



# PACK FOR BIOTUM® BITUMEN BINDERS

## 1. Description, materials applied



BIOTUM® package serves to purpose of storage and transportation of all types of bitumen binders and PMB in cold form. BIOTUM® package represents a galvanized steel metal drums, 580 mm in diameter and 0,5 mm thick.

Drum shell is made of helically coiled steel strip. Steel strip coils are linked with each other by a secure seam with a sign WWW.BIOTUM.RU along the seam length. Steel strip is reinforced with 2 longitudinal ribs along its full length. Bottoms are made of steel sheet, 0,5 mm thick, and they are interconnected with the drum shell. On the top of a drum there is a hole for filling, 150 mm in diameter. The hole is closed with a lid.

Steel drums are produced at the BIOTUM enterprise, manufacturing technology is covered by patent.

## 2. Types of a package, size, capacity

Before filling bitumen binder BIOTUM® drums are joined in a pack, i.e. 4 drums on a pallet 1,14 x1,14 m, securely tied up with a nylon band all round. We have developed 3 types of a pack to reduce shipment costs per 1 ton of products:

1. **BIOTUM® 1250 pack** for covered railway cars and 40" ISO-container
2. **BIOTUM® 970 pack** for 20" ISO-container
3. **BIOTUM® 920 pack** for trailers

All types of a pack differ only in height size, and this peculiarity enables to efficiently use the space of a transport vehicle and increase freight turnover. Pack sizes are shown in figure 1. Pack capacity is specified in table 1.

Fig.1 BIOTUM® pack size (mm)

1 – Steel drum; 2 – Nylon band; 3 - Fixing unit; 4 – Pallet; 5 – Lid

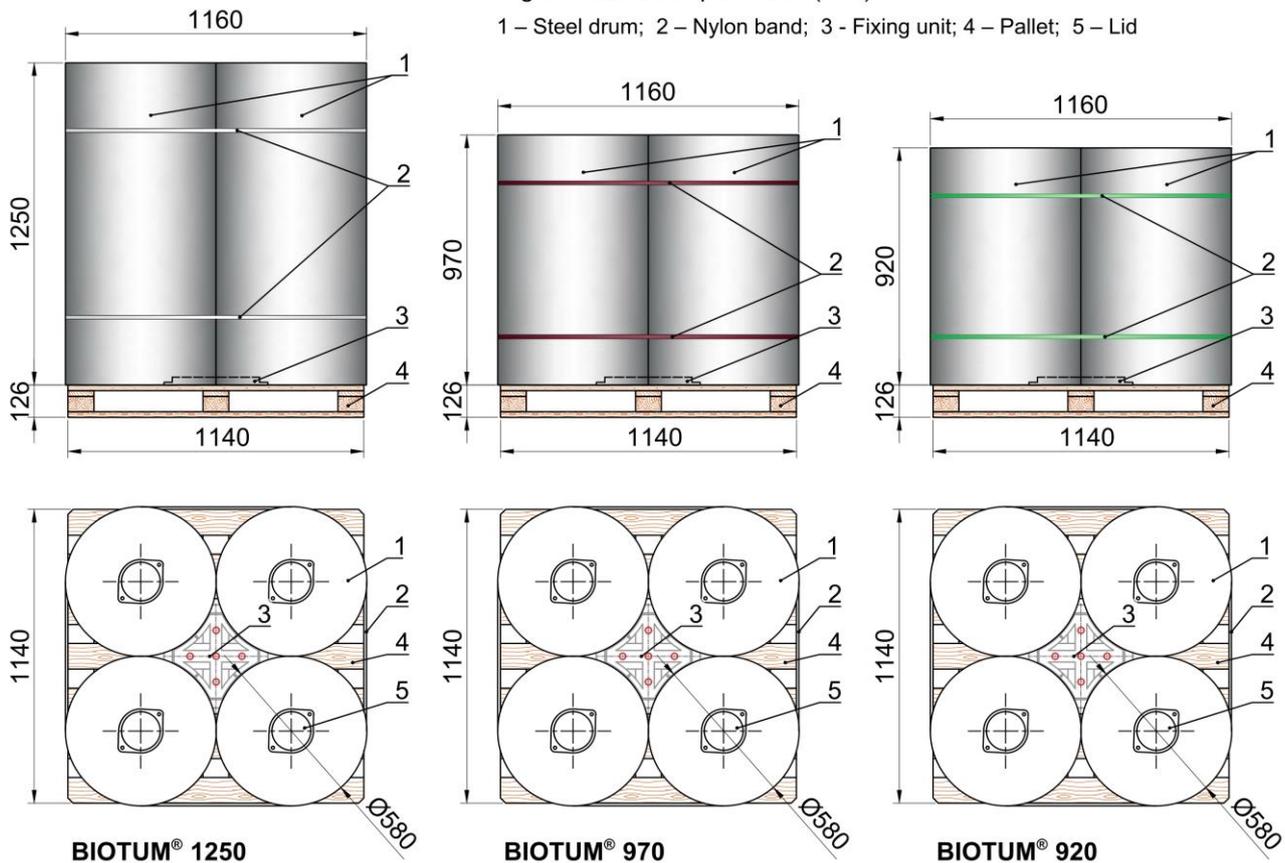


Table 1

PACK TYPE	WEIGHT			
	Net	Gross	Pallet	Metal
BIOTUM® 1250 pack	1170 kg	1242,5 kg		52,5 kg
BIOTUM® 970 pack	896 kg	960,5 kg	20 kg	44,5 kg
BIOTUM® 920 pack	860 kg	922 kg		42 kg

### 3. Loading and unloading

Correct methods of loading, unloading and storage of packs will avoid damage to the drums and product leakage. Drums filled with bitumen binders have a significant weight, so we recommend to exercise extreme caution during loading and unloading. Cutting the tie bands and removing the drums from the pallets is allowed only before the material is heated in the immediate vicinity of the receiving hopper of the heating equipment.



**Package displacement should be performed only on pallets! Drums should be securely tied together with polyamide tape. Physical impact on the drum, i.e. pushing, turning, rolling, dropping can lead to the destruction of the seams and the integrity of the drum.**

Loading, unloading and displacement of the drums should be carried out **with 1 pack** per pass **using only a forklift truck or a pallet truck**. Platforms for loading and unloading should have a solid flat foundation, preferably concrete foundation. Before displacement, check pallets for burrs, rifts, protruding nails and other protruding objects that may damage the drum. Make sure that the brand name of the product matches the brand name on the label.

### 4. Transportation



Shipping and distribution costs are taken into account when planning the optimal delivery method. To optimize logistics, BIOTUM® packs are transported by road, rail and sea. Information about the loading on different kind of transport is given in table 2.

Таблица 2

TYPE OF TRANSPORT / TYPE OF A PACK	Net weight / gross weight	Number of packs
Covered railway car / BIOTUM® 1250	62,010 t / 65,852 t	53
20" container / BIOTUM® 970	17,920 t / 19,210 t	20
40" container / BIOTUM® 1250	23,400 t / 24,850 t	20
Car semi-trailer / BIOTUM® 920	18,920 t / 20,284 t	22

Drummed BIOTUM® bitumen binders are not considered hazardous goods; however, you must follow the rules of the manufacturer during transportation to avoid damages of the drums.

Regardless of the type of transport, the drums should be transported **only in the original packaging**: on the original pallet with a fixing unit and with polyamide tape ties (Fig. 1). The requirements for transportation by the most common types of transport are given below.

#### ISO-container / covered railway car:

- Any metal parts protruding into the trailer/container should be removed
- The wooden frame of the car body contacting the drums should be covered with a soft protective material
- The empty space between the packs should be filled with wooden inserts to prevent the movement of pallets during transportation
- Loading/transportation of packs is allowed in 2 tiers in height (for a 40" container in 1 tier)

#### Curtain sided trucks (Tautliner) / trailer with a rigid frame:

- Removable car bodies in trailers should have rigid and plane surface
- Any metal parts protruding into the trailer should be removed
- To increase stability and avoid sliding down the load should be additionally fixed with the tensioning belts on the trailer platform
- Loading/transportation of packs is allowed in 1 tier in height

## 5. Storage

For BIOTUM® packs only the vertical storage method is suitable in open and closed areas. The packs are assembled strictly one above the other in stacks (like a column) up to 3 tiers in height (Fig. 2). This method of storage allows the most efficient application of the useful storage area without deforming the drums.



Рис.2 Metal drums in a "column" stack

#### The main storage conditions for BIOTUM® packs:

- **The drums should be stored only in the original packaging:** on the company's pallet with an insert-lock and polyamide tape ties (Fig.1)
- The storage area should have rigid and plane foundation (preferably concrete), drainage should be organized in the storage area
- The drums should not protrude beyond the edge of the pallet by more than 15 mm
- Pallets should be the good quality – without burrs, broken boards, protruding nails, etc.

If storage conditions are observed, the packaging is not deformed and retains its geometrical dimensions for a long period of time, including storage time in an open area.

## 6. Unpacking, application and salvaging

If manual opening of the drum is required it is recommended to use pneumatic metal shears. Shears cut the upper bottom of the drum without damaging a lining plate, i.e. a lock-on connection of a drum shell and a bottom.

Metal drums are salvaged according the local legislation. Pallets are thermally phytosanitary treated (HT) according IPPC requirements and can be recycled.

For the heating of any type of the three packs the installation BIOTUM® DMS is used. This installation is equipped with conveyors and features automatic loading, unpacking, turning over and unloading of drums. The melting capacity of the installation is up to 19,2 t/h.

