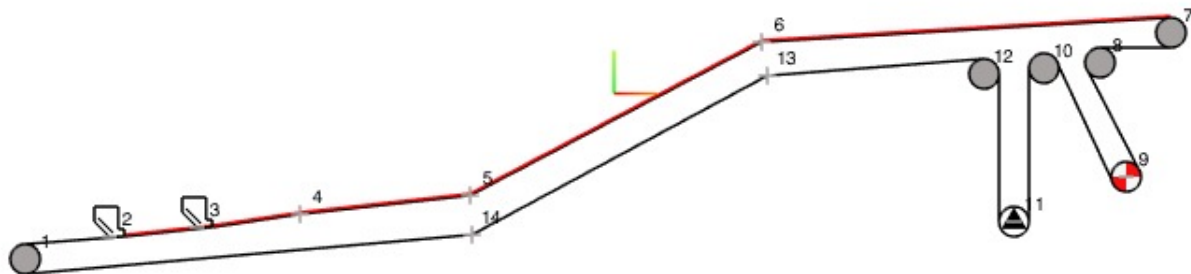


Project	Demo 02 Conveyor High Lift	Client	ABC Iron
Project No.	P9823	Prepared By	Peter Burrow
Conveyor No.	C223	Design Date	01 Oct 2019



C223



Conveyor Material

Material	Iron ore, Lump & Fines Product	Surcharge Angle	15 °
Low Bulk Density	1860 kg/m3	Angle of Repose	34 °
High Bulk Density	2400 kg/m3	Material Lump size	31.5 mm

Conveyor Data

Conveying Distance	287.57 m	Design Capacity	9400 tonnes/hr
Nett Lift / Lower(-)	33.44 m	Belt Speed	4.3 m/s

Belt Details

Belt Width	1800 mm	Calculated Belt % Full	93.85 %
Belt Class & Run Safety Factor	ST-1800 7.59	Top Cover Thickness	22 mm
Belt Rated Tension	253 kN/m	Bottom Cover Thickness	7 mm
Belt Total Length	628.8 m	Belt Mass	81.7 kg

Belt Tensions and Power Calculations ISO

Effective Tens. Fully Loaded	296.76 kN	Belt Power - Empty Belt	106.22 kW
Maximum Tension Tmax	427.08 kN	Belt Power - Inclines Loaded	1274.77 kW
Minimum Tension Tmin	119.29 kN	Belt Power - Declines Loaded	230.83 kW
Sag Tension	1.1% 76.78 kN	Belt Power - Fully Loaded	1276.05 kW
Takeup Type	Vertical Gravity	Drive Efficiency	95.00 %
Takeup Mass	26700 kg	Absorbed Power Fully Loaded	1343.23 kW
Takeup Pulley Belt Tension	130.92 kN	Installed Motor Power	1260 kW

Carry and Return Idlers

Carry Idler Trough Angle	35 °	Return Idler Trough Angle	0 °
Carry Idler Spacing	1 m	Return Idler Spacing	3 m
Carry Idler No Rolls x Dia	3 x 152 mm	Return Idler No Rolls x Dia	1 x 152 mm

Dynamics and Miscellaneous Data

Startup Factor - Fully Loaded	122.00 %	CEMA Temperature Factor Kt	1
Startup Factor - Empty	122.00 %	Total Braking Torque LSS	26.50 kNm
Starting Time - Fully Loaded	34.66 sec	Stop Time - Loaded, Braking	4.26 sec
Starting Time - Empty	2.33 sec	Stop Time - Loaded, Coasting	5.01 sec

Designers Comments

C223 at 9400tph capacity existng case.