Pricing Trends/Market Size Insight for Rubber Products

Quarterly Pricing Trends

The Producer Price Index (PPI) data presented here provide a snapshot in time of pricing trends for five common industrial product groups sold by NAHAD members. This report provides a national benchmark and comparison of the latest quarterly data with the previous quarter and the same quarter of the previous year. It represents trends in selling prices received by domestic producers and is a good barometer for inflationary pressures felt at the wholesale level.

During the fourth quarter of 2019, the Conveyor Belt and Seals & O-Rings categories increased by 0.3 percent from the previous quarter, with Conveyor Belt showing the strongest year-to-year pricing pressures of nearly 5 percent. All other products showed a relatively mild increase in pricing from the previous year fourth quarter.

Product Categories	Quarterly % Change 3Q19:4Q19	Annual % Change 4Q18:4Q19
Hydraulic Hose	N/A	N/A
Industrial Hose	0.1	+ 1.4
Conveyor Belt	0.3	+ 4.8
Transmission Belt	0.0	+ 1.5
Seals & O-Rings	0.3	+ 1.1

Source: Quarterly Producer Price Index, U.S. Bureau of Labor Statistics. For more detail on pricing trends methodology, see appendix at the end of this report.

Quarterly Pricing Trends:

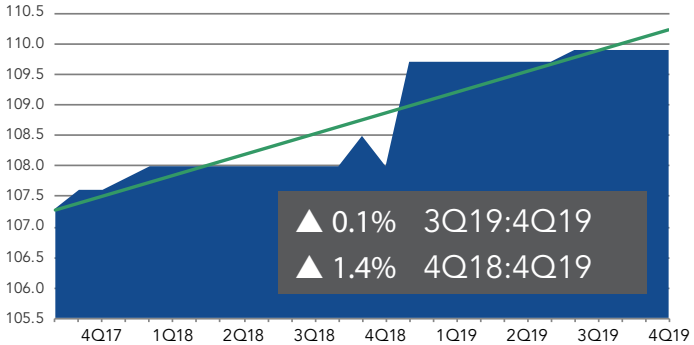
Hose – Hydraulic/Industrial

- NOTE: The Hydraulic Hose Producer Price Index has not been updated by the Department of Labor and so is not included in this report.
- The Industrial Hose Price Index rose 0.1% in Q4 of 2019 and realtively stable since the end of 2018.

Hydraulic Hose

NOTE: The Hydraulic Hose Producer Price Index has not been updated by the Department of Labor and so is not included in this quarter's data

Industrial Hose

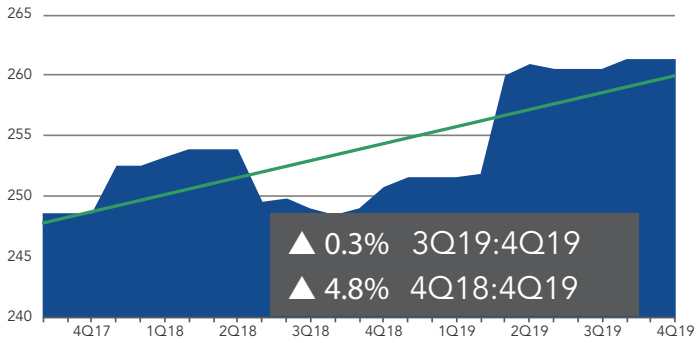


Quarterly Pricing Trends:

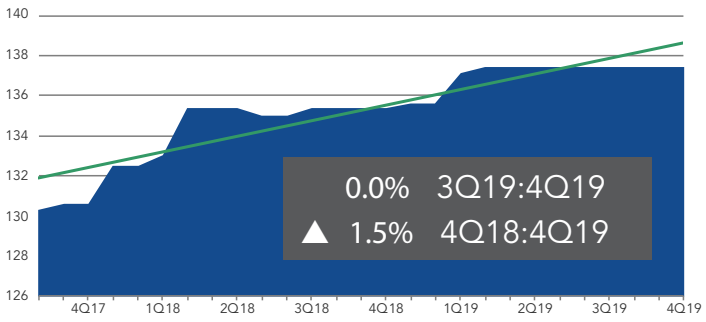
Belt – Conveyor/Transmission

- Pricing for the Conveyor Belt category rose 0.3% in the fourth quarter after a sharp second quarter increase.
- Transmission Belt pricing has remained flat for most of 2019.

Conveyor Belt



Transmission Belt

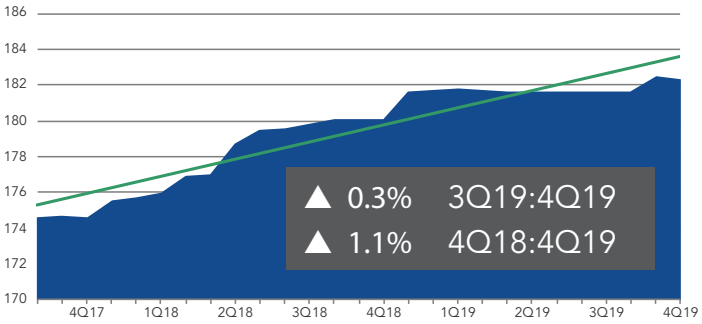


Quarterly Pricing Trends:

Seals & O-Rings

- The Seals & O-Rings pricing index rose 0.3% during the fourth quarter of 2019.
- The Seals & O-Rings category last saw a pricing increase at the beginning of 2019.

Seals & O-Rings



The indices above are derived from the Producer Price Index, published monthly by the U.S. Bureau of Labor Statistics, which measures the average change over time in selling prices received by domestic producers for their output. The prices included in the PPI are from the first commercial transaction for many products and some services. The data from the Producer Price Index tracks wholesale prices, making this index the best source of price trend data for wholesale distribution markets.

Annual Market Size – Rubber Products

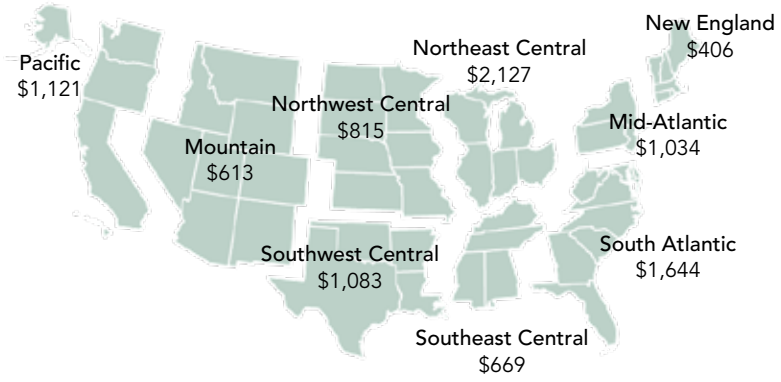
The annual market size rose 7.0% into 2019 for the five industrial product categories listed below and is estimated at $9.5 billion. Demand for all five of the product categories increased year-to-year, reflecting overall trends across industrial production indicators for key customer segments in mining, energy, industrial and construction markets. The overall Industrial Production Index, a key measure of U.S. manufacturing activity, showed an increase in 2018 and into 2019.

Product Categories	2019 Estimated Market Size (in $ Millions)	Annual % Change 2018:2019
Hydraulic Hose	$2,010	+7.8%
Industrial Hose	$2,321	+7.9%
Conveyor Belt	$1,874	+7.9%
Transmission Belt	$836	+7.9%
Seals & O-Rings	$2,473	+4.3%
Total Market Potential	$9,513	+7.0%

Source: MDM Analytics

Annual Market Size – Regions/Top 10 States (2019 data)

National Rubber Products Market Size = $9.5 Billion



State	(in $ Millions) Total Demand
Texas	$740
California	$728
Michigan	$550
Ohio	$497
Illinois	$453
Pennsylvania	$423
Florida	$384
New York	$364
Wisconsin	$353
Georgia	$349

All market size analysis in this report is based on five product categories defined at the end of this report. The data reflect estimates of end-use consumption, on an annual basis in U.S. dollars, for maintenance, repair, and operations (MRO) and original equipment manufacturer (OEM) business segments.

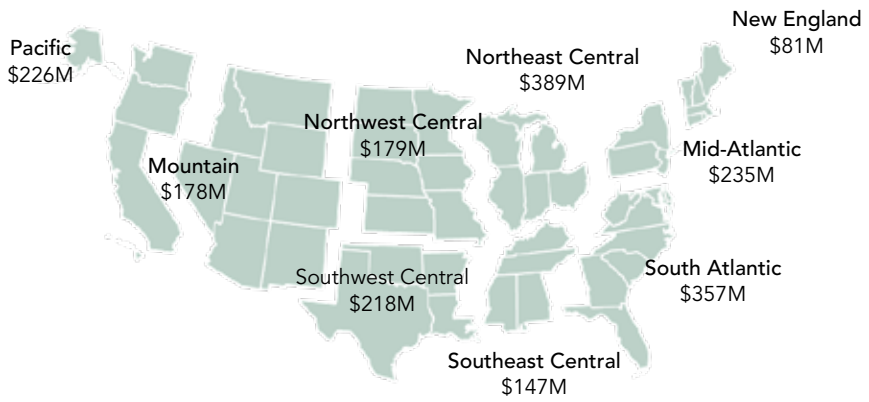
Each quarter, this page profiles a different product category to provide a more in-depth look at the size and make-up of the key customer segments for that category.

Market Size Profile – Conveyor Belt

The size of the Conveyor Belt market is $2.0 billion, according to estimates by MDM Analytics. This page profiles how demand for Conveyor Belt is segmented regionally, across the top 10 states by demand, and the top 10 customer sectors that consume Conveyor Belt, which account for 26 percent of the total market size. Market size is defined as the total available market at the end-user customer level, including a distributor margin estimate, to provide a "street" price estimate, in U.S. dollars.

Market Size – Regions/Top 10 States (2019 data)

Conveyor Belt **Market Size = $2.0 billion**



State	(in $ Millions) Total Demand
California	$151
Texas	$145
Ohio	$110
Pennsylvania	$110
Illinois	$99
North Carolina	$77
New York	$76
Georgia	$72
Florida	$71
Michigan	$69

Annual Market Size – Top 10 Customer Segments (2019 data)

NAICS 6	Description	Conveyor Belt (in $ Millions)	Accounts
445110	Supermarkets and Other Grocery (except Convenience) Stores	$79	95,735
212111	Bituminous Coal and Lignite Surface Mining	$78	527
333922	Conveyor and Conveying Equipment Manufacturing	$75	1,129
212112	Bituminous Coal Underground Mining	$68	138
322121	Paper (except Newsprint) Mills	$61	1,932
213113	Support Activities for Coal Mining	$58	553
333111	Farm Machinery and Equipment Manufacturing	$57	3,020
333249	Other Industrial Machinery Manufacturing	$45	3,375
212393	Other Chemical and Fertilizer Mineral Mining	$41	115
491110	Postal Service	$40	21,956

Product Category Definitions

The market analysis in this report defines the following five product categories in the following manner, using standardized classifications based on the U.S. Census Bureau's NAICS product codes, as well as the U.S. Bureau of Labor Statistics (BLS) Producer Price Index Commodity Codes. See Methodology and Data Sources below for more detail.

Hydraulic Hose
This category is defined by BLS as All Other Hydraulic/ Pneumatic Hose.

Industrial Hose
This category is defined by BLS as Industrial Rubber/Plastics Hose.

Conveyor Belt
This category is defined by BLS as Flat Rubber/Plastics Belts and Belting.

Transmission Belt
This category is defined by BLS as Rubber/Plastics Belts and Belting, except flat rubber, including motor vehicle rubber/plastics transmission belts and belting.

Seals & O-Rings
This category is defined by BLS as Packing and Sealing Devices, which includes compression packings, molded packing and sealing devices, rotary oil seals, and axial mechanical face seals and parts.

Regional Territory Definitions

This report uses the nine statistical divisions defined by the U.S. Census Bureau. States included in each division:

Division 1: New England
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Division 2: Mid-Atlantic
New Jersey, New York, Pennsylvania

Division 3: Northeast Central
Illinois, Indiana, Michigan, Ohio, Wisconsin

Division 4: Northwest Central
Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota

Division 5: South Atlantic
Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia

Division 6: Southeast Central
Alabama, Kentucky, Mississippi, Tennessee

Division 7: Southwest Central
Arkansas, Louisiana, Oklahoma, Texas

Division 8: Mountain
Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming

Division 9: Pacific
Alaska, California, Hawaii, Oregon, Washington

Methodology & Data Sources

The data in this report was compiled by MDM Analytics, formerly Industrial Market Information, Inc., a subsidiary of Gale Media, Inc., Lafayette, CO, using an econometrics model developed more than 30 years ago. MDM Analytics' databases provide information on the potential demand for a wide range of key industrial goods across the hundreds of industries encompassed by the North American Industry Classification System (NAICS) system for North America. The following is a general overview of the methodology used to develop MDM Analytics' key reports.

All market analysis in this report is based on five product categories defined above. The data reflect estimates of end-use consumption, on an annual basis in U.S. dollars, by maintenance, repair, operations and production (MROP) accounts, and original equipment manufacturer (OEM) accounts.

First, a total market size for each product category is established using the U.S. Census Bureau's five-year **Economic Census** together with its **Annual Survey of Manufacturers.** This mandatory survey of U.S. manufacturers is conducted at a granular product level using standardized NAICS-based product codes, which MDM Analytics aggregates into specific product class and category groupings. Imports-Exports are then factored and a distributor margin is added to estimate an end-user customer, or "street-level," market sizing nationally.

Consumption rates for MRO products at a given account location are largely driven by the type of manufacturing or unique industry-sector processes and number of employees at a location. This demand relationship can be used to model market potential for defined territories at the county level and higher based on a territory's unique composition of industries and the number of employees in those industries.

Continued next page

MDM Analytics' proprietary statistical model segments the national demand for each product category based on its unique historical consumption patterns by each 6-digit NAICS industry sector. Then the total employment of each industry is divided into the total annual market size to arrive at the dollar-per-employee ratio. Market potential can then be estimated by modeling the types of end-market industries and their size in a given territory. In effect, the "DNA" of a territory and its estimated consumption patterns for defined industrial product categories can be estimated.

This NAHAD Markets Monitor report updates market size estimates annually based on change in employment by sector at a county level, as well as a proprietary model using a number of industry sector indices for manufacturing, construction, mining and energy sectors. U.S. employment is measured by 6-digit NAICS industry sector at a county level, sourced through a combination of U.S. Bureau of Labor Statistics, Dun & Bradstreet and private databases. Annual market size estimates are revised with additional input and validation from annual

Quarterly Pricing Trends Methodology

Data presented here provide a snapshot in time of wholesale pricing trends in five common industrial product groups sold by NAHAD members. The report provides comparison of the latest quarterly data with the previous quarter and the same quarter of the previous year.

The NAHAD Markets Monitor quarterly pricing trends report is based on the Producer Price Index (PPI) published by the U.S. Bureau of Labor Statistics. Quarterly percent change, which is not reported by the U.S. government, is calculated by MDM editors based on quarterly averages using a method developed after consulting with the BLS.

The PPI program measures the average change over time in selling prices received by domestic producers for their output. The prices included in the PPI are from the first commercial transaction for many products and some services. The data from the Producer Price Index tracks wholesale prices, making this index the best source of price trend data for the wholesale distribution market. The PPI does not measure the cost of producing an item.

Indexes are organized in three major structures: stage of processing (organized by class of buyer and degree of fabrication); industries and their products (organized by producing industry as defined by NAICS); and type of commodity (organized by similarity of end use or material composition).

To calculate its item-specific index each quarter, MDM uses the PPI organized by commodity. This provides the greatest detail for specific products. It also provides a great deal of historical data. The downside to the commodity index coding system is that no other governmental statistical program uses it. Commodities are grouped according to similarity of material composition and end use, regardless of industry of origin. Because of this, they are not organized by NAICS (North American Industry Classification System).

In addition, when using the commodity indexes, it is inadvisable to roll up products into one overarching index without accounting for double-counting due to stages of processing. This is why MDM presents data at a lower level and as close to an individual product basis as possible, rather than presenting a total index for the products. For overall percent changes by industry (NAICS) or level of processing (crude vs. finished, for example), businesses should use the stage of processing or industry indexes at www.bls.gov/ppi.

How Firms Use the Producer Price Index

According to the BLS, businesses often employ price adjustment clauses in long-term sales and purchase contracts, frequently using the PPI family of indexes, either alone or in conjunction with other sources of economic data. Because the PPI indexes measure price changes objectively, the PPI calculated by the Bureau of Labor Statistics are widely recognized among businesses, economists, statisticians and accountants as useful for this purpose.

To learn more about the development of escalation clauses in contracts tied to PPI data, as well as potential challenges in doing so, visit this website: http://www.bls.gov/ppi/ppiescalation.htm.

MDM Analytics does not encourage or discourage the use of price adjustment measures in purchase and sales agreements.

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