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**GlobeCore**

Bitumen  
equipment



The catalogue contains photographs of the products with various options. The options are subject to change depending on the technology process, rules and regulations in effect. Please visit <https://globecore.com/contacts.html> and contact us to specify product options.

## Introduction

The increased speeds and loads of cargo vehicles on the road present new challenges to reliability and durability of asphalt concrete pavements. New surfaces and designs are being developed to meet these challenges. As a rule, the bitumen materials used as binders are not sufficient to meet the requirements to the strength of road pavements.

This catalogue presents GlobeCore equipment designed for production and storage of high quality binding materials: bitumen emulsion and modified bitumen. These materials can be implemented in various technologies of road construction, maintenance and repair.

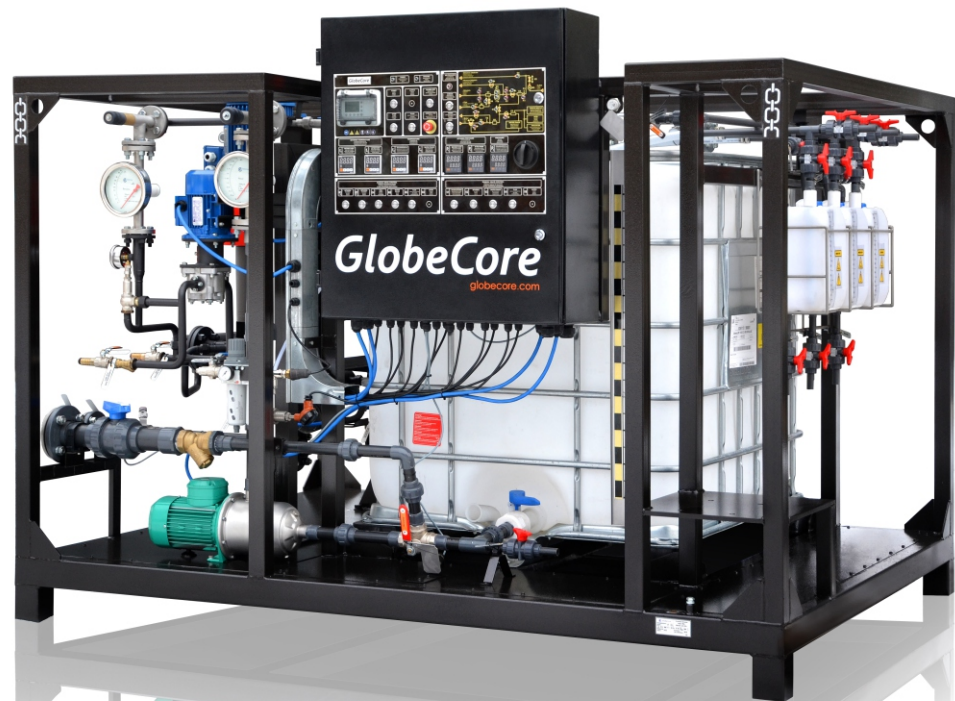
# GlobeCore



# UVB-1

## Bitumen Emulsion Production Machine

1 m<sup>3</sup>/hour (4.4 gpm) and 2 m<sup>3</sup>/hour (8.8 gpm)



The UVB-1 bitumen emulsion machine is designed for production of anionic and cationic bitumen emulsions.

Bitumen emulsions are used in road construction for tack coating of old road surface before application of asphalt, for production of cold asphalt mix, for surface treatment, to create thin-film protective layers, for patch repairs, as well as in Multimac and Slurry Seal technologies.

The unit can be operated either indoors or outdoors with adequate overhead protection.



low power consumption



exclusive



automation-assisted operation

### Parameter

### Value

Max production capacity (including preparation time), m <sup>3</sup> /hour (gpm)	1 (4.4)*	2 (8.8)*
Bitumen flow, m <sup>3</sup> /hour (gpm), (not less than)	0.97 (4.3)	1.8 (7.9)
Water flow, m <sup>3</sup> /hour (gpm)	0.4-1.1 (1.8-4.8)*	0.7-2.2 (3.1-9.7)*
Flux flow, dm <sup>3</sup> /hour (gpm)	0-50 (0-0.2)*	0-70 (0-0.3)*
Acid (base) flow, dm <sup>3</sup> /hour (gpm)	1-20 (0.004-0.08)*	5-20 (0.02-0.08)*
Surfactant flow, dm <sup>3</sup> /hour (gpm)	1-20 (0.004-0.08)*	5-20 (0.02-0.08)*
Adhesive flow, dm <sup>3</sup> /hour (gpm)	1-20 (0.004-0.08)*	1-20 (0.004-0.08)*
Bitumen pressure at inlet, MPa (Psi), (max)	0.2 (29)	0.2 (29)
Bitumen pressure at mixer, MPa (Psi)	1.4 (203)	1.4 (203)
Water phase pressure at mixer, MPa (Psi)	0.2 (29)	0.2 (29)
Bitumen temperature required at inlet, °C (°F)	140-160(284-320)	140-160(284-320)
Water temperature required at inlet, °C (°F)	40-60 (104-140)	40-60 (104-140)
Emulsion output head, m (ft), (max)	15 (49)	15 (49)
Nominal power, kW, (max)	17	17
Voltage of power supply at 50 Hz, V	380**	380**
Compressed air pressure, bar (Psi)	4-6 (58-87)	4-6 (58-87)
Air flow, dm <sup>3</sup> /min (CFM)	100 (3.5)	100 (3.5)
Dimensions, mm (in): length	2250 (89)	2340 (92)
width	1750 (69)	2080 (82)
height	1840 (72)	2080 (82)
Weight, kg (lbs), (max)	1050 (2310)	1260 (2780)

\* - depends on product formula

\*\* - depends on customer requirements

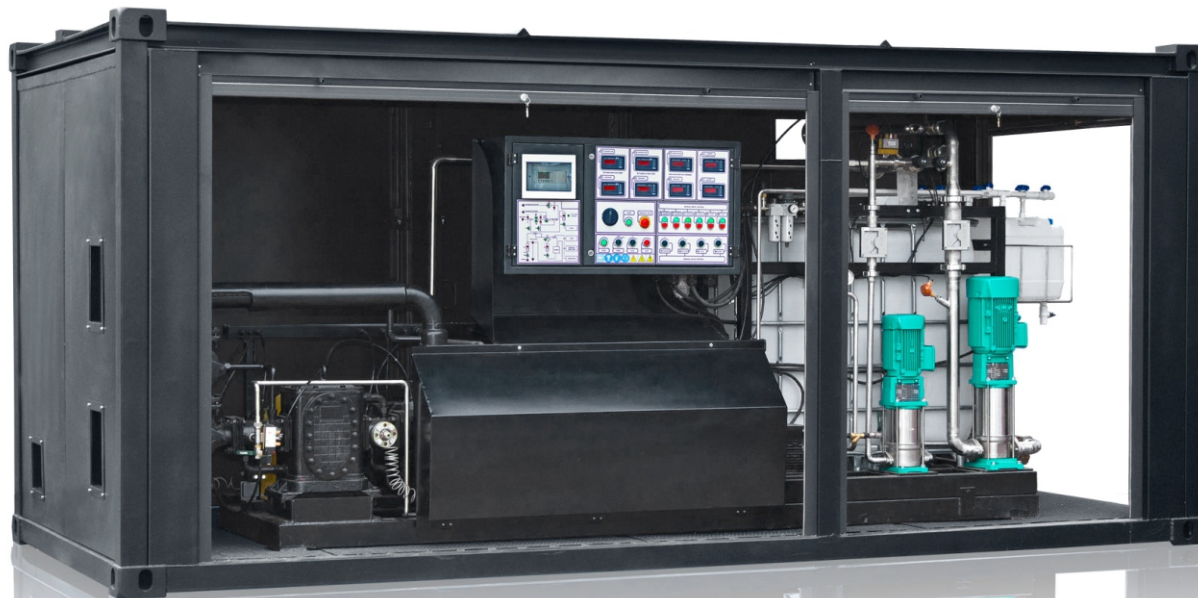
Note: the machine can introduce various components into the emulsion: stabilizers, viscosity adjustment additives, adhesives, as well as water solution of latex, to produce modified bitumen emulsions.

# GlobeCore

# UVB-1

## Bitumen Emulsion Production Machine

8 m<sup>3</sup>/hour (35.2 gpm)



low power consumption



exclusive



automation-assisted operation

The reliability of the machine is ensured by advanced high quality components from world class suppliers:

- Motovario gearbox;
- KTR couplings;
- Wilo pumps;
- GlobeCore flow meters;
- Zipson valves.

Safe operation is facilitated by Wika pressure sensors.

The machine can be installed in anti-vandal or regular container with roll-down doors.

## Parameter Value

Max production capacity (including preparation time), m <sup>3</sup> /hour (gpm)	8 (35.2)*
Bitumen flow (90...130 penetration), m <sup>3</sup> /hour (gpm), (not less than)	10.5 (46.2)*
Water flow, m <sup>3</sup> /hour (gpm)	5-7 (22-30.8)*
Flux flow, dm <sup>3</sup> /hour (gpm)	50-250 (0.2-1)*
Acid flow, dm <sup>3</sup> /hour (gpm)	50-150 (0.2-0.6)*
Surfactant flow, dm <sup>3</sup> /hour (gpm)	up to 50 (0.2)*
Adhesion additive consumption, dm <sup>3</sup> /hour (gpm)	up to 150 (0.6)*
Latex consumption (latex injection section available on customer request), dm <sup>3</sup> /hour (gpm)	up to 490 (2)*
Bitumen pressure at inlet, MPa (Psi), (max)	0.2 (29)
Bitumen pressure at mixer, MPa (Psi)	1.4 (203)
Water phase pressure at mixer, MPa (Psi)	0.2 (29)
Bitumen temperature at inlet, °C (°F)	140-160 (284-320)
Water temperature at inlet, °C (°F)	40-60 (104-140)
Emulsion output head, m (ft), (max)	10 (32.8)
Nominal power, kW, (max)	33
Voltage of power supply, V	380**
Dimensions without/with container, mm (in):	4500(177)
length	/4850(191)
width, <u>deployed</u>	1800(71) 2250(89)
	/2150(85) 2350(93)
height	1800(71)/2200(87)
Weight, kg (lbs), (max)	1800(3970)/3550(7830)

# GlobeCore

\* depends on product formula

\*\* depends on customer requirements

# UVB-2

Polymer Bitumen Modification Machine  
6 m<sup>3</sup>/hour (26.4 gpm)



low power consumption



touch panel



automation-assisted operation

The UVB-2 machine is designed for modification of bitumen by adding polymers, adhesives and plasticizers. Modified bitumen is used in top layer asphalt, protective layers for concrete surfaces and crack sealant mastics. Using modified bitumen has a number of benefits over regular bitumen by expanding the temperature range of application in various seasons, resisting physical traffic loads (rutting and cracking) and improving road durability.

The machine can run virtually any bitumen modification process with many various modification materials (polymers, wax etc).

## Parameter Value

Production capacity, m <sup>3</sup> /hour (gpm), (not less than)	6 (26.4)
Polymer used per 1 m <sup>3</sup> of bitumen, kg (lbs)	10-100 (22-220)
Mode of operation	Batch
Number of reaction tanks	2
Nominal power, kW	110
▪ mill	75
▪ bitumen to mill pump	5.5
▪ bitumen input/output pump	11
▪ vane mixer	3x3; 5.5
▪ control systems	0.8
▪ plasticizer supply pump	3
▪ adhesive supply pump	0.25
Power supply: voltage, V	380*
frequency, Hz	50*
Dimensions, excluding components removed for transportation, mm (in): length	6950 (274)
width	2300 (91)
height	2480 (98)
Weight, kg (lbs), (max)	5500 (12130)

\* - on customer request

# CLM

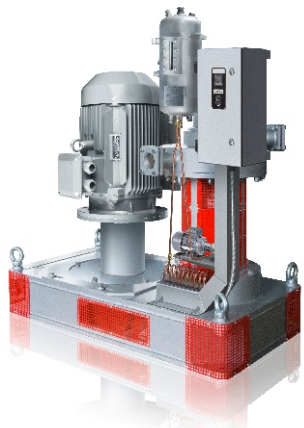
## Colloid Mills



CLM  
200.2



CLM  
250.3



CLM  
40.2



CLM  
100.2



pulverization  
to 1µm



corrosion  
resistance



designed for  
nonstandard  
conditions

The CLM colloid mills are designed for stream homogenization and emulsification of liquids, in particular in bitumen emulsion production.

Colloid mills can be used for preparation, dissolution, processing and treatment of various products in many industries.

## Parameter

## Value

	CLM 100.2	CLM 200.2	CLM 250.3	CLM 40.2
Processing rate, m <sup>3</sup> /hour (gpm)	0.1..1 (0.4..4.4)*	0.2 (0.9)*	0.25..0.5 (1.1..2.2)*	35..40 (154..176)*
Process temperature, °C (°F), (max)	180 (356)	150 (302)	180 (356)	200 (392)
Process pressure, bar (Psi), (max)	6 (87)	6 (87)	6 (87)	16 (232)
Product volume, liters (gal)	5 (1.3)	5..10 (1.3..2.6)	10..20 (2.6..5.2)	flow
Shaft seal type	mechanical	gland	gland	mechanical
Rotor/stator tooling type	nozzle	chamber	nozzle	chamber
Replaceable tooling	optional**			
Knife axial gap, mm (in), (preset)	0.2..2 (0.007..0.078)	0.5..1 (0.019..0.039)	0.3..2 (0.011..0.078)	0.3..2 (0.011..0.078)
Knife radial gap, mm (in)	0.25 (0.009)	0.2 (0.007)	-	2 (0.078)
Knife tip speed, m/sec (ips), (max)	50 (1970)	15..30 (590..1180)	25 (980)	70 (2750)
Mill shaft and bearing rpm	6800	2840..5680	4050	3000
Electric motor rpm	3400	2840..5680	3000	3000
Drive power, kW	3.3	2.2	5.5	132
Power voltage, V	Custom			
Dimensions, mm (in), (max): length	550 (22)	800 (31)	800 (31)	1600 (63)
width	600 (24)	750 (30)	650 (26)	1100 (43)
height	850 (33)	1450 (57)	1400 (55)	1850 (73)
Weight, kg (lbs), (max)	75 (165)	90 (200)	190 (420)	2050 (4520)

\* - depends on product (liquid)

# SBM/SBE

## Modified Bitumen and Bitumen Emulsion Containers



SBM  
15-01M



reliability



size adapted for  
various transportation  
means

The SBM (SBE) containers are designed for storage of modified bitumen (bitumen emulsion), made with the UVB-2 and UVB-1 units respectively. The container can be supplied separately and integrated into an existing emulsion production or bitumen modification process. The container is equipped with temperature sensors, Dinel and Wika level sensors and overflow sensors.

Parameter	Value		
	SBM 15-01M	SBM 30-01M	SBE 15
Total volume, m <sup>3</sup> (gal), (min)	16 (4220)	32 (8440)	16 (4220)
Usable volume, m <sup>3</sup> (gal), (min)	15 (3960)	30 (7920)	15 (3960)
Agitator type	Vanes	Vanes	-
Agitator rpm	35-40	400	-
Heat exchanger area, m <sup>2</sup> (ft <sup>2</sup> )	9 (97)	22 (237)	6 (65)
Insulation thickness, mm (in)	200 (8)	200 (8)	100 (4)
Nominal power, kW	11.3	30.5	0.3
Power supply: voltage, V	380*	380*	380*
frequency, Hz	50*	50*	50*
Dimensions in transportation position, mm (in), (max): length	6550 (258)	12000 (472)	6620 (261)
width	2400 (94)	2400 (94)	2250 (89)
height	2550 (100)	2550 (100)	2250 (89)
Dimensions deployed, mm (in), (max): length	2850 (112)	2850 (112)	2950 (116)
width	2800 (110)	2800 (110)	2550 (100)
height	6550 (258)	12000 (472)	6400 (252)
Weight, kg (lbs), (max)	4000 (8820)	8500 (18740)	3000 (6610)
Max loaded weight, kg (lbs)	18800 (41450)	41000 (90390)	18000 (39680)

\* - on customer request

# GlobeCore

# UVB-2L

## Laboratory Bitumen Modification



exclusive



versatility (works  
with different  
modifiers).

The laboratory scale UVB-2L machine is designed for preparation of small modified bitumen batches (no more than 10 liters (2.6 gal) per cycle).

Modified bitumen is prepared by inline mixing with simultaneous dispersion of bitumen and polymer in the mill. The design allows for addition of other liquid ingredients.

The machine is intended for the oil refining facilities to perfect the process of bitumen modification by determining the optimal composition of the product, using a batch of modified bitumen as a laboratory sample.

Parameter	Value
Main loading vessel volume, liters (gal)	24 (6.3)
Minimal bitumen load, liters (gal)	10 (2.6)
Bitumen modification process	Dispersion of bitumen and polymer in the mill
Product pump capacity, liters/min (gpm)	30 (7.9)
Max bitumen modification temperature, °C(°F)	190 (374)
Minimum bitumen load temperature, °C(°F)	160 (320)
Heating of the product in piping	Heat carrier
Heat carrier heating element power, kW	4.8
Control	Manual
Component control	Automation-assisted
Max power requirement, kW	15
Dimensions, mm (in), (max): length	1630 (64)
width	770 (30)
height	1800 (71)
Weight, kg (lbs)	420 (930)

# GlobeCore