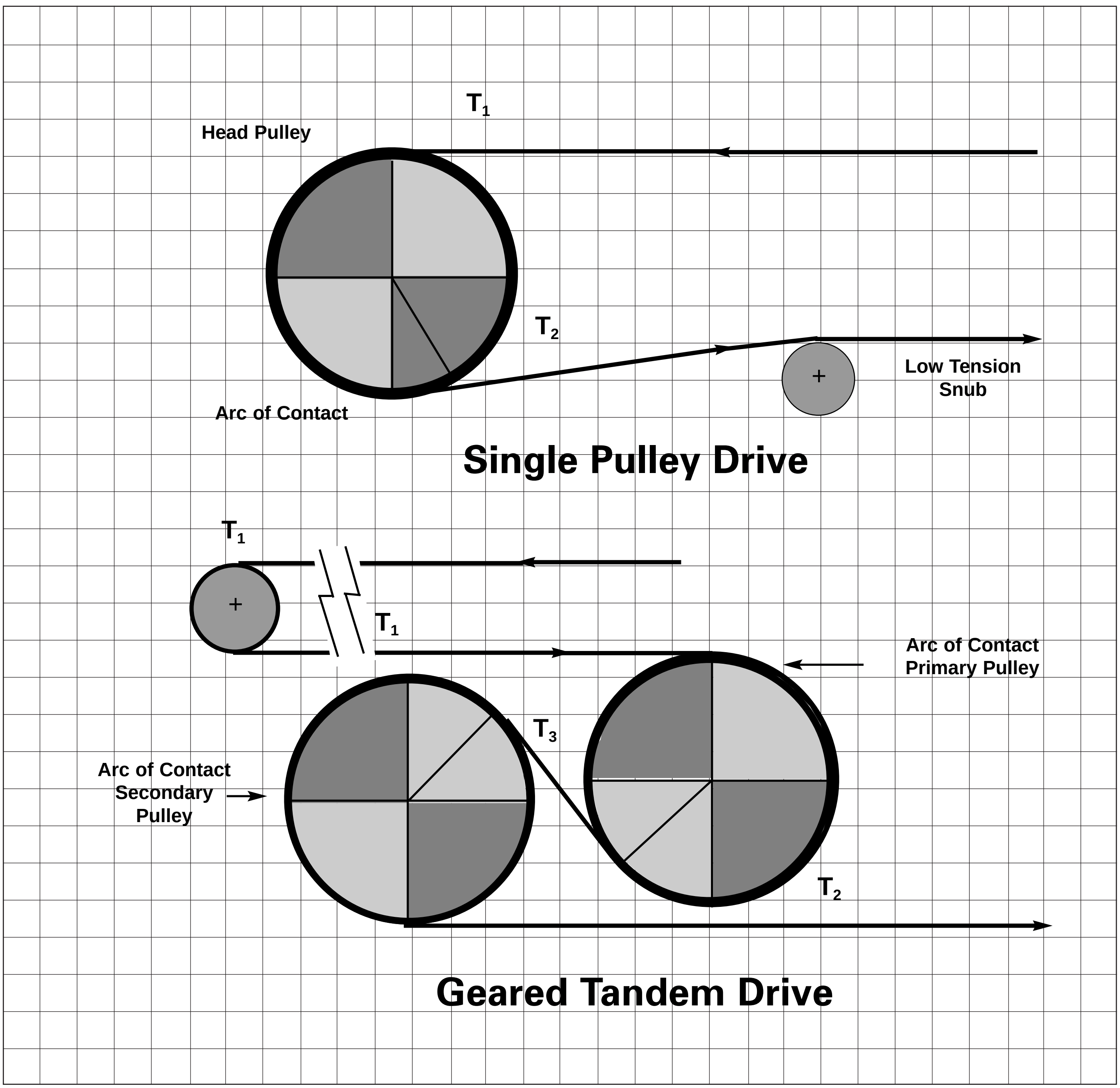
FENNER DUNLOP
CONVEYOR BELTING

Selecting the Proper Conveyor Belt



Selecting the Proper Conveyor Belt

Selection of the best conveyor belt construction . . .carcass . . . and cover . . . is based on the specific requirements of the particular conveyor system, the material being conveyed and the conditions under which it must operate, as well as its "cost effectiveness." Some primary considerations involved are:

1. Maximum Operating Tension (Working Tension)
2. Minimum Pulley Diameters
3. Troughability, Transverse Rigidity
4. Load Support
5. Transition Distance
6. Impact Rating
7. Covers, and
8. Cost per unit handled

Should this belt be a replacement belt, an examination of the old belt and a thorough study of the conveyor system itself can pay off in longer belt life and reduced maintenance cost.

Questions, such as the following, should be raised:

1. How did the old belt fail?
2. How long did it last?
3. What type carcass? Cover gauge?
4. Have operating or environmental conditions changed?
5. In view of the past history, what changes in belting specifications are recommended?

Maximum Operating Tension

Maximum operating tension is generally characterized in terms of pounds per inch of width and should be matched as closely as possible to the PIW working strength of the belt constructions under consideration. The working strengths of specific Georgia Duck belt constructions can be found in the appropriate Georgia Duck brochure or belt specification data sheets.

Maximum operating tension is a prime consideration in selecting the right belt . . . this being the highest tension occurring in any portion of the belt, on the conveyor system, under operating conditions. The conveyor system applies an appropriate amount of power to the belt in order to drive the belt at design speed. This power must be sufficient to accelerate and drive the empty conveyor, to move the material horizontally and vertically, all within the design of the conveyor system . . . and to overcome all flexural, inertial, frictional and gravitational forces operating on the system.

These aforementioned forces create tension in the belt. The amount of tension created can be computed in the time honored fashion by careful consideration of each of these forces; however, there is a "Quick Method" which can be used and which generally proves satisfactory. Initially, let us consider effective tension.

Effective tension (T_e) is that tension created in the belt when sufficient power is applied to the system to drive the conveyor belt at a desired speed. This relationship can be derived from a knowledge of motor horsepower and belt speed as follows:

$$T_e = \frac{Hp \times 33{,}000}{\text{belt speed (in feet per minute)}}$$

(Horsepower [Hp] usually refers to the power actually applied to the belt. If, however, we simply use the nameplate horsepower rating of the motor in the system, we automatically build in a convenient safety factor, providing the motor efficiency is less than 100%).

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Belt conveyors utilize a friction drive and accordingly, when power is applied to the drive system, one run of the belt will experience a higher tension than the other. Let us call this the tight side tension (T_1) and the other run, the slack side tension (T_2). Upon installation, a belt is normally tensioned until the belt fails to slip with the system fully loaded.

The amount of slack side tension required to prevent slippage at the drive is a function of several constant factors:

1. The coefficient of friction between the drive system and the belt (whether pulley is lagged or not).

2. Belt wrap at the drive, and type of drive. Type of drive is important, since this has a direct bearing on how the motor applies driving force to the belt. This has a direct impact on the maximum tension to which the belt will be exposed. (See illustrations on the following page).

3. Type of take-up (whether screw or gravity).

The ratio of slack side tension (T_2) and effective tension (T_e) can be represented by a constant.

$$K = \frac{T_2}{T_e} \qquad \textbf{Therefore; } T_2 = KT_e$$

For convenience sake, a “K factor” table has been derived which takes these factors into consideration. This table can be seen below.

Maximum operating tension (tight side tension) can now be computed by $\mathbf{T_1 = T_e + T_2}$ times the starting factor (1.5, 2.0, 3.0 etc.). Electric motors may have very high starting torques. CEMA recommends the use of a starting factor (multiplier) to compensate in calculations.

In the “quick method” we equate “maximum operating tension” to “tight side tension” since we are using a generous safety factor-total motor horsepower.

K Factor Table

Angle of Belt Wrap at Drive	Type of Drive	Screw Takeup		Counter Weighted or Gravity Take-up	
		Bare Pulley	Lagged Pulley	Bare Pulley	Lagged Pulley
180°	Plain	1.20	.80	.84	.50
200°	Snubbed	1.00	.70	.72	.42
210°	Snubbed	1.00	.70	.67	.38
220°	Snubbed	.90	.60	.62	.35
240°	Snubbed	.80	.60	.54	.30
380°	Tandem or Dual	.50	.30	.23	.11
420°	Tandem or Dual	-	-	.18	.08

For belts exposed to the weather and wet operating conditions, the K factor in the calculations should be increased by up to 50% to help prevent slippage. By increasing the K factor, the slack side tension (T_2) will be increased, thereby increasing the counterweight (Cwt).

For conventional conveyors designed with a gravity take-up located near and behind the drive area, the counterweight (Cwt) has a direct relationship to the slack side tension (T_2). The amount of Cwt can be expressed as:

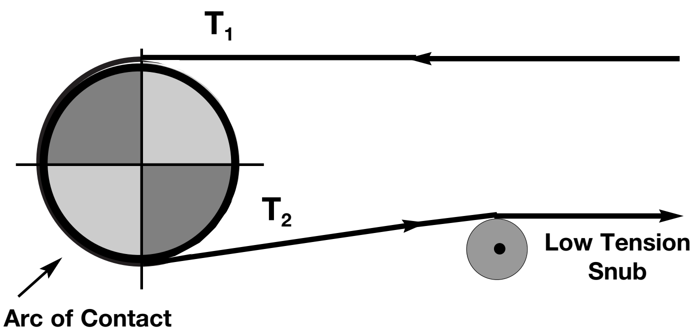
$Cwt=2T_2$

This Cwt is the total amount of counterweight needed in the system to maintain proper conveyor tensions. It should be noted that this total also includes the weight of the take-up pulley, the take-up weight box, and appropriate hardware associated with the gravity take-up.

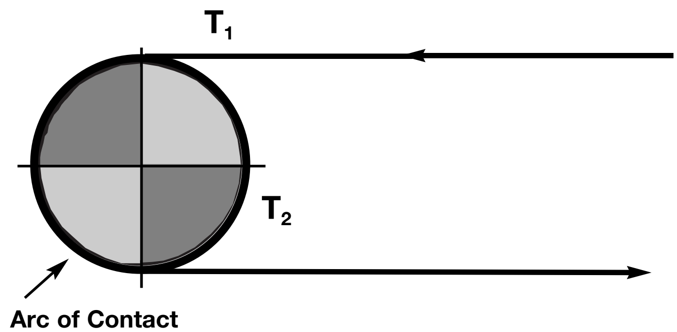
As the gravity take-up location moves toward the tail area and further away from the drive, the amount of take-up weight will increase. This increased take-up weight will be needed to overcome the return run friction factors between the drive and the take-up location.

The four drive systems shown below are only four of the many drive arrangements that can be constructed depending on the general conveyor profile.

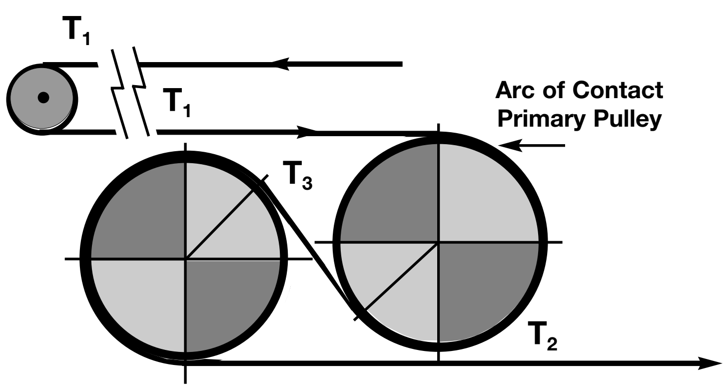
Single Drive, with snub



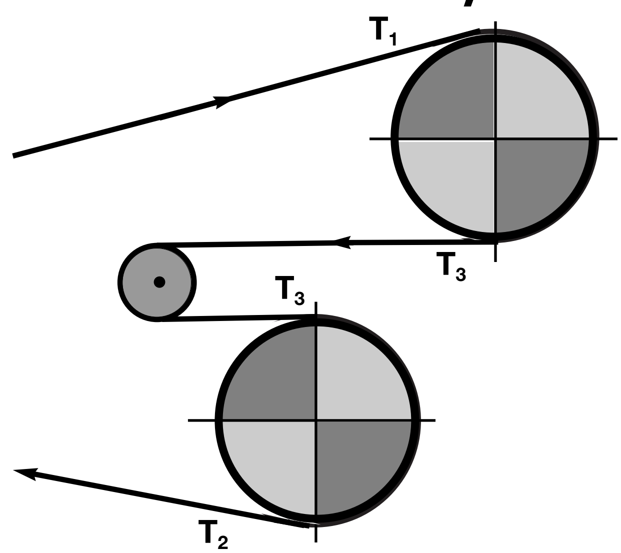
Single Drive, no snub



Geared Tandem Drive

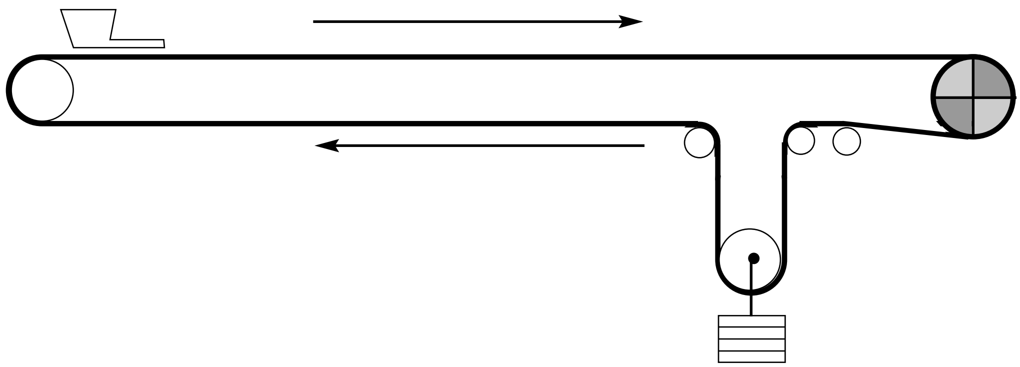


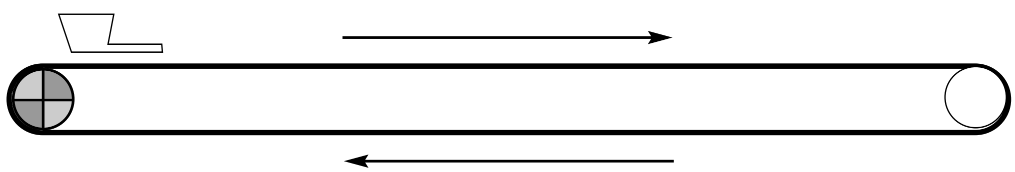
Dual Drive with Primary Drive as Head Pulley

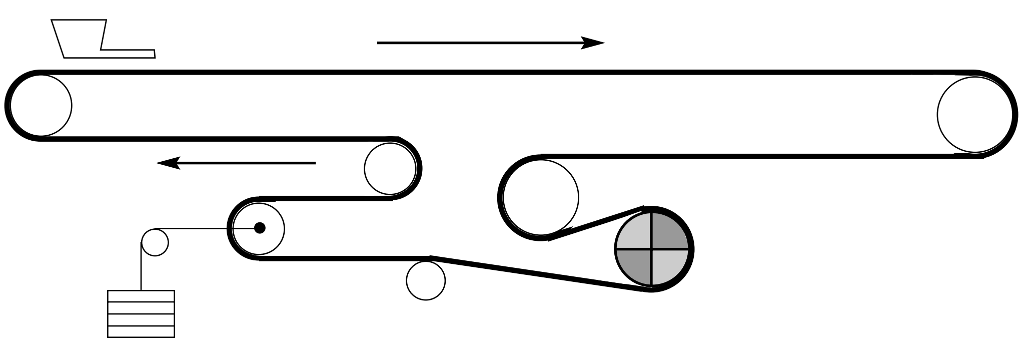


The following pages illustrate simple drawings of various conveyor profiles showing the drive located at the head, the tail, or on the return run.

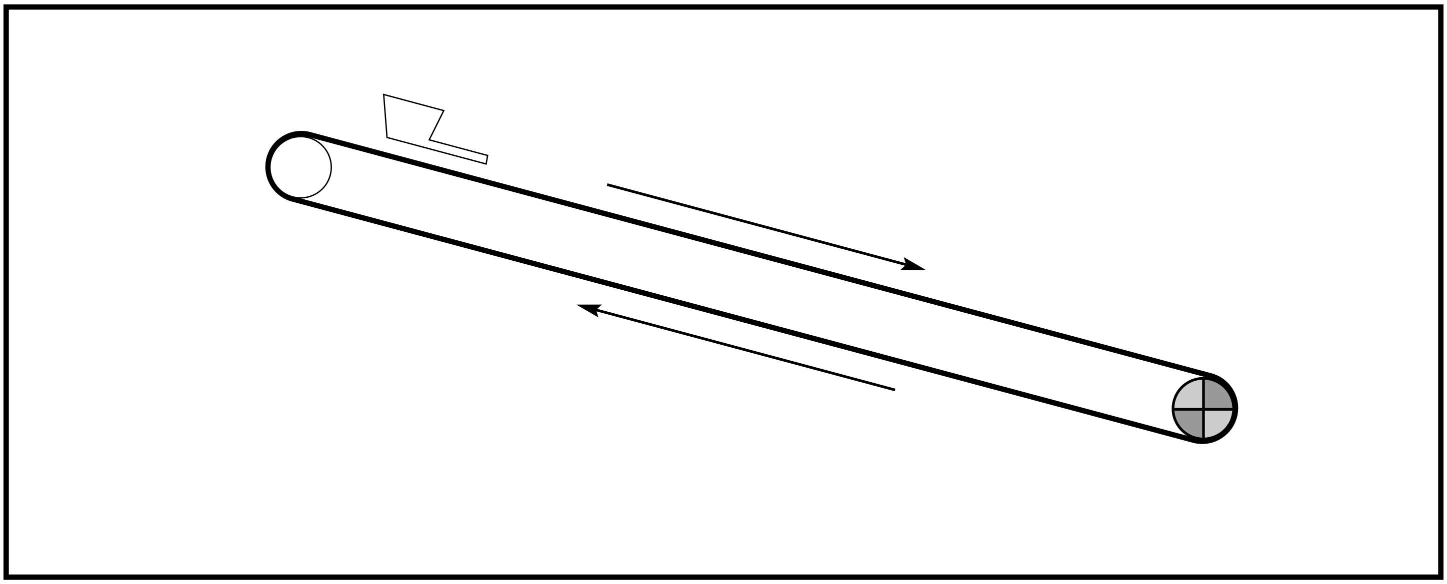
Horizontal Conveyor Profiles

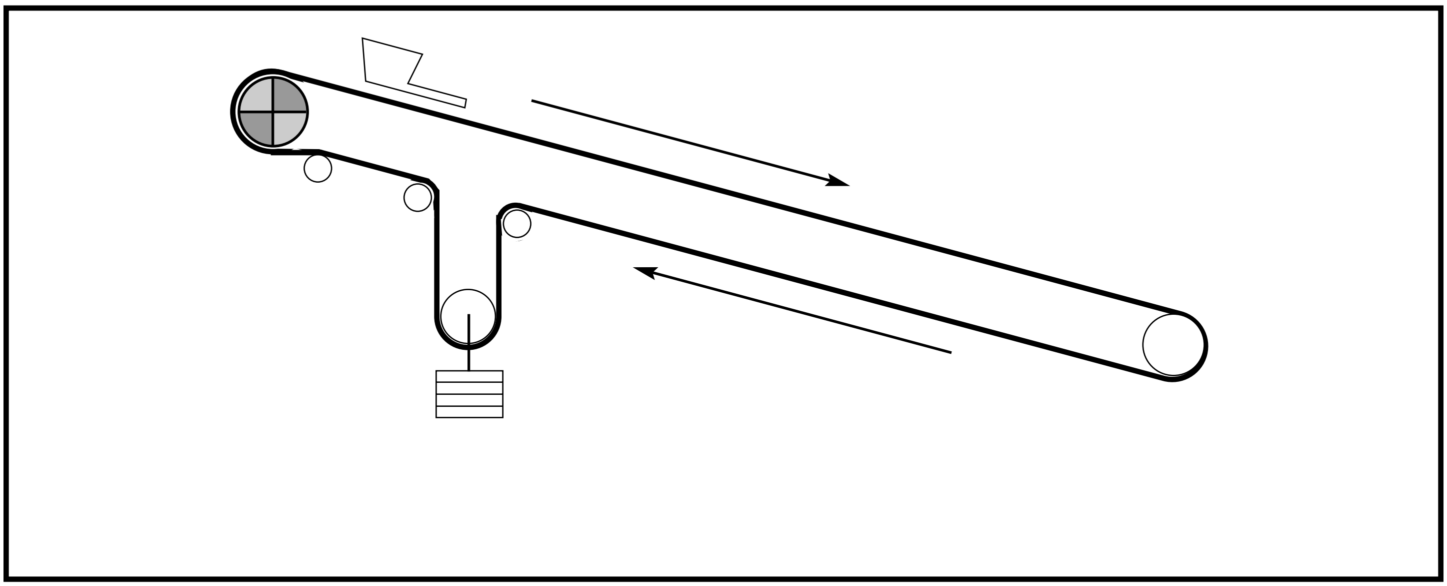


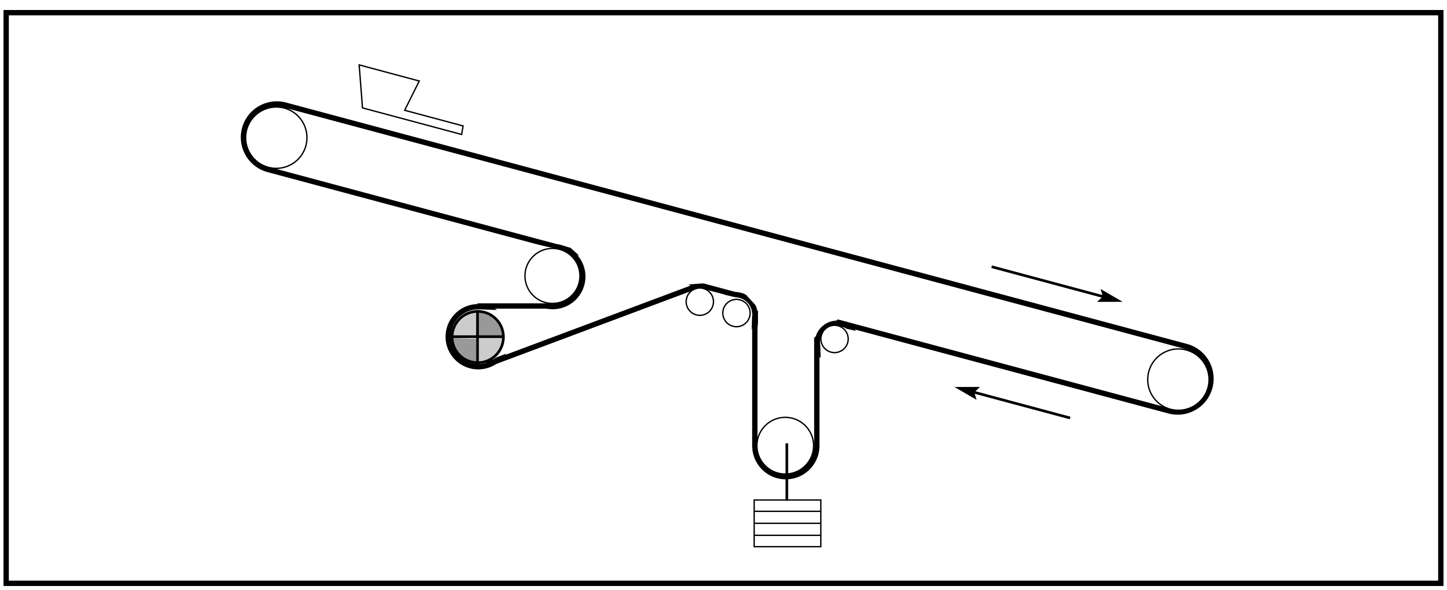




Decline Conveyor Profiles







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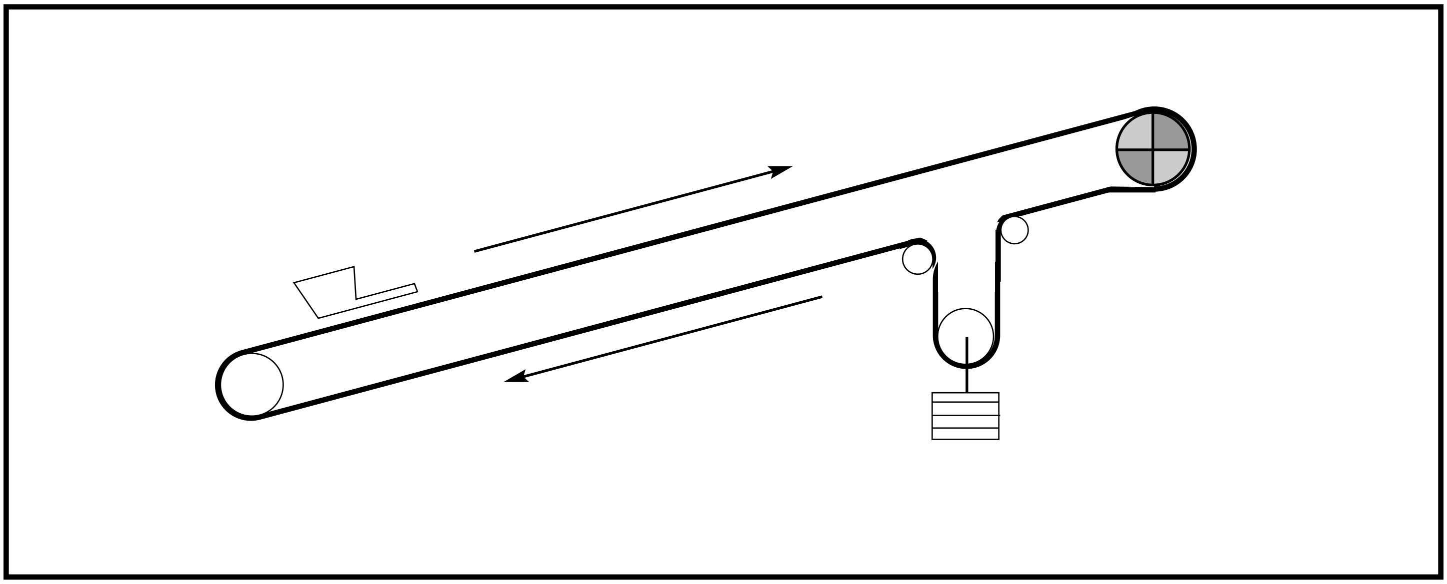
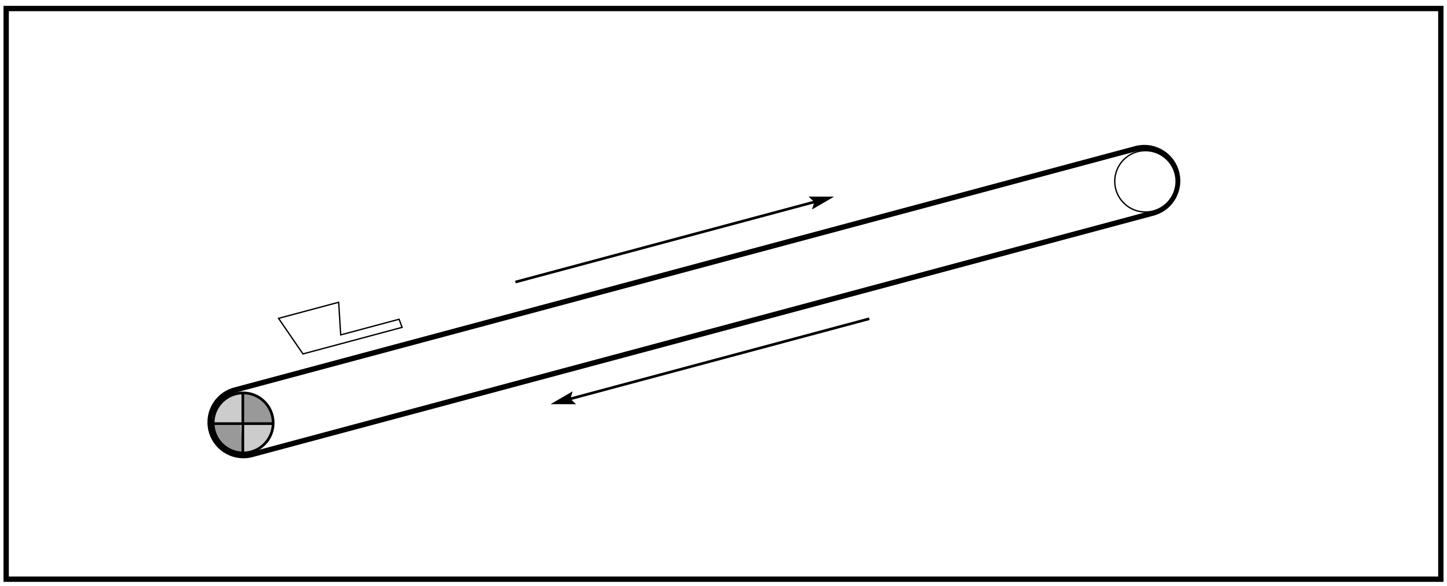
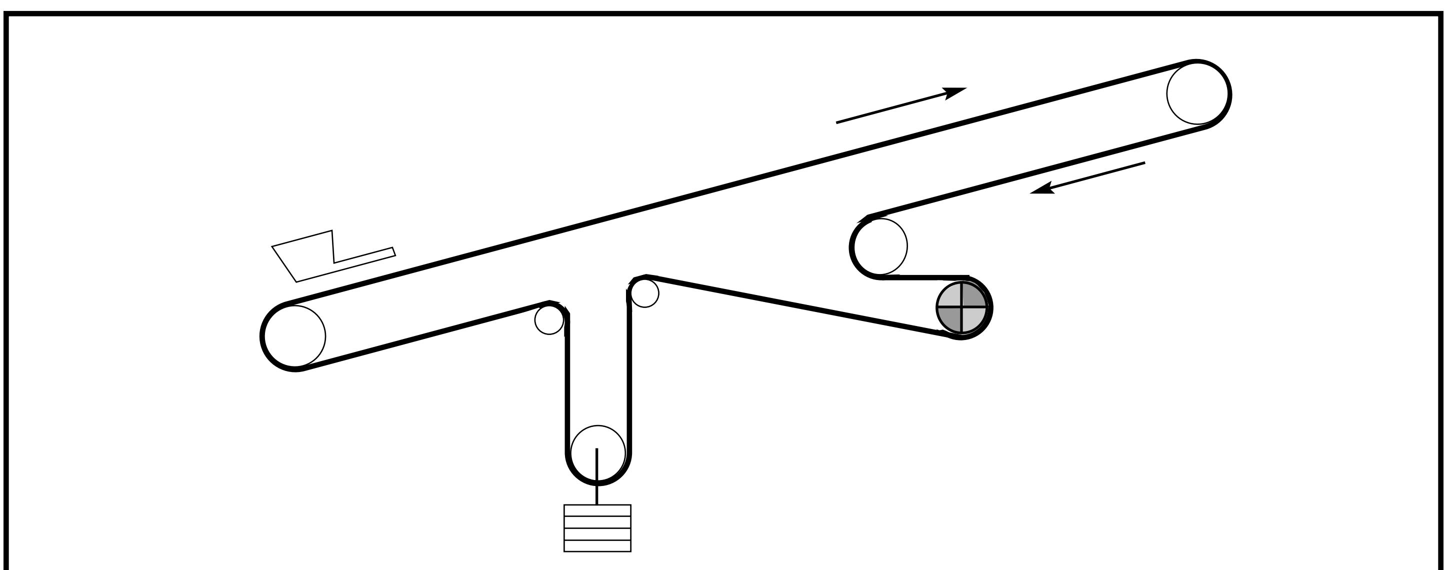
Incline Conveyor Profiles

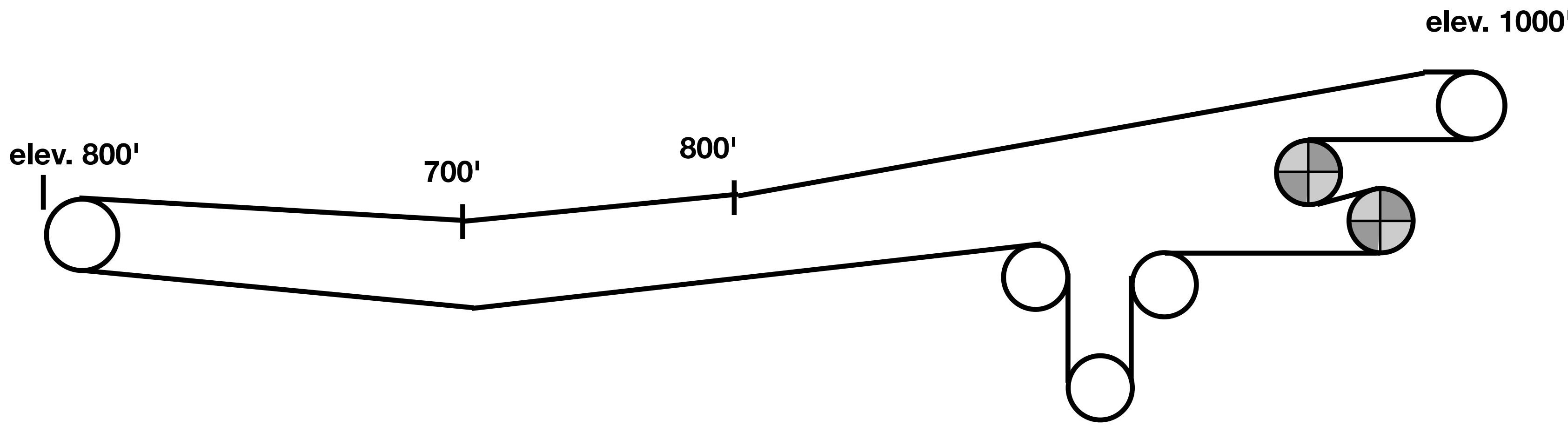






Overland Conveyor, Long Centered

CAUTION: Several calculations with fully loaded, partially loaded, on inclines and then on declines must be done with Georgia Duck's "Point-to-Point" program. This program is used to determine tensions at various points along the conveyor, including curve radii.



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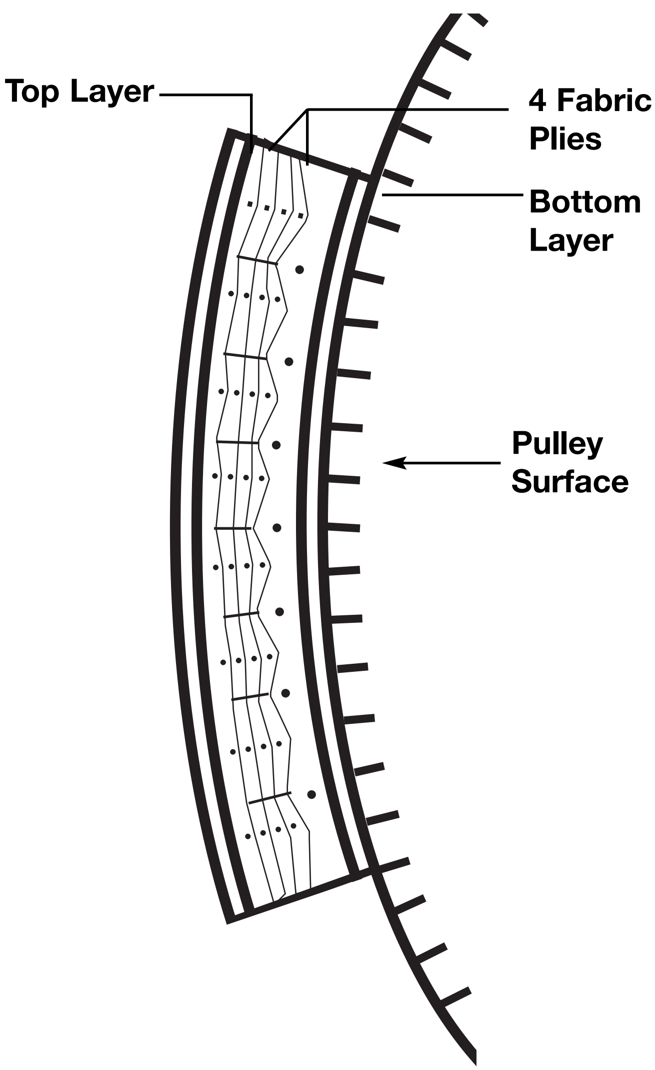
The preceding conveyor profiles offer many challenges for the conveyor engineer to establish conveyor tensions at various points along the belt path. This is particularly true when dealing with multiple drives, overland conveyors, reversing conveyors and regenerative conveyors. If a more accurate operating tension computation is desired, a full computerized belt analysis is available from your Georgia Duck representative.

Georgia Duck representatives also have lap top computers to offer instant assistance with engineering calculations on the more common conveyor profiles.

A computer program for engineering calculations for bulk haulage, elevator, and package handling conveyors is also available for Georgia Duck associates. These programs are user friendly and can offer numerous benefits in problem solving.

Buckling of Conveyor Belt by Bending



Buckling of Inner plies at the pulley

Minimum Pulley Diameter

The smallest pulley diameter the belt will encounter in the conveyor system is a primary consideration in selecting the proper conveyor belt. It is important that as the belt wraps around that pulley, under tension, the stress in the belt is below the fatigue limit of the bond between the belt components. Overstressing the belt, particularly the bond between the individual plies and the skim, can result in ply separation and premature belt failure . . . especially at the belt splices. In some applications, due to system limitations, smaller than recommended pulleys may be used. This will affect the service life of the belt and will result in more frequent splice replacements. A given belt construction has a characteristic "flexibility" in the lengthwise direction. Our brochures and data sheets give recommendations based on calculated tension at the pulley location.

Troughability

Transverse flexibility or rigidity of the belt is another significant consideration. It is important that the belt trough properly. The empty conveyor belt must make sufficient contact with the center roll in order to track properly. In the example shown below, the top belt is too stiff to contact the center rolls, and therefore, will wander from side to side with the possibility of causing considerable damage to the belt edges . . . and to the structure. The bottom belt shows sufficient contact with the center roll and is the condition we strive for. The "troughability table" in the specification pages tells you that a given belt will trough in this fashion, providing belt width exceeds a given dimension based upon the troughing angle of the idler systems.

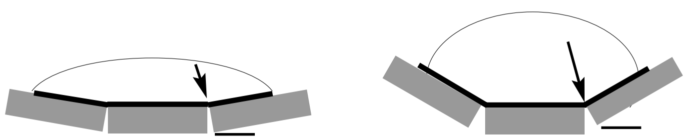
In unit handling, a high lateral stiffness may be desirable to prevent side load deflection.

Incorrect Troughing

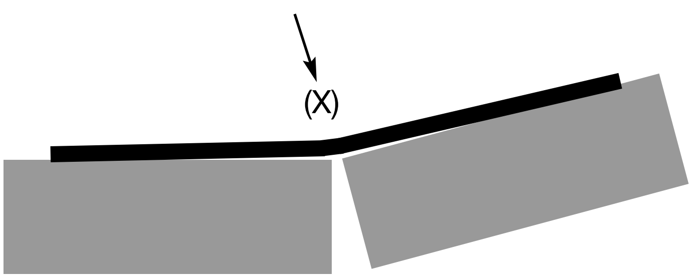
Correct Troughing

Load Support

Most conveyor belts carrying "freely flowing" materials operate over troughed idlers. The troughing angle of these idlers will usually vary from 20 degrees to 45 degrees . . . and beyond. Obviously, this trough-angle affects the belt by creating a line along which the belt is constantly flexed. The greater the trough angle, the greater the flexing action. When the belt is fully loaded, the portion of the load (X) directly over the idler junction gap forces the belt to flex to a shorter radius. The heavier the load, the smaller the radius through which the belt must flex. Further, at higher troughing angles (like 45 degrees), gravitational force is exerted on the portion of the belt in contact with the wing idler. All these forces are trying to pull that belt down into that idler junction gap.

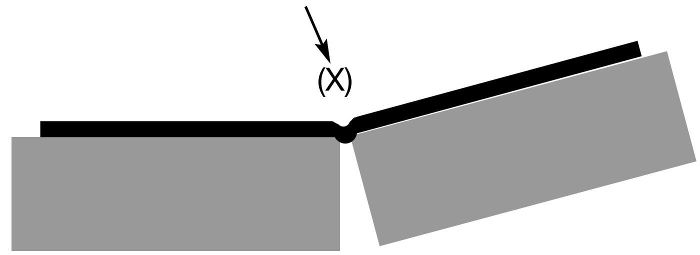


The above illustrations show the necessity of flexibility at different troughing angles.



The above illustration demonstrates satisfactory belt design, in that it bridges the gap properly under full load.

In the illustration below, the weight of the load has forced the belt tightly into the gap, causing the possibility of premature failure.



Consequently, consideration must be given to designing the belt with sufficient transverse rigidity and flex life so that for a given idler angle and load weight, premature belt failure will not occur. This is done by designing the belt with sufficient transverse stiffness to "bridge" the idler junction gap with a satisfactory radius. In unit handling stiffness laterally is desirable where high volume sort-on / sort-off loads occur.

This belt characteristic is detailed in the "load support" or transverse rigidity section of the specification sheet or brochure. The load support number refers to the maximum width possible for a given belt construction at a given troughing angle and a material of a specific density. The TR number is a direct comparison of belts.

Note: *Single-plied belt constructions do well on idler sets up to and including 35 degrees. Plied constructions are generally thicker for a given belt tension rating, and therefore, appear to perform better on 45 degree troughing idler sets.*

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Transition Distance

Transition distance is defined as the distance from the center line of the first fully troughed idler roll to the center line of either the head or tail pulley. If you just consider the geometry of the situation, you will realize that the edge of the belt is being stretched since it is following the hypotenuse of a right triangle. The distance from the pulley to the top of the wing idler is certainly greater than the distance from the pulley to the center roll of the troughing set. If the transition distance is too short, the edge of the belt can be over-stretched. This will adversely affect the load support and belt life.

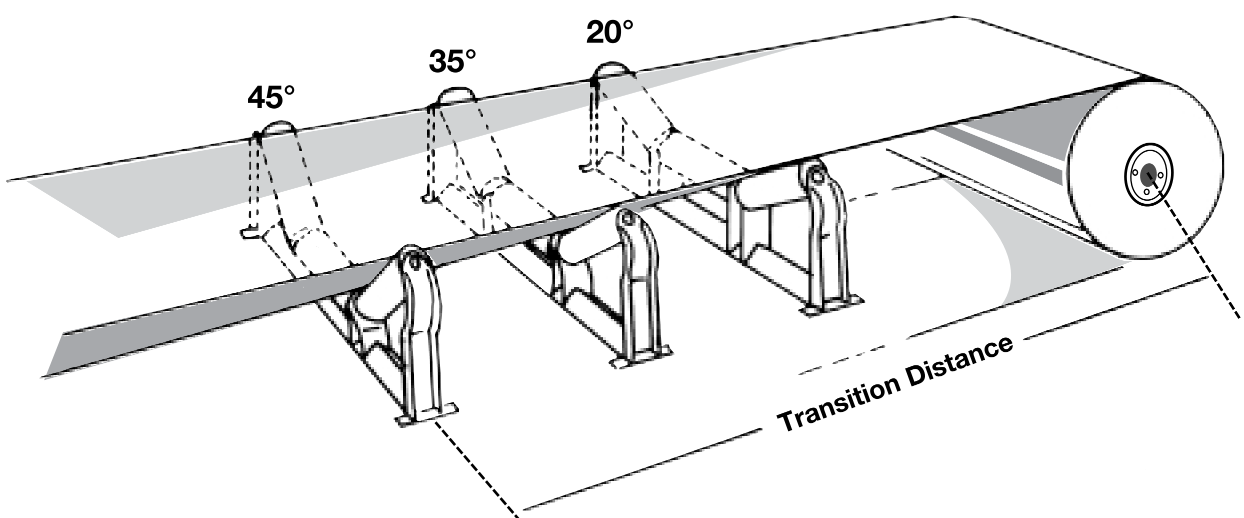
Impact Rating

Impact rating of the belt being selected needs to be considered relative to the material to be handled and the manner in which it will be loaded onto the belt. It is not unusual for a severe impact requirement to dictate a belt construction with a maximum working tension higher than otherwise required. Please consult Georgia Duck for assistance in belt selection of impact applications.

Conveyor Takeup Requirements and Belt Stretch Characteristics

Conveyor takeup requirements and belt stretch characteristics need to be matched. If the system has limited takeup capacity (say 1 1/2 percent), using a high-stretch belting product like a nylon carcass belt could result in a continuous and excessive maintenance problem. Care should be taken to match belt modulus to takeup capabilities.

More information on transition distances can be found in the Heavy Duty Conveyor and Elevator Belting brochure.

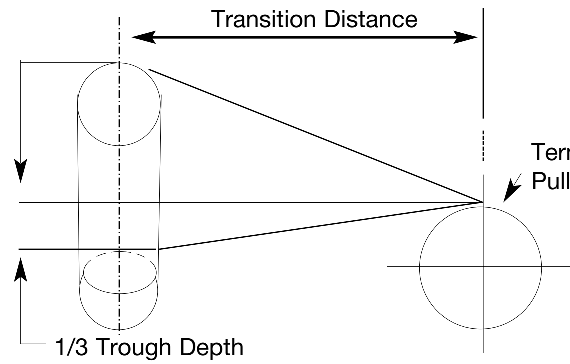


The transition tables to the right show the distance required between terminal pulleys and the first 20° Idler set along with the distances required for the first 35° Idler set, and the distances required for the first 45° Idler set.

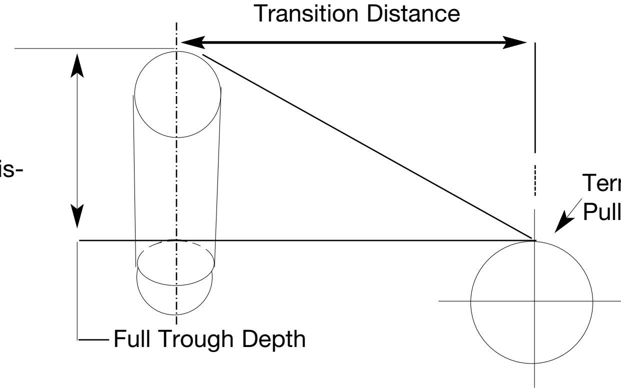
b=Belt width (Transition distance will be in the same units as those used for b)

The tables are for loading at 1/3 trough depth and full trough depth.

Recommended Minimum Transition Distances



Idler Angle	% Rated Tension	Fabric Belts
20°	Over 90 60 to 90 Less than 60	1.2b .9b .8b
35°	Over 90 60 to 90 Less than 60	2.1b 1.4b 1.2b
45°	Over 90 60 to 90 Less than 60	2.6b 2.0b 1.6b



Idler Angle	% Rated Tension	Fabric Belts
20°	Over 90 60 to 90 Less than 60	1.8b 1.4b 1.2b
35°	Over 90 60 to 90 Less than 60	3.2b 2.4b 2.0b
45°	Over 90 60 to 90 Less than 60	4.0b 3.0b 2.4b

Cover Selection

Selecting Rubber Covers

Cover compounds come in many varieties, and are selected to be compatible with the service they are going to perform and the atmosphere in which they are going to be working. A list of common cover compounds is shown in the "Cover Compound Properties" list.

In addition to selecting the correct cover compound, we must determine proper thickness. Accordingly, a consideration of "frequency factor" is in order.

Belt cycle frequency increases with the increased belt speed and decreases as the conveyor length increases. The more often a given section of the belt carries a load, the faster the wear rate will be. The cover of a 50 ft. belt carries twice as much material at 400 ft. per minute as it does at 200 ft. per minute. By the same token, at the same speed, the 50 ft. belt carries a load twice as often as does a 100 ft. belt. "Frequency Factor" can be calculated as follows:

Frequency Factor = Belt length in feet, divided by the Belt speed in Ft. /Minute

The chart on the next page will help in selecting the amount of carry cover needed based on frequency factor, cover grade, lump size and product properties.

Selecting PVC Covers

In the case of a high-performance, solid woven / PVC conveyor belt, this involves a section of belt thickness. Since the "covers" of a solid-woven PVK belt consist of PVC and carcass face yarns, it is necessary to increase belt thickness in order to increase "cover thickness", unless heavy-covered PVC is ordered, such as 2 mil X 2 mil.

Generally, a standard PVK construction is equivalent to a plied rubber belt of like operating tension with a 1/16" cover. If the application requires heavier covers, then we would increase the PVK belt thickness by 1 factor for each 1/8" of additional rubber in the case of the rubber construction.

In the case of single-ply, straight-warp rubber belt constructions, it is wise to use balanced covers. Further, at no time should one cover be more than twice the thickness of the other. Belts where this ratio is exceeded are subject to "cupping".

Cover Texture/Profile

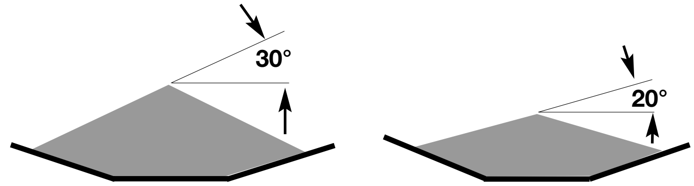
Textures applied to the belt surface can overcome natural limitations of the elastomers involved and provide for appropriate gripping action. Currently, there are many textures and cleat patterns available which do an exceptional job of handling freely flowing materials, such as wood chips, grain, sand, aggregate and fertilizer. They will enable you to handle inclines, limited only by the system and the surcharge angle of the material itself.

Roebling cloth "rough-top" patterns are also available in both rubber and PVC constructions which can handle boxes, bags, package products and lumber on normal inclines up to 30 degrees (and more, in special cases).

Surcharge Angle

If a "freely flowing" material (think of crystals of salt) is dribbled onto a stationary, horizontal surface, the top of the surface of this freely formed pile forms a unique angle to the horizontal. This angle is called "the angle of repose".

If we now "jiggle" or vibrate this pile, as on a conveyor belt, the pile tends to flatten out. Depending on the characteristics of the material and the type and amount of movement and vibration (that is, the individual conveyor system), this angle will decrease, anywhere from 5° to as much as 20°. The resultant angle is known as the angle of surcharge. (It is important to note that the angle of surcharge will vary from conveyor to conveyor).



At rest
With vibration

RECOMMENDATIONS FOR COLD BULK MATERIALS WITH NORMAL LOADING CONDITIONS

Frequency Factor	Cover Grade (RMA)	Non Abrasive Material such as lime, charcoal, wood chips, bituminous coal, grain				Abrasive Material such as salt, anthracite, coal, phosphate rock, limestone, fullers earth				Very Abrasive Material such as slag, copper ore, sinter, coke, sand, fine dust				Very Sharp Abrasive Material such as quartz, some ore, foundry refuse, glass batch, iron borings			
		Material Class 5 (CEMA)				Material Class 6 (CEMA)				Material Class 7 (CEMA)				Material Class 8 (CEMA)			
		Lump size, inch				Lump size, inch				Lump size, inch				Lump size, inch			
		Dust to 1/4	1/2 to 1 1/3	2 to 5	6 and over	Dust to 1/4	1/2 to 1 1/3	2 to 5	6 and over	Dust to 1/4	1/2 to 1 1/3	2 to 5	6 and over	Dust to 1/4	1/2 to 1 1/3	2 to 5	6 and over
0.2	2	3/32	3/16	3/16	3/8	3/16	3/8	-	-	3/16	-	-	-	3/8	-	-	-
	1	1/16	1/8	1/4	5/16	1/8	1/4	3/8	3/8	7/32	3/8	3/8	3/8	5/16	3/8	3/8	3/8
0.4	2	1/16	3/32	3/16	1/4	3/32	1/16	3/8	-	3/16	3/16	-	-	7/32	3/8	-	-
	1	1/16	3/32	1/8	3/16	3/32	1/8	1/4	3/8	1/8	1/4	3/8	3/8	3/32	5/16	3/8	3/8
0.6	2	1/16	3/32	1/8	3/16	3/32	1/8	1/4	3/8	1/8	7/32	3/8	-	3/16	3/16	-	-
	1	1/16	3/32	1/8	3/16	3/32	1/8	3/16	1/4	1/8	3/32	1/4	3/8	1/8	7/32	3/8	3/8
0.8	2	1/16	3/32	1/8	3/16	3/32	1/8	3/16	9/32	1/8	3/32	3/16	-	1/8	7/32	3/8	-
	1	1/16	3/32	1/8	3/16	3/32	1/8	3/32	3/16	1/8	1/8	7/32	3/8	1/8	3/32	5/16	3/8
1.0	2	1/16	3/32	1/8	3/16	3/32	1/8	3/32	7/32	1/8	1/8	1/4	3/8	1/8	3/16	3/8	-
	1	1/16	3/32	1/8	3/16	3/32	1/8	3/32	3/16	1/8	1/8	3/16	1/4	1/8	1/8	1/4	3/8
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	1	1/16	3/32	1/8	3/16	3/32	1/8	3/32	3/16	1/8	1/8	3/32	3/16	1/8	1/8	3/16	1/4
3.0	2	1/16	3/32	1/8	3/16	3/32	1/8	3/32	3/16	1/8	1/8	3/16	7/32	1/8	1/8	3/16	1/4
	1	1/16	3/32	1/8	3/16	3/32	1/8	3/32	3/16	1/8	1/8	3/32	3/16	1/8	1/8	3/16	1/4
4.0 and over	2	1/16	3/32	1/8	3/16	3/32	1/8	3/32	3/16	1/8	1/8	3/16	7/32	1/8	1/8	3/16	1/4
	1	1/16	3/32	1/8	3/16	3/32	1/8	3/32	3/16	1/8	1/8	3/32	3/16	1/8	1/8	3/16	1/4

NOTE: *THE FREQUENCY FACTOR INDICATES THE NUMBER OF MINUTES FOR THE BELT TO MAKE ONE COMPLETE TURN OR REVOLUTION.*

The inclinability of a given material is obviously limited by the angle of surcharge of that material on that specific conveyor.

At conveyor angles which are less than "the angle of surcharge" an appropriate textured surface will "lock" the material to the belt enabling the conveyor system to operate at that incline. Georgia Duck provides many such surfaces:

- Chevron I
- Chevron II
- Steeplok
- Cleatlok
- Mini-Cleatlok
- Scoop top
- Rough top
- Mini-rough top

For angles of incline greater than "the angle of surcharge" special means must be provided to handle the material such as:

- Cleats
- Pockets
- Buckets
- Cover belts, etc.

Incline requirements may force you to select a belt elastomer with relatively poorer release characteristics, depending upon the materials' surcharge angle. Rubber can handle "freely flowing materials" at inclines up to 18 degrees, under most weather conditions. PVC, on the other hand, would be limited to approximately 12 degrees.

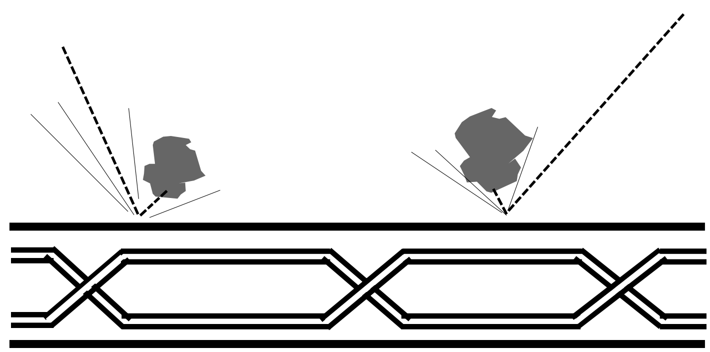
Abuse Resistance

Abuse resistance may be an important factor in selecting your belt. Are you concerned with impact or rip-resistance? In this event, a single-ply or minimum-ply straight warp construction might be preferable.

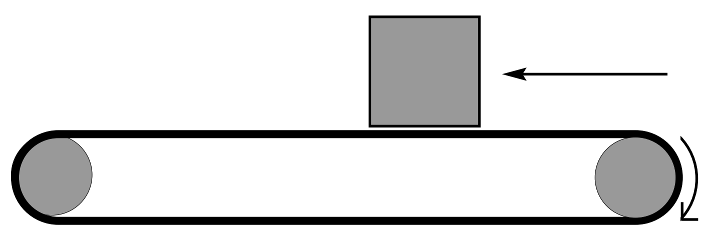
The elastomers most commonly used in modern conveyor belt construction are rubber, PVC and Urethane formations. Each material has its inherent advantages and disadvantages. Great strides have been made in recent years to improve performance characteristics of the formulations offered.

"Impingement" type abrasion is usually handled best by an appropriate rubber elastomer. Think in terms of a piece of gravel, for example, striking a rubber belt. The rubber will absorb the energy and not be damaged. PVC, on the other hand, does not have the inherent resilience of rubber, and very well may take a "cut". Accordingly, PVC will not do well in handling aggregate or hard minerals. For these types of applications, rubber, or even urethane, would be recommended.

In applications involving "soft" minerals (coal, potash, etc.), grain, or wood products, PVC does an exceptional job. Particularly, if the PVC is combined with a single-ply type, polyester carcass construction wherein the binder face warp functions as a sacrificial member and provides the working surface for the belt, composed of polyester and PVC.



Cutting abrasion (such as a conveyor carrying metal samplings), or sliding abrasion (like an accumulator conveyor) can be handled with a variety of Georgia Duck belt constructions.



Slider belt conveyor systems generally require a bottom conveyor belt surface with a lower coefficient of friction than roller bed conveyor systems . . . unless the slider bed system will be lubricated with water, as in some wood products or food applications.

Loading conditions (favorable and unfavorable), as well as skirtboards and trippers, should be considered in your abrasion decision. Ideally, the materials should be moving in the direction of belt travel and approximate belt speed when it is deposited on the belt.

Flame retardance* is a highly desirable property in conveyor belts which are going to be used in systems where safety is a concern, such as grain, underground mining, etc. In certain applications, flame retardant belting is mandatory. Be aware of such standards and advise your belt supplier of your requirement.

It is important to note that: ***All fire retardant belting will burn under some set conditions. If the defenses built into the belt are overwhelmed, the belt will burn.*** You can help protect your installation by being aware of and practicing, those safety standards that are currently in your industry, whether mandated by law or not. Zero slip controls, side motion sensors, fire detection, and fire suppression equipment, such as required by MSHA, should be included in any appropriate approach to fire hazard control in addition to the use of the fire retardant belting.

The temperature range for the installation must be considered. Do consult your Georgia Duck Representative.

Chemical reaction from oils, acids, bleaches, vegetable and animal fats, ozone, ultraviolet, etc. needs to be considered when selecting the elastomer for your conveyor belt. In wood products applications, elastomers with at least a moderately oil-resistant characteristic do well particularly on pine and similar products.

Static control is a consideration in some conveyor applications (usually, grain and mining) due to the atmosphere in which the belt must operate. Both rubber and PVC constructions are available which are static-conductive, and which will safely dissipate a static charge on a properly and contiguously grounded conveyor system. For more information on static electricity consult Georgia Duck's technical data bulletin titled "Static Electricity Considerations."

Government Regulations

It is the conveyor operator's responsibility to be aware of all safety standards and governmental regulations (example--manlift standards) applicable to his or her specific system. Sources of such information include:

Governmental bodies
Industry associations
Generally accepted standards
Suppliers, etc.

In Summary

It is obvious from the preceding that selecting the correct conveyor belt for your application involves a myriad of considerations. Final selection may very well represent a compromise between what is desired and what is available. It is often necessary to modify one requirement in order to get a more important requirement satisfied.

To assist you in obtaining the proper information required to select a proper belt construction, the following check list is provided.

1. Material Conveyed
- a. General description
- b. Density, pounds per cubic foot (pcf)
- c. Lump size
- d. Presence of oils or chemicals, if any
- e. Maximum temperature of load, if hot
- f. Requirements of fire resistance

2. Maximum loading rate or required maximum capacity, tons (2000) lbs. per hour (tph)

3. Belt width, inches*

4. Belt speed, feet per minute ((fpm)

5. Center of center distance (length) of Belt *

6. Profile of Conveyor
- a. Profile distance along conveyor path
- b. Elevations
- c. Locations of all vertical curves and angle of slope

7. Drive
- a. Single-pulley or two-pulley
- b. If two-pulley, geared tandem or dual-drive
- c. If dual-drive, distribution of total motor horsepower at primary and secondary drive pulleys
- d. Angle of belt warp on drive pulley(s)
- e. Location of drive

f. Pulley surface, bare or lagged. Type of lagging
g. Type of starting to be employed

8. **Pulley Diameters. These may require confirmation according to the belt requirement.**

9. **Takeup**
   a. Type
   b. Location

10. **Idlers**
   a. Type, roll diameter, angle of trough
   b. Spacing, including transition distance at head and tail

11. **Type of loading arrangement**
   a. Chutes
   b. Free-fall distance, lumps to belt
   c. Skirtboard length

12. **Lowest cold weather operating temperature anticipated, if applicable**

13. **Type of belt splice to be used**

Note: It is obvious that all of the above information is not required for the short method of belt selection. But, it is well to learn to look for this information.

**Belt length and width are, of course, determined by the conveyor system. It is wise to actually measure both, since memories are frequently faulty and conveyors are modified from time to time. When measuring length, the take-up is run to the minimum position, the length required is determined by steel tape and a short length added for ease of splicing. The length should be such that the take-up pulley will be 25% down the slide for installation and splicing. This will allow for additional footage, in case another splice is required before the belt stretches to its final position. This will also allow 75% of the take-up area for belt stretch.*

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