\right)^{0{,}35} 25^{\left[\alpha\rho_s \frac{f_{yw}}{f_c}\right]} (1{,}25^{100\rho_d}) \quad \text{(A.1)}$$

Apply α=0

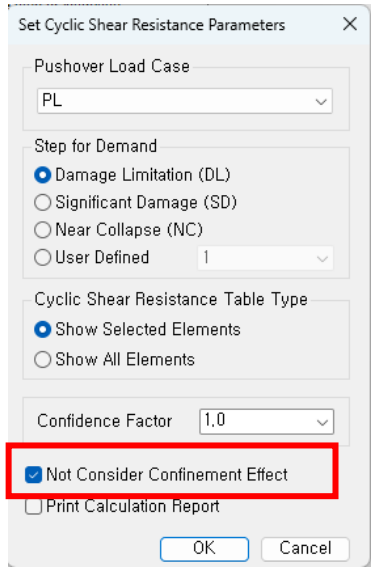
α is the confinement effectiveness factor, that may be taken equal to:

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

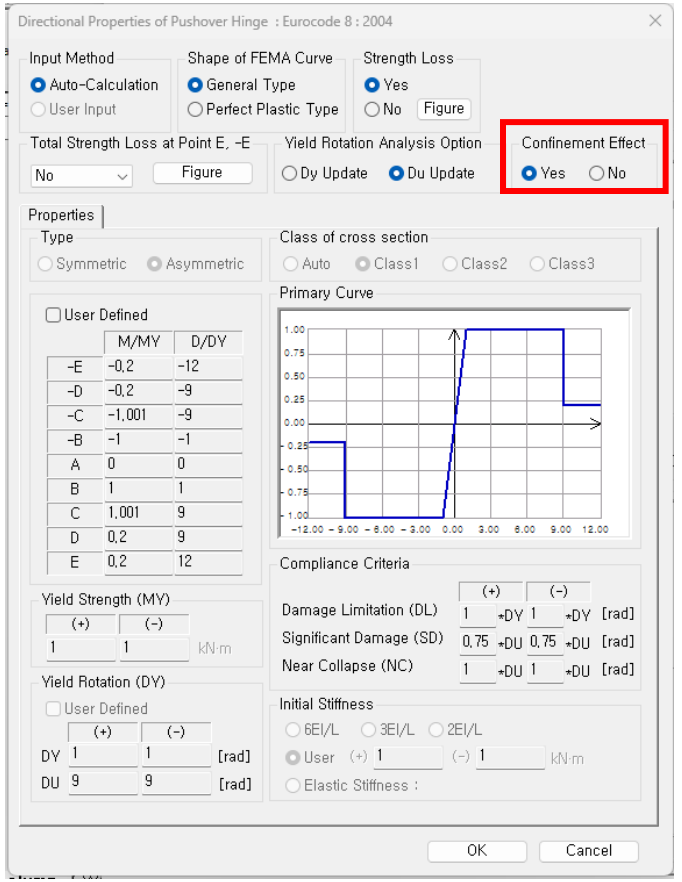
Safety Verification



Cyclic Shear Resistance

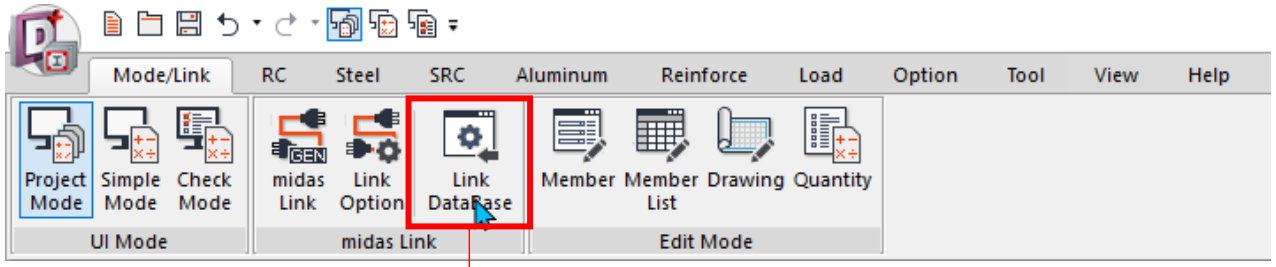


Nonlinear Hinge Curve

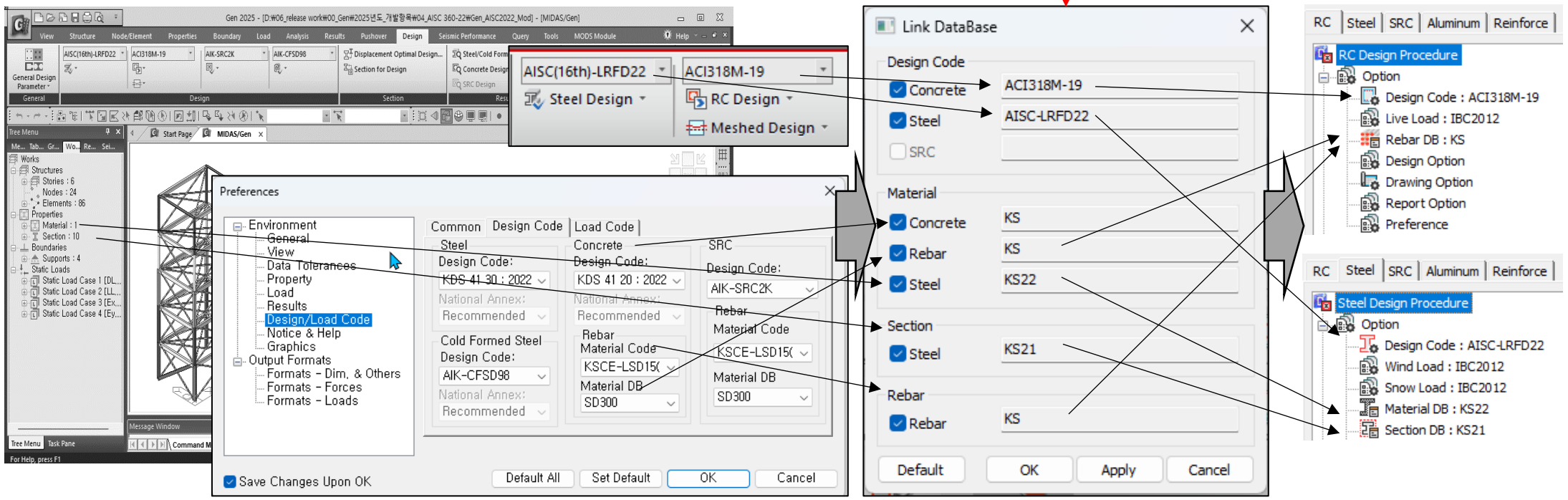


[DESIGN+] Improvement of GEN-DESIGN+ link

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