T.CARSON AND COMPANY
"CONVEYING A WORLD OF SOLUTIONS"

Conveyor Belt Data Specification Sheet

Customer ______________________ Date ____________

Location ______________________ Conveyor ____________

DATA AND SPECIFICATIONS

BELT WIDTH (INCHES) ____________

LENGTH (FEET) ____________

BELT LENGTH ____________

Conveyor Centers ____________

Horizontal Centers ____________

ELEVATION

Lift (feet) ________ or Drop (feet) ________

Slope (Degrees) ____________

BELT SPEED (FT/MIN) ____________

CAPACITY (TONS/HR) ____________

Average ____________

Maximum ____________

PULLEY DIAMETERS (INCHES)

Head ____________

Drive Snub ____________

Tail ____________

Take Up ____________

Other ____________

BELT SPLICE . . . VULC (V) or MECH (M) ______

DRIVE DETAILS

Type: Single (S), Tandem (T) Dual (D) ________

Motor Horsepower ________

Pulley Surface: Bare (B) or Lagged (L) ________

Belt Wrap (Degrees) ________

Location from Head (feet) ________

MATERIAL INFO

Type ____________

Weight (PCF) ________

Maximum Lump Size (Inches) ________

Temperature (Degrees F) ________

Oil : None (N), Some (S), Much (M) ________

Drop to Belt (feet) ________

IDLERS

Degree Trough ________

Roll Diameter (inches) ________

Trough Spacing (feet) ________

TAKE UP

Type: Auto (A) or Manual (M) ________

Movement (feet) ________

Location from Head (feet) ________

CALCULATIONS

MAXIMUM OPERATING TENSION (lbs) ____________

UNIT OPERATING TENSION ____________

HORSEPOWER REQUIRED ____________

LOAD SUPPORT. Q (lb/ft) ____________

Wrap Factor, K ____________

COMMENTS

PREVIOUS BELT SPEC ______________________

PREVIOUS BELT FAILURE ______________________

OTHER ______________________

BELT RECOMMENDATIONS

Short method for belt selection

The actual motor horsepower should be used in the formula below to determine the maximum tension that could affect the belt.

To use this method we must have all of the information given in the sample problem below:

Known data

Belt width — 42″

Material — 10″ limestone — 100 pcf 4 ft. drop at load point

Capacity — 1500 tons per hour

Speed — 400 ft. per minute (if unknown, calculate speed as explained on page 29.

Motor — 100 horsepower

Single pulley drive, lagged and snubbed (210° wrap).

Gravity takeup

Vulcanized splice

Pulley diameters — 24″ head
20″ tail
18″ takeup

Note: assume total gear, belt, or roller chain reduction losses equal 10%. Horsepower to drive pulley therefore equals 0.90 x motor horsepower.

Formula and Application	Source of Information
1. Effective tension (T_E) $T_E = \dfrac{0.90 \times \text{Motor HP} \times 33000}{\text{Belt Speed}}$ $= \dfrac{0.90 \times 100 \times 33000}{400}$ $= 7425$ lb.	Motor HP = 100 Speed = 400 ft. per min.
2. Slack side tension (T_2) $T_2 = KT_E$ $= 0.38 \times 7425$ $= 2822$ lb.	K (Table 2, Pg. 13) = 0.38
3. Tight side tension (operating tension) T. $T_1 = T_E + T_2$ $= 7435 + 2822$ $= 10247$ lb.	
4. Unit operating tension (T_U) $T_U = \dfrac{T_1}{\text{Belt width}}$ $= \dfrac{10247}{42}$ $= 244$ lb. per inch belt width	Belt width (given data) 42″