

Pulley Lagging

Conveyor pulleys can be covered with some form of rubber, fabric, ceramic, urethane or other material. Lagging is used on driving pulleys to increase the coefficient of friction between the belt and pulley. See Chapter 6 for details on the coefficient of friction between the lagging and the belt and Cw factor chart. Lagging is also used to reduce abrasive wear on the pulley face and to effect a self cleaning action on the surface of the pulley. Abrasive wear and material buildup can substantially decrease pulley life. Drive pulleys should always be lagged. Non-driving pulleys, especially on the carrying side of the belt, should be lagged whenever abrasive or buildup conditions exist. Also, see RMA's Roll Covering Handbook for additional information.

THICKNESS AND ATTACHMENT

Lagging thickness can vary from a few thousandths of an inch, as with a sprayed-on coating, to thicknesses of 1 to 2 inches, as with some solid rubber vulcanized coatings. Common methods of attachment are bolting, cold bonding, welding, and vulcanizing. Cold bonded and vulcanized lagging are the preferred methods for heavy duty or severe service applications. Of the preferred methods, vulcanized lagging is the most common and most economical. In applications where added rubber elasticity is needed, the cold bond method is preferred. Lagging can be obtained in various grooved and other specialized surface finish types. Bolted-on lagging usually consists of a rubber cover reinforced with multiple ply fabric construction similar to conveyor belting. The fabric plies are required to provide strength under the bolt heads. Welded lagging can be either a slide-on or weld-on lagging. Slide-on lagging is constructed of rubber or ceramic tiles embedded in rubber molded to a metal backing plate and slots welded onto the pulley face. Replacement of the pads can be accomplished by sliding the old strip out of the slots and the new strip in without removing the pulley from its conveyor location. Weld-on lagging is constructed of rubber or ceramic tiles embedded in rubber molded to a metal backing plate. The metal backing plate is welded to the pulley face. Replacement of weld on lagging can also be done without removing the pulley from its conveyor location.

RUBBER LAGGING HARDNESS

Rubber lagging used on drive pulleys normally has a durometer hardness of 60 on the Shore A scale. The lagging used on non-driving pulleys may have a hardness of 45 or 60, depending on the application. For snub and bend pulleys, which contact the carrying side of the belt, softer rubber tends to better resist buildup on the pulley face. With high tension belts, lagging of 70 hardness is sometimes used.



read 45 to 60

LAGGING GROOVING

Drive pulleys, which operate in wet or damp conditions, commonly incorporate grooved lagging. These grooves generally take a shape designed to shed water and slurry materials that can build up at the lagging interface and lower lagging drive efficiency. Common shapes used include diamond, herringbone, and chevron patterns. Grooves are usually spaced on 1-1/4 to 2-1/2 inch centers. In a chevron pattern, the grooves meet at the center of the pulley face, while in the herringbone pattern the grooves are offset by one-half the groove spacing. Figures 8.16 through 8.18 illustrate the grooving patterns. In the Herringbone and Chevron patterns, the apex points in the direction of belt travel. Generally, the dimensions of the grooves are 1/4 inch wide by 1/4 inch deep with a 1/8 inch minimum thickness of material under the bottom of the rubber. There are also groove configurations and sizes of rubber lagging, which can be furnished to enhance belt tracking or reduce the accumulation of material on the pulley face. Ceramic lagging also incorporates grooves, which are configured based upon the ceramic tile layout.