



Helicoid and Sectional Flighting for Screw Conveyors

Question

I have screw conveyors throughout my plant conveying a variety of bulk materials. I want to maximize the life of my screw conveyors but stay within my maintenance budget. I keep hearing about two different flighting types but don't really understand what they are. Can you give me some advice?

Answer

Great question! The two different flighting types that you are referring to are Helicoid and Sectional.

Helicoid Flighting is manufactured as one continuous helix from carbon or stainless steel. Special Helicoid flight rolling machines are required to create the flighting. Raw materials in the form of strip stock are fed into the Helicoid rolling machine and cold formed as they go through a set of cone-shaped dies. The dies form the raw material into a continuous helix of a specific outside diameter and pitch. The material actually gets compressed at the outer edges of the flight during the rolling process making it thinner than the inner edges of the flight. The surface of the flights actually hardens as it is cold rolled in the dies making it more abrasion resistant.

Sectional Flights are manufactured from sheet or plate. Metal donuts of a specific outside and inside diameter are cut on a plasma, water-jet or laser burn table. The metal donuts are split so they can be formed into a helix in a special press. Each helix or flight is one revolution. The flights are joined (welded) end-to-end to make a continuous helix.

Design Considerations: Screws manufactured from helicoid flighting are more cost-effective when compared to sectional screws. The helicoid flight rolling process maximizes material usage with very little scrap. Helicoid flighting takes less time to produce because it is formed as a continuous helix and cut to the exact screw length. It also takes less labor to weld the helicoid flighting to the center pipe. However, helicoid flighting is limited to standard CEMA sizes for diameter, flight thickness and pitch because of the limitations of the helicoid rolling machines.

Screws manufactured from sectional flights allow for greater variation in material type, material thickness and overall screw design. Since the sectional flights are made from sheet or plate, you can use a wide variety of material types depending on your application. For example, if you are handling a very corrosive chemical and need a high nickel alloy to prevent corrosion, then a sectional screw can easily be manufactured for your application. Or if you need 1/2 inch thick flights with cutting teeth to chop up and convey a lumpy bulk material, then again sectional flighting would be your choice.

Applications: We offer both light duty and heavy duty helicoid flights and screws for your application. Light duty helicoid is generally used for conveying non-abrasive, free-flowing bulk materials such as grains, ice or polyethylene pellets. Heavy duty helicoid is great for moderately abrasive bulk materials such as limestone, cement or fertilizer. Sectional flights and screws can be used in any application but are mainly used in heavy duty and extremely abrasive applications such as alumina, flyash or glass cullet. There are numerous applications where heavy helicoid flighting can be used in place of sectional flighting with no loss in performance and at a cost savings to you.

KWS stocks a full line of both helicoid and sectional flights and complete screw assemblies. Due to many years of experience, we can help you choose the right type of flighting and screw conveyor for your application. Our goal is to give you a very cost-effective solution that fits your budget and provides many years of maintenance free operation.



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