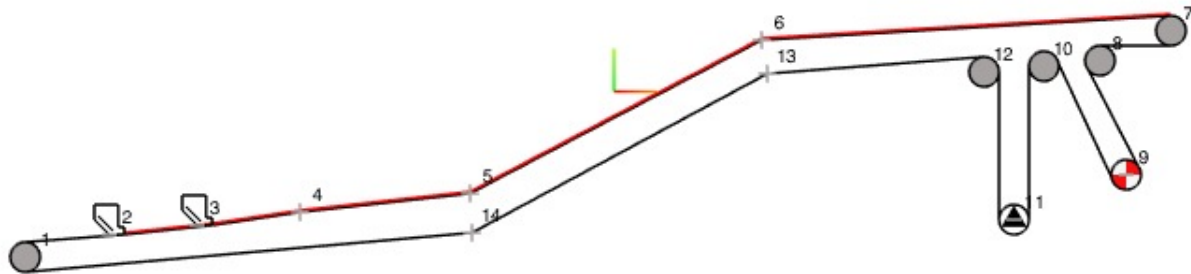


Project	Demo 02 Conveyor High Lift	Client	ABC Iron
Project No.	P9823	Prepared By	Peter Burrow
Conveyor No.	C223	Design Date	01 Oct 2019



C223



System Masses		Input Data	
Mass of Belt	51,371 kg	Belt Speed	4.3 m/s
Mass of Material	174,621 kg	Belt Rated Tension	253 kN/m
Carry Idler Equivalent Mass	8,208 kg	Allowable Belt Start Tension Rise	150 %
Return Idler Equivalent Mass	3,508 kg	Drive Inertia	170.43 kg-m ²
Pulley Equivalent Mass	9,717 kg	Total Braking Torque	26.50 kNm
Drive Equivalent Mass	98,069 kg	Start Up Factor - Full	122 %
Total System Equivalent Mass	345,494 kg	Start Up Factor - Empty	122 %
Conveyor load inertia at HSS	600.41 kgm ²		
Tensions and Accelerating Forces		Installed Power	1260 kW
Effective Tension Fully Loaded	296.76 kN	Drive Efficiency (Average)	95.00 %
Effective Tension Empty	24.70 kN	Stopping Times & Deceleration Rates	
Total Braking Force	51.76 kN	Stopping Time Loaded Braking	4.26 s
Tension Available to Accelerate conveyor		Stopping Time Loaded Coasting	5.01 s
Accelerating Tension - Loaded	42.86 kN	Stopping Time Empty Braking	9.61 s
Accelerating Tension - Empty	314.91 kN	Stopping Time Empty Coasting	29.74 s
Starting Times & Acceleration Rates		Deceleration - Loaded Braking	-1.01 m/s ²
Starting Time - Fully Loaded	34.66 s	Deceleration - Loaded Coasting	-0.86 m/s ²
Starting Time - Empty	2.33 s	Deceleration - Empty Braking	-0.45 m/s ²
Acceleration Rate - Loaded	0.12 m/s ²	Deceleration - Empty Coasting	-0.14 m/s ²
Acceleration Rate - Empty	1.84 m/s ²	Stopping distances & Discharge Volumes	
Belt Tension Rise Starting / Braking		Stopping Distance Loaded Braking	9.16 m
Max Belt Tension Start / Brake	457.06 kN	Stopping Distance Loaded Coasting	10.76 m
Belt Width	1800 mm	Stopping Distance Empty Braking	20.66 m
Max Belt Tension / Width	253.92 kN/m	Stopping Distance Empty Coasting	63.95 m
Belt Rated Tension / Width	253 kN/m	Discharge Mass Braking	5,565 kg
Actual Max Tension Start/Brake	100.4 %	Discharge Mass Coasting	6,536 kg
Allowable Tension Rise Start/Brake	150 %	Discharge Volume Braking	2.99 m ³
		Discharge Volume Coasting	3.51 m ³