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Technical Article
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Perforated Belting

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Sometimes a hole in a belt can help provide a valuable operation in mechanical applications. Perfectly placed holes or slots punched through a belt in a specific pattern typically describes perforated belting. This fabricated belt is utilized in industry to provide a variety of functions. Wood finishing, agricultural, and filtration applications are common.

The most popular industry for perforated belting is wood finishing. The belt travels over a vacuum box. A product to be finished, such as a door or panel, is carried on the top side of a smooth or incline type lightweight perforated belt. The hole pattern and hole size is engineered to provide the proper suction to hold the panel in place while a sanding head levels the surface of the panel. Clean holes and proper vacuum are required to keep the product from slipping and to keep the belt from producing too much drag. Many systems have sections in the vacuum box which can be turned on as different products and shapes are moved through the system. Most belts are endless and many have v-guides to help ensure proper tracking.

In the agricultural industry, lightweight perforated belts are generally called a sorting or sizing belt. Many fruits and vegetables, such as apples, tomatoes, cherries, pears, etc., are sorted according to size. Depending on the number of product sizes required, either two or three conveyors are stacked vertically or lined up horizontally. The first conveyor has a belt perforated to allow the smallest desired size to drop through holes to a tray or belt underneath. If more than two sizes are separated, the second belt is also perforated to allow a larger size to drop through. The largest products stay on the belt and are moved to the next part of the system for sizing.

Filtration belting has perforations or drainage holes for processing slurries to separate solids and liquids. These are usually heavy duty rubber covered belts with horizontal ribs and drainage holes in the center of the belt. The drainage holes or perforations allow liquid to drain off between the ribs leaving the solids on the belt surface. This process is used in gold separation, copper mines, sewage sludge, taconite plants, and many other industries. This process provides a simple economical approach to final product recovery.