

BITUME BARRELS MAKING LINE & FILLING MACHINE (JUMBO-BAG)



شرکت مهندسی فراسو توزین

WHO WE ARE

Farasoo Towzin engineering Co, is a professional manufacturer of BITUME BARRELS MAKING LINE, Bitumen Filling Machine & Accessories with more than 30 years of history. We are leading supplier of complete turnkey solution for steel drum production line manufacturing equipment.

We are improving technologies all the time and developing drum machinery market. We provide customers with valued solutions including automatic machine, automatic hole punching & locking machine, flangers & curlers machine, W-Beader & corrugator machine, automatic sheet rolling, resistance longitudinal seam welding, assembly & seaming machine, drum painting spray booth, drying oven, silk printing machine etc.

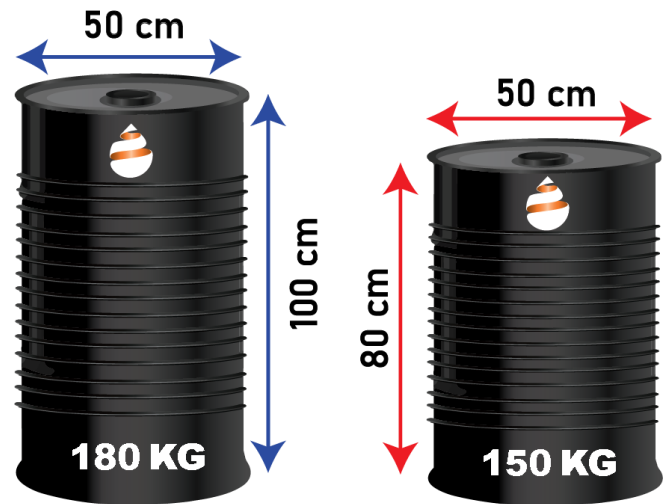
Due to professional engineer team, technical operation and reliable quality equipment, our machineries have been worked in many plants.

We are long term company, and we will provide long term Quality Machinery and long-term cooperation for the customers from all over the ME Zone.



Customarily, bitumen has been packaged and exported in new steel drums. Drum bitumen capacity ranges from 150 Kg to 200 Kg.

The most commonly used drum packaging capacity by nearly all bitumen consumers in the globe is 180 Kg. 180 Kg drums are used more widely by bitumen consumers as they are the most beneficial to them. Bitumen importers can save on costs by using 180 Kg drums. The areas of savings are associated but not limited to, drum production cost, handling and shipping related expenses.



Drum Details			
SPECIFICATION	150 KG	180 KG	200 KG
Plate Thickness			
Body	0.6±0.02 mm	0.6±0.02 mm	0.8±0.02 mm
Top & Bottom	0.6±0.02 mm	0.7±0.02 mm	0.8±0.02 mm
Height	86 Cm	98 Cm	98 Cm
Diameter	50 Cm	50 Cm	55 Cm
Lid Hole Position			Center
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	156±3 Kg	192±3 Kg	215±3 Kg
Drum Tare Weight	8.2±0.1 Kg	9.5±0.1 Kg	16.0±0.2 Kg
Color	Glossy Black	Glossy Black	Glossy Black
Loading in 20ft Container-With Pallet			
Number of Drums	80	80	80
Bitumen Net Weight	≈12.00 MT	≈14.40 MT	≈16.00 MT
Loading in 20ft Container-Without Pallet			
Number of Drums	110	110	88
Bitumen Net Weight	≈16.50 MT	≈19.80 MT	≈19.80 MT

*Supplied Drums of good workmanship and are sufficiently leak-proof when filled with hot bitumen

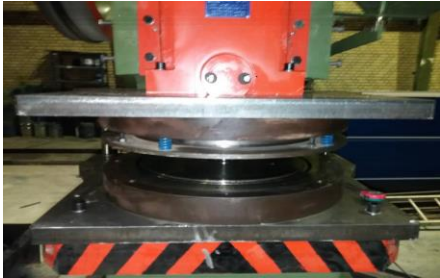
* New cold roll steel grade DIN 1623 ST12





List of Equipment of bitumen barrel making line (sheet size 600 microns)

- ✓ 10 Ton De-coiler machines for placing sheet coils at the beginning of the production line
- ✓ Car Coil carriage
- ✓ NC straightener feeder
- ✓ Automatic guillotine machine
- ✓ Sheet sorting table for cut sheets Stand-up operator panel
- ✓ Barrel body rolling machine
- ✓ Transfer tables for rolled and formed bodies to production stations
- ✓ 25 KV welding point
- ✓ Automatic welding reel with corresponding fixture
- ✓ Cooling chiller suitable for production line
- ✓ Barrel body horizontal flanger
- ✓ Barrel body line machine
- ✓ Vertical seamer device at the top and bottom of the barrel
- ✓ Electromechanical presses related to the top and bottom doors of the barrel
- ✓ Automatic servo feeder equipment + roll opener + sheet straightener
- ✓ Making all molds related to production in pressing stations





Jumbo Bag Filling for Bitumen



Bitumen big-bag filling machine (300 & 1000 kg)

The machine is designed for packaging bitumen and other fast curing products to big-bag. The machine operates in semiautomatic mode. The operator places a big bag in the filling area and fastens the neck of the bag to the filling nozzle. The filling is done gravimetrically. The product feed line, including pump and filling valve, heating with a coolant or heating cable. The big bag is removed using a forklift. The machine can be supplied with additional equipment, such as a system for evacuation of outgoing vapors and inflatable bags inside the big bag.

- ✓ Main Steel Structure
- ✓ Collector & Control Valves (For 2 Station of Filling)
- ✓ Platform Scale - Weighing System (2 section separately)
- ✓ Filling Equipment
- ✓ Blowers and Connections
- ✓ Digital Weight Indicators
- ✓ Controller systems, Electrical Cell & Accessories
- ✓ Stairs





Bitumen polybag packing

Poly bags are multi-layer flexible bags available in different sizes sometimes called as bituplast, bitubag, and poly cube. The poly-alkenes bags with high quality and resistance are among the best types of bitumen packaging. With its easy-to-use functionality and reasonable price, it has become popular with industries. Recently, bitumen exporters have switched from steel drums to jumbo bags. Jumbo bags reduce the amount of waste bitumen by between 3 and 4 percent compared to drums. It's necessary to heat the bitumen when discharging the drum, but with jumbo bags, it's sufficient to tear the outer layer of the jumbo bag and throw it in the molten furnace with the inner layer.

Using Poly bags, bitumen is cooled precisely to a temperature lower than that of the plastic material lining the bag, then deposited into a special Polyolefin bag to become solid and ready for transportation.

Featuring a three-ply outer layer made of special plastic bags that are strong and durable, they are environmentally friendly and safe to handle since they store and carry large amounts of bitumen for prolonged periods of time, reducing fuel costs and reducing wasted heat associated with bulk vessels. A high-tech melt unit is used to cut open the outer layer which allows the inside liner to melt with the bitumen as it melts.

Whenever heat-sensitive bitumen is packed in bags, it is not transported over large distances, resulting in a reduction in carbon emissions; however, nothing is left behind as environmental waste, and the bitumen is only melted where it is needed. When compared with melting drums or Bitumen Tank Containers, the bags also save about 8% in terms of energy consumption.

Assisting in bitumen transportation, Poly bag is a revolutionary system. Bitumen drums can be replaced with this cost-effective solution.

- As a general rule, the waste left in drums constitutes 3-4 percent of the waste, while no waste remains in Polyethylene Bag bags.
- Unlike drums, which can be recycled and resold, the packaging doesn't pollute the environment, especially when bitumen is melted far from the port at deep inland locations.
- Shipment and storage are easy with the system.
- A convenient location is selected for the delivery and melting of bitumen.
- It reduces the cost of labour.
- Carbon emissions are reduced because heating is more efficient (only the bitumen is heated, not the drum).
- Since bitumen is only used and melted when needed, there is no constant energy consumption for keeping it warm, resulting in lower carbon dioxide emissions.
- Rather than ship out bulk shipments, where constant heating is needed to transport the cargo across the oceans, the cargo is shipped cold which saves carbon emissions.





Advantages of poly bag packing

- Cost-effective bitumen packing in comparison to drums
- Low weight
- It is environmental - friendly that has no harm to ecosystems
- Safety and ease of loading
- It occupies a little space
- The inner lining is 100% consumable and the outer lining is recyclable
- It protects the bitumen from moisture
- Ease of movement by forklift and crane truck
- It has a unique design that enables quick filling and discharge of bitumen

Overall features & benefits

- ❖ **Melt Activator** : As the end use with the bitumen at melted temperature $160^{\circ}\text{C} \sim 170^{\circ}\text{C}$, the Fusible Bitumen bag is not the polluted element but a good melt activator.
- ❖ **Save the cooling time** : No need to wait for hours even one night, no need to be stored on a number of shelves, only need 1 hour's refrigeration in water.
- ❖ **Abide High Temperature** : The Fusible Bitumen bag is found to be capable of withstanding temperature at $130^{\circ}\text{C} \pm 10^{\circ}\text{C}$ in the bitumen-filling process . So, the high temperature cannot affect the bitumen's transportation and storage.
- ❖ **Economical**: No waste of bitumen with the Fusible Bitumen bag, instead of problems on how to remove remaining bitumen from a steel drum and how to deal with the broken Kraft paper . Saving more time and costs on bitumen packing, transport as well as other labor force.





Applications of poly bag packing

- The filling temperature should be $\leq 140^{\circ}\text{C}$ for the road bitumen.
- The working house temperature for use should be $\geq 8^{\circ}\text{C}$.
- Both the poly and woven bags could be melted completely at $160^{\circ}\text{C} - 170^{\circ}\text{C}$, while the machine stirred for about 20-30 minutes,
- If in 20 minutes, it means the inner bag could be melted completely at $160^{\circ}\text{C} - 165^{\circ}\text{C}$ only
- In summer, this bag could be piled up at most for 5-6 layers. In winter, it could be piled up for 6-7 layers. Avoid piling too much to affect the quality of the bag.
- The elongation at break is $\geq 250\%$.



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