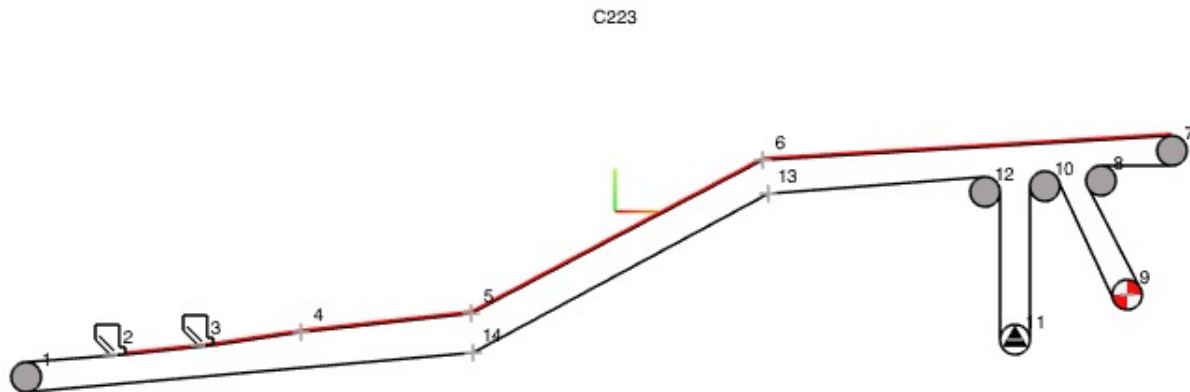


Project	Demo 02 Conveyor High Lift	Client	ABC Iron
Project No.	P9823	Prepared By	Peter Burrow
Conveyor No.	C223	Design Date	01 Oct 2019



Dynamic Analysis Starting - Loaded

Dynamic Belt Inputs

Belt Modulus	129600 kN/m
Conveyor Belt Spring Constant K	233280000
Max Conveyor Element length	50 m
Dynamic Friction f adjustment	1
Total Moving System Mass	345494 kg
<input type="checkbox"/> Use Runge-Kutta 4th order ODE solver	

Dynamic Calculation Inputs

Calculation Run Time	30 seconds
Start / Stop Ref Time (Tref)	10.0 seconds
Time Step Interval dt	0.1 seconds
Viscoelastic Delay Time Tau	0.0013641
Viscoelastic Damping Constant	318212 N/m/s
Runge-Kutta internal step size	0.001

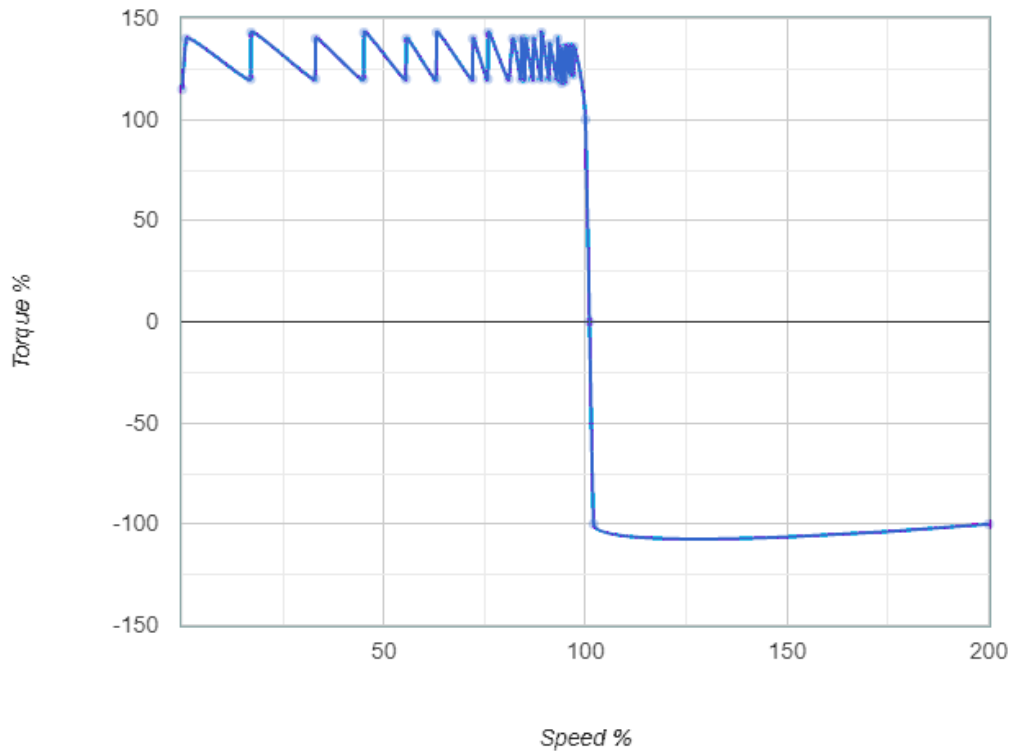
Takeup Mass & Lockup Capstan Winch (Optional)

Takeup Mass Static Calculations	26700 kg	Average Tension Running Full	222.07 kN
Takeup Tension Static Calculations	130.92 kN	Average Tension Belt Stationary	125.02 kN
Capstan/Winch Appl. Time Delay	0.5 seconds	Belt Stretch Tension Available	97.05 kN
Additional Tension to add at takeup for Capstan / Winch Locking			0 kN
<input type="checkbox"/> Lock-up Takeup Weight Rope with winch during Stopping			

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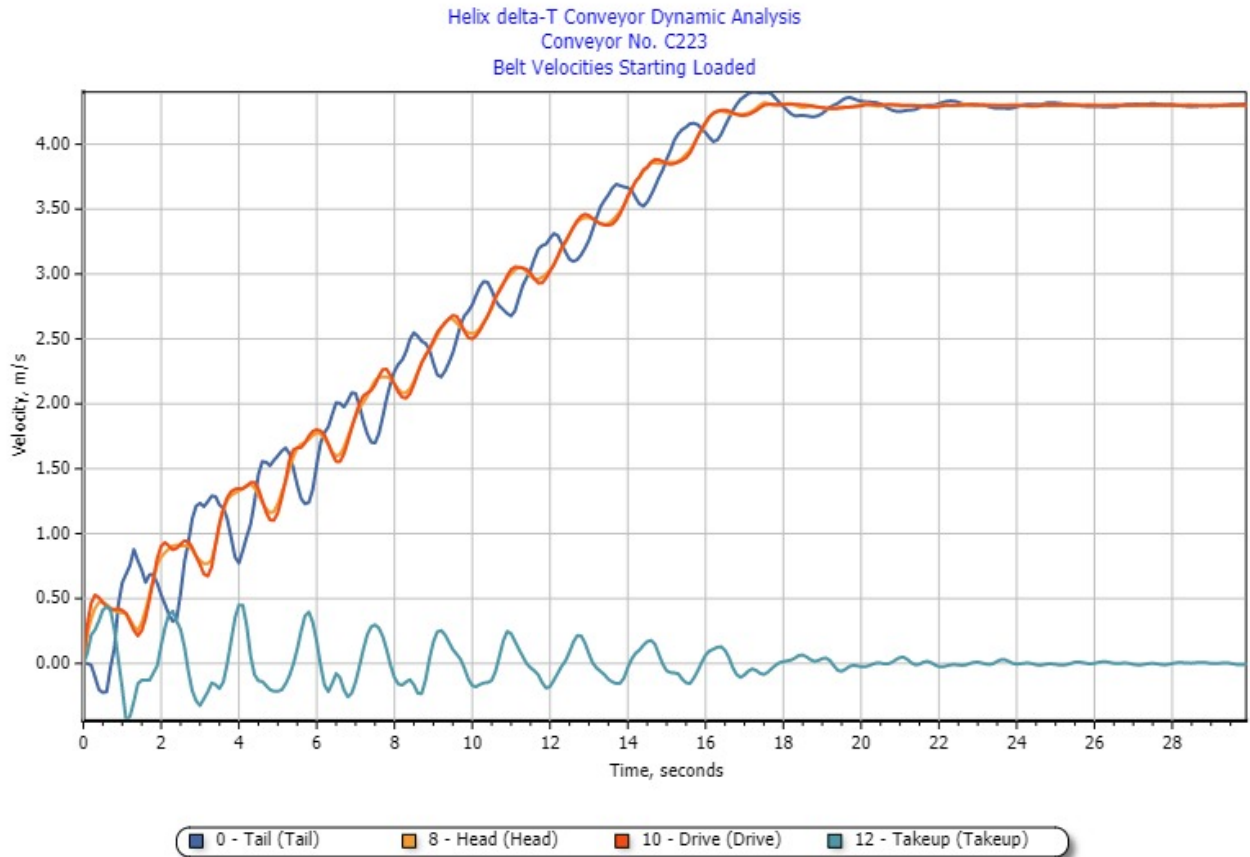
Drive No: 1 Head	Pulley No:9	Drive Inertia	
Drive Description	Head	Motor Inertia	74.1 kg-m2
Load Share on Drive Pulley	100 %	High Speed Coupling Inertia	0.514 kg-m2
Number of Motors on Drive Pulley	2	High Speed Brake Disc Inertia	7.32 kg-m2
Motor Power Rating	630 kW	Flywheel Inertia	0 kg-m2
Low Speed Braking Torque	26.5 kN/m	Gearbox Inertia (HSS)	1.8 kg-m2
Starter Category	C202 800kW x 2 WR	Total Drive Inertia	170.428 kg-m2
Starter Description	2x800kW Full Load Blocked chute	Total Drive Equivalent Mass	98069 kg
Starter Type	Torque-Speed	<input checked="" type="checkbox"/> Holdback is installed on Drive	

Starter Curve Category: C202 800kW x 2 WR
2x800kW Full Load Blocked chute Type: Torque-Speed



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Dynamic Analysis Velocity Graphs

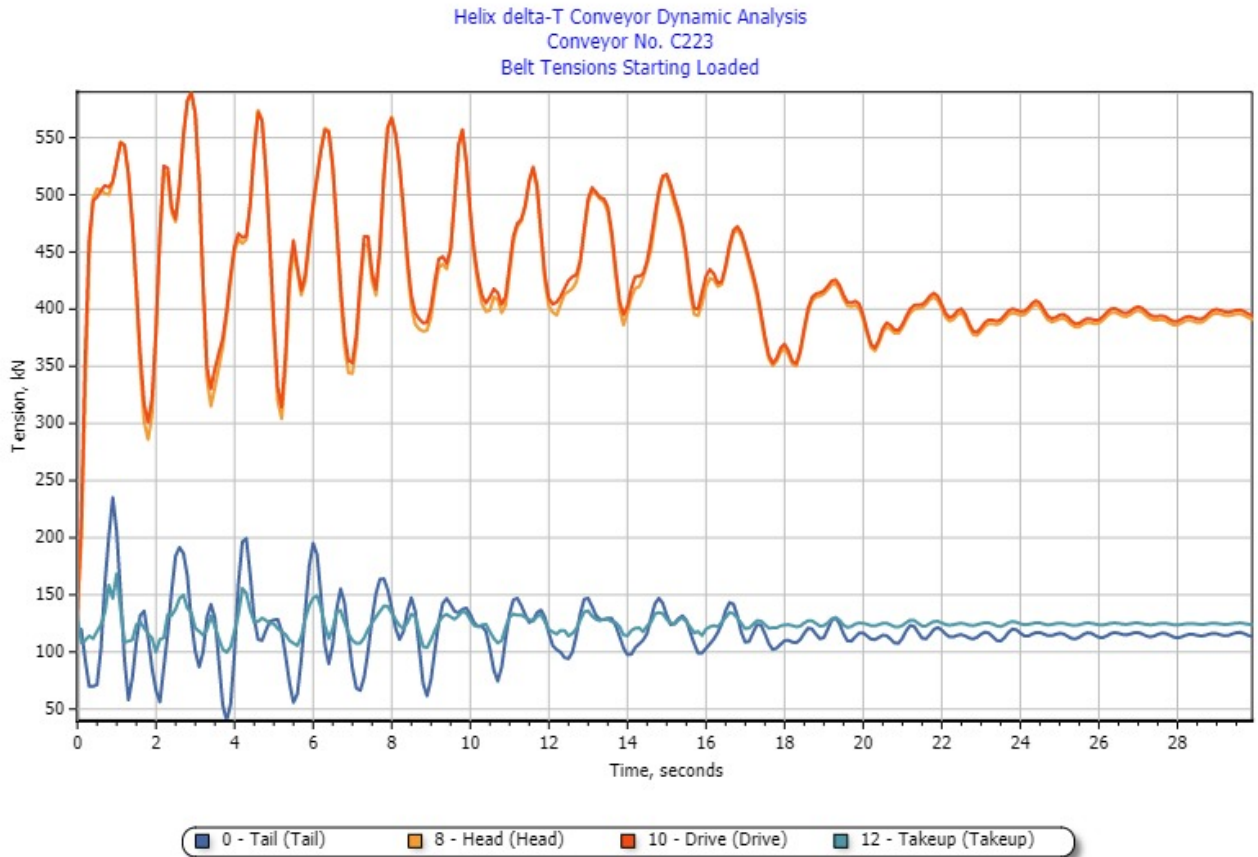


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Graph Comments Starting - Loaded

Project	Demo 02 Conveyor High Lift	Client	ABC Iron
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Dynamic Analysis Belt Tension Graphs



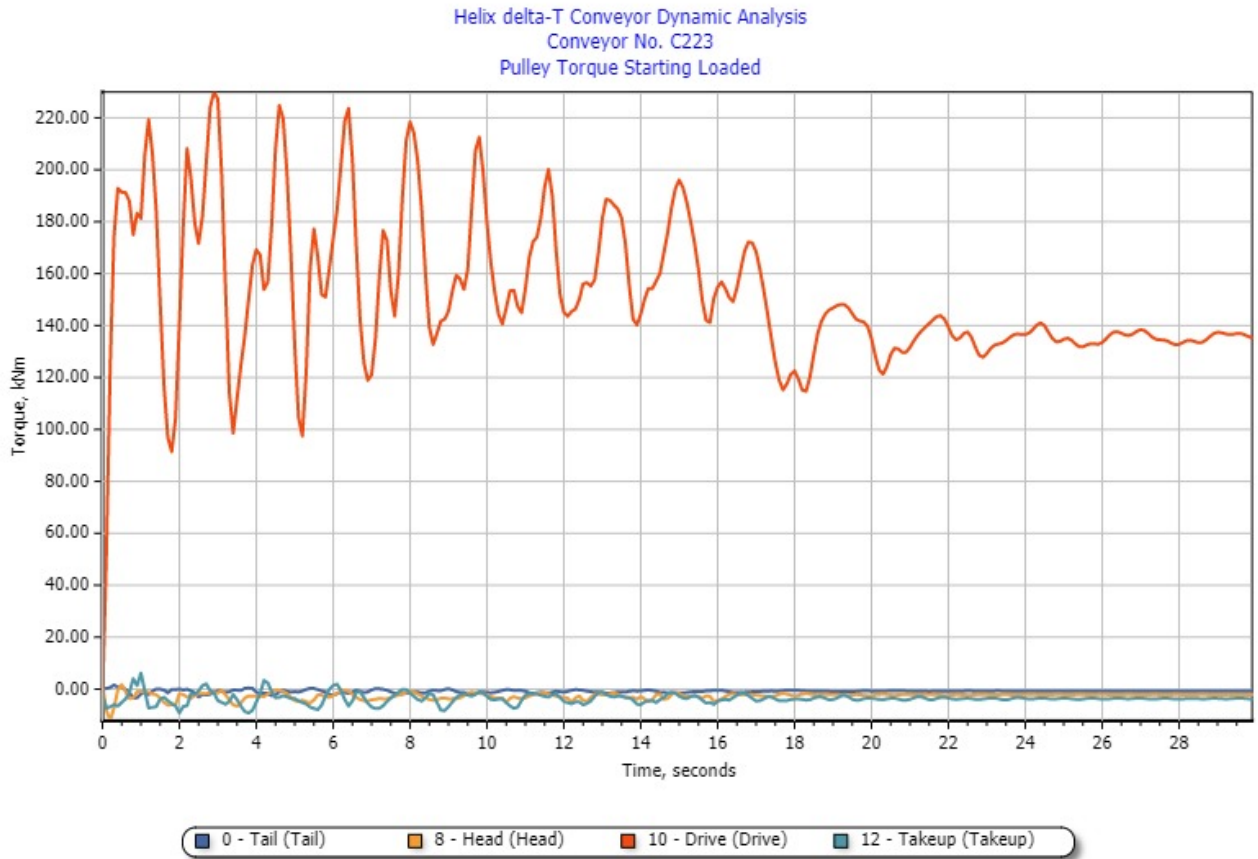
Maximum Tension = 592.16 kN Belt Safety Factor = 5.47

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Graph Comments Starting - Loaded

Project	Demo 02 Conveyor High Lift	Client	ABC Iron
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Dynamic Analysis Pulley Torque Graphs



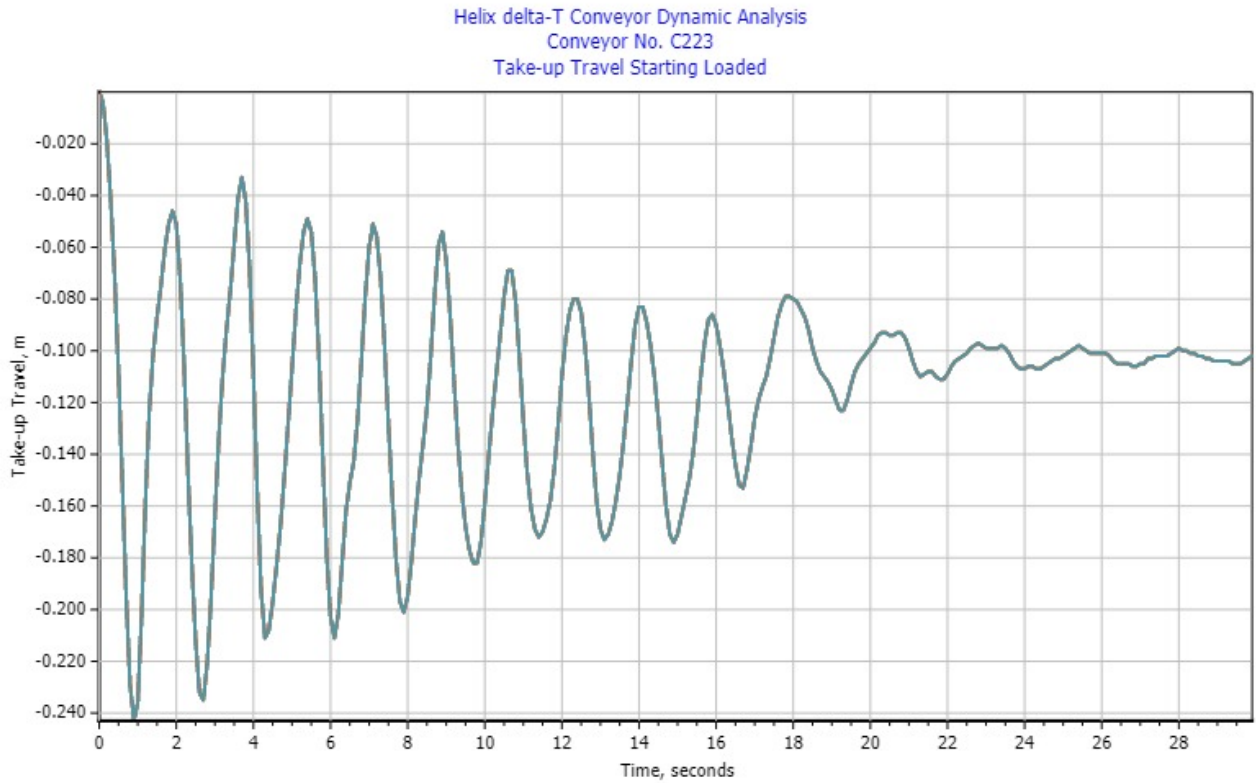
Maximum Torque = 229.93 kNm Minimum Torque = -12.21 kNm

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Graph Comments Starting - Loaded

Project	Demo 02 Conveyor High Lift	Client	ABC Iron
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Dynamic Analysis Take-up Travel Graph



- 0 - Tail (Tail)
- 8 - Head (Head)
- 10 - Drive (Drive)
- 12 - Takeup (Takeup)

Maximum Take-up Travel Distance = 0.243 m

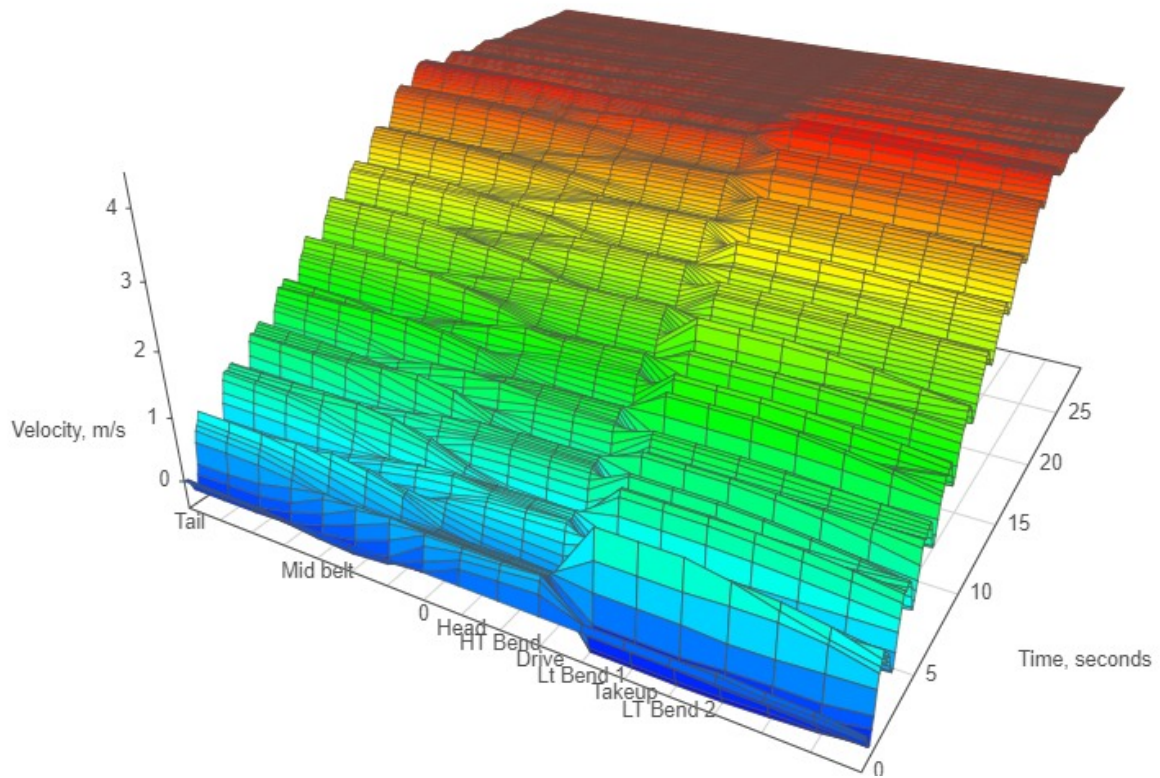
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Graph Comments Starting - Loaded

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Conveyor No.	C223	Design Date	01 Oct 2019

Dynamic Analysis Velocity Graphs

Helix delta-T Conveyor Dynamic Analysis Velocity3D
Conveyor No C223
Starting Loaded

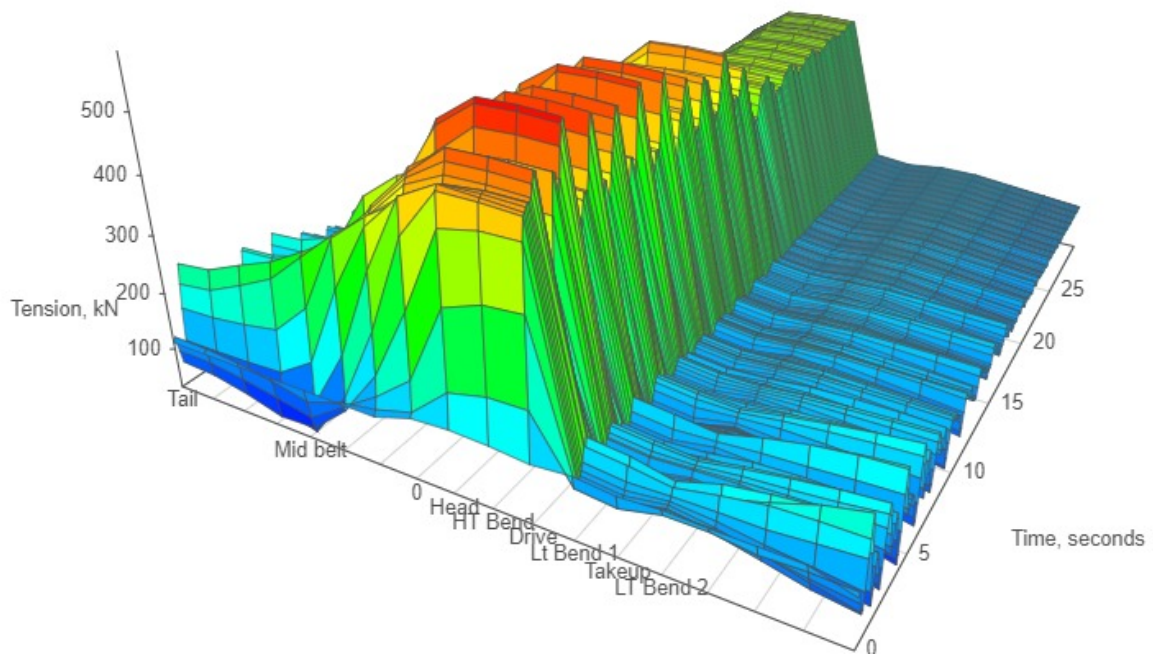


3D Graph Comments Starting - Loaded

Project	Demo 02 Conveyor High Lift	Client	ABC Iron
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Conveyor No.	C223	Design Date	01 Oct 2019

Dynamic Analysis Belt Tension Graphs

Helix delta-T Conveyor Dynamic Analysis Tension3D
Conveyor No C223
Starting Loaded



3D Graph Comments Starting - Loaded

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Dynamic Analysis Belt Tensions Starting - Loaded
Maximum and Minimum Dynamic Belt Tension Table

	Max kN	Min kN
0 - Tail (Tail)	235.05	39.78
1 - Hopper ()	242.67	38.84
2 - Hopper ()	268.84	40.21
3 - Int. Pt ()	293.00	36.05
4 - Int. Pt (Mid belt)	327.61	29.77
5 - Sect 5/1 (Mid belt)	403.26	93.07
6 - Sect 5/2 (Mid belt)	451.46	113.16
7 - Int. Pt (0)	544.92	134.12
8 - Head (Head)	589.95	138.52
9 - Bend (HT Bend)	592.16	136.36
10 - Drive (Drive)	589.70	130.79
11 - Bend (Lt Bend 1)	174.67	106.09
12 - Takeup (Takeup)	168.30	99.72
13 - Bend (LT Bend 2)	154.17	120.85
14 - Int. Pt ()	175.57	109.27
15 - Sect 13/1 ()	186.17	87.11
16 - Sect 13/2 ()	199.63	66.41
17 - Int. Pt ()	214.94	48.10