



YEAREX
TRADING

BITUMEN

Yearex Trading exporter and Bitumen importer

Yearex Trading is a major exporter and importer of bitumen in GCC. The company was registered in the United Arab Emirates in 2019 , with a group of experts to become a market leader. The company has an expanding presence in bitumen market and is involved as a seller.

The core business of the company has always been the production of and trade in paving-grade bitumen, polymer-modified bitumen, multigrade bitumen and industrial grade of bitumen. The company applies state-of-the-art technology solutions as a reliable manufacturer of bitumen, and is perfectly positioned to supply its products for major road projects, harnessing its modern and efficient installations, operated by qualified personnel.

With worldwide operations, we supply customers across the globe using our extensive contacts within every link of the product supply chain.



Purpose

Our purpose is to be the leading exporter and importer of bituminous products in GCC. We will achieve this by listening to our customers and providing sustainable total pavement solutions tailored to their needs. This is made possible with support from our outstanding team of people and investment in industry-leading technology.

Yearex Trading is a transparent company and makes sure that its operations follow the rules of corporate governance in place as well as the principles of corporate social responsibility and supporting the development of staff and protecting the natural environment at the same time.



A firm bitumen supplier

Market expertise

- Supplies more than 5000k tons of bitumen per annum
- Commercial and operational teams around the world
- Expertise in local and international bitumen markets

Reliable source of supply

- Global presence of production and distribution systems
- Strategically positioned partners
- Sourcing globally ensures constant product availability and high throughput
- High quality bitumen are sourced from Europe, Middle East and Asia

Flexible, global delivery

- Access to global network of shipping and infrastructure
- Capable of transportation of parcels sizes from 20 tons to 15,000 tons
- Delivers by vessel, ISO container, truck, IBC, poly bags or drum

Specialist logistical solutions

- Deals with the world's renewed shipping lines and specialized vessels
- Out of box shipping and logistic solutions
- Experienced in overcoming complex logistical constraints



Market leading expertise

Yearex measured and modern approach to risk management ensure minimized price risk. The company is able to supply most international grades of bitumen and a full range of specialty products including standard grade bitumen, PMB's, cutback and emulsions, which, together with the extensive sourcing abilities, enables Yearex to offer highly competitive product costs.

Trading logistics and distribution

Business built upon long-standing relationships with producers, refiners and customers.

Combining financial expertise with marketing intelligence;

- * Extensive experience in international business
- * Excellent awareness of the local and international markets
- * Flexibility of supplies of various grades and qualities

Proven partner

Our proven track record and distinctive capabilities are underpinned by years of experience, making us a natural partner of choice

- Collaborative and solutions-focused approach
- Business founded on long-standing partnerships
- Execute consistently and successfully in a complex world



Performance Grade of Bitumen

Performance Grade (PG) Bitumen

A range of PG grade binders complying with AASHTO M320 are available, selection of which depends on climatic variations in different countries.

Yearex has the expertise and know-how from many years of international supply using a variety of bitumen sources with different binder modifiers including polymers when appropriate to achieve the required properties.

PG Bitumen Binders - Unmodified

Property	PG 46-34	PG 46-28	PG 52-28	PG 58-28	PG 58-22	PG 64-22	Method AASHTO
Original Binder							
Flash Point, COC, °C				230			T 48
Flash Point, P-M, °C		NS			≥ 204		ASTM D93
Rotational Viscosity @ 135°C, Pa·s				3.00			T 316
Dynamic Shear @ Grade Temperature, °C	46	46	52	58	58	64	T 315
G*/sin @ 10 rad/sec, kPa				≥ 1.00			
RTFOT Residue							
Mass Loss, %				≤ 1.00			T 240
Dynamic Shear @ Grade Temperature, °C	46	46	52	58	58	64	T 315
G*/sin @ 10 rad/sec, kPa				2.20			
PAV Residue (Aging Temperature, °C)		90			100		R 28
Dynamic Shear @ Grade Temperature, °C	10	13	16	19	22	25	T 315
G*/sin @ 10 rad/sec, kPa				5000			
Creep Stiffness	-24	-18	-18	-18	-12	-12	
S, Mpa				≤ 300			T 313
m-value				≥ 0.30			T 313



Advantages



- 1) Empirical methods such as viscosity and penetration grading systems were developed based on old experiences and can be applicable if those conditions still exist. But climatic and current traffic conditions are rapidly changing and past experiences can no longer be defining criteria. In the PG system, it is possible to use actual traffic volume and vehicle speed which represents the duration of loads are applied.
- 2) Common tests are conducted at a single test temperature which is 25°C in penetration and 60°C in viscosity test, which means that they cannot give any details about how the bitumen would behave in low or high temperatures. Superpave grading indicates a working temperature range of binder and therefore, helps with choosing the best type according to the condition each project demands.
- 3) Because of the visco-elastic properties of bitumen, the rate of load application and temperature have a great effect on its behavior.
- 4) Although the behavior of bitumen in lower loading rates corresponds to that of higher temperatures, none of the other grading systems doesn't take the rate of load into account except for Superpave.
- 5) While Superpave can be easily used for both unmodified and modified bitumen, conventional methods are used only for unmodified bitumen types,
- 6) Conventional methods ignore the long-term aging of binders and its behavior. But Superpave takes both long-term aging -using with the pressure aging vessel (PAV)- and short-term aging -using the rolling thin film oven test (RTFOT)- into account.
- 7) Bitumen properties indicated at different temperatures contribute to resistance to the distresses in a different level. Bitumen contributing in a better rutting resistance is measured at maximum pavement temperatures and which leads to a more elastic and stiffer binder. Bitumen contributing to fatigue resistance is the most crucial at average pavement temperatures and it requires a softer bitumen while it still favors an elastic binder. Bitumen contribution to thermal cracking is sensitive at minimum pavement temperatures and it demands a less elastic and soft bitumen.





Bitumen Presentation

In response to the industry demands and the changing needs of its customers, Yearex Trading has been working to implement smarter transport logistics that adapt to constantly evolving market requirements.

BULK

With reliability, experience and speed, bulk delivery (in tankers) is our main delivery method in the local market and allows us to guarantee our customers an efficient service for all our manufactured and commercialized products.

Likewise, Yearex Trading has sufficient capacity and experience for maritime transport, especially with deliveries of large quantity of bitumen to marine terminals internationally using the bulk tanker vessels of size ranging from 1000 to 10,000 Metric Ton.



Bitumen Presentation

DRUM

The main advantages of delivery in drums are the possibility to maintain ample stocks and the ease of handling both transit and at the destination.

This method of packaging is well suited to long distance transport, as between 16 and 20 metric tons of any of the products can be stored in a standard 20-foot container, depending on the type of drum.

Drum Sizes	150 KG	180 KG	200 KG
Plate Thickness (Body)	0.6±0.02 MM	0.6±0.02 MM	0.8±0.02 MM
Plate Thickness (Top & Bottom)	0.6±0.02 MM	0.6±0.02 MM	0.8±0.02 MM
Height	86±2 CM	98±2 CM	98±2 CM
Diameter	50 CM	50 CM	55 CM
Lid Hole Position	Centre		
Lid Hole Diameter	10±1 CM	10±1 CM	10±1 CM
Net Filling Capacity	147±3 KG	182±3 KG	200±3 KG
Gross Weight	154±3 KG	192±3 KG	215±3 KG
Drum Tare Weight	7.0±0.1 KG	9.5±0.1 KG	16.0±0.2 KG
Color	Glossy Black		
Loading in 20ft Container – With Pallet			
Number of Drums	80	80	80
Net Weight of Bitumen	≈ 12.00 MT	≈ 14.40 MT	≈ 16.00 MT
Loading in 20ft Container – Without Pallet			
Number of Drums	110	110	96
Net Weight of Bitumen	≈ 16.50 MT	≈ 19.80 MT	≈ 19.20 MT

Bitumen Presentation

Poly bag

The Polybag is filled with bitumen that is exactly cooled down to a temperature slightly higher than the softening point - and lower than the melting point of the plastic liner material of the bag into a special Polyolefin Bag and is let down to harden and become solid for easy handling and cold transportation.

The inner bag is placed in a very solid and firmly designed 3ply outer layer of special polymeric bags. These bags are environmentally friendly and safe to handle, as it allows transportation and storage of large quantities of bitumen for long periods of time reducing energy costs and avoiding any left overs in drums or un-necessary heating like in bulk vessels. The outer layer is cut open and the inner liner melts with the bitumen during the melting process using specially designed high tech melting units which have a capacity of 4 tons per hour.

Poly Bag Sizes	40 Kg	300 Kg	1 Ton
Capacity			
Filling quantity for Bitumen (net)	40 kg	300 kg	1,000 Kg
Materials			
Outer bag	-	PP Fabric	PP Fabric
Inner Liner	Polyethylene	Polyethylene	Polyethylene
Melting peak inner bag (liner)	125°C / 257°F	137°C / 279°F	137°C / 279°F
Storage under roof	6-12 Months	6-12 Months	6-12 Months
Multiuse of outer bag	No	No	No
Loading in 20Ft Container			
Number of Bags	TBD	80	20
Quantity of Bitumen - Net Weight	≈ 20.00 MT	≈ 24.00 MT	≈ 20.00 MT

Bitumen Presentation

Bitumen tank containers

Bitumen tank containers are used for the transport and storage of bitumen emulsions, PMBs and heavy fuel oils. They maximise product carrying capacity within the constraints of a standard ISO shipping slot space. Bitumen tanks are ideal for temporary storage depots and job sites.

- 20ft tanks store up to 27,000 litres
- 40ft tanks store up to 65,000 litres
- ▶ • Ships as a standard ISO container with full intermodal transport - road, rail or sea
- Heating systems include direct fire, thermal oil and electric or combinations



Packing Comparison

	BULK SHIPMENTS (Bitumen Vessel – Terminal – Tanker)	Used (or) New Drums	Poly Bags
Shipping Method	Special Bitumen Vessels – Heated Cargo	Standard Shipping Containers 18MT-20MT per Container	Standard Shipping Container 20mt per container
Shipping Availability/Reliability	Limited availability, cyclical supply	Excellent	Excellent
Shipping Cost	Expensive, freights vary with demand, difficult to budget for long term projects.	Affordable	Affordable
Storage	Extremely capital intensive in bulk terminals, high operating costs, major overheads	Standard Warehouses or directly on site	Standard Warehouses or directly on site
Handling	Bulk road tankers to deliver directly on site. Expensive but swift.	Forklifts, 5-6 drums/mt. Used Drums can leak. New drums if mishandled may break as well. Damaged drums that do not break will become difficult to decant.	3.5ton Fork lifts can handle 2 x 1mt bags at a time. All bags double slinged and self-stabilizing. Can go straight from container to Melter in one move. Highly efficient handling.
Ground Transport	Expensive Bitumen Tankers – cargo continuously heated.	Standard trailers, can visit remote locations in smaller flat beds as well. Cheap and affordable.	Standard trailers, can visit remote locations in smaller flat beds as well. Cheap and affordable.
Wastage	Certain revolving %age will always remain in the vessel, terminal tank and road tanker. A direct loss.	3-5% is always left in the drum and is wasted.	Inner lining is completely consumable. 100% of transported cargo is consumed.
Decanting / Melting	Product is always in liquid state, easy and immediate decanting.	Each drum has to be cut open (often manually). This is an arduous and inefficient task. Messy and often product is left behind in the drum.	Simple. Outer bag is cut away and the inner lining and cargo is melted in one go.
Environmental Impact	Large carbon footprint for entire supply chain as energy is used to keep the cargo heated throughout.	Very Poor as a steel drum has to be produced for just 160 – 180kg of bitumen. A 1000mt project results in 5000+ empty drums to be disposed of. The used drums will have bitumen residue that will inevitably pollute the ground and storage/scrap	Inner lining is 100% consumable and outer lining is 100% recyclable.
Other Points	Expensive, large carbon footprint and huge capital needs to be invested into a distribution chain that should be obsolete by now.	Old drums could cross contaminate the bitumen. New Drums are expensive.	Triple layered technology and an outer woven polypropylene bag ensures chance of leakage is negated.

Bitumen grades

Standard Grade Bitumen

Grade	Standards	Packing
Penetration Grades		
40/50, 60/70, 85/100, 80/100, 120/150, 180/200, 200/300	ASTM, AASHTO	Drums, Polybags, Bulk
20/30, 30/45, 35/50, 40/60, 50/70, 70/100, 100/150, 160/200	European	
30A, 50A, 70A, 90A, 110A, 130A, 160A, AH30, AH50, AH70, AH90, AH110, AH130	Chinese	
Viscosity Grades		
AC10, AC20, AC30, AC40	ASTM, AASHTO	Drums, Polybags, Bulk
C170, C240, C320, C600	Australian	
VG10, VG20, VG30, VG40	Indian	

Bitumen Emulsions

Grade	Standards	Packing
Cationic Emulsions		
CRS1, CRS2, CSS-1, 1H, CQS-1H	CSS- ASTM, AASHTO	Drums, IBC
K1-70, K1-60, K1-40, K2, K3	British	
CSS60, CMS60, CMS65, CRS60, CRS65, CRS70	South Africa	
RS-0K, RS-1K, RS-2K, 1K, MS-2K, SS-1K	MS- Malaysian	
PC-1, PC-2, PC-3, BC-1	Chinese	
Anionic Emulsions		
SS-1, SS-1H, MS-1, RS-2, QS-1	MS-2, ASTM, AASHTO	Drums, IBC
A1-60, A1-55, A1-40, A2-57, A2-50, A3, A4	British	
RS60, MS60, SS60	South Africa	
ARS, AMS, ASS	Australia	
PA-1, PA-2, PA-3, BA-1	Chinese	
Nonionic Emulsions		
PN-2, BN-1	Chinese	Drums, IBC
Modified Emulsions		
PCR, BCR	Chinese	Drums, IBC
SC-E1, SC-E2, AC-E1, E2	AC- South Africa	



Bitumen grades

Specialty Grade Bitumen

Grade	Standards	Packing
Performance Grades		
PG64-16, PG64-22, PG70-10, PG70-16, PG70-22, PG76-10, PG76-16	ASTM, AASHTO	Drums
Polymer Modified Bitumen		
10/40-70, 25/55-65, 45/80-60, 45/80-65, 45/80-75, 75/130-60	European	Drums
S-E1, S-E2, A-E1, A-E2, A-P1	South African	

Cutback Bitumen

Grade	Standards	Packing
SC70, SC250, SC800, SC3000, MC30, MC70, MC250, MC800, MC3000, RC70, RC250, RC800, RC300	ASTM/ AASHTO	Drums, IBC
AMC00, AMC0, AMC1, AMC2, AMC3, AMC4, AMC5, AMC6, AMC7	Australia n	Drums, IBC

Oxidized Bitumen

Grade	Standards	Packing
Bitumen 75/30, 85/25, 85/40, 95/25, 95/40, 115/15	British, European	Drums, Polybags



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