

Reborn 2020



Dara FZE

BITUMEN



Dara FZE

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Bitumen 10/20 Specifications

No.	Analysis	Unit	Limit	Test Method
1	Density@25°C	Kg/m ³	1010-1060	ASTM D70 or D3289
2	Penetration@25°C	Mm/10	10-20	ASTM D5
3	Softening point	°C	120	ASTM D36
4	Ductility@25°C	Cm	3 Min.	ASTM D113
5	Loss on heating	Wt%	0.2 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5 and D6
7	Flash point	°C	225 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min.	ASTM D4
9	Spot test	-	Negative	AASHOT102

Usage: The main common usage of bitumen 10/20 is being used in the manufacturing of hot mix asphalt for bases and wearing courses. It allows for a thinner pavement design by its high viscosity which uses up to 30% less asphalt than traditional one.





Bitumen 20/30 Specifications

No.	Analysis	Unit	Limit	Test Method
1	Density@25 °C	Kg/m ³	1010-1060	ASTM D70 or D3289
2	Penetration@25 °C	mm/10	20-30	ASTM D5
3	Softening point	°C	80-90	ASTM D36
4	Ductility@25 °C	Cm	3 Min.	ASTM D113
5	Loss on heating	Wt%	0.2 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5 and D6
7	Flash point	°C	225 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min.	ASTM D4
9	Spot test	-	Negative	AASHTO T102

Usage: The main common usage of bitumen 20/30 is suitable for road construction and for the production of asphalt pavements with superior properties. This grade of bitumen is mainly used of hot mix asphalt for bases and wearing courses as well.





Bitumen 30/40 Specifications

No.	Analysis	Unit	Limit	Test Method
1	Density@25 °C	Kg/m ³	1010-1060	ASTM D70 or D3289
2	Penetration@25 °C	mm/10	30-40	ASTM D5
3	Softening point	°C	55-63	ASTM D36
4	Ductility@25 °C	Cm	100 Min.	ASTM D113
5	Loss on heating	Wt%	0.2 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5 and D6
7	Flash point	°C	232 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min.	ASTM D2042
9	Spot test	-	Negative	AASHTO T102

Usage: The main common usage of bitumen 30/40 is being used for paving and road construction the penetration grade bitumen has a thermoplastic property which causes the material to soften at high temperatures and to harden at low temperatures.



*Bitumen 40/50 Specifications*

No.	Analysis	Unit	Limit	Test Method
1	Density@25 °C	Kg/m ³	1010-1060	ASTM D70 or D3289
2	Penetration@25 °C	mm/10	40-50	ASTM D5
3	Softening point	°C	49 Min.	ASTM D36
4	Ductility@25 °C	Cm	100 Min.	ASTM D113
5	Loss on heating	Wt%	0.2 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5
7	Flash point	°C	232 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min.	ASTM D2042
9	Spot test	-	Negative.	AASHTO T102
10	Viscosity@60 °C	P	4000±800	ASTM D2171
11	Viscosity@135 °C	CST	400 Min.	ASTM D2170





Bitumen 50/70 Specifications

No.	Analysis	Unit	Limit	Test Method
1	Density@25 °C	Kg/m ³	1010-1060	ASTM D70 or D3289
2	Penetration@25 °C	mm/10	50-70	ASTM D5
3	Softening point	°C	46 Min.	ASTM D36
4	Ductility@25 °C	Cm	100 Min.	ASTM D113
5	Loss on heating	Wt%	0.2 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5
7	Flash point	°C	232 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min	ASTM D4
9	Spot test	-	Negative	AASHTO T102
10	Viscosity@60 °C	P	2000 $\pm$ 400	ASTM D2171
11	Viscosity@135 °C	CST	300 Min.	ASTM D2170



*Bitumen 60/70 Specifications*

No.	Analysis	Unit	Limit	Test Method
1	Density@25 °C	Kg/m ³	1010-1060	ASTM D70 or D3289
2	Penetration@25 °C	mm/10	60-70	ASTM D5
3	Softening point	°C	46 Min.	ASTM D36
4	Ductility@25 °C	Cm	100 Min.	ASTM D113
5	Loss on heating	Wt%	0.2 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5
7	Flash point	°C	232 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min	ASTM D4
9	Spot test	-	Negative	AASHTO T102
10	Viscosity@60 °C	P	2000 _± 400	ASTM D2171
11	Viscosity@135 °C	CST	300 Min.	ASTM D2170



*Bitumen 60/90 Specifications*

No.	Analysis	Unit	Limit	Test Method
1	Density@25 °C	Kg/m ³	1010-1060	ASTM D70 or D3289
2	Penetration@25 °C	mm/10	60-90	ASTM D5
3	Softening point	°C	46 Min.	ASTM D36
4	Ductility@25 °C	Cm	100 Min.	ASTM D113
5	Loss on heating	Wt%	0.2 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5
7	Flash point	°C	232 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min	ASTM D4
9	Spot test	-	Negative	AASHTO T102
10	Viscosity@60 °C	P	2000 _± 400	ASTM D2171
11	Viscosity@135 °C	CST	300 Min.	ASTM D2170



*Bitumen 80/100 Specifications*

No.	Analysis	Unit	Limit	Test Method
1	Density@25 °C	Kg/m3	1010-1050	ASTM D70 or D3289
2	Penetration@25 °C	mm/10	80-100	ASTM D5
3	Softening point	°C	42 Min.	ASTM D36
4	Ductility@25 °C	Cm	100 Min.	ASTM D113
5	Loss on heating	Wt%	0.5 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5
7	Flash point	°C	232 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min	ASTM D2042
9	Spot test	-	Negative	AASHTO T102
10	Viscosity@60 °C	P	1000 $\pm$ 200	ASTM D2171
11	Viscosity@135 °C	CST	250 Min.	ASTM D2170



*Bitumen 85/100 Specifications*

No.	Analysis	Unit	Limit	Test Method
1	Density@25 °C	Kg/m ³	1010-1050	ASTM D70 or D3289
2	Penetration@25 °C	mm/10	85-100	ASTM D5
3	Softening point	°C	42 Min.	ASTM D36
4	Ductility@25 °C	Cm	100 Min.	ASTM D113
5	Loss on heating	Wt%	0.5 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5
7	Flash point	°C	232 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min	ASTM D2042
9	Spot test	-	Negative	AASHTO T102
10	Viscosity@60 °C	P	1000 $\pm$ 200	ASTM D2171
11	Viscosity@135 °C	CST	250 Min.	ASTM D2170



*Bitumen 85/100 Specifications*

No.	Analysis	Unit	Limit	Test Method
1	Density@25 °C	Kg/m ³	1010-1050	ASTM D70 or D3289
2	Penetration@25 °C	mm/10	85-100	ASTM D5
3	Softening point	°C	42 Min.	ASTM D36
4	Ductility@25 °C	Cm	100 Min.	ASTM D113
5	Loss on heating	Wt%	0.5 Max.	ASTM D6
6	Drop in penetration after heating	%	20 Max.	ASTM D5
7	Flash point	°C	232 Min.	ASTM D92
8	Solubility in Trichloroethylene	Wt%	99.0 Min	ASTM D2042
9	Spot test	-	Negative	AASHTO T102
10	Viscosity@60 °C	P	1000 $\pm$ 200	ASTM D2171
11	Viscosity@135 °C	CST	250 Min.	ASTM D2170



*Bitumen VG 10*

No.	Analysis	Limit	Test Method
1	Absolute Viscosity @60 °C, Poises	Min. 800	IS 1206 (Part 2)
2	Kinematic Viscosity @135 °C, cst	Min. 250	IS 1206 (Part 3)
3	Flash Point (Cleveland Open Cup) °C	Min. 220	IS 1209
4	Solubility in Trichloroethylene, %	Min. 99	IS 1206
5	Softening Point (R&B), °C	Min. 40	IS 1205
6	Penetration @25°C, 0.1mm 100g, 5 Sec.	80-100	IS 1203
Tests on Residue from Thin Film Oven Tests / RTFOT			
7	Viscosity Ratio @60°C	Max. 4.0	IS 1206 (Part 2)
8	Ductility @25°C, Cm, after thin film oven test	Min. 75	IS 1208
9	Specific Gravity@27/27 °C	Min 0.99	IS 1202

** Conforms to (IS 73:2006) Specifications.*

Usage: Bitumen VG 10 is mostly used for surface dressing on paving and repairing by spraying applications in very cold climate instead of 80/100 penetration bitumen grade. It also used to produce bitumen emulsion and modified bitumen products.



*Bitumen VG 20*

No.	Analysis	Limit	Test Method
1	Absolute Viscosity @60 °C, Poises	Min. 1600	IS 1206 (Part 2)
2	Kinematic Viscosity @135 °C, cst	Min. 300	IS 1206 (Part 3)
3	Flash Point (Cleveland Open Cup) °C	Min. 220	IS 1209
4	Solubility in Trichloroethylene, %	Min. 99	IS 1206
5	Softening Point (R&B), °C	Min. 45	IS 1205
6	Penetration @25°C, 0.1mm 100g, 5 Sec.	60-80	IS 1203
Tests on Residue from Thin Film Oven Tests / RTFOT			
7	Viscosity Ratio @60°C	Max. 4.0	IS 1206 (Part 2)
8	Ductility @25°C, Cm, after thin film oven test	Min. 50	IS 1208
9	Specific Gravity@27/27 °C	Min 0.99	IS 1202

** Conforms to (IS 73:2006) Specifications*

Usage: Bitumen VG-20 is used for paving in high altitude and cold climate regions. it can be used for manufacturing some kind of asphalt primer & waterproofing products as well.



*Bitumen VG 30*

No.	Analysis	Limit	Test Method
1	Absolute Viscosity @60 °C, Poises	Min. 2400	IS 1206 (Part 2)
2	Kinematic Viscosity @135 °C, cst	Min. 350	IS 1206 (Part 3)
3	Flash Point (Cleveland Open Cup) °C	Min. 220	IS 1209
4	Solubility in Trichloroethylene, %	Min. 99	IS 1206
5	Softening Point (R&B), °C	Min. 47	IS 1205
6	Penetration @25°C, 0.1mm 100g, 5 Sec.	50-70	IS 1203
Tests on Residue from Thin Film Oven Tests / RTFOT			
7	Viscosity Ratio @60°C	Max. 4.0	IS 1206 (Part 2)
8	Ductility @25°C, Cm, after thin film oven test	Min. 40	IS 1208
9	Specific Gravity@27/27 °C	Min 0.99	IS 1202

** Conforms to (IS 73:2006) Specifications.*

Usage: Bitumen VG-30 is especially used to construct extra heavy duty bitumen pavements to tolerate heavy traffic loads. It is recommended for road construction where extra heavy traffic is expected.



*Bitumen VG 40*

No.	Analysis	Limit	Test Method
1	Absolute Viscosity @60 °C, Poises	Min. 3200	IS 1206 (Part 2)
2	Kinematic Viscosity @135 °C, cst	Min. 400	IS 1206 (Part 3)
3	Flash Point (Cleveland Open Cup) °C	Min. 220	IS 1209
4	Solubility in Trichloroethylene, %	Min. 99	IS 1206
5	Softening Point (R&B), °C	Min. 47	IS 1205
6	Penetration @25°C, 0.1mm 100g, 5 Sec.	40-60	IS 1203
Tests on Residue from Thin Film Oven Tests / RTFOT			
7	Viscosity Ratio @60°C	Max. 4.0	IS 1206 (Part 2)
8	Ductility @25°C, Cm, after thin film oven test	Min. 25	IS 1208
9	Specific Gravity@27/27 °C	Min 0.99	IS 1202

** Conforms to (IS 73:2006) Specifications.*

Usage: Bitumen VG-40 is used in highly stressed areas such as: Intersections, Air ports, truck parking lots, near toll booths and roads with heavy traffic loads in higher temperatures. Because of higher viscosity it also can be used instead of 30/40 bitumen penetration grade.



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