



# BITUMENSHOP CO,LTD



Bitumen Shop Company established in 2008, has been doing bitumen business .our Company buys bitumen produced by “pasargad Oil Company (POC) and JEY oil related to Iran government and also other reputable private factory with high quality along with the latest standards and certificate and export it to many countries in the world. We are in capable of supplying and exporting bitumen in drum and bulk in different sizes and volumes .we value competitive price and high quality for our customers.

Bitumen Shop Co, LTD is Behalf of PITCO Holding and can supply and provide Bitumen with Different Grade but in Best Quality that Available in IRAN and UAE Market.

Bitumen shop as one of the Biggest Bitumen Supplier in Iran Can Arrange Bitumen with Different Payment Terms in All port that Available to Ship by Direct or Cross Stuff Method.

Bitumen Shop is your one stop for your Bitumen needs. At Bitumen Shop we do your shopping for you and present you with the best Bitumen offer available in the market.BitumenShop does not provide the lowest prices only, but it offers the best Bitumen price accompanied with the best quality. Whether you wish to buy Bitumen from Iran or UAE, we offer both services. Therefore, before you spend hours or days searching for the “right” Bitumen supplier, give us a call or send us an email, once you do, you will realize why at the Bitumen Shop we do your shopping for you based on your demands.

## Product

### Penetration Grading of Bitumen

The American Society for Testing Materials (ASTM) D 04 carried out bitumen grading at a temperature of 25 degree Celsius for the testing of the road and pavement materials in 1903.

The penetration test involves penetration of a needle that is loaded by 100g, into a bitumen sample maintained at a temperature of 25-degree Celsius in a water bath for a period of 5 seconds. The penetration value is measured in millimeters.

1 penetration unit = 0.1mm.

The greater the penetration value, the softer the bitumen become. The ASTM standard D 946 gives five penetration grades for the bitumen binders. They are:

## 40 – 50 , 60 –70 , 85 - 100

The penetration grading system is 100 years old bitumen grading method. In India, before 2006, the most widely used grade of bitumen was 60 to 70. For the construction of low volume roads and to perform spraying, penetration value from 80 to 100 was used.

The disadvantages of penetration grading of bitumen are:

The method of penetration grading is not a fundamental test. It makes use of empirical tests.

For polymer modified bitumen, this method cannot be employed

At higher and lower temperatures during service, similitude at 25 degree Celsius affects the performance. As shown in below figure, three bitumen binders with 60 to 70 penetration grade is plotted against stiffness values.

### Viscosity Grading of Bitumen

In the 1970s, US introduced the method of viscosity grading at 60 degree Celsius. This was to ensure a solution for construction problems and to have high temperature performance. These were tender mixes that must undergo mix pushing and shoving under the roller, without which it can not be rolled properly.

Prior to 1970s, the US construction used 60 to 70 penetration grade that shows variation towards rutting action. They showed lower viscosity at 135 degree Celsius. This caused tender mix problems during the construction process.

The viscosity test, unlike penetration grading, is a fundamental test carried out at 60 degree Celsius. This temperature is the maximum temperature to which the road pavement is subjected to at summer. The measurement is in terms of Poise.

In India, the equipment for testing the viscosity at 60 and 135 degrees are available. They are very simple to handle with. In the US, Six Asphalt Cement (AC) viscosity grades were specified. They are,

Viscosity at 60 degree Celsius, Poises

AC -2.5 SOFTEST            250±/-50

AC-5    500±/-100

AC-10   1000±/-200

AC-20   2000±/-400

AC-30   3000±/-600

AC-40 HARDEST 4000 ±/-800

In the US, Bitumen is mentioned as asphalt cement or asphalt. The grades with lower viscosity i.e. AC-2.5 and AC-5 were used for cold service temperatures; areas like Canada. In Northern tier states, AC-10 was used. Mostly in the US, AC-2- was used.

Only five grades excluding AC-30 was initially determined. These have a mean viscosity that will double from grade to grade. This resulted in no overlap in viscosity range. But the problem of AC-20 to be too soft and AC-40 to be too hard, that was faced by countries Florida, Georgia, and Alabama made AC-30 to be incorporated and hence six grades.

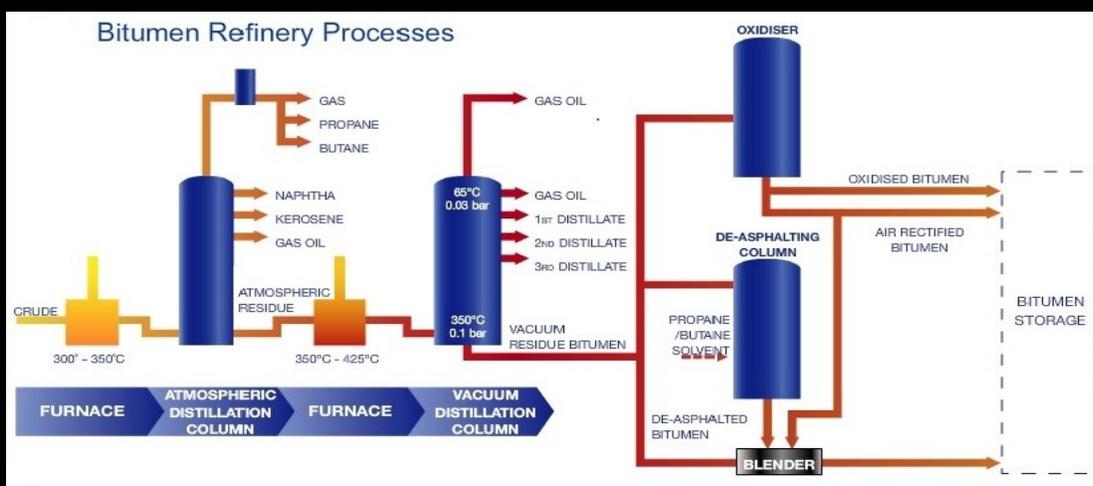
## What is bitumen?

Asphalt, also known as bitumen is a sticky, black, and highly viscous liquid or semi-solid form of petroleum. It may be found in natural deposits or may be a refined product, and is classed as a pitch. Before the 20th century, the term asphaltum was also used. The word is derived from the Ancient Greek ἄσφαλτος *ásphaltos*.

The primary use (70%) of asphalt is in road construction, where it is used as the glue or binder mixed with aggregate particles to create asphalt concrete. Its other main uses are for bituminous waterproofing products, including production of roofing felt and for sealing flat roofs.

The terms “asphalt” and “bitumen” are often used interchangeably to mean both natural and manufactured forms of the substance. In American English, “asphalt” (or “asphalt cement”) is commonly used for a refined residue from the distillation process of selected crude oils. Outside the United States, the product is often called “bitumen”, and geologists worldwide often prefer the term for the naturally occurring variety. Common colloquial usage often refers to various forms of asphalt as “tar”, as in the name of the La Brea Tar Pits.

Naturally occurring asphalt is sometimes specified by the term “crude bitumen”. Its viscosity is similar to that of cold molasses while the material obtained from the fractional distillation of crude oil boiling at 525 °C (977 °F) is sometimes referred to as “refined bitumen”.



## BITUMEN ANALYSIS

### BITUMEN 40/50

ANALYSIS	UNIT	LIMIT	TEST METHOD
DENSITY @25 °C	Kg/ma	1010-1060	ASTM D70 OR
PENETRATION @25 °C	mm/10	40-50	ASTM D5
SOFTENING POINT	°C	52-60	ASTM D36
DUCTILITY @25 °C	cm	100 min	ASTM D113
LOSS ON HEATING	wt%	0.2 max	ASTM D6
DROP IN PENETRATION AFTER HEATING	%	20 max	ASTM D5
FLASH POINT	°C	232 min	ASTM D92
SOLUBILITY IN	wt%	99.0 min	ASTM D2042
SPOT TEST		NEGATIV	A.A.S.H.O.T 102
VISCOSITY @60 °C	P	4000±800	ASTM D2171
VISCOSITY @135 °C	Cst	400 min	ASTM D2170
<b>TEST ON RESIDUE FROM THIN FILM OVEN TEST (ASTM D1754)</b>			
RETAINED PENETRATION AFTER (T.F.O.T).	%	58 min	ASTM D5
DUCTILITY, (25 °C),5cm/min, cm AFTER TFOT	CM	50	ASTM D113
VISCOSITY @60 °C	P	20000 max	ASTM D2171

### BITUMEN 60/70

ANALYSIS	UNIT	LIMIT	TEST METHOD
DENSITY @25 °C	Kg/m	1010-	ASTM D70 OR
PENETRATION @25 °C	min/10	60-70	ASTM D5
SOFTENING POINT	°C	49-56	ASTM D36
DUCTILITY @25 °C	cm	100 min	ASTM D113
LOSS ON HEATING	wt	0.2 max	ASTM D6
DROP IN PENETRATION	%	20 max	ASTM D5
FLASH POINT	°C	232 min	ASTM D92
SOLUBILITY IN	wt%	99.0 min	AS, D2042
SPOT TEST		NEGATI	A.A.S.H.O.T
VISCOSITY @60 °C	P	2000,10	ASTM D2171
VISCOSITY @135 °C	Cst	300 min	ASTM D2170
<b>TEST ON RESIDUE FROM THIN FILM OVEN TEST (ASTM D1754)</b>			
RETAINED PENETRATION AFTER (T.F.O.T)	%	54 min	ASTM D5
DUCTILITY , (25 °C),5cm/min ,cm AFTER	cm	50	ASTM D113
VISCOSITY @60 C	P	10000	ASTM D2171

## BITUMEN 80/100

ANALYSIS	UNIT	LIMIT	TEST METHOD
DENSITY @25 °C	Kg/m <sup>3</sup>	1000-	ASTI, D70 OR
PENETRATION @25 °C	mm/10	85-100	ASTI, D5
SOFTENING POINT	°C	45-52	ASTM D36
DUCTILITY @25 °C	cm	100 min	ASTM D113
LOSS ON HEATING	wt%	0.5 max	ASTM D6
DROP IN PENETRATION AFTER HEATING	%	20 max	ASTM D5
FLASH POINT	°C	232 min	ASTM D92
SOLUBILITY IN	wt%	99.0 min	ASTM D2042
SPOT TEST		NEGATIV	A.S.H O.T 102
VISCOSITY @60 °C	P	10001200	ASTI, D2171
VISCOSITY @135 °C	Cst	250 min	ASTI, 0217
<b>TEST ON RESIDUE FROM THIN FILM OVEN TEST (ASTM D1754)</b>			
RETAINED PENETRATION AFTER (T.F.O.T) ,	%	50 min	ASTI, D5
DUCTILITY. (25 °C).5cm/min. cm AFTER TFOT	cm	75	,STI, D113
VISCOSITY @60 C	P	5000 max	ASTI, D2171

## OUR SUPPLIERS

PASARGAD OIL COMPANY (POC) , JEY OIL COMPANY ,100% PURE BITUMEN REFINERIES IN IRAN AND UAE ARE OUR MAIN SUPPLIERS TO SUPPLY BEST QUALITY BITUMEN TO OUR COSTUMERS



**CONTACT US**

# BITUMENSHOP



**A WORLD CLASS PACKAGING TEAM, BUILT FOR YOU**

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