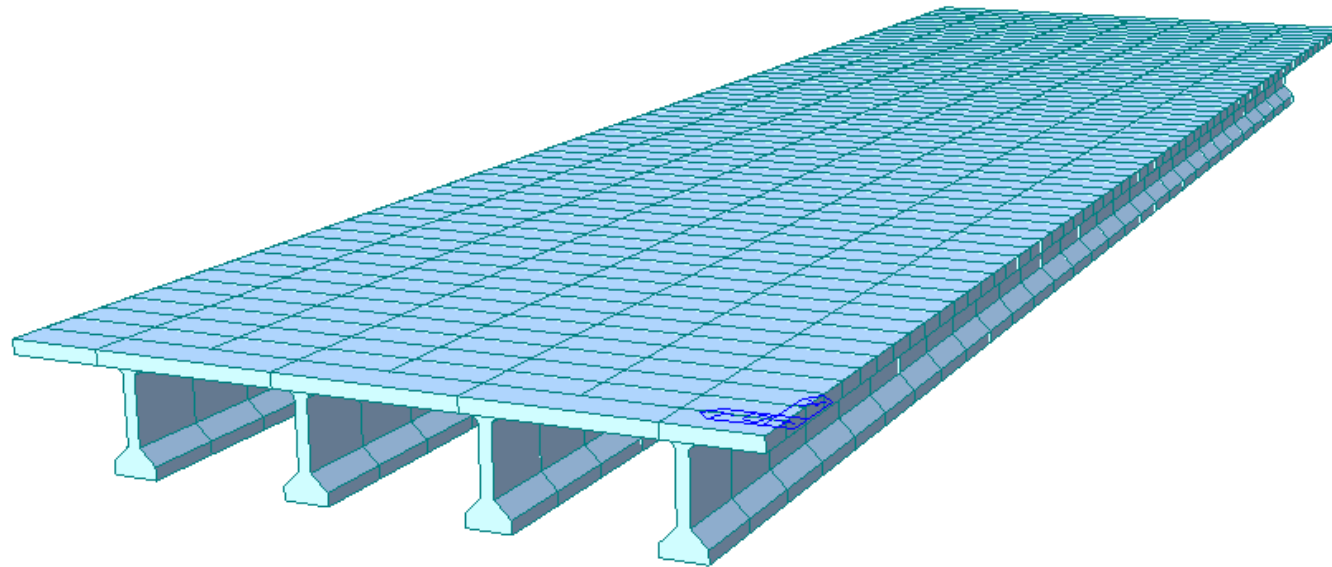


midas Civil Learning

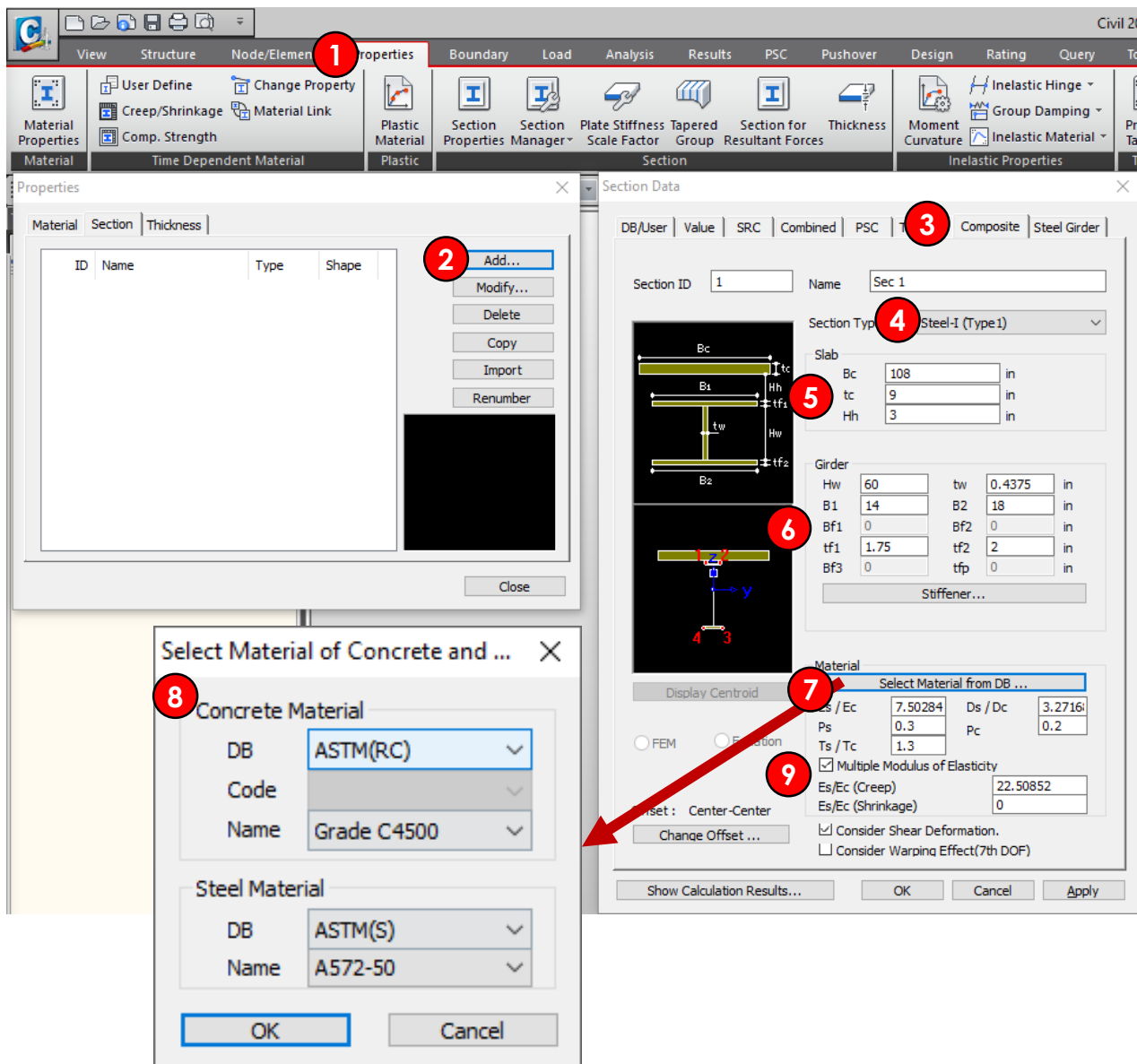
Season 1

Episode 3

Calculating All About Your Section Is 10 Steps Away



midas Civil Learning Season 1 Episode 3



1. Go to **Section Properties**
2. Click **Add...**
3. Go to **Composite** tab
4. Select **Steel-I (Type 1)** for Section Type
5. Type slab information
 1. Bc: 108 in
 2. tc: 9 in
 3. Hh: 3 in
6. Type girder information
 1. Hw: 60 in
 2. Tw: 0.4375 in
 3. B1: 14 in
 4. B2: 18 in
 5. tf1: 1.75 in
 6. Tf2: 2 in
7. Click **Select Material from DB...**
8. Select following materials
 - Concrete material
 - DB: ASTM (RC)
 - Name: Grade C4500
 - Steel material
 - DB: ASTM (S)
 - Name: A572-50
9. Click **Multiple Modulus of Elasticity**
 1. Type 22.50852 for Es/Ec (Creep)

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Section Data

DB/User | Value | SRC | Combined | PSC | Tapered | Composite | Steel Girder

Section ID: 1 Name: Sec 1

Section Type: Steel-I (Type1)

Slab

Bc	108	in
tc	9	in
Hh	3	in

Girder

Hw	60	in	tw	0.4375	in
B1	14	in	B2	18	in
Bf1	0	in	Bf2	0	in
tf1	1.75	in	tf2	2	in
Bf3	0	in	tfp	0	in

Stiffener...

Material

Select Material from DB ...

Es / Ec	7.50284	Ds / Dc	3.27161
Ps	0.3	Pc	0.2
Ts / Tc	1.3		

☒ Multiple Modulus of Elasticity

Es/Ec (Creep) 22.50852

Es/Ec (Shrinkage) 0

☒ Consider Shear Deformation

☐ Consider Warping Effect (7th DOF)

Offset: Center-Center

Change Offset ...

Display Centroid

☐ FEM ☐ Equation

10 Show Calculation Results... OK Cancel Apply

Section Properties

	Value(Before)	Value(After)	Long Term	Shrinkage	Unit
Area	8.675000e+001	2.163009e+002	1.299336e+002	0.000000e+000	in ²
I _{xy}	4.721155e+001	1.635007e+002	8.545949e+001	1.000000e+000	in ²
I _{yz}	2.730066e+001	2.731577e+001	2.730112e+001	-1.000000e+000	in ²
I _{xx}	7.473756e+001	1.969420e+003	7.062984e+002	0.000000e+000	in ⁴
I _{yy}	6.435394e+004	1.630709e+005	1.189383e+005	0.000000e+000	in ⁴
I _{zz}	1.372585e+003	1.272961e+005	4.334709e+004	0.000000e+000	in ⁴
I _{yp}	9.000000e+000	9.000000e+000	9.000000e+000	0.000000e+000	in
I _{ym}	9.000000e+000	9.000000e+000	9.000000e+000	0.000000e+000	in
I _{zp}	3.589481e+001	9.903993e+000	2.147248e+001	0.000000e+000	in
I _{zm}	2.785519e+001	5.384601e+001	4.227752e+001	0.000000e+000	in
I _{yb}	0.000000e+000	0.000000e+000	0.000000e+000	0.000000e+000	in ²
I _{zb}	0.000000e+000	0.000000e+000	0.000000e+000	0.000000e+000	in ²
Peri:O	1.906250e+002	4.246250e+002	4.246250e+002	4.246250e+002	in
Peri:L	0.000000e+000	0.000000e+000	0.000000e+000	0.000000e+000	in
Center:y	9.000000e+000	5.400000e+001	5.400000e+001	0.000000e+000	in
Center:z	2.785519e+001	5.384601e+001	4.227752e+001	0.000000e+000	in
y1	-7.000000e+000	-7.000000e+000	-7.000000e+000	0.000000e+000	in
y1	3.589481e+001	9.903993e+000	2.147248e+001	0.000000e+000	in
y2	7.000000e+000	7.000000e+000	7.000000e+000	0.000000e+000	in
y2	3.589481e+001	9.903993e+000	2.147248e+001	0.000000e+000	in
y3	9.000000e+000	9.000000e+000	9.000000e+000	0.000000e+000	in
y3	-2.785519e+001	-5.384601e+001	-4.227752e+001	0.000000e+000	in
y4	-9.000000e+000	-9.000000e+000	-9.000000e+000	0.000000e+000	in
y4	-2.785519e+001	-5.384601e+001	-4.227752e+001	0.000000e+000	in

Close

10. Click **Show Calculation Result...**

Ta-da! You can check before composite, after composite, long term, and shrinkage section values here!

10. Take screen shot of the orange highlighted boxes and email them to hopekang@midasoft.com