



Sidewinder Conveyor Design Software 7.2.2

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File Advanced User Help

Material Input Data

Material Set: 1 2 3 4
Tonnage (t/h): 2000
Material: Earth
Density (kg/m³): 1200
Maximum Lump Size (mm): 150
Lump Shape Factor
Surcharge Angle (deg): 15.0
Internal Friction Angle (deg)
Take-up Input Data
Take-up Type: Gravity Take-up
Belt Line Tension (N): 37,000
Cable Reeling Ratio

Belt Input Data

Conveyor Type: Troughed Conveyor
Speed for All Cases (m/s): 4.00
Type (Fabric / Steel Cord): Fabric
Width (mm): 1200
Rating (N/mm): 1250
Number of Fabric Plys in Belt: 4
Top Cover Thickness (mm): 10.00
Bottom Cover Thickness (mm): 5.00
Weight (kg/m)
Elastic Modulus (kN/m)
Rubber Rolling Loss Factor

Idler Input Data

	Set 1	Set 2	Set 3
Number of Rolls	3	1	
Bearing Series *	6305	6307	
Troughing Angle (deg) *	35	0	
Roll Diameter (mm) *	152.0	152.0	
Shaft Diameter (mm)	25	35	
Total Drag for Set (N)			
Forward Tilt (deg)			
Idler Installation & Alignment	CEMA 5th		
Type / Manufacture			

Material / Take-up Load Point Structural Chute

Belting Details Splice Curves Transitions

General L10 Life Custom Set

Motor Input Data

Type: 1
Type: VFD
Number of Motors on Pulley (1 or 2): 1
Nameplate Rating per Motor (kW): 300.0
Motor Voltage (V):
Synchronous RPM: 1500
Starting Torque (%): 140.0
Motor Slip (%):
Inertia - Motor (kg m²):
Inertia - Flywheel (kg m²):
Running Torque Limit (%):
Motor Load Cell Tension (kN)
* Select these inputs and right click for a pulldown menu

Material

EM-N: Tonnage (t/h): 2,000
FL-N: %CEMA Area: 78 %
FL-L: Edge Dist (mm): 142
FL-H: Mat. Mass (kg/m): 138.9
BT-L: Belt
BD-L: Type: Fabric
Width (mm): 1200
Speed (m/s): 4.00
Rating (N/mm): EP-1250 / 4
Covers (mm): 10.0 x 5.0
Mass (kg/m): 31.9

Motors

Nameplate (kW): 1 x 300
Demand (kW): -206
Percent Nameplate: -68.6 %
Lift / Drag (kV): -292.0 / 86.1

General

Temperature (°C): 10.0
Length / Height (m): 255 / -54
Material Lift (m): -53.6
Belt Line Mass (kg): 72.486
Din Factor f / Cs: 0.0199 / 1.790
Curves / Flap: Ok / Ok

Take-up

Requirements (N): Sag: 37,000 TR: 898
Steady State: 33,885
Dynamic: 14,669 15,296

Idlers

Min L10 Life: 6305 6307
Max Shaft Def: 135.859 350.000
Diameter (mm): 152 152
Speed (rpm): 503 503
Avg Set Drag (N): 8.9 4.9
Avg Spacing (m): 1.5/1.0 3.0/1.0
Req'd Pulley Diam: 431 400 315

Tensions

Max (kN): 115.3 13.01 34.5 0.91
Min (kN): 96.2 15.60 32.8 0.96
Sag (%): 124.9 12.01 34.9 0.90
Dynamics: Running: 6.4 40.6 kN/m
Starting: 10.00 -34.7 % M1 - 35
O-Stop: 20.0 -90.0 % M1 - 52
E-Stop: 145.9 10.28 35.6 0.88

Motors Reducers Brakes Backstops Pulleys / Shafts Dynamics

Summary Material Belt Idlers Take-up Motors Brakes Backstops Pulleys Shafts Frame Layout Loading Tensions Power Elements Curves Transition Flap Load Pt. Chute Trajectory Structural

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EM-N

FL-N

FL-L

FL-H

BT-L

BD-L

Calculate

Calculate All

☐ Animate Calculations
Calculation Time Step (s): 5

Max Allowable Nameplate Power (%): 100
Min Allowable Nameplate Power (%): 0

Max Tension Line (kN): 0
Min Tension Line (kN): 0

Element: 16

Power All Tensions Single Element Tension



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