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## ***ARGUS ASPHALT***

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The most up-to-date Argus Asphalt Methodology is available on [www.argusmedia.com](http://www.argusmedia.com)

## Introduction

Argus Asphalt is a weekly report on the bulk and rack markets for asphalt, also referred to as bitumen. It features price assessments, market commentary, market news, and asphalt production economics. The report is published every Friday, with the exception of some public holidays. For a full list of publication dates, see Argus' [publication schedules](#).

## Asphalt price assessments

Asphalt price assessments reflect open-market, arms-length deals. For a detailed definition of arms length, see the [Argus Global Compliance Policy](#).

Unless otherwise noted, assessments reflect the range of spot trade since the last publication. The low represents the lowest price transacted, and the high represents the highest price transacted. Argus will take into account deals confirmed by one or both counterparties. Deals must be considered representative to have a bearing on Argus assessments. Argus reserves the right to exclude deals from the range of trade. If a reported deal falls well outside of the generally observed highs and lows that operated throughout the week or raises other concerns, Argus will analyse the transaction in light of other market data in order to determine if the deal should be excluded. This process is critical to ensuring that the Argus range of trade is accurate and representative.

### Rack and delivered-by-truck

Rack and delivered-by-truck prices reflect trade in one more grades of asphalt within a defined geographic region. For detailed parameters, see tables 1 and 2. Rack price assessments reflect trade where ownership of the product is transferred upon delivery into the buyer's truck, typically at a truck-loading rack. Delivered-by-truck assessments reflect trade where ownership of the product is transferred upon delivery, typically by truck, to the buyer's specified worksite.

In the absence of confirmed trade, assessments will reflect the range within which trade could have occurred. Argus will determine that range with reference to one or more of:

- sellers' offer levels
- sellers' postings
- discounts to offer levels/postings that sellers typically offer their customers
- the price at which buyers tell Argus they would be willing to buy
- the price buyers say they have been quoted by their supplier(s)
- the price at which local, state, provincial, or federal authorities contract product by tender
- price changes in local residual fuel oil markets
- price changes at competing or nearby asphalt markets
- delivered-to-site prices, where the assessment is for the rack
- transportation costs

### Chinese rack prices: contract and posted

Argus publishes posted and contract prices for asphalt sold at Chinese refinery loading racks. Posted prices are the refineries' official sales prices. Contract prices are the prices at which most buyers are able to purchase product. Some buyers may also be able to purchase product at discounts to contract prices.

### Canadian posted rack prices

Argus publishes posted prices for asphalt sold at Canadian truck-loading racks. Posted prices are the distributors' official selling prices, and may not reflect the price at which the majority of buyers are able to purchase asphalt.

### Rail

Rail price assessments reflect trade in a defined volume of one or more asphalt grades, where ownership is transferred upon delivery into the buyer's railcar, at loading terminals within a defined region. For detailed parameters, see table 3

In the absence of confirmed trade, assessments will reflect the range within which spot trade could have occurred. Argus will determine that range with reference to one or more of:

- delivered-by-rail prices
- Rail freight rates
- changes in the price of high-sulphur fuel oil since the last publication
- price changes at competing or nearby asphalt markets
- consensus among participants in that market

### Waterborne

Waterborne price assessments reflect trade in a defined volume of one or more asphalt grades, where ownership is transferred upon delivery from or into vessels at terminals within a defined region, and within a defined timeframe. For detailed parameters, see table 4

In the absence of confirmed waterborne trade, assessments will reflect the range within which spot trade could have occurred. Argus will determine that range with reference to one or more of:

- fob markets, where the assessment is for cif/cfr trade
- cif/cfr markets, where the assessment is for fob trade
- asphalt freight rates (see below)
- changes in the price of high-sulphur fuel oil since the last publication
- price changes at competing or nearby asphalt markets
- consensus among participants in that market

European waterborne asphalt cargoes trade at a differential to high-sulphur fuel oil. Argus assesses European waterborne asphalt cargoes as differentials, and determines outright prices by adding the differential to Argus' high-sulphur fuel oil assessments.

### Grades and specifications

Asphalt grades specified in tables 1-4 are typically expected to meet the following quality criteria:

	Penetration of 100g needle for five seconds at 25°C, mm	
	Min	Max
Pen 35/50	35	50
Pen 40/50	40	50
Pen 40/60	40	60
Pen 50/70	50	70
Pen 60/70	60	70
Pen 70/100	70	100
Pen 80/100	80	100
Pen 100/160	100	160
Pen 150/200A	150	200
Pen 160/220	150	220
AH-70	60	80
AH-90	80	100
AH-100	90	110
AH-110	100	120
AH-130	120	140
AH-140	130	150
AH-180	170	190
70-A	60	80
70-B	60	80
90-A	80	100
90-B	80	100

Viscosity at 60°C, min (Pa s)	
Class 170	170
Class 320	320
Viscosity at 60°C (Poise)	
AC-30	3,000 ± 600

	Average 7-day pavement design temperature, °C		Flash point, min °C
	Max	Min	
PG 58-28	<58	>28	230
PG 58-34	<58	>34	230
PG 64-10	<64	>10	230
PG 64-16	<64	>16	230
PG 64-22	<64	>22	230
PG 64-28	<64	>28	230
PG 64-34	<64	>34	230
PG 67-22	<67	>22	230
PG 70-10	<70	>10	230
PG 70-28	<70	>28	230

Softening point, °C		Penetration at 0°C		Penetration at 25°C		Penetration at 46°C	
Min	Max	Min	Max	Min	Max	Min	Max
<b>Roofing flux Type III</b>							
85	96	6		15	35		90
<b>Roofing flux Type IV</b>							
99	107	6		12	25		75

## Non-asphalt oil price assessments

Argus Asphalt includes “week-range” price assessments for non-asphalt commodities, including fuel oil, gasoil, and crude. These are based on assessments published in four daily products reports: Argus European Products; Argus US Products; Argus Asia-Pacific Products; and Argus Crude

The week-range low is the lowest of all daily lows published in the relevant daily report since Argus Asphalt was last published. The high is the highest of all daily highs published in the relevant daily report since Argus Asphalt was last published.

If the daily report publishes only a midpoint for the relevant assessment, the week-range low is the lowest of all daily midpoints published in the relevant daily report since Argus Asphalt was last published. The week-range high is the highest of all daily midpoints published in the relevant daily report since Argus Asphalt was last published.

For daily crude and product report methodologies, see [argusmedia.com/methodology](http://argusmedia.com/methodology)

### Example:

Argus Asphalt is published at close of business on 10 and 17 January 2014. Argus US Products reports US Gulf no 6 fuel oil as follows in the intervening period:

	No 6 fuel oil 3pc	
	Low	High
13 Jan 14	90	90.5
14 Jan 14	89	90
15 Jan 14	88	88.5
16 Jan 14	88.5	90
17 Jan 14	90	90.25

The Argus Asphalt published on 17 January 2014 will report US Gulf No 6 fuel oil as follows

	No 6 fuel oil 3pc	
	Low	High
17 Jan 14	88.5	90.5

## Freight assessments

Freight rate assessments reflect the cost of spot chartering a vessel to load up to 5,000t of asphalt 10-25 days from the date of publication. Where the discharge region is Australia, rates reflect cargo sizes of up to 10,000t. Argus bases asphalt freight rate assessments on a survey of market participants, including charterers, shipowners, and shipbrokers.

## Data collection

Argus' reporters survey key industry participants to uncover relevant market information. Argus uses the telephone and various electronic mail and messaging services to acquire information. Market surveys are balanced and conducted by well-trained specialist reporters. Argus will contact and accept market data from all credible market sources including front and back office of market participants and brokers.

## Market commentary

Argus' market commentaries aim to explain price moves with reference to market fundamentals. Argus Asphalt features a detailed commentary on price moves in each region covered.

Argus does not publish counterparty names in Americas and Asia-Pacific asphalt market commentaries. Many companies in these regions can only reveal deals to the press if confidentiality is maintained. Maintaining confidentiality allows Argus to gather more information and create more robust assessments.

## Corrections

Argus will on occasion correct errors that arise from clerical mistakes, calculation errors, a misapplication of methodology, or from market data submitted by a source that is discovered to have

inadvertent errors. Argus will not retroactively assess markets based on new market data gathered after the assessments have been published.

## Currency conversions

Argus converts currencies based on the average of exchange rates on each business day up to and including the business day before the day of publication. For details of the currency in which individual assessments are originally made, see tables 1-4.

## Asphalt economics

Argus assesses asphalt's value as a fuel oil blendstock in Singapore, Los Angeles, New York, the US Gulf, and the Mediterranean. Calculations assume an asphalt density of 5.6 bl/st

Asphalt's value as a fuel oil blendstock is calculated as follows, where **f** is fuel oil, **h** is heating oil, and **bv** is blendstock value:

$$bv (\$/st) = 7.2f (\$/bl) - 1.6h (\$/bl)$$

**Table 1: Rack**

Assessment	Rack locations	Grades included	Currency/unit of assessment
<b>Asia-Pacific</b>			
Indonesia	Cilacap	Pen 60/70	\$/t
Japan	Yokkaichi, Sendai, Negishi, Mizushima, Marifu, Oita	Pen 60/80	¥/t
Mumbai	Mumbai	VG10, VG30	Rs/t
Mumbai drums	Mumbai	VG10, VG30	Rs/t
Singapore: pen 60/70	Bukom, Pulau Merlimau; Pulau Ayer Chawan	Pen 60/70	\$/t
Singapore: pen 80/100*	Bukom, Pulau Merlimau; Pulau Ayer Chawan	Pen 80/100	\$/t
South Korea	Ulsan, Onsan and Yeosu and Daesan	Pen 60/70, Pen 60/80, Pen 80/100	\$/t
Thailand	Rayong, Siracha	Pen 60/70	\$/t
<b>Europe-Africa</b>			
Antwerp	Antwerp	Pen 50/70, Pen 70/100	€/t
Rotterdam	Rotterdam	Pen 50/70, Pen 70/100	€/t
North Germany	Lingen; Gelsenkirchen; Hamburg-Harburg; Heide	Pen 50/70, Pen 70/100	€/t
Northeast Germany	Leuna	Pen 50/70, Pen 70/100	€/t
Southern Germany	Ingolstadt; Vohburg-Neustadt	Pen 50/70, Pen 70/100	€/t
Southwest Germany	Karlsruhe	Pen 50/70, Pen 70/100	€/t
West Germany	Godorf; Gelsenkirchen	Pen 50/70, Pen 70/100	€/t
Northeast Spain	Bilbao; La Coruna	Pen 40/50, Pen 60/70	€/t
Southwest Spain	Puertollano; Tarragona; Huelva	Pen 40/50, Pen 70/100	€/t
Italy	Italy	Pen 50/70, Pen 70/100	€/t, including tax
South Africa	Durban; Cape Town; Sasolburg	Pen 35/50, Pen 50/70, Pen 70/100	R/t
*used in Malaysia			

<b>Table 1: Rack</b>			
<b>Assessment</b>	<b>Rack locations</b>	<b>Grades included</b>	<b>Currency/unit of assessment</b>
Southern UK	South of Severn in west, south of and including Norfolk in east, south of and including Northamptonshire in centre	Pen 40/60, Pen 100/160, Pen 160/220	£/t
<b>USAC</b>			
Southwest Maine	Portland and 50 mile radius	PG 64-28	\$/st
Greater Boston	Providence, Boston, Manchester, Portsmouth	PG 64-28	\$/st
Connecticut	New Haven, Hartford	PG 64-22	\$/st
Albany	Albany	PG 64-22	\$/st
Western NY/Western PA	Warren, Tonawanda, Pittsburgh	PG 64-22	\$/st
New York City	New York City metropolitan area	PG 64-22	\$/st
Philadelphia	Philadelphia, Paulsboro	PG 64-22	\$/st
Baltimore	Baltimore	PG 64-22	\$/st
Southeast Virginia	Richmond to Hampton Roads	PG 64-22	\$/st
Coastal Carolinas	Wilmington, Charleston	PG 64-22	\$/st
Inland North Carolina	Charlotte, Winston-Salem, Wilson	PG 64-22	\$/st
Atlanta	Atlanta	PG 64-22	\$/st
Coastal Georgia and NE Florida	Savannah, Jacksonville	PG 64-22	\$/st
Miami	Miami metropolitan area	PG 64-22	\$/st
<b>USGC</b>			
Gulf coast Florida	Tampa, Panama City	PG 64-22	\$/st
Northern Alabama	Tuscaloosa, Decatur	PG 64-22	\$/st
Mobile	Mobile	PG 64-22	\$/st
Southeast Louisiana	New Orleans and 50 mile radius	PG 64-22	\$/st
Mississippi	Vicksburg, Lumberton	PG 64-22	\$/st
Houston	Houston and 50 mile radius	PG 64-22	\$/st
Northeast Texas	Northeast of Waco. Ardmore OK	PG 64-22	\$/st
<b>USMC</b>			
North Dakota	Bismarck, Fargo, Grand Forks	PG 64-22	\$/st
Chicago metropolitan area	Chicago, Whiting, Utica, Calumet, Bartlett	PG 64-22	\$/st
Northern Minnesota/Northern Wisconsin	Crookston, Rhinelander, Minneapolis, Green Bay	PG 58-28	\$/st
Southern Minnesota/Southern Wisconsin	St. Paul, Bartlett	PG 64-22	\$/st
Southeast Michigan	Detroit, Bay City	PG 64-22	\$/st
Indianapolis	Indianapolis	PG 64-22	\$/st
Ohio	Cincinnati, Cleveland, Canton, Wellsville	PG 64-22	\$/st
Kansas City	Kansas City	PG 64-22	\$/st
Tulsa	Tulsa	PG 64-22	\$/st
St Louis	St Louis	PG 64-22	\$/st
Southern Kentucky/Tennessee	Kuttawa, Memphis, Nashville, Knoxville, Chattanooga	PG 64-22	\$/st
Omaha	Omaha	PG 64-22	\$/st
<b>USWC-Rockies</b>			
Phoenix	Phoenix, Tucson	PG 70-10	\$/st
Bakersfield	Bakersfield	PG 64-10, PG 64-16	\$/st
San Francisco Bay Area	Oakland, San Francisco, Sacramento	PG 64-10, PG 64-16	\$/st
Los Angeles	Los Angeles	PG 64-10, PG 64-16	\$/st
Denver	Commercial City	PG 64-22	\$/st
Portland	Portland	PG 64-22	\$/st
Montana	Billings, Great Falls	PG 64-22	\$/st
Las Vegas	Las Vegas	PG 64-22	\$/st
Salt Lake City	Salt Lake City	PG 64-22	\$/st
Wyoming	Cheyenne, Casper	PG 64-22	\$/st
<b>Canada</b>			
Alberta	Edmonton, Lloydminster, Calgary	Pen 150/200A	C\$/t
British Columbia	Prince George, Kamloops, Vancouver	Pen 150/200A	C\$/t
Toronto	Toronto	PG 58-28	C\$/t
Montreal	Montreal	PG 58-28	C\$/t
Saskatchewan	Regina, Lloydminster	Pen 150/200A	C\$/t
Manitoba	Winnipeg	Pen 150/200A	C\$/t

Table 2: Delivered			
Assessment	Delivery range	Grades	Currency/unit of assessment
<b>Europe-Africa</b>			
Southern UK	south of Severn in west; south of and including Norfolk in east, south of and including Northamptonshire in centre	Pen 40/60, Pen 100/160, Pen 160/220	£/t
Brussels	Brussels metropolitan area	Pen 50/70, Pen 70/100	€/t
Northern France	north of river Loire in west, north of Orleans in east	Pen 35/50, Pen 50/70	€/t
Central France	north of, and including Auvergne; south of river Loire in west; south of Orleans in east	Pen 35/50, Pen 50/70	€/t
Southern France	south of Auvergne	Pen 35/50, Pen 50/70	€/t

Table 3: Rail						
Assessment	Location	Grades	Currency/unit of assessment	Timing (days forward)	Delivery	Cargo size '000t
<b>USMC</b>						
Asphalt	IL, IN, MI, OH, KY, Warren PA	PG 64-22	\$/st	10-30	fob	3-5
Roofing Flux	IL, IN, MI, OH, KY, Warren PA	Type III flux, Type IV flux	\$/st	10-30	fob	3-5
<b>USWC-Rockies</b>						
Rockies	MT, WY, CO	PG 64-22	\$/st	10-30	fob	5-15

Table 4: Waterborne							
Assessment	Location	Grades	Price type	Currency/unit of assessment	Timing (days forward)	Delivery	Cargo size '000t
<b>Asia-Pacific</b>							
Bahrain	Sitra	Pen 60/70	Outright price	\$/t	21-30	fob	1.5-5
Bandar Abbas	Bandar Abbas	Pen 60/70, Pen 80/100	Outright price	\$/t	5-40	fob	1.5-5
Bandar Abbas drums	Bandar Abbas	Pen 60/70, Pen 80/100	Outright price	\$/t	5-40	fob	1.5-5
Rayong: pen 60/70	Rayong	Pen 60/70	Outright price	\$/t	21-30	fob	1.5-5
Rayong: class 170	Rayong	C-170	Outright price	\$/t	21-30	fob	1.5-5
Rayong: C-320	Rayong	C-320	Outright price	\$/t	21-30	fob	1.5-5
Singapore: pen 60/70	Bukom; Pulau Merlimau; Pulau Ayer Chawan; Tanjung Langsat; Kemaman	Pen 60/70	Outright price	\$/t	21-30	fob	1.5-5
Singapore: pen 60/70 drums	Bukom; Pulau Merlimau; Pulau Ayer Chawan; Tanjung Langsat; Kemaman	Pen 60/70	Outright price	\$/t	21-30	fob	1.5-5
Singapore: class 170	Bukom; Pulau Merlimau; Pulau Ayer Chawan; Tanjung Langsat; Kemaman	C-170	Outright price	\$/t	21-30	fob	1.5-5
Singapore: class 320	Bukom; Pulau Merlimau; Pulau Ayer Chawan; Tanjung Langsat; Kemaman	C-320	Outright price	\$/t	21-30	fob	1.5-5
South Korea	Ulsan; Onsan; Yeosu	Pen 60/70, Pen 60/80	Outright price	\$/t	21-30	fob	1.5-5
Taiwan	Kaohsiung; Mailiao	Pen 60/70	Outright price	\$/t	21-30	fob	1.5-5
North China coast	Tianjin; Rizhao	Pen 60/70, Pen 60/80	Outright price	\$/t	21-30	cfr	1.5-5
Central China coast	Nanjing; Changzhou; Jiangyin; Shanghai; Ningbo	Pen 60/80	Outright price	\$/t	21-30	cfr	1.5-5
South China coast	Fuzhou; Dongguan; Guangzhou; Shantou; Maoming; Qinzhou	Pen 60/70, Pen 60/80	Outright price	\$/t	21-30	cfr	1.5-5
North Vietnam (drums)	Haiphong	Pen 60/70	Outright price	\$/t	21-30	cfr	1.5-5
South Vietnam (drums)	Ho Chi Minh	Pen 60/70	Outright price	\$/t	21-30	cfr	1.5-5
<b>Europe-Africa</b>							
West Africa	Lagos; Warri; Port Harcourt; Calabar	Pen 60/70	Diff to West Med. fuel oil 3.5% 0.998 fob	\$/t	10-25	cfr	2-7

**Table 4: Waterborne**

Assessment	Location	Grades	Price type	Currency/unit of assessment	Timing (days forward)	Delivery	Cargo size '000t
Rotterdam	Rotterdam	Pen 50/70, Pen 70/100	Diff to NWE fuel oil 3.5%S RMG barge	\$/t	5-20	fob	2-7
Greece	Aspropyrgos; Agio Theodori	Pen 50/70, Pen 70/100	Diff to West Med fuel oil 3.5% 0.998 fob	\$/t	5-20	fob	2-7
Italy	Livorno; Ravenna; Augusta; Falconara	Pen 50/70, Pen 70/100	Diff to West Med fuel oil 3.5% 0.998 fob	\$/t	5-20	fob	2-7
Spain	Tarragona; Huelva	Pen 40/50, Pen 60/70	Diff to West Med fuel oil 3.5% 0.998 fob	\$/t	5-20	fob	2-7
Ivory Coast	Abidjan	Pen 60/70	Diff to West Med fuel oil 3.5% 0.998 fob	\$/t	5-20	fob	2-7
<b>USAC</b>							
New Jersey	Paulsboro, Linden	PG 64-22	Outright price	\$/st	21-30	fob	1.5-5
New England	MA, ME	PG 64-28	Outright price	\$/st	5-40	cif	1.5-5
New York	NYH terminals	PG 64-22	Outright price	\$/st	5-40	cif	1.5-5
<b>USGC</b>							
Eastern US Gulf	New Orleans, Mobile	PG 64-22, PG 67-22, AC-30	Outright price	\$/st	10-45	fob	5 minimum
Western US Gulf	Corpus Christi	PG 64-22, PG 67-22, AC-30	Outright price	\$/st	10-45	fob	5 minimum
US Gulf	New Orleans, Mobile, Corpus Christi	PG 64-22, PG 67-22, AC-30	Outright price	\$/st	10-45	fob	5 minimum
<b>USMC</b>							
Asphalt	IL, IN, MI	PG 64-22	Outright price	\$/st	10-30	fob	5-15
Roofing Flux	IL, IN, MI	Type III flux, Type IV flux	Outright price	\$/st	10-30	fob	5-15