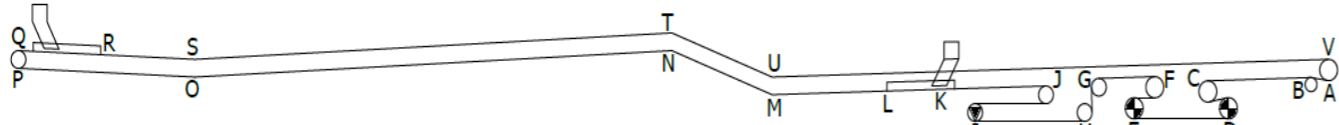


PRE-LIMINARY CONVEYOR DESIGN SUMMARY

GREENTECHNICAL			
Project:	Example	Conveyor Drawing:	PROPOSED CONVEYOR PROFILE WG25 (A0)
Project No:	Example	Design Date:	21/08/2014
Conveyor No:	FE-CON-01	Designer:	S. Roos
Description:	Dual Carry (750 mm Wide) Conveyor	Rev 1	



(ISO 5048)

MATERIAL PROPERTIES

Material	Bulk Density (kg/m <sup>3</sup> )	Moisture Content (%)	Max. Lump Size (mm)	Min. Lump Size (mm)	Angle of Repose (°)	Surcharge Angle (°)	% Fines
Kimberlite	2000	8	32	0	38	22	40

TENSIONS & POWER (RUNNING)

Te (kN)	T1 (kN)	T2 (kN)	T3 (kN)	Ttail (kN)	Drive Efficiency %	Absorbed Power (kW)	Installed Power (kW)	% Power used
120.43	143.56	23.12	83.34	84.76	93.1	361.30	440	82.1

DRIVE DETAILS

	Wrap Angle (°)	Motor kW	No. of Motors	Installed	Voltage	No. of Poles	Start-up Type	Start-up Factor
Primary Drive:	200	220	1	220	525	4	V.S.D.	1.2
Secondary Drive:	210	220	1	220	525	4	V.S.D.	1.2

BELT STORAGE

Total Length of Belting (m)	No. of Rolls Required	Max. Length of Spool (m)	Length of Belt per Fractional Roll (m)	Maximum Roll Mass (kg)	Core Diameter (m)	Outer Spool Diameter (mm)	No. of Splices
8241	22	377	330	6216	0.45	2.75	22

IDLER DETAILS

Idlers	Type:	Through (°)	Spacing (m)	Series	Roll Dia. (mm)	No. of Rolls	Bearing Type	Bearing Life (hrs)
Carry	Fixed Belt Saver	35	2.5	25	127	3 Roll	Deep Groove Ball	40000
Return	Fixed Belt Saver	35	2.5	25	127	3 Roll	Deep Groove Ball	40000
Impact	Garland	35	0.5	25	133	3 Roll	Deep Groove Ball	40000
Transition	Fixed Belt Saver	10 - 20 - 35	-	25	127	3 Roll	Deep Groove Ball	40000

TRANSITIONS

Trough (°)	Head - Lt (mm)	Tail - Lt (mm)
35	5670	2719

PULLEYS

No.	Description	Shell Diameter (mm)	Face Width (mm)	Bearing Centres (mm)	Shaft Diameter (mm)	Bearing Diameter (mm)	Bearing Type	Bearing Size	Hub Type	Shaft Extension Diameter (mm)	Shaft Extension (mm)	Shaft Material	Lagging Type	Lagging Thickness (mm)
1	HEAD	630	900	1350	180	160	SNL	3136	Turbine-End Discs	N/A	N/A	EN3A	Plain	12
2	SNUB	500	900	1350	140	125	SNL	528	Turbine-End Discs	N/A	N/A	EN3A	Plain	10
3	HIGH TENSION BEND	630	900	1350	180	160	SNL	3136	Turbine-End Discs	N/A	N/A	EN3A	Plain	10
4	PRIMARY DRIVE	630	900	1350	180	160	SNL	3136	Turbine-End Discs	N/A	N/A	EN3A	Ceramic	12
5	SECONDARY DRIVE	630	900	1350	180	160	SNL	3136	Turbine-End Discs	N/A	N/A	EN3A	Ceramic	12
6	LOW TENSION BEND	500	900	1170	110	100	SNL	522	Turbine-End Discs	N/A	N/A	EN3A	Plain	10
7	LOW TENSION BEND	500	900	1170	110	100	SNL	522	Turbine-End Discs	N/A	N/A	EN3A	Plain	10
8	LOW TENSION BEND	500	900	1170	110	100	SNL	522	Turbine-End Discs	N/A	N/A	EN3A	Plain	10
9	TAKE-UP	500	900	1170	110	100	SNL	522	Turbine-End Discs	N/A	N/A	EN3A	Plain	10
10	LOW TENSION BEND	500	900	1170	110	100	SNL	522	Turbine-End Discs	N/A	N/A	EN3A	Plain	10
11	TAIL	500	900	1170	140	125	SNL	528	Turbine-End Discs	N/A	N/A	EN3A	Plain	10
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

COUPLING DETAILS

High Speed Coupling				Low Speed Coupling			
Make	Size	Make	Size	Make	Size	Make	Size
N/A	N/A	Bikon	N/A				

SCRAPER & PLOUGH DETAILS

Scraper Type	Total Scrapers	Plough Type	Total Ploughs
Double Blade	1	V	2

Plough required at Take-up

COMMENTS

No-Antirollback Idlers required.  
No Dynamic Calculations required.  
  
Vertical curves required to be confirmed with detail design.

REVISION HISTORY

Rev1 - Start-up type updated to VSD.

CONVEYOR PARAMETERS

Horizontal Pulley Centres (m)	Net Lift (m)	Belt Speed (m/s)	Actual Belt Speed (m/s)	Production Rate (t/hr)	Design Capacity (t/hr)	Inclination of Belt (°)	Starting Time (s)	Coasting Time (s)	Material Overrun (kg)
3910.0	-5	3.000	TBC	650	650	0	24.95	16.44	1486

BELT DETAILS

Width (mm)	Type	Class	Belt Mass	Top Cover (mm)	Bottom Cover (mm)	Belt Grade	% Capacity	Bed Depth @ 100% Belt Capacity (mm)	100% Capacity (kg/m)
750	Steelcord	1250	17	5	5	N	48	152	125

GEARBOX DETAILS

Manufacturer	Description	Size	Required Ratio	Installed Service Factor	Bearing Life Type	Bearing Life (hrs)	Handing	External Cooling
TBC	Bevel Helical Reducers	TBC	16.985	TBC	L10ha23	100000	Left Handed - CCW	N/A

VERTICAL CURVES

Concave			Concave			Holdback Type	Rating (kN.m)	Supplier
Min. Required Radius (m)	Distance to Tangent (m)	Lift to Tangent (m)	Min. Required Radius (m)	Distance to Tangent (m)	Lift to Tangent (m)	Integral to G/Box	14.59	N/A
390.0	463	1	30.0	70	2	Min. Wrap Angle Required (°)	Holdback Sharing	Holdback Position
						180.00	Loadsharing	N/A

TAKE-UP DETAILS

Take-up Type	Falls @ Carriage	Falls @ Counter Weight	Travel @ Carriage (m)	Travel @ Weight (m)	Mass @ Counter Weight (kg)
Horizontal Gravity	2	2	9.50	4.00	5322

Winch Details

Type	Supplier	Size	Safe Working Load (tons)	Motor Voltage	Control Voltage	kW Rating
Electric/Manual	Dymot	5000S II	3.5	525	110	2.2

Sheave & Rope Details

Total No. of Sheaves	Sheave Bearing/Bush	Sheave/ Rope Size	Rope Length
6	Bearing	16 x 6 x 36 cons	TBC

