



# S-LINE™

## *Continuous Beam Design and Detailing Tool*

### **Reinforced Concrete Continuous Beam Design and Detailing Application**

- Intuitive visual editor - simply drag lines to changedimensions or click on hot-spots to change reinforcing.
- Support for ACI 318-08, 05, 02, & 99, CSA A23.3-04 & 94, BS 8110:1997 & 1985, CP 65:1999.
- Support for fiber-reinforced concrete beams (ACI 318-08 only) with implications for minimum shear reinforcing requirements.
- American, British, Canadian, Korean, Singaporean, or define your own set of reinforcing bars (Custom Bars).
- Design of T-beams, L-beams, slab bands and rectangular beams.
- Rectangular and circular columns as well as girder supports.
- Standard and user defined reinforcing styles are available.
- Combined moment, shear and torsion design for all codes.
- CSA-A23.3 simplified or general method of shear and torsion design.
- Automatic generation of pattern loading and load combinations .
- Apply moment redistribution.
- Apply distributed or concentrated vertical and torsional loads.
- Apply distributed or concentrated vertical and torsional loads on members.
- Apply moment redistribution and check if adequate rotational capacity is provided.
- Automatic design with beam section and/or reinforcement optimization.
- Choose a variety of reinforcing styles to serve as a guideline.
- Automatic generation of pattern loading and load combinations.
- Perform short and long term (cracked section) deflection estimation.
- Full graphical output including capacity envelopes on shear, moment and torsion diagrams.
- View Results Report (displaying status levels or code violations) and clause references with on-line help for details.
- Quality output to AutoCAD® and Microsoft Word®.



### Reinforcing Styles

Top Bars | Bottom Bars | Miscellaneous

Other Parameters:  
 Lap Coefficient: 1.00 x Ld  
 Short Span: 0.60 x L  
 Rho (Gross): 0.0090

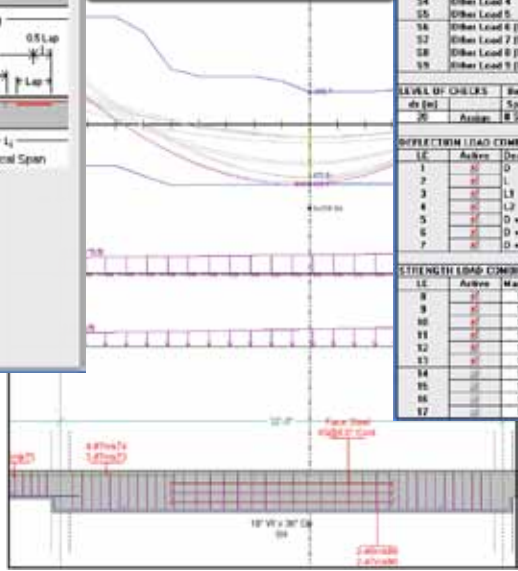
Bar Size: b / db: 16.0  
 Min: 0.625 in  
 Max: 1.375 in

Bar Coating: Normal

Curtailment & Area Coefficients:  
 k1: 0.500, a1: 0.333  
 k2: 0.250, c2: 0.667  
 k3: 0.250, c3: 11.76  
 k4: 0.400, c4: 0.167  
 k5: 0.250

Reinforcing Styles

Capacity Envelopes



Pattern Loading & Load Combinations

### Load Cases and Combinations

LOAD CASES	Definition	B1	B2	B3	B4	B5
D	Dead Load	1	1	1	1	1
L	Full Live Load	1	1	1	1	1
L1	Live Load 1	1	1	1	1	1
L2	Live Load 2	1	1	1	1	1
L3	Live Load 3	1	1	1	1	1
L4	Live Load 4	1	1	1	1	1
L5	Live Load 5	1	1	1	1	1
L6	Live Load 6 (Hood)	1	1	1	1	1
L7	Live Load 7 (Hood)	1	1	1	1	1
L8	Live Load 8 (Hood)	1	1	1	1	1
L9	Live Load 9 (Hood)	1	1	1	1	1
L10	Live Load 10 (Hood)	1	1	1	1	1
S	Full Other Load	1	1	1	1	1
S1	Other Load 1	1	1	1	1	1
S2	Other Load 2	1	1	1	1	1
S3	Other Load 3	1	1	1	1	1
S4	Other Load 4	1	1	1	1	1
S5	Other Load 5	1	1	1	1	1
S6	Other Load 6 (Hood)	1	1	1	1	1
S7	Other Load 7 (Hood)	1	1	1	1	1
S8	Other Load 8 (Hood)	1	1	1	1	1
S9	Other Load 9 (Hood)	1	1	1	1	1

LEVEL OF CHECKS	Min. Max.	B1	B2	B3	B4	B5
dr (in)	Span (in)	84	379	288	304	88
20	8	17	17	17	17	5

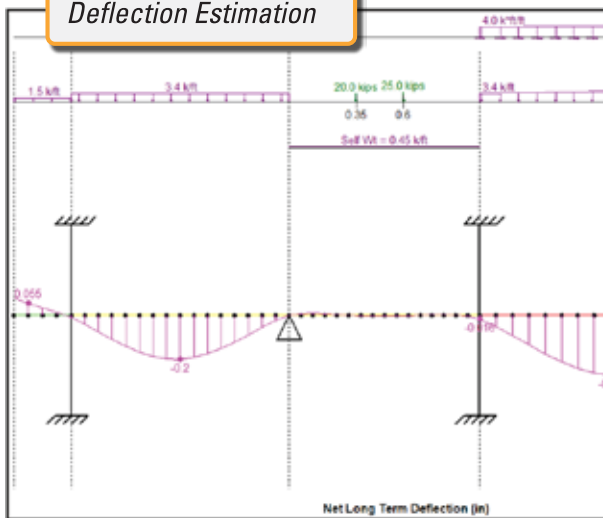
  

DEFLECTION LOAD COMBINATIONS (Service Loads)	LC	Active	Description	Deflection Limit	Max (in)
1	0	D		Span / 360	1.00
2	1	D + L	Immediate Deflection	Span / 480	1.30
3	1	L1	Immediate Deflection		
4	1	L2	Immediate Deflection		
5	1	D + L	Long Term Net Deflection	Pattern Installation	
6	1	D + L1	Long Term Net Deflection	Allow (1 in. -)	
7	1	D + L2	Long Term Net Deflection	Long Term Deflection Only	

STRENGTH LOAD COMBINATIONS (Factored Loads)	LC	Active	Max Dead Load	Loaded Live Span	Min Dead Load	Loaded Other Span
8	1	1.20	x D + 1.60	x L + 1.20	x D + 1.60	x S
9	1	1.20	x D + 1.60	x L1 + 1.20	x D + 1.60	x S1
10	1	1.20	x D + 1.60	x L2 + 1.20	x D + 1.60	x S2
11	1	1.20	x D + 1.60	x L3 + 1.20	x D + 1.60	x S3
12	1	1.20	x D + 1.60	x L4 + 1.20	x D + 1.60	x S4
13	1	1.20	x D + 1.60	x L5 + 1.20	x D + 1.60	x S5
14	1	1.20	x D + 1.60	x L6 + 1.20	x D + 1.60	x S6
15	1	1.20	x D + 1.60	x L7 + 1.20	x D + 1.60	x S7
16	1	1.20	x D + 1.60	x L8 + 1.20	x D + 1.60	x S8
17	1	1.20	x D + 1.60	x L9 + 1.20	x D + 1.60	x S9

Deflection Estimation



Moment Redistribution

