

# Mining dump truck BELAZ-75180

## Payload capacity 180 tonnes (198 short tons)

It's designed for transportation of rock mass in difficult mining and technical conditions of deep mines, at mineral deposit open pits on technological roads under various climatic operating conditions (at ambient temperature from -50 to +50 °C).



### Engine

Model	CUMMINS QSK 50-C
Four-cycle turbocharged and intercooled direct diesel engine with V-type cylinders arrangement.	
Rated power @ 1900 rpm, kW (hp)	1491(2000)
Maximum torque @ 1500 rpm, N.m	7865
Number of cylinders	16
Cylinders displacement, l	50.3
Cylinder diameter, mm	159
Piston stroke, mm	159
Specific fuel consumption, g/kW hr	199
Air cleaning is performed by three-stage filters with dry-type elements.	
Exhaust gas expulsion is routed through dump truck body.	
Circulating and pressurized lubrication system with "wet" crankcase.	
Single-loop fluid cooling system with forced circulation.	
Fluid preheating system.	
Starting system is actuated by pneumatic starter.	
Electric equipment system voltage, V	24

### Transmission

AC electric drive KTE-160 with traction alternator, two traction motors, motor-in-wheel differential-type double-row planetary reduction gears, adjustment and control devices.	
Gear ratio	38.67
Maximum travel speed, km/h	60

Traction alternator	GST 1600-8
Traction motor	TAD-5

### Suspension

Conventional suspension for front axle and driving axle with trailing arms, central joints and transverse rods. Cylinders are pneumohydraulic (nitrogen and oil) with inbuilt hydraulic shock absorber. Two cylinders are on the front axle and two cylinders are on the rear axle.

Cylinder piston stroke, mm	
- front	220
- rear	290

### Steering

Hydrostatic steering with steerable front wheels.

Steering angle, degree	42
Turning radius, m	14.5
Overall turning diameter, m	30
The steering meets ISO 5010 requirements.	

### Brakes

**Braking system** meets ISO 3450 international safety requirements and consists of service, parking, auxiliary and emergency brake systems.

#### Service brake system:

Front wheels - disk brakes with two brake gears per disk.

Rear wheels - disk brakes with two brake gears per disk and automatic gap adjustment. Brake disks are mounted on shafts of traction motors.

**Parking brake system** is permanently closed system with one brake gear of rear wheels per disk. Spring actuation and hydraulic control.

**Auxiliary brake system** is electrodynamic braking by traction motors with forced air cooling of brake resistors.

**Emergency brake system:** parking brake and operable circuit of wheel brakes are used.

Brake resistors Gridbox 2x600 - 2 units, power 2400 kW

### Hydraulic system

Hydraulic system is combined for body dumping gear, steering and brake actuator. Two-section variable-displacement oil pump.

Two-stage telescopic body lift cylinders with one stage of double action.	
Body lifting time, s	20
Body lowering time, s	22
Maximum pressure in hydraulic system, MPa	18
Maximum pump delivery @ 1900 rpm, dm <sup>3</sup> /min	698
Filtration degree, mcm	10

## Body

Bucket-type welded body with FOPS safety system, rops and heating by engine exhaust gases. The body is equipped with device for mechanical fixing in raised position and rock-ejectors.

Body capacity, m<sup>3</sup>:

struck	heaped 2:1
78.5	108.5

## Frame

High-strength low-alloyed steel welded frame with cast elements in places of maximum loading. Box-section variable height side rails are interconnected by cross-members.



## Tires

Pneumatic tubeless tires with quarry tread pattern.

Designation	42/90R57; 37.00R57
Inflation pressure, MPa	upon recommendation of tire producer
Rim designation	27.00-57/6.0

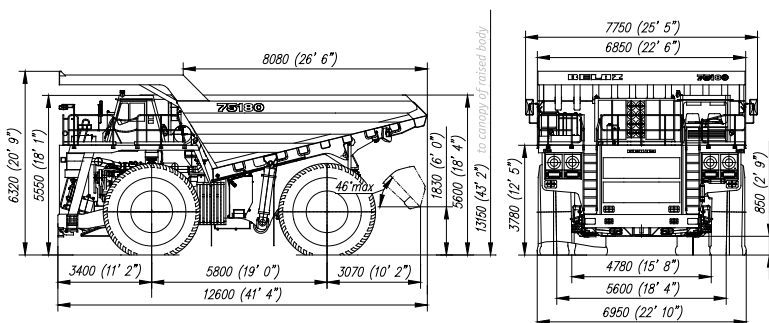
## Cab

Two-man two-door cab with air-sprung adjustable seat for driver, auxiliary seat for trainee and adjustable steering column. The cab meets requirements of EN 474-1 and EN 474-6 standards for in-cab noise, vibration, content of harmful substances and dust. Driver's workplace meets ROPS safety requirements. In-cab noise level is not more than 80 dB(A).

## Special equipment

- Combined fire-fighting system with remote actuation and subsystem in back axle (standard)
- Starting preheater (standard)\*
- Heating and conditioning unit (standard)
- Centralized lubrication system (standard)
- Fuel and loading control system (standard)
- Telemetering tire pressure control system (standard)
- Video observation system (standard)
- High-voltage line attention device (standard)
- Fettling of body floor (optional)
- Combined fire-fighting system with automatic control and subsystem in back axle (optional)

## Overall dimensions, mm\*\*



\*Excepting dump trucks of tropicalized design

\*\*Overall dimensions are specified for standard equipping of the dump truck

## Weight

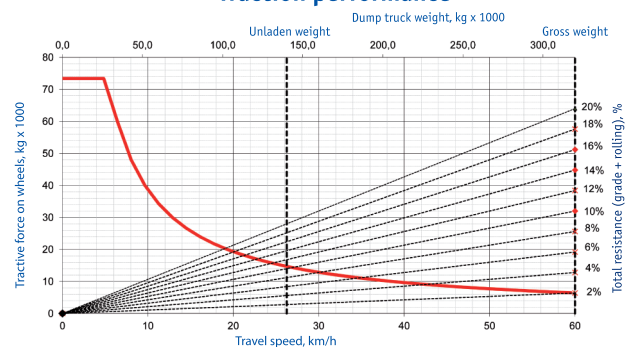
Maximum payload capacity, kg	180000
Unladen weight, kg	140000
Gross weight, kg	320000
Dump truck weight distribution on axles, %:	
unloaded	
front	50.9
rear	49.1
loaded	
front	33.0
rear	67.0

## Refill capacities, l

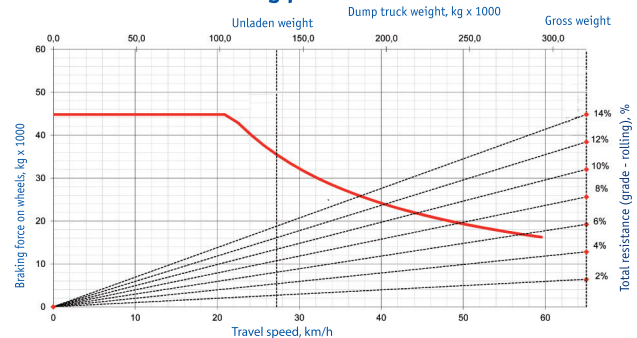
Fuel tank	2300
Engine cooling system	500
Engine lubrication system	170
Hydraulic system	780
Motor-in-wheel reduction gears	210(105x2)
Suspension cylinders:	
- front	33(16.5x2)
- rear	56 (28x2)

## Traction and braking performance

### Traction performance



### Braking performance



# BELAZ

**OJSC "BELAZ" — Management Company of Holding "BELAZ-HOLDING"**  
 40 let Oktyabrya str. 4, 222160, Zhodino, Minsk region, Republic of Belarus  
 phone: (+375 1775) 3-27-82, 3-26-23, 3-37-37 fax: (+375 1775) 7-01-37  
 e-mail: office@belaz.minsk.by, marketing@belaz.minsk.by,  
 export@belaz.minsk.by  
[www.belaz.by](http://www.belaz.by)