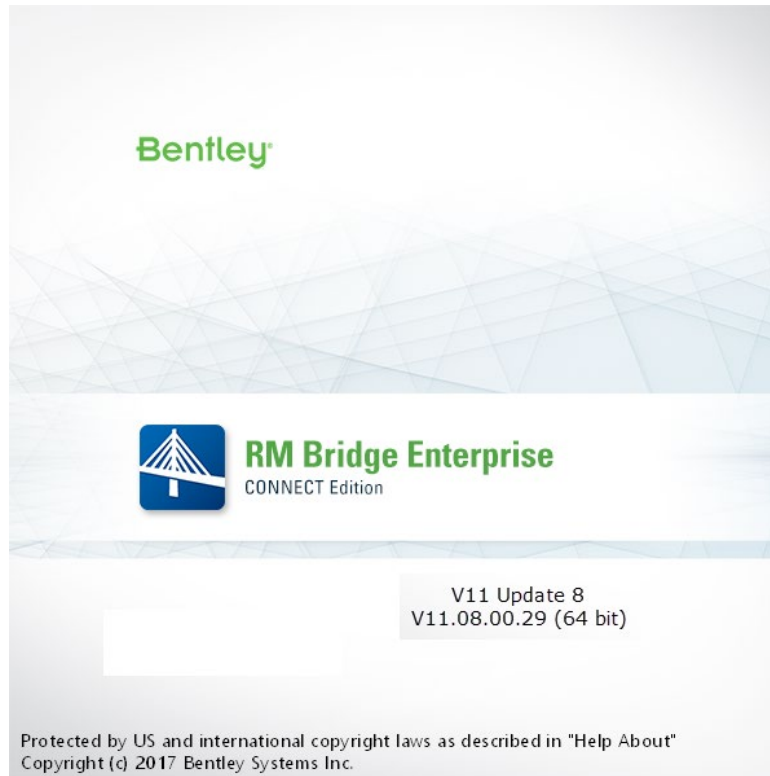




## RM Bridge CONNECT Edition V11 Update 8 Release Notes (May 2020)



### Enhancements in RM Bridge CONNECT Edition V11 Update 8:

RM Bridge CONNECT Edition V11 Update 8 (V11.08.00.XXX) contains the following enhancements and error corrections:

1. BIM Workflow: Read Concrete Diaphragms from OpenBridge Modeler (OBM)
2. External Tendons in Modeler
3. Indian Code Update per IRC 2017
4. TrackSup Action for Summation Loads During Schedule Stages
5. New Texas Girders in Modeler Cross-section Library
6. Enhancements in GUI
7. Error Corrections

**Note:** *RM Bridge View automatically will be installed with RM Bridge, RM Bridge Advanced, and RM Bridge Enterprise on your machine. Prior to installing the latest version, please uninstall any pre-existing RM Bridge View.*

If you get an installation error message 1603 or 2738, please follow these steps:

1. Click on the Start menu, choose Run, type cmd and click OK

## 2. For 32-bit OS

- To unregister the VBScript engine, run this command:  
reg delete "HKCU\SOFTWARE\Classes\CLSID\{B54F3741-5B07-11CF-A4B0-00AA004A55E8}" /f
- To unregister the JScript engine, run this command:  
reg delete "HKCU\SOFTWARE\Classes\CLSID\{F414C260-6AC0-11CF-B6D1-00AA00BBBB58}" /f

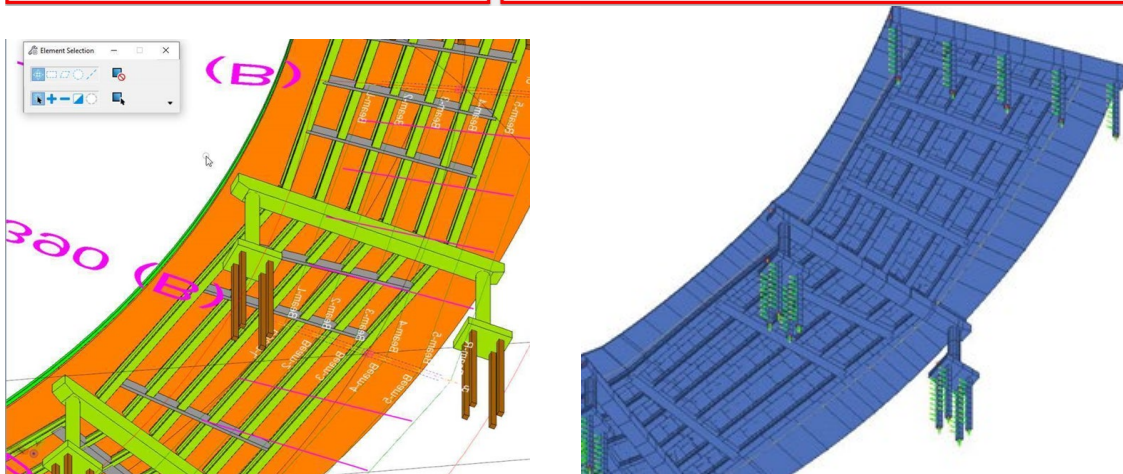
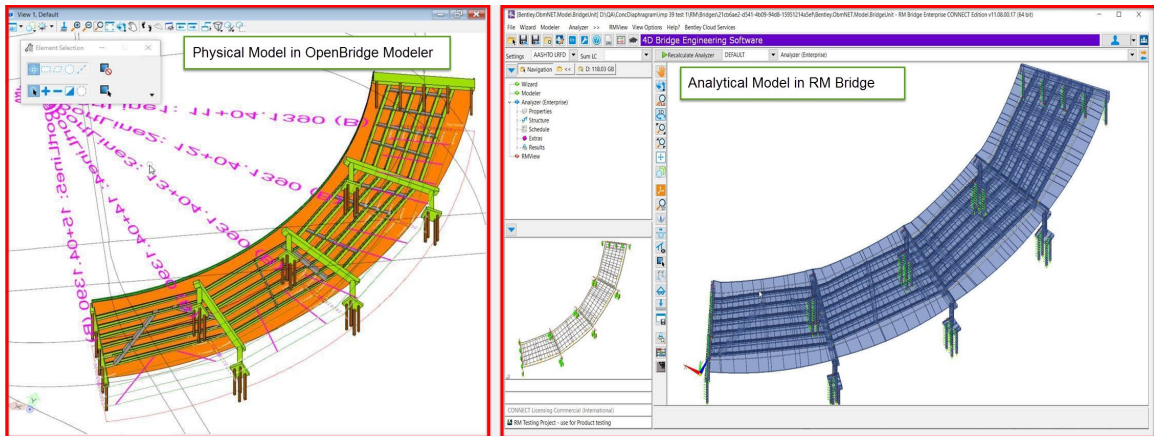
## 3. 64-bit OS

- To unregister the VBScript engine, run this command:  
reg delete "HKCU\SOFTWARE\Classes\Wow6432Node\CLSID\{B54F3741-5B07-11CF-A4B0-00AA004A55E8}" /f
- To unregister the JScript engine, run this command:  
reg delete "HKCU\SOFTWARE\Classes\Wow6432Node\CLSID\{F414C260-6AC0-11CF-B6D1-00AA00BBBB58}" /f

## 4. Retry installation

# 1. BIM Workflow: Read Concrete Diaphragms from OpenBridge Modeler (OBM)

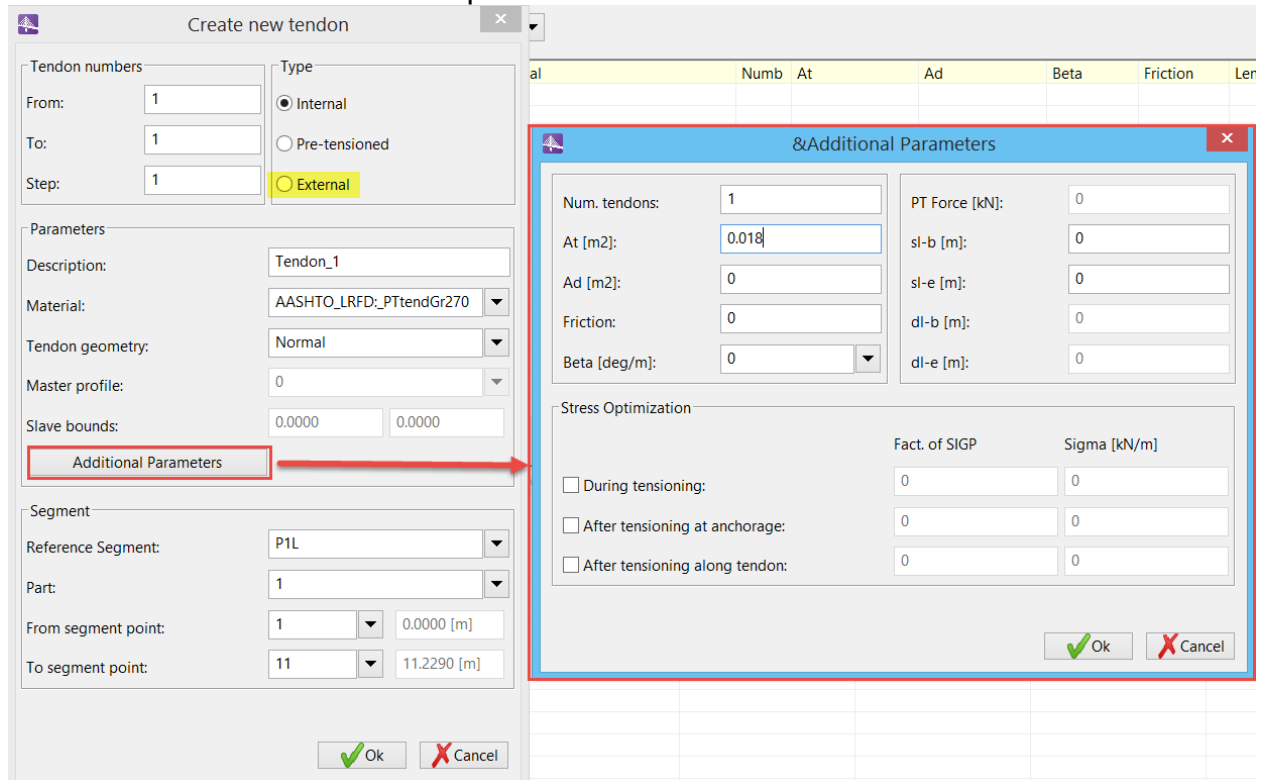
Concrete Diaphragms created as part of physical models in OpenBridge Modeler (OBM) with information about materials can be transferred into RM Bridge.



Concrete diaphragm is transferred as a simplified geometry with a rectangular block shape with corresponding OBM model' height and thickness. Offsets from beams centerlines are also supported, so corresponding eccentric connection will be created on Analyzer side.

## 2. External Tendons in Modeler

A new option for creating External tendons in Modeler have been added. User can define tendons based on bridge geometry and using station points. The new feature is available by double clicking on "Tendons" tree item inside Modeler. For more information click on F1 Help.



## 3. Indian Code Update per IRC 2017

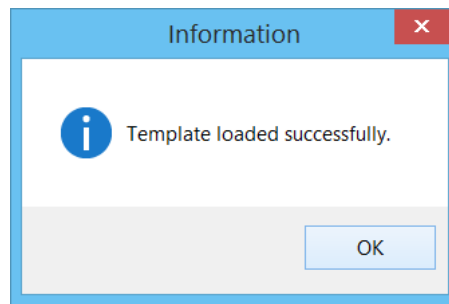
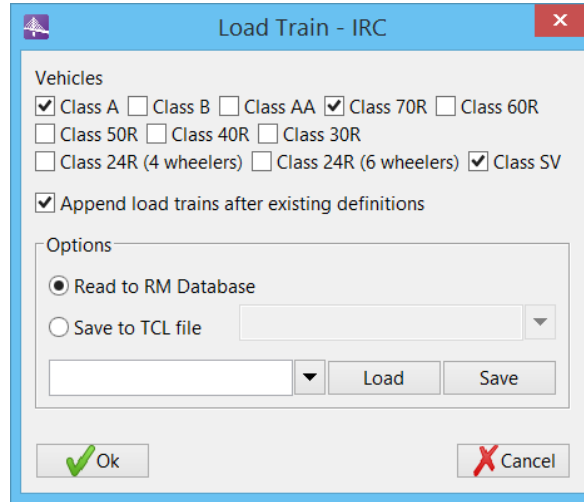
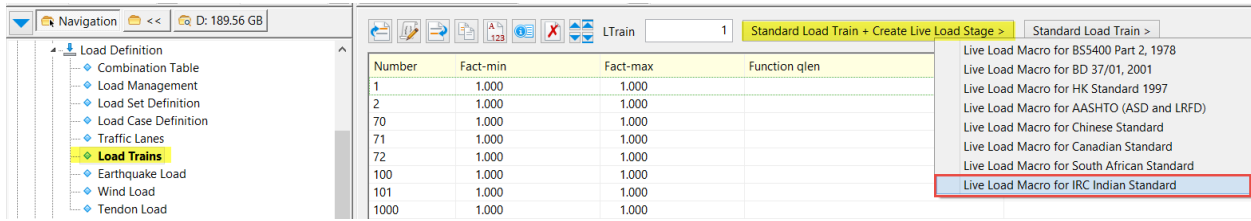
The following items have been added and updated in Indian Code per IRC 6:2017.

### 3.1 New Live Load Macro

A new live load macro per Indian Standard (IRC) is now available. It includes all factors and combinations for Class A, Class 70R, Class A+Class70R, and Class SV. The interface is very user friendly and a stage for Live Load analysis which include all superposition files needed for calculating maximum/minimum results will be generated automatically by program. This new macro can be found in Load Trains and Traffic Load Macros under Extras.

Note: Users need to create the lanes before using live load macros.

When user click on Live Load Macro for IRC Indian Standard, the list of load train will be displayed.



When user click OK, the load train template will be loaded in the program and new dialog box for Live Load Macro will be displayed.

**Live Load Macro for IRC Indian Standard**

Stage name:

Envelope for IRC combination - final

Envelope for IRC combination - wheeled

Envelope for IRC combination - tracked

Envelope for IRC combination - special veh.

Delete temporary envelopes

Lane Reduction Factors

Up to 2 lanes	<input type="text" value="0.0"/> %	3 lanes	<input type="text" value="10.0"/> %
4 lanes	<input type="text" value="20.0"/> %	5 lanes and more	<input type="text" value="20.0"/> %

Impact factor

Congestion factor

Number of lanes  ▼

Bridge length (m)       Step (m)

Vehicle numbers:  
 Class A: 1 (wheeled), 2 (wheeled reverse)  
 Class 70R: 70 (wheeled), 71 (wheeled reverse) and 72 (tracked)  
 Class SV: 100, 101 (reverse)

No of divisions for Class 70R Tracked

Note 1: Bridge length and Step are used by program for automatic generation of successive vehicles per IRC. Program automatically create different possible configuration of vehicles that can be placed on the bridge based on Bridge Length and Step inputs. Small value as Step input may increase the analysis time significantly and causes errors in automatic generation of vehicles for longer span bridges greater than 200m.

As per our investigation, it's recommended to use around 30% of total bridge length as "Bridge length" input and use 10%-20% of this input for "Step" input in long span bridges such as cable-stayed or suspension bridges. For example, if total bridge length is 900 m, it's recommended to use 300m and 30m as inputs for bridge length and step, respectively.

Note 2: Number of divisions for Class 70R Tracked input is used for placing uniform load with equivalent point loads in automatic generation of this class. When user click on “Load Combination”, the following window will be displayed. Users can graphically see and assign lanes from drop downs to the different combinations of Class A, Class A +Class 70R, etc. per IRC. These lanes and vehicles will be displayed on the bridge in the lower right window and different combinations will be generated in the table when user click on Insert button.

IRC Load Combination

1.2.3

Train	Lane	Lane	Lane	Lane 70R	Lane SV	Lane Reduction	Congestion	Impact
1,2	1					1.00	1.25	1.15
1,2	2					1.00	1.25	1.15
1,2	3					1.00	1.25	1.15
1,2	1	2				1.00	1.25	1.15
1,2	1	3				1.00	1.25	1.15
1,2	2	3				1.00	1.25	1.15
1,2	1	2	3			0.90	1.25	1.15

Class A-3 lanes | Class A-1 lane + Class 70R(W) | Special vehicle

9.6m ≤ CW ≤ 13.1m

CLASS A CLASS A CLASS A

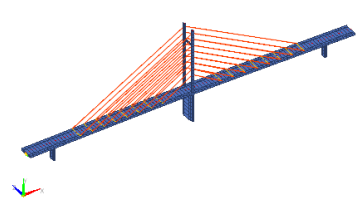
1.8 1.2 (MIN.) 1.2 (MIN.) 1.8

0.15 (MIN.) 0.5 0.5 0.5 0.5 0.5

CASE 1 : CLASS A - 3 LANES

1 2 3

Scale 10.00



Ok Cancel

Class A-3 lanes | Class A-1 lane + Class 70R(W) | Special vehicle

9.6m ≤ CW ≤ 13.1m

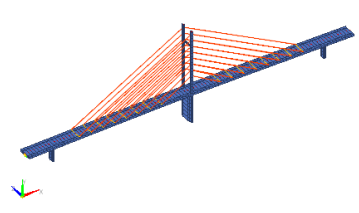
CLASS A CLASS A CLASS A

1.8 1.2 (MIN.) 1.2 (MIN.) 1.8

0.15 (MIN.) 0.5 0.5 0.5 0.5 0.5

CASE 1 : CLASS A - 3 LANES

1 2 3



The screenshot displays the 'Traffic-IRC' stage configuration. The left sidebar shows a tree view with 'Schedule Actions' selected. The main window shows a table of stages with columns: Status, Name, Date, Time (Day), Duration (Day), Make camber, and Description. The 'Traffic-IRC' stage is highlighted in yellow.

Status	Name	Date	Time (Day)	Duration (Day)	Make camber	Description
Ok	63	11/06/2008	240	0.0	End	Seg06 and Seg16 - relocate derrick
Ok	71	11/06/2008	240	0.0	End	Seg07 and Seg17 - self weight
Ok	72	11/06/2008	240	0.0	End	Seg07 and Seg17 - insert 7th cables
Ok	73	11/06/2008	240	0.0	End	Seg07 and Seg17 - relocate derrick
Ok	81	11/06/2008	240	0.0	End	Seg08 and Seg18 - self weight
Ok	82	11/06/2008	240	0.0	End	Seg08 and Seg18 - insert 8th cables
Ok	83	11/06/2008	240	0.0	End	Seg08 and Seg18 - relocate derrick
Ok	91	11/06/2008	240	0.0	End	Seg09 and Seg19 - close segments
Ok	99	11/06/2008	240	0.0	End	Superimposed dead load
Ok	ADDCON	11/06/2008	240	0.0	ADDCON	ADDCON
Ok	camber	11/06/2008	240	0.0	End	Camber - Conventional
Ok	DoCamber	11/06/2008	240	0.0	End	Camber (new module: DoCamber)
Ok	Traffic-IRC	11/06/2008	240	0.0	End	Traffic Calculations

Below this, a 'Construction stage Traffic-IRC' table is shown with columns: Status, Command, Inp1, Inp2, Inp3, Out1, Out2, Delta-T, and Time.

Status	Command	Inp1	Inp2	Inp3	Out1	Out2	Delta-T	Time
	SupAndSup	L1T3.sup	T3.sup				0.0	240
	SupInIt				TrafficCsup		0.0	240
	SupInIt				TrafficWhsup		0.0	240
	SupInIt				TrafficTrsup		0.0	240
	SupInIt				TrafficCvsup		0.0	240
	SupOrSup	TrafficWh.sup	L1.sup	1.000000			0.0	240
	SupOrSup	TrafficWh.sup	L2.sup	1.000000			0.0	240
	SupOrSup	TrafficWh.sup	L3.sup	1.000000			0.0	240
	SupOrSup	TrafficWh.sup	L1L2.sup	1.000000			0.0	240
	SupOrSup	TrafficWh.sup	L1L3.sup	1.000000			0.0	240
	SupOrSup	TrafficWh.sup	L2L3.sup	1.000000			0.0	240
	SupOrSup	TrafficWh.sup	L1L2L3.sup	0.900000			0.0	240
	SupOrSup	TrafficWh.sup	L1R3.sup	1.000000			0.0	240
	SupOrSup	TrafficTrsup	L1T3.sup	1.000000			0.0	240

### 3.2 Updated Load Combination Table

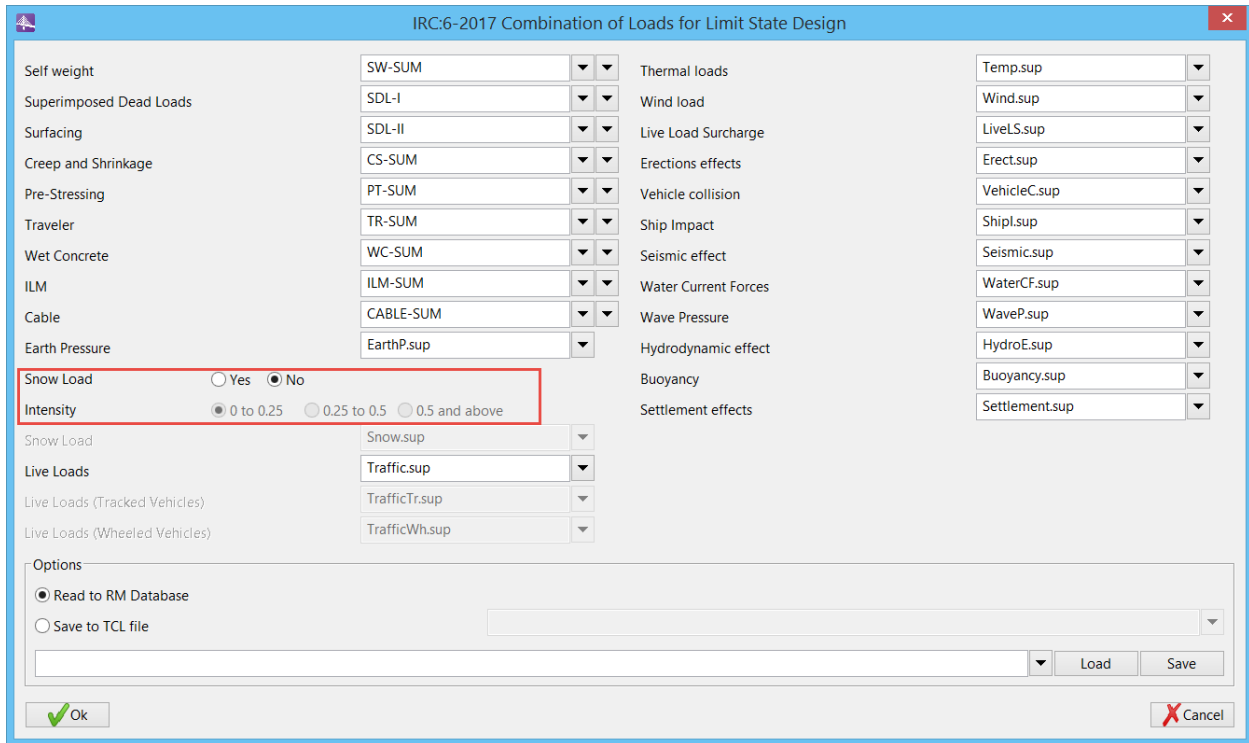
Load Combination Table for Indian code has been updated per IRC 6 (Limit State) 2017. The new options for snow loads and load intensity have been added to the table. The updated load combination table can be found under Load Definition and Extras.

The screenshot shows the 'Standard Load Combination Table' window. A dropdown menu is open, listing various standards. 'IRC (Limit State)' is highlighted with a red box.

LC/Envelope	Comb	Combination 1 Favor.	Combination 1 Unfavor.	Combination 1 Favor.
100	SupAddLc	1.00	1.00	1
417	SupAddLc	1.00	1.20	1
200p	SupAddLc	1.00	1.00	1
200s	SupAddLc	1.00	1.00	1
300	SupAddLc	1.00	1.00	1
400	SupAddLc	1.00	1.00	1
500	SupAddLc	1.00	1.00	1
600	SupAddLc	1.00	1.00	1
993	SupAddLc	1.00	1.00	1
Live.sup	SupAndSup		1.00	
Rupture.sup	SupAndSup			

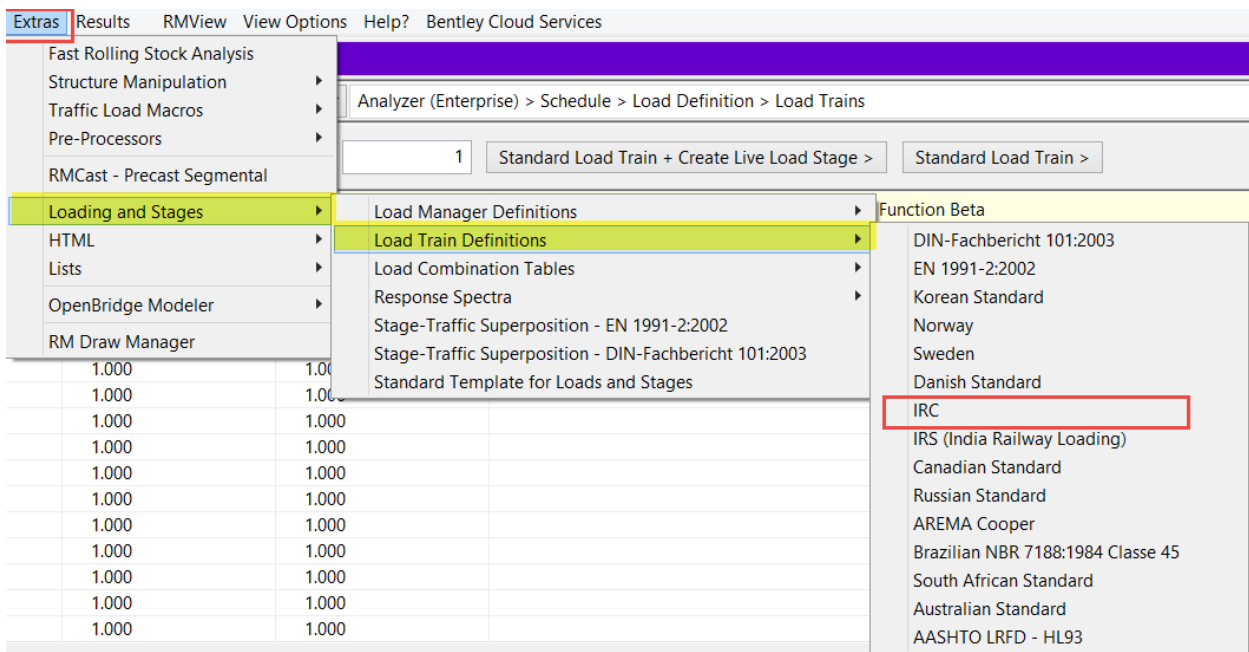
The screenshot shows the 'Extras' menu path: Extras > Loading and Stages > Load Combination Tables. A dropdown menu is open, listing various standards. 'IRC (Limit State)' is highlighted with a red box.

LC/Envelope	Comb	Combination 1 Favor.	Combination 1 Unfavor.	Combination 1 Favor.
SupAddLc				
SupAddLc	1.00	1.00	1.00	1.00
SupAddLc	1.00	1.00	1.00	1.00
SupAddLc	1.00	1.00	1.00	1.00
SupAddLc	1.00	1.00	1.00	1.00
SupAndLc			1.00	1.00
SupAndSup			1.00	0.75
sup	SupAndSup			
.sup	SupAndSup			
f.sup	SupAndSup			
up	SupAndSup			



### 3.3 New Special Vehicle (Class SV) and Updated Load Trains

Load Trains for Indian code has been updated per IRC 2017. The new Special Vehicle Class SV has been added to the load trains. The updated load Trains can be found under Load Definition and Extras.





Navigation << D: 189.56 GB

Standard Load Train + Create Live Load Stage > Standard Load T

Load Definition

- Combination Table
- Load Management
- Load Set Definition
- Load Case Definition
- Traffic Lanes
- Load Trains**
- Earthquake Load
- Wind Load
- Tendon Load

Stages

- Activation
- Schedule Actions
- Additional Constraints
- Schedule Variants
- Stage Simulation

Number	Fact-min	Fact-max	Function qlen	Function Beta
1	1.000	1.000		
2	1.000	1.000		
70	1.000	1.000		
71	1.000	1.000		
72	1.000	1.000		
100	1.000	1.000		
101	1.000	1.000		
1000	1.000	1.000		
1001	1.000	1.000		
1002	1.000	1.000		
1003	1.000	1.000		
1004	1.000	1.000		
1005	1.000	1.000		
1006	1.000	1.000		

DIN-Fachbericht 101:2003  
EN 1991-2:2002  
Korean Standard  
Norway  
Sweden  
Danish Standard  
**IRC**  
IRS (India Railway Loading)  
Canadian Standard  
Russian Standard  
AREMA Cooper  
Brazilian NBR 7188:1984 Classe 45  
South African Standard  
Australian Standard  
AASHTO LRFD - HL93

### Load Train - IRC

**Vehicles**

Class A
  Class B
  Class AA
  Class 70R
  Class 60R  
 Class 50R
  Class 40R
  Class 30R  
 Class 24R (4 wheelers)
  Class 24R (6 wheelers)
  Class SV

Append load trains after existing definitions

**Options**

Read to RM Database  
 Save to TCL file

### IRC Class SV Loading: Special Multi Axle Hydraulic Trailer Vehicle

(Prime Mover with 20 Axle Trailer - GVW = 385 Tonnes)

204.5.1 The longitudinal axle arrangement of SV loading shall be as given in Fig 6.

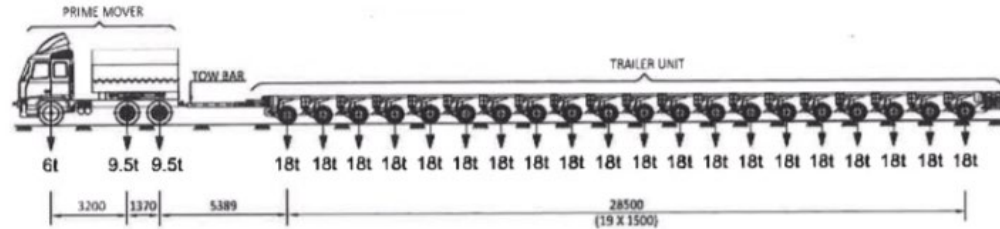


Fig 6: Typical Axle Arrangement for Special Vehicle

204.5.2 The transverse wheel spacing and the axle arrangement of SV loading shall be as given in Fig. 6A

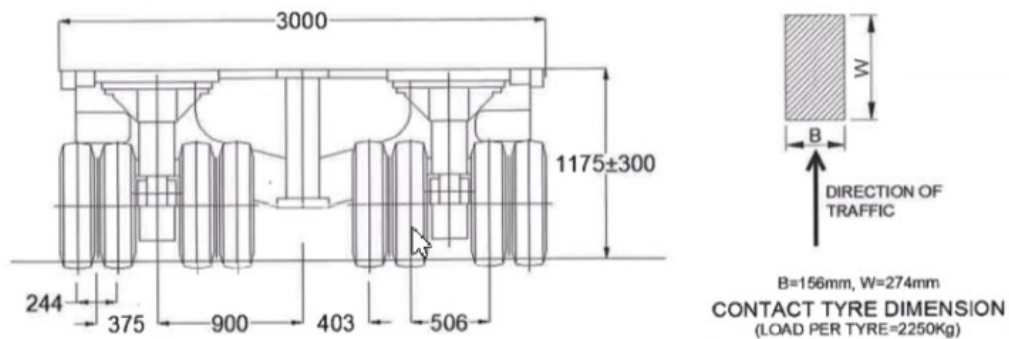
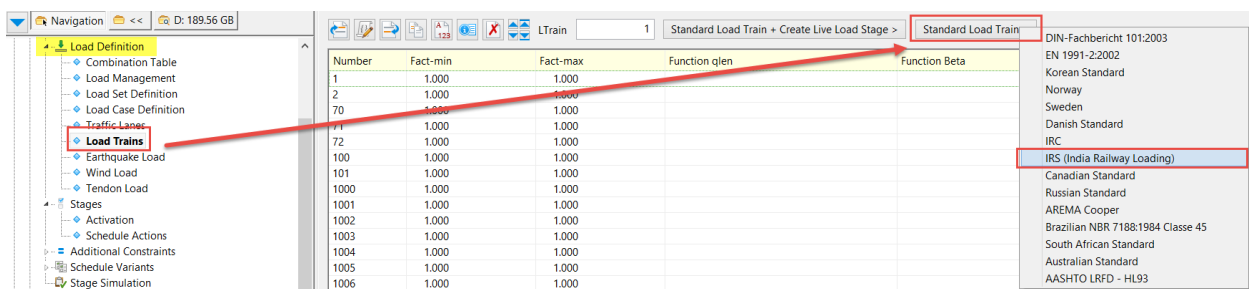


Fig 6A: Transverse Wheel Spacing of Special Vehicle

### 3.4 New Load Trains per Indian Railway Standard (IRS)

All different combinations of 25T and 32.5T Load Trains as per Indian Railway Standard (IRS) has been added. These new load trains can be found under Load Definition and Extras.



Fast Rolling Stock Analysis  
 Structure Manipulation  
 Traffic Load Macros  
 Pre-Processors  
 RMCast - Precast Segmental

Analyzer (Enterprise) > Schedule > Load Definition > Load Trains

1 Standard Load Train + Create Live Load Stage > Standard Load Train >

Load Manager Definitions  
 Load Train Definitions  
 Load Combination Tables  
 Response Spectra  
 Stage-Traffic Superposition - EN 1991-2:2002  
 Stage-Traffic Superposition - DIN-Fachbericht 101:2003  
 Standard Template for Loads and Stages

Function Beta  
 DIN-Fachbericht 101:2003  
 EN 1991-2:2002  
 Korean Standard  
 Norway  
 Sweden  
 Danish Standard  
 IRC  
**IRS (India Railway Loading)**  
 Canadian Standard  
 Russian Standard  
 AREMA Cooper  
 Brazilian NBR 7188:1984 Classe 45  
 South African Standard  
 Australian Standard  
 AASHTO LRFD - HL93

1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000
1.000	1.000

Navigation C:\23.22 GB

- Load Set Definition
- Load Case Definition
- Traffic Lanes
- Load Trains**
- Earthquake Load
- Wind Load
- Tendon Load
- Stages
- Activation
- Schedule Actions
- Additional Constraints
- Schedule Variants
- Stage Simulation
- Extras
- Results
- RMView

Number	Fact-min	Fact-max	Function qlen	Function Beta
251	1.000	1.000		
252	1.000	1.000		
253	1.000	1.000		
254	1.000	1.000		
255	1.000	1.000		
321	1.000	1.000		
322	1.000	1.000		
323	1.000	1.000		
324	1.000	1.000		
325	1.000	1.000		

LTrain 0251 IRS 25T: Comb

Keyword	q	F	I	...
LITEM	-91.496	0.000		
LITEM	0.000	0.000		
LITEM	0.000	-245.166		
LITEM	0.000	-245.166		
LITEM	0.000	-245.166		
LITEM	0.000	-245.166		
LITEM	0.000	-245.166		
LITEM	0.000	-245.166		
LITEM	0.000	-245.166		
LITEM	0.000	-245.166		

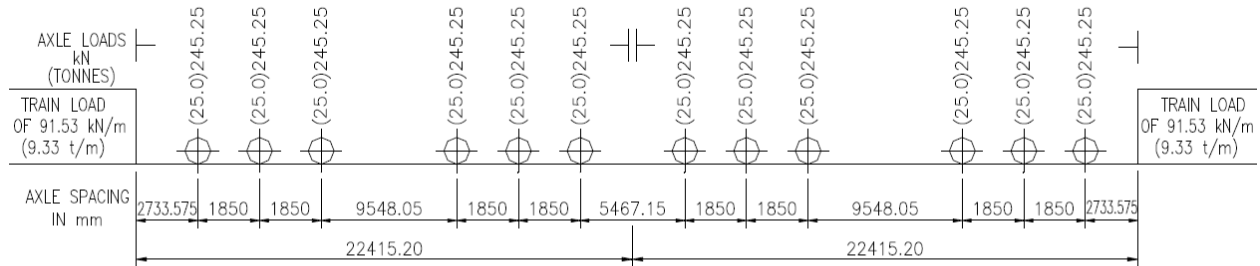
Loads-Load Train Load-INFO - LTrain 251

Load train 251 - IRS 25T: Combination 1 (Double Headed Dies  
 al Loco)

General load train type

Close Plot to file

### COMBINATION-1: DOUBLE HEADED DIESEL LOCO

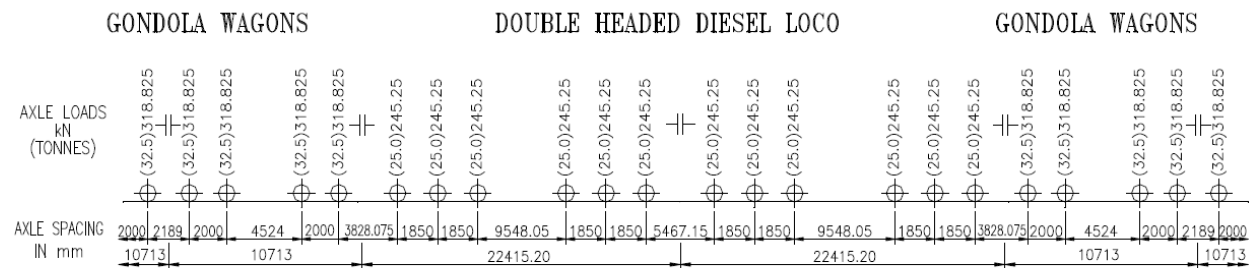


**LONGITUDINAL FORCES**

TRACTIVE EFFORT PER LOCO.....63.0 TONNES (618.03 kN)  
 BRAKING FORCE PER LOCO AXLE.....25% OF AXLE LOAD  
 BRAKING FORCE OF TRAIN LOAD.....13.4% OF TRAIN LOAD

“25t LOADING-2008”

### COMBINATION-1: DOUBLE HEADED DIESEL LOCO



**LONGITUDINAL FORCES**

TRACTIVE EFFORT PER LOCO.....63.0 TONNES (618.03 kN)  
 BRAKING FORCE PER LOCO AXLE.....25% OF AXLE LOAD  
 BRAKING FORCE OF TRAIN LOAD.....13.4% OF TRAIN LOAD

“DFC LOADING (32.5t AXLE LOAD)”

#### 4. TrackSup Action for Summation Loads During Schedule Stages

"TrackSup" action is now enhanced for summation load cases results generated in the load management table during schedule stages. Users now have possibility of running this action during the different construction stages and when summation load cases are not yet completed and/or finalized.

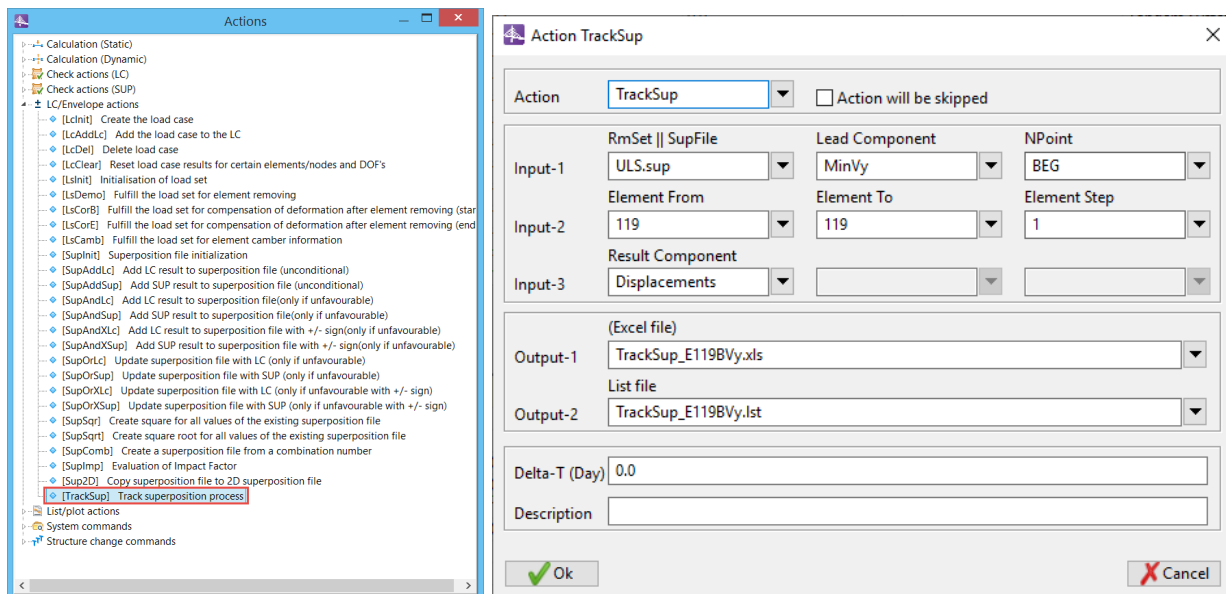
This action generates one list/excel output file with all various and original sources of load cases and/or superposition files that contribute to the final tracking displacement result component.

The output file for this action contains the final result along with the factorized results for each original load case and/or superposition file. The correspondent load factors used in each load case and/or superposition file are also indicated.

A schedule can have as many "TrackSup" actions as desired and they can be positioned inside a schedule action at any stage.

##### Notes:

- All the fields presented in this action should be filled out before running the "TrackSup" action.
- TrackSup action should be used in one specific schedule (not in different schedule variants).



Training1  
 Prestressing Basic

SUPERPOSITION LOADCASE DISTRIBUTION

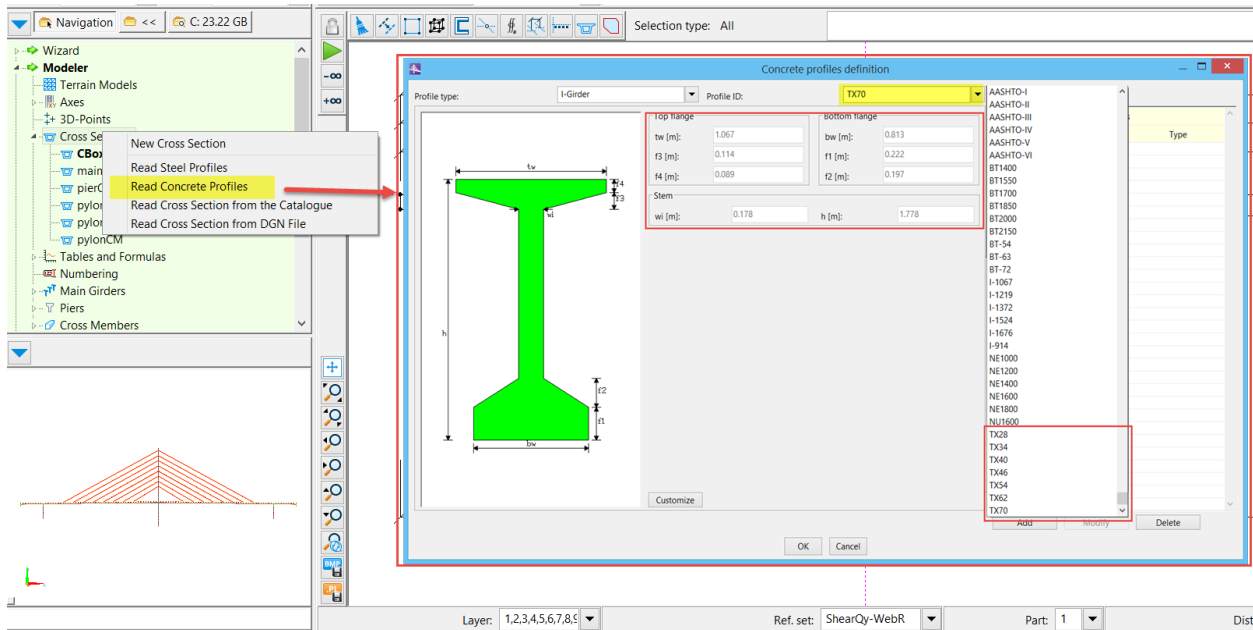
Global Units : Length(m\*1000),Rotation(rad\*1000)

SUP SOURCE	ULS.sup	COMP	MinVy	ELEM 119	PNT 1	F *Vx	F *Vy	F *Vz	F *Rx	F *Ry	F *Rz
SW-SUM	1.35	:	-1.1	-35.3	-4.1	0.5	-0.0	-0.0			
SDL-SUM	1.35	:	-0.0	-4.3	-0.0	0.0	0.0	-0.0			
PT-SUM	1.00	:	-1.1	20.8	-0.4	-0.1	-0.0	0.2			
CS-SUM	1.00	:	-1.3	-2.7	-1.1	0.1	-0.0	0.1			
CS-INF	1.00	:	-0.3	-6.3	0.1	0.1	0.0	0.0			
Settle-A1	1.00	:	-0.7	1.2	0.1	-0.0	-0.0	0.0			
Settle-A2	1.00	:	-0.7	-5.8	-0.2	0.0	0.0	-0.2			
Settle-A3	1.00	:	0.8	-6.7	-0.5	0.0	-0.0	0.2			
Temp-Unif-M	0.90	:	-0.5	-1.5	0.1	-0.0	-0.0	-0.0			
Temp-Grad-P	0.67	:	0.1	-1.2	-0.8	0.1	-0.0	0.0			
Wind+T	-0.90	:	1.2	-0.1	-6.6	0.3	-0.0	0.0			
LL-L11-T1.s	1.35	:	0.1	-2.8	-0.9	0.2	0.0	0.0			
LL-L12-T2.s	1.35	:	-0.0	-1.8	-0.2	0.0	0.0	-0.0			
LL-L13-T3.s	1.35	:	-0.0	-0.9	0.1	-0.0	0.0	-0.0			
LL-L14-T5.su	1.35	:	-0.1	-2.1	0.7	-0.1	0.0	-0.0			
LL-L11-T6.s	1.35	:	0.2	-3.2	-1.8	0.2	0.0	0.0			
LL-L14-T5.s	1.35	:	0.1	-2.2	-0.9	0.1	0.0	0.0			
Full result	:		-3.4	-54.8	-16.5	1.7	-0.1	0.3			

SUP SOURCE	DESCRIPTION (Action : Input1 : Input2)
LL-L11-T1.sup	LiveL : 11 : 1
LL-L12-T2.sup	LiveL : 12 : 2
LL-L13-T3.sup	LiveL : 13 : 3
LL-L14-T5.sup	LiveL : 4 : 5
LL-L11-T6.sup	LiveL : 11 : 6
LL-L14-T5.sup	LiveL : 14 : 5

## 5. New Texas Girders in Modeler Cross-section Library

Library of Texas Girder cross-sections (TXDOT Girders) have been added in Modeler Cross-section library. These cross-sections can be accessed from "Read Concrete Profile".

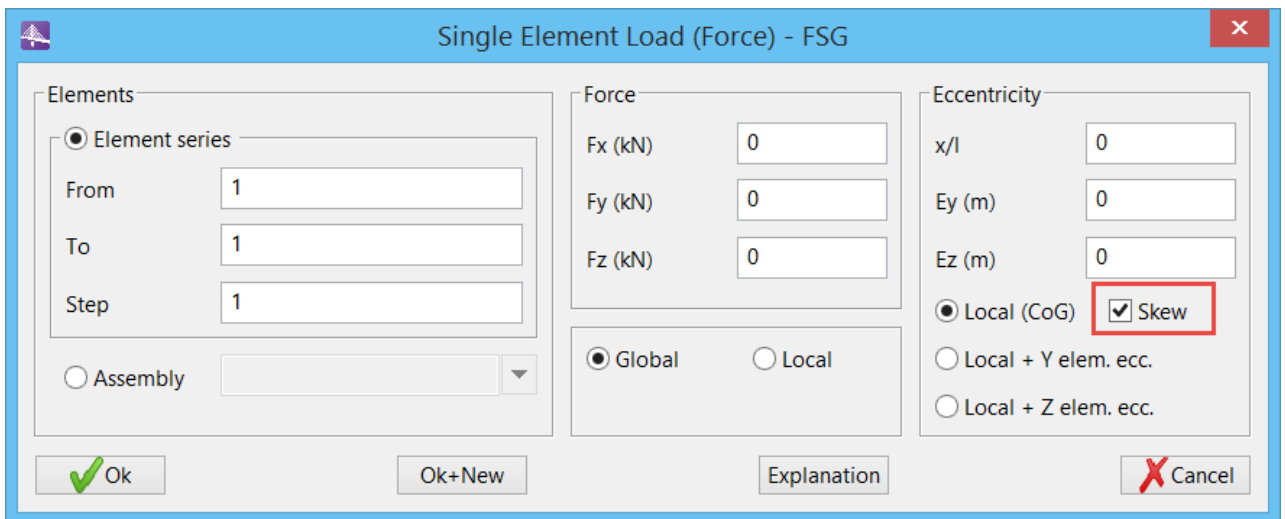


## 6. Enhancements in GUI

The following GUI enhancements have been implemented to improve the user experience. They include:

### 6.1 Enhance Loading on Skewed FEM in Analyzer

FSG load dialog has a new option called "Skew" which follows the skew of the element cross-section during load application. If the skew angle is different at begin and end of beam, then the linear variation of the skew is used in calculating the final skew angle for calculating the load location.



## 6.2 Delete Multiple Tendons inside Modeler

New option for deleting multiple tendons by input a tendon number range is now available inside Modeler.

Show tendons for segment:

Segment	TndNum	Type	Master	Material	Numb	At	Ad	Beta	Friction	Length0	sl-b	sl-e	PT Force
MG	1	Int	Master	EN_Eurocode:Strand-1640/1860	1	1.80000e-03	5.00000e-03	0.300	0.200	141.071			
MG	101	Int	1	EN_Eurocode:Strand-1640/1860	12	1.80000e-03	5.00000e-03	0.300	0.200	52.432			
MG	102	Int	1	EN_Eurocode:Strand-1640/1860	16	1.80000e-03	5.00000e-03	0.300	0.200	84.440			
MG	103	Int	1	EN_Eurocode:Strand-1640/1860	12	1.80000e-03	5.00000e-03	0.300	0.200	52.431			

**Delete tendons** X

From tend num:  |<<

To tend num:  >>|

Step:  All

Geometry    Tendons stressing

Elem. No.	Station [m]	Length	S1	S2	X	Y	Z
101	0.0000	4.0000	0.000	4.083	0.0000	-1.3751	0.0000
102	4.0000	4.0000	4.083	8.134	4.0000	-2.2432	-0.0000
103	8.0000	4.0000	8.134	12.123	8.0000	-2.8879	-0.0000
104	12.0000	4.0000	12.123	16.120	12.0000	-3.1001	-0.0000
105	16.0000	4.0000	16.120	20.153	16.0000	-2.8585	-0.0004
106	20.0000	4.0000	20.153	24.207	20.0000	-2.3428	-0.0003
107	24.0000	4.0000	24.207	28.263	24.0000	-1.6737	0.0020
108	28.0000	4.0000	28.263	32.304	28.0000	-0.9783	0.0085
109	32.0000	4.0000	32.304	36.327	32.0000	-0.3750	0.0233
110	36.0000	4.0000	36.327	40.325	35.9998	0.0549	0.0598
111	40.0000	4.0000	40.325	44.322	39.9992	0.2415	0.1333
112	44.0000	4.0000	44.322	48.337	43.9975	0.1268	0.2483
113	48.0000	0.0000	48.337	52.361	47.9947	-0.2261	0.3903

## 6.3 Delete Multiple Springs inside Modeler

New option for deleting multiple springs by input a spring number range is now available inside Modeler.

Parts    Variables    Connections    Spring Constants    Offsets

Type	Element	Auto (FE)	Segment Point	Side	Node
Spring	9481 (BC / Pos. 1)	Deck1_Beam_2: 2		A	902 (Part 2)
Spring	9491 (BC / Pos. 1)	Deck1_Beam_2: 1		A	901 (Part 3)

**Delete Spring** X

From element:  |<<

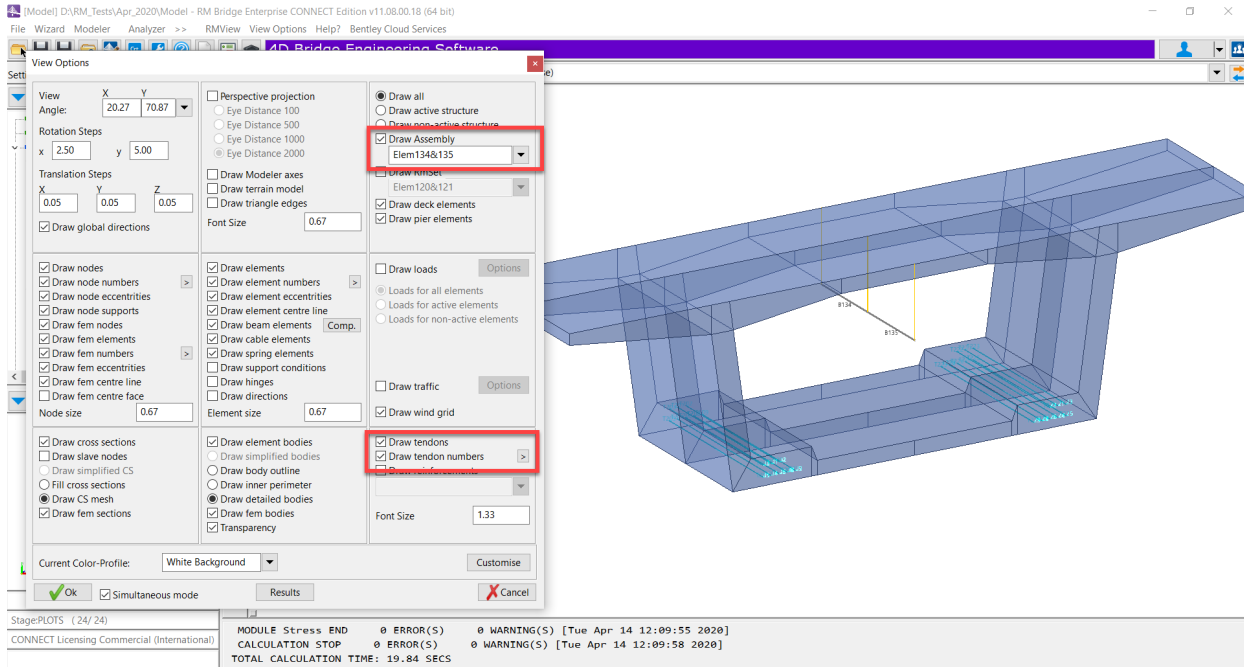
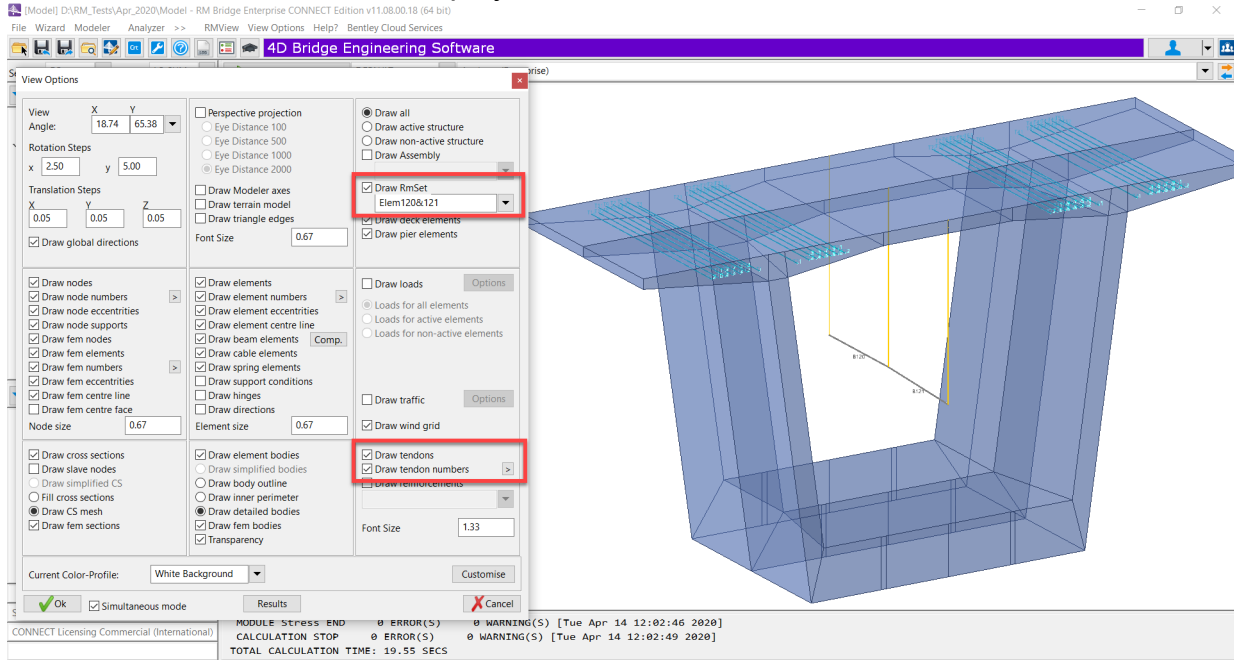
To element:  >>|

Step:  All



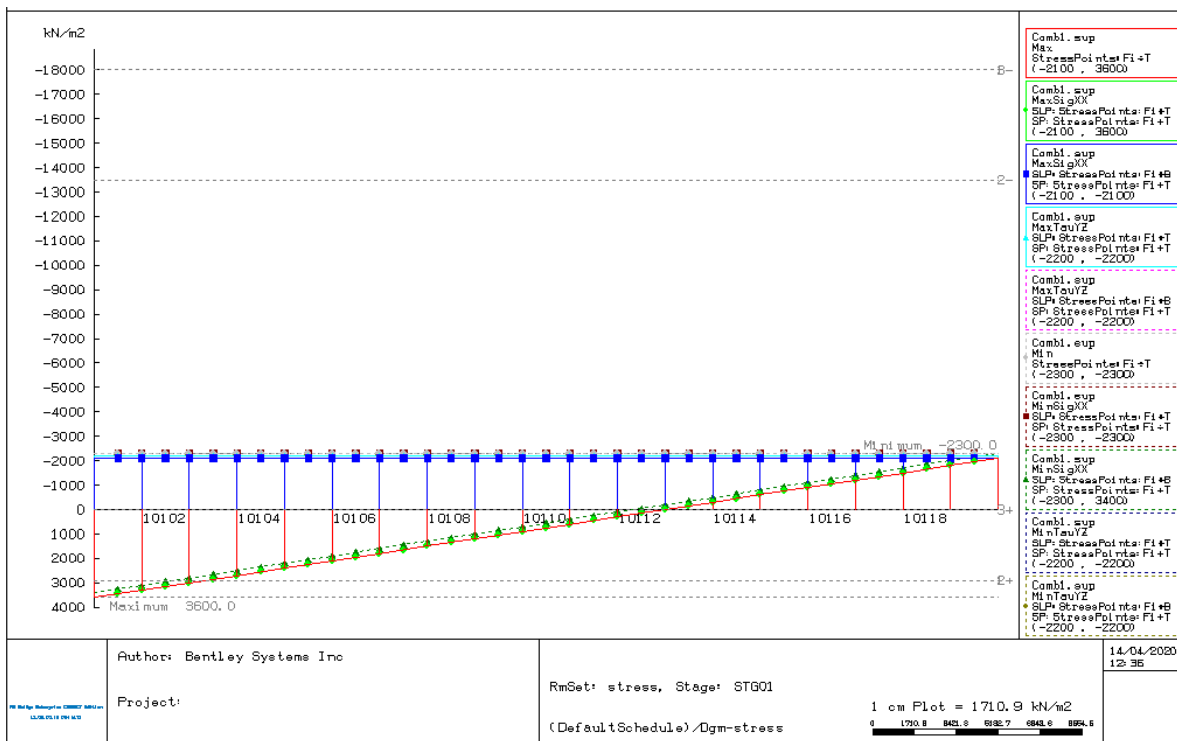
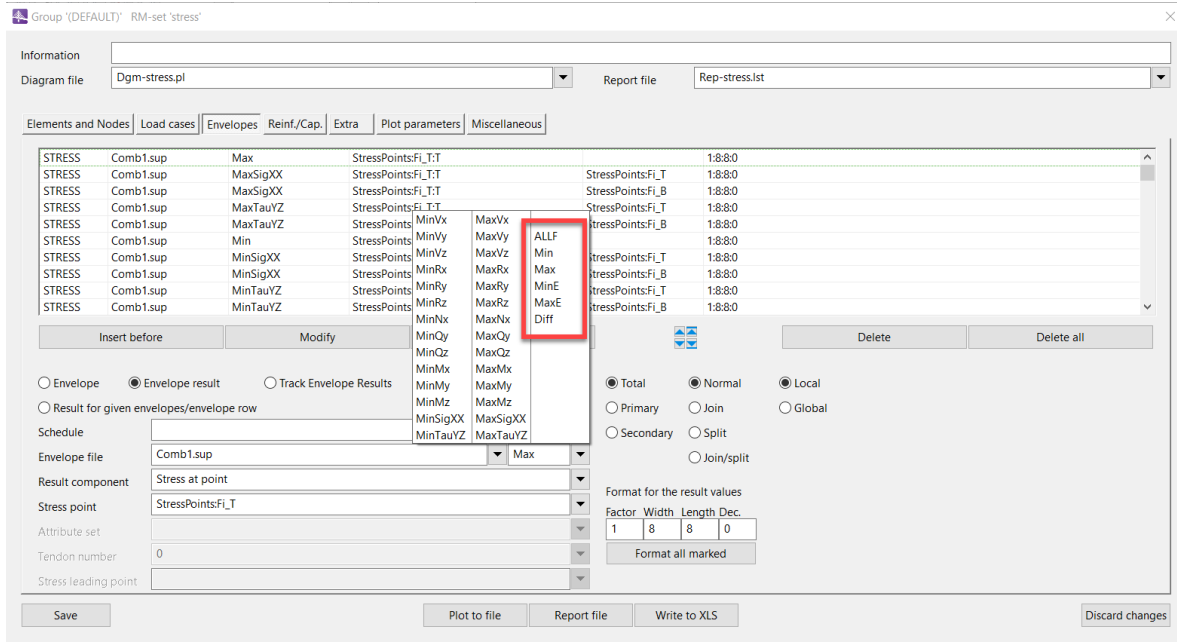
## 6.4 Display Tendons in RM-Sets and Assemblies

Tendons can now be displayed in RM-Sets and Assemblies.



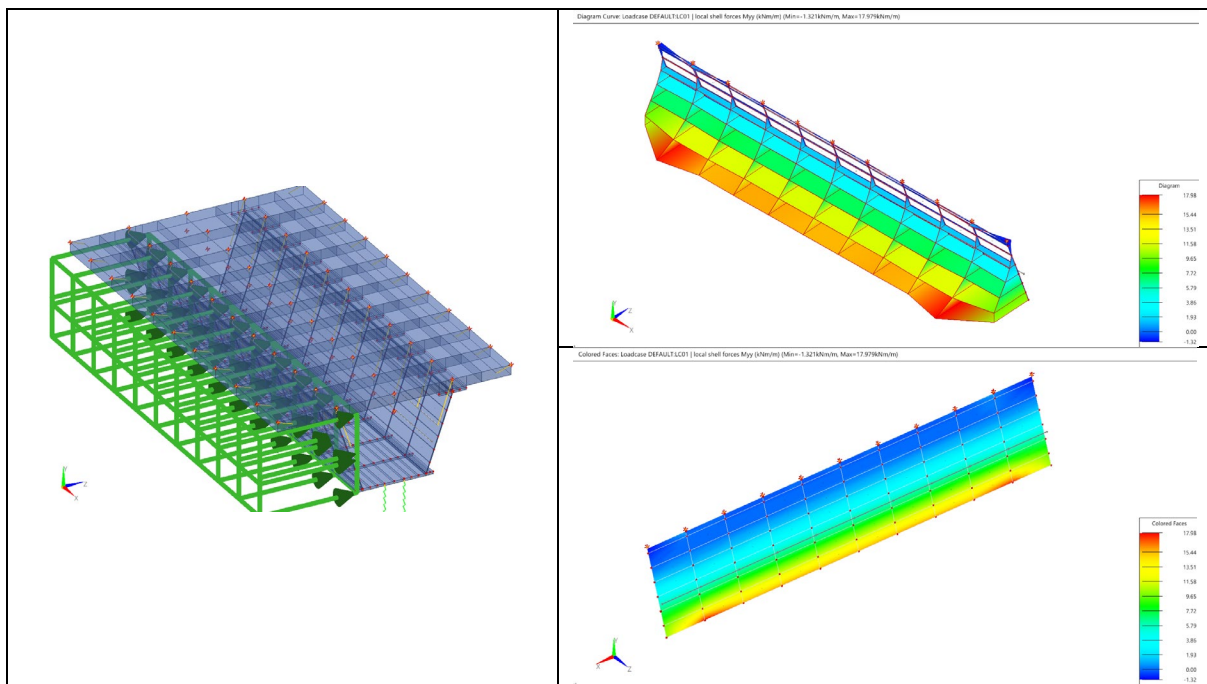
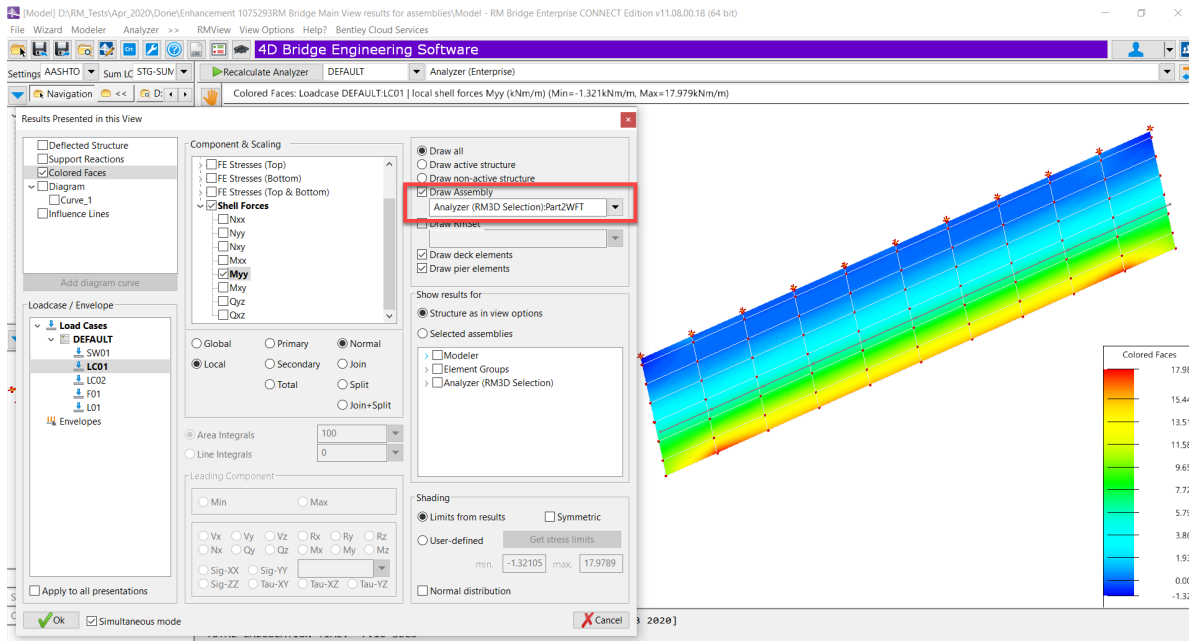
## 6.5 Max and Min Stress Leading Results in Result Diagrams

Stress leading results is now included and displayed in Min, Max, MinE, MaxE and Diff result diagrams.



## 6.6 Display Results for Partial Selected Shell Elements by Assemblies

It is now possible to display shell results in a predefined selected area by Assembly definition. Legend and Max/Min header results are according with the selected and presented area.



## 7. Error Corrections

The following errors have been corrected:

- The drag and lift coefficient were incorrectly applied in dynamic calculations for wind load on cables. This issue is now corrected.
- The BiHyst spring data did not translate correctly to SI units from Metric. This issue is now corrected.

- The issue for copying assemblies inside Analyzer has been fixed.
- The display of Max and Min values for response history diagram plot has been corrected.
- The results for Temperature Gradient TNLIN load type have been corrected.
- The issue with displaying PTZL load type has been fixed.
- The issue of drawing local Axis in spring elements that are defined between two nodes has been corrected.
- The issue of exporting assemblies from Modeler to Analyzer has been fixed.
- The issue with the changing unit force factor to a value different than one in Lane Macro has been corrected.
- The issue with displaying Load type FSL in local direction has been fixed.
- The issue of plotting partial models results in plot containers has been fixed.
- The formula for Korean Response spectra has been corrected.
- The issue related to computation of the values of begin and end excess length defined in Superstructure page has been fixed.
- The issue of expression overwritten with values from variables in cross-section has been fixed.
- The calculation for crack widths has been corrected. Formula was revised and corrected in accordance to the EC standard. Convergence algorithm was revised and corrected. Default material diagram has been changed from Ultimate to Non-linear per 7.3.4 of EC2, only.
- The issue of Superposition tracking Supfiles reused by SupComb has been corrected in TrackSup action. This issue was related to not clearing previous tracking data in Suptracker.
- The error message related to CrackSup action '\*\*\* ERROR: No valid crackwidth: 0.15' has changed to a warning message '\*\*\* WARNING: Crackwidth 0.1 out of bounds [0.15 .. 0.35] recommended by Canadian\_CSA standard', thus not interrupting the calculation process. This change affects other standards. The warning will be displayed accordingly for the selected standard.
- An error message will be displayed by the TrackSup action when the results reproduced do not match the tracked results in the target supfile. This is usually caused by accumulated load cases which are not being tracked when they accumulate loads. This issue will be addressed in the next release.
- The issue of adding an Offset in the project specification in Modeler has been corrected.
- The issue with running SupCoex action during stage analysis has been fixed.
- An issue affecting the linearization of capacity curve has been fixed in this release. The bug caused error in calculation of performance point in FEMA 440 equivalent linearization analysis.

### **Product Interoperability**

- OpenBridge Modeler
- MicroStation, GEOPAK, MXROAD

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- Continue to develop the project with each session, focusing on major stages of the design process and ultimately ending with the production of detailed reports, iModels and typical construction drawings.

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