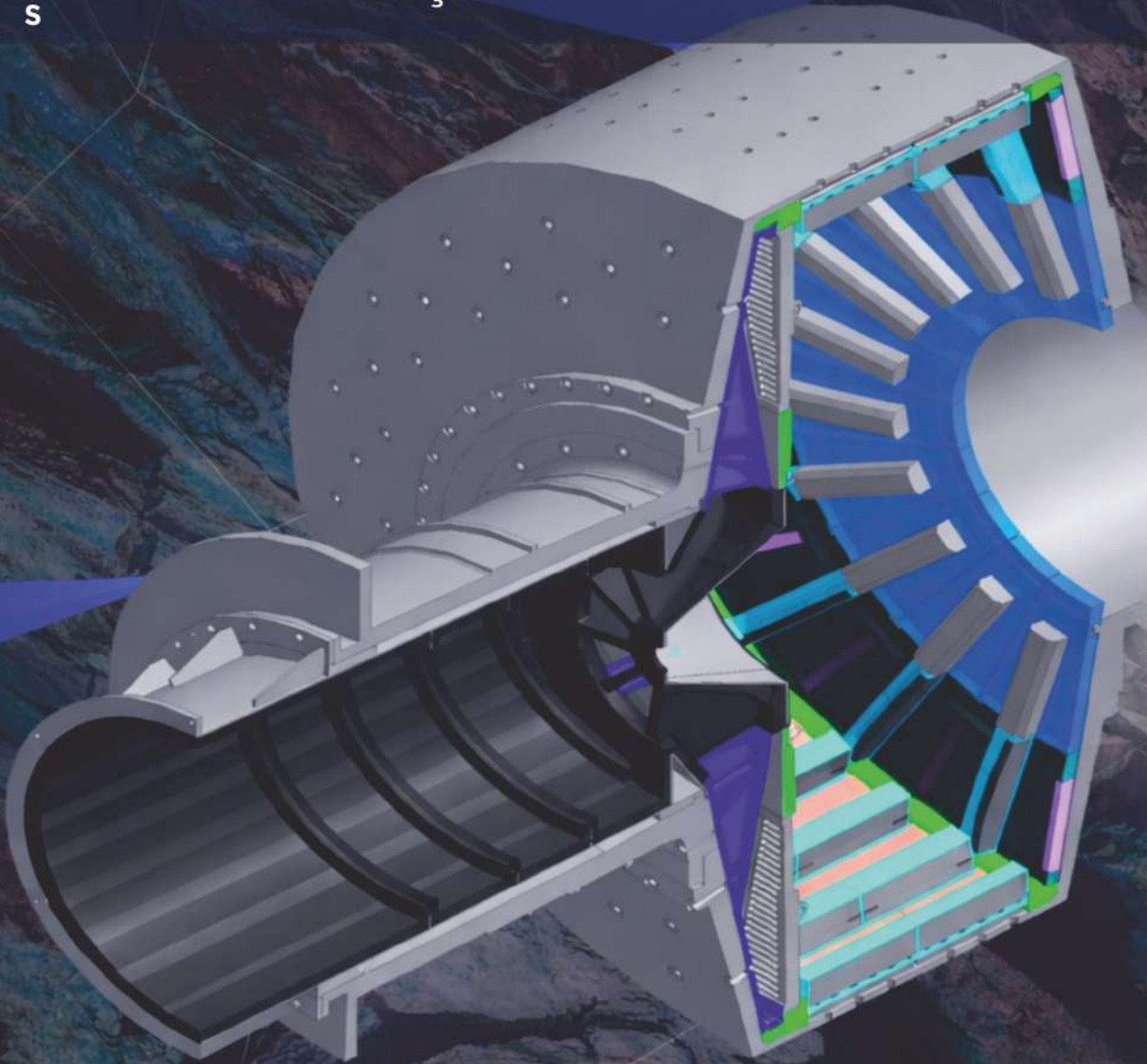




PUSULA

KAUÇUK



www.pusulakaucuk.com



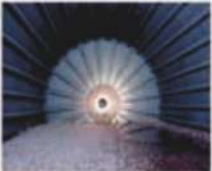
Pusula Rubber - OUR years of expertise in mill technologies empower us to make high quality linings

Pusula Rubber produces rubber-technical products for industrial enterprises

We specialize in the production of the following rubber-technical products:

- Rubber linings for all types of mills, which are located all around the world
- Pusula rubber linings for all types of mills
- Rubber lining plates
- Steel linings made of chromium-molybdenum alloy
- Rubber lining for spiral classifier
- Monoblocks
- Pipes corrosion protection rubber
- Any rubber products ordered by client
- Rubber mixtures for producing MRG

We offer answers in regards to the enhancing the work of life span, production, high quality products, fast delivery times, high level of service.



Our Rubber-centric products vs the Industry:

Pusula rubber linings are 80% lighter than metal linings, providing more safety in installing and uninstalling our products, without compromising with the quality of grinding.

In addition, the decrease in weight allows user to load more minerals for processing, lowering the pressure on the bearings, crown gears. As a result, it brings the greater mill production and tonnage, with a longer life of bearings and gears.

Our production lowers the electric usage on startup and in use of the mill due to the decrease in weight.

It lowers the effects, found in the breakdown of steel balls, due to the decreasing the net cost in processing the minerals.

Finally, your technical checkups will be easier, allowing you to save time and money in addition to a fewer and further between

checkup schedule

Our factory is equipped with the world class equipment:

Compression press for MRG production:

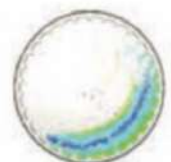
- German company LWB Steine GmbH, Simplekapm Machines GmbH
- Italian company Pirelli
- Extruder made by American company David-Standard
- Waterjet cutting machine manufactured in Italy Waterjet Company and waterjet cutting machine Mavijet made in Turkey
- Plasma cutting machine of the American company Hypertherm
- Milling gantry machines Okuma (Japan), Nicolas Correa (Spain)



Crude rubber for the production of rubber products is made according to the developed recipes by technologists from Italy and North America.

Metal fasteners are supplied by European companies.

All developments and design of products, molds, manufacturing technologies are developed by the specialized companies from Italy, Canada together with our design bureau. Company entire team has experience in the field of production of rubber products for more than 30 years

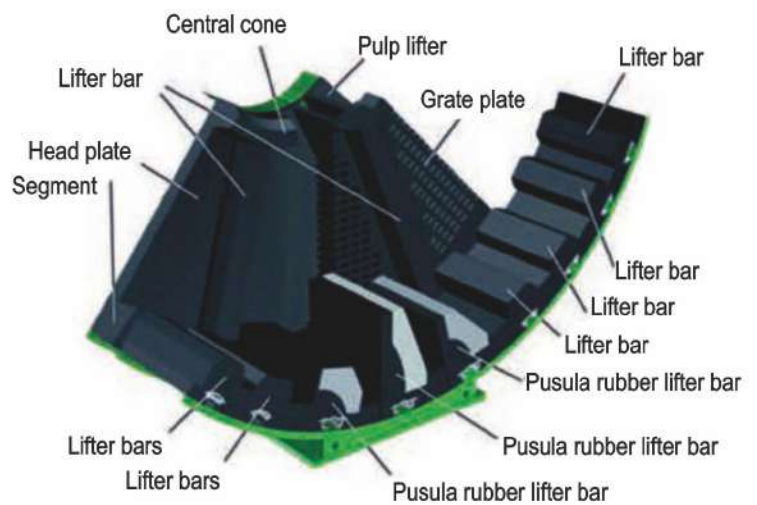




Pusula Rubber - OUR years of expertise in mill technologies empower us to make high quality linings

We release the following product for rubber, Pusula rubber linings

- Lifter bars
- Shell plates
- Head plates
- Grade plate
- Centre cones
- Segments, bars
- Mounting (bolts, Nuts, gaskets, shims, pegs)
- Unloading systems (Pusula rubber/metal Pulp lifter)



Sizing of products:

Lifter bars of any configurations:

- | | | |
|-------------------------|-------------|-------------|
| 1 Width of lifter bars | from 100 mm | to 400 mm |
| 2 Height of lifter bars | from 100 mm | to 500 mm |
| 3 Length of lifter bars | | to 12 000mm |

Shell plates of any configuration:

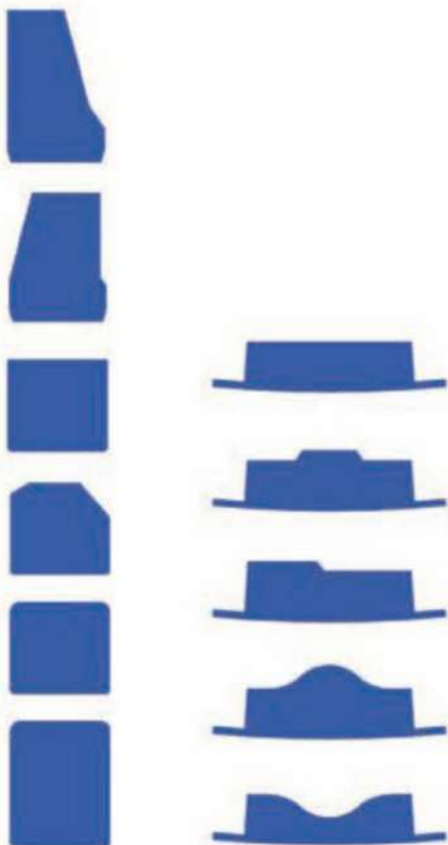
- | | | |
|--------------------------|------------|-------------|
| 1 Width of Shell plates | | to 500 mm |
| 2 Height of Shell plates | from 40 mm | to 200 mm |
| 3 Length of Shell plates | | to 12 000mm |

Head plates of any configuration:

- | | | |
|----------------------------------|--|------------|
| 1 1. Thickness of the Head plate | | to 1200 mm |
|----------------------------------|--|------------|

Grate plate:

- | | | |
|--------------------------------|--|-----------|
| 1 Thickness of the Grate plate | | to 200 mm |
|--------------------------------|--|-----------|





Pusula Rubber - OUR years of expertise in mill technologies empower us to make high quality linings

Pusula rubber linings for mills.



Shell plate



Lifter bar



Head plate



Grate plate



Pulp lifter



Central cone



Segment

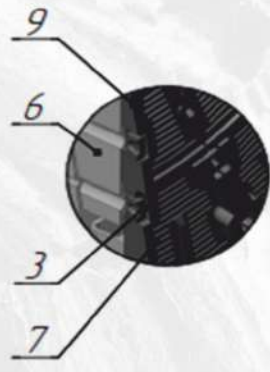
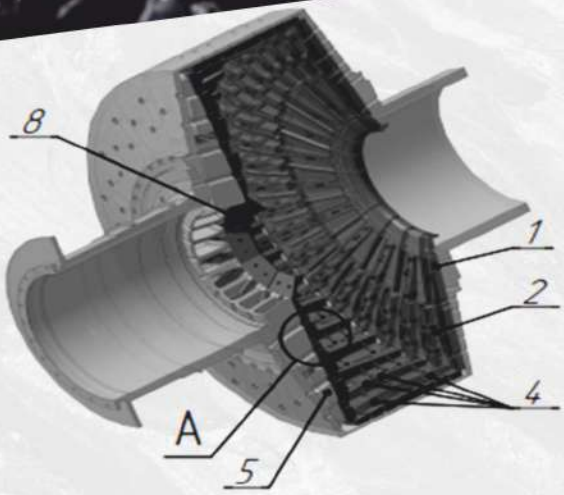
We release rubber-metal products for mills:

- Pusula rubber lifters made from high alloy steel
- Pusula rubber lifter bars made from high alloy steel
- Pusula rubber lifter bars made from HSS
- Pusula rubber Shell Plates
- Pusula rubber Head plates
- Pusula rubber Grate plates





Metal Linings SAG mill 7.0x2.3



01.



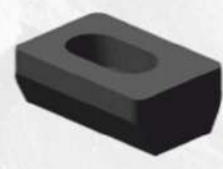
Head Plate T1,
weight 704kg, 20 units

02.



Head Plate T2,
weight 420kg, 40 units

03.



Wedge, weight 11kg, 70 units

04.



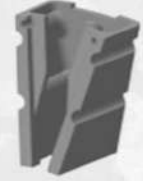
Shell liner,
weight 1846kg, 20 kits

05.



Pulp lifter,
weight 660kg, 20 units

06.



Pulp lifter,
weight 540kg, 20 units

07.



Grate plate,
weight 682kg, 20 units

08.



Linings,
weight 80kg, 10 units

09.



Grate plate,
weight 320kg, 10 units

Total mass of Metal Linings 110 tons



Description and comparison of advantages investigating Pusula Rubber Linings on mills SAG mill 7.0x2.3

Investigating advantages:

increasing work time of lining from 2 to 4 times when loading the mills and 4 times more when unloading mills SAG mill 7.0x2.3. When using steel linings mark 110G 13L the estimated work time is:

- For loading 4 months,
- For unloading 4 months.
- When using rubber-metal lining the estimated work time increase to;
- 12 months when loading;
- 24 months when unloading.
- Lowering the costs while increasing the work time

Lowering the install process, because the instalment time on Pusula Rubber Linings is 2 times lower than steel. Install time for steel linings is 10 days, Pusula Ruber Linings on the order hand is 5 days.

Safety during dismantling/installment PUSULA Rubber Linings.

The result of using Pusula Rubber Linings lowering of the weight of the mills (lowering the weight up to 50 ton), which leads to lowering of runout on the main and drive unit and lowering wearing of the concrete drive unit because of the decrease in the level of vibration and capacity.

Saving energy because of the lowering in total mass of the linings and the use of the starting current (because the outgoing power during start is 5-6 times higher than in usual conditions)

There's no need to start/stop mills for tightening bolts, usage of the steel linings weakening the bolts. Excluding restarting the mills for unplanned maintenance checks.

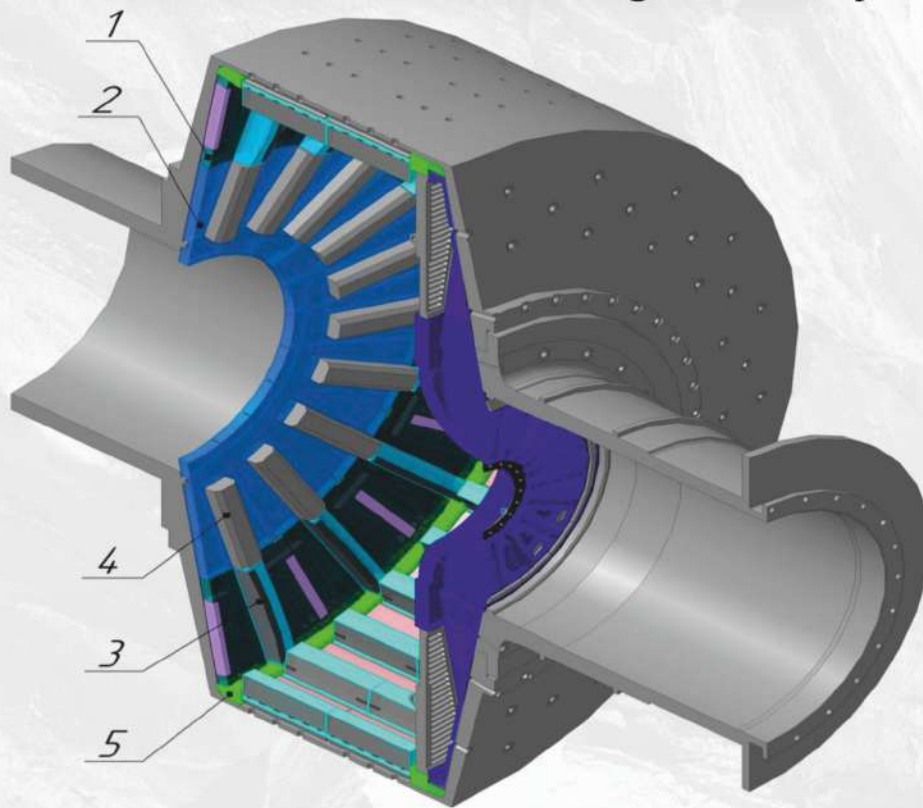
Excluded leaking pulp from under the bolt holes of the mills for the whole period of exploitation of Pusula Rubber Linings.

Increasing production of the mills without decreasing the Tonin's fine because of the design and lowering weight of the linings.

Lowering the noise and vibration improve on working condition of the factory staff. Work span of the steel elevators 12-14 months, rubber-metal 24-28 months.

FEED LINERS

Unit of the Pusula Rubber lining for SAG 7.0X2.3 Using on Nikolayevskaya CF



01.



Head plate T-2,
weight 184kg, 20 units

02.



Head plate T-1,
weight 68kg, 20 unitst

03.



Lifter bar RM 210x280,
weight 190kg, 20 units

04.



Lifter bar R 210x250,
weight 48kg, 20 kits

05.

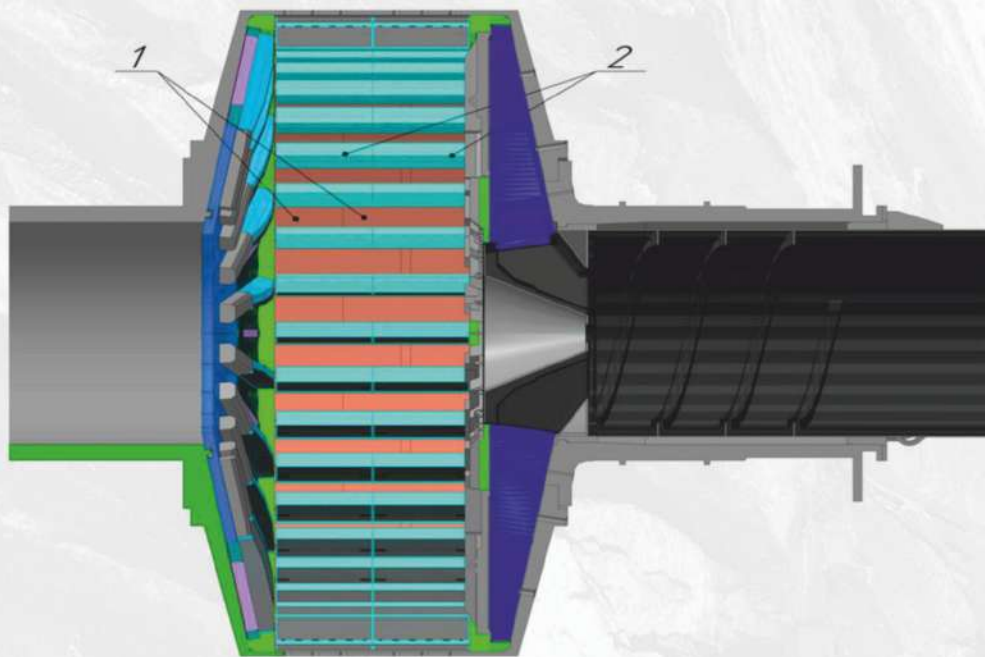


Segment,
weight 36kg, 20 units



SHELL LINE

Unit of the Pusula Rubber lining for SAG 7.0X2.3 Using on Zhez Kent MPP

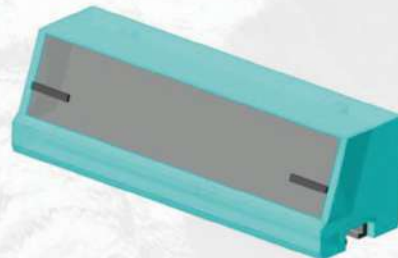


01.



Shell plate (1+1), weight 68kg, 40 kits

02.

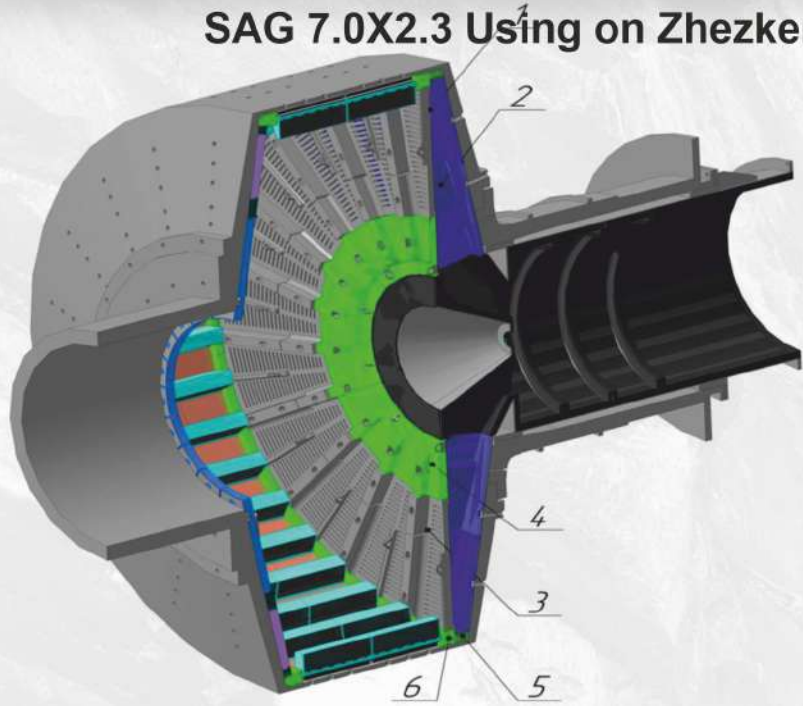


Lifter bar RM 210x330 (1+1) weight 332kg, 40 kits



DISCHARGE LINER

Unit of the Pusula Rubber lining for SAG 7.0X2.3 Using on Zhez Kent MPP



01.



Elevator, weight 305kg, 20 units

02.



Elevator, weight 274kg, 20 units

03.



Grate Plate, weight 740kg, 20 units

04.



Grate Plate 112kg, 10 units

05.



Segment, weight 24kg, 17 units

06.



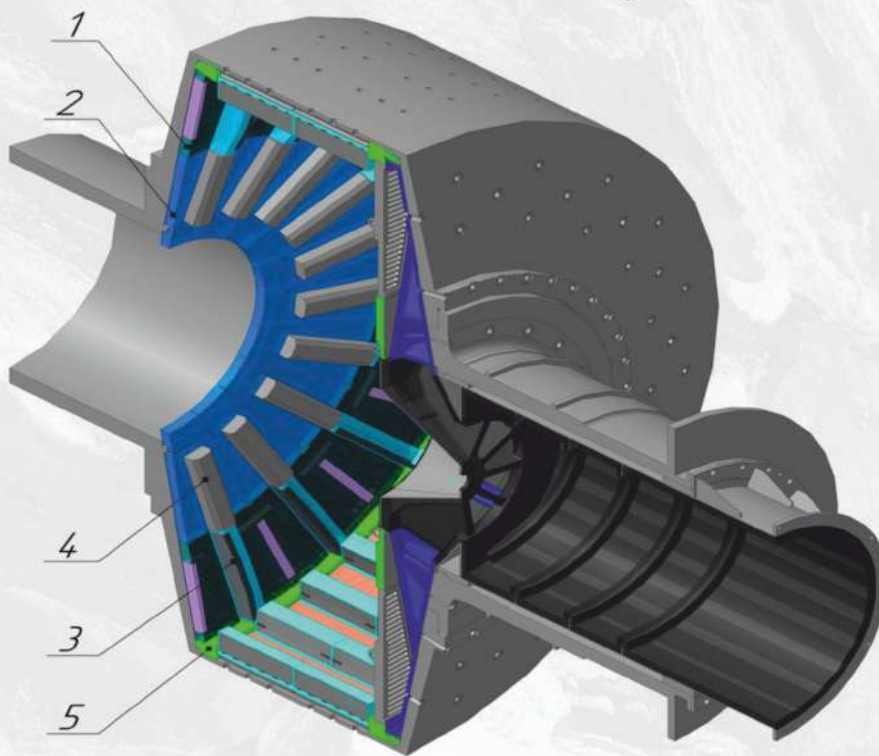
Segment, weight 52kg, 17 units

Total mass of Pusula Rubber Linings 55,5 tons



FEED LINERS

Unit of the Pusula Rubber lining for SAG 7.0X2.3 Using on Zhez Kent MPP



01.



Head plate T-2, weight 182kg, 20 units

02.



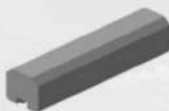
Head plate T-1, weight 68kg, 20 units

03.



Lifter bar RM 210x280, weight 190kg, 20 units

04.



Lifter bar R 210x250, weight 48kg, 20 kits

05.

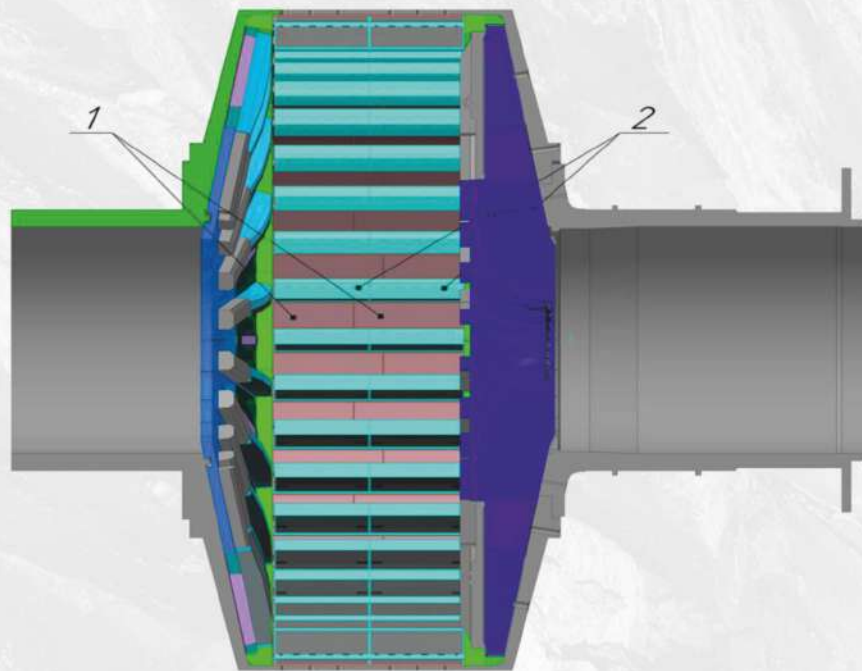


Segment, weight 36kg, 20 units

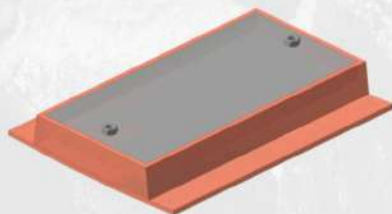


SHELL LINE

Unit of the Pusula Rubber lining for SAG 7.0X2.3 Using on Nikolayevskaya CF

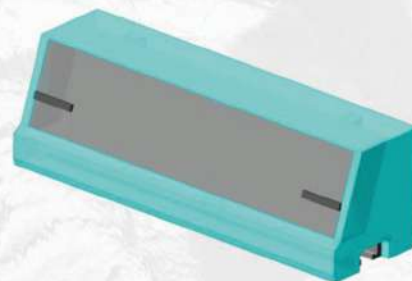


01.



Shell plate (1+1), weight 234kg, 40 kits

02.

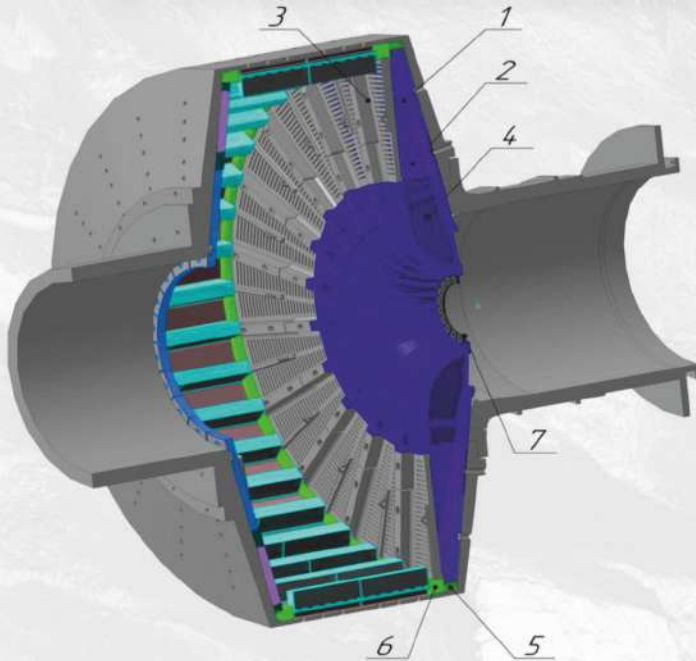


Lifter bar RM 250x330 (1+1), weight 402kg, 40 kits



DISCHARGE LINER

Unit of the Pusula Rubber lining for SAG 7.0X2.3 Using on Nikolayevskaya CF



07.



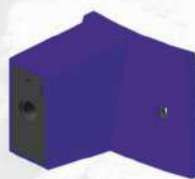
Ring, weight 24kg

01.



Pulp Lifter, weight 305kg,
20 units

02.



Pulp Lifter, weight 135kg,
20 units

03.



Grate plate, weight 740kg,
20 units

04.



Unloading cone,
weight 250kg, 20 units

05.



Segment, weight 24kg,
17 units

06.



Segment, weight 52kg,
17 units

Total mass of Pusula Rubber Linings 66 tons



General savings effect of changing to Pusula Rubber Lining SAG mill 7.0x2.3 first stage of grinding at a processing factory per year



Pusula Rubber Linings

works 2-4 times longer than the steel Mg lining. Saving from up to \$100 000 to \$200 000 USD.



The production of the mill

increases minimum for 10% because of the design of linings. The profit is up to \$2 000 000 USD.



Lowering mill in weight

up to 50 tons saves 10% of the electricity. Savings make up to \$70 000 USD.



Saving on parts of the mills

(ring gear, main bearings, drive shaft, gearboxes, electric engine, gear coupling) because of the lowering linings weight. Savings make up a minimum of \$100 000 USD.



Cost savings

because of the work time of elevators up to 24 months, savings make up \$100 000 USD.



Linings demounting/mounting multiplicity

savings make up to \$30 000 USD.



Cost savings because of fasteners

(bolts, nuts, washers, pegs). Cost savings up to \$10 000 USD.



Cost savings because of the downtime of the mills 20-30 days

a year, for relining, demounting/mounting of linings. Savings make up \$1 000 000 USD.

The minimum total of savings per year on the one SAG MILL 7.0x2.3 is

\$1 610 000 USD



Power saving during using Pusula Rubber Linings for
SAG MILL 7.0x2.3

Parameters of the gear	Parameters of the linings	rust, kW	amount	Mass of component, tn				Lt, Ur	Power consumption	Working hours		Power expense		Power saving, year
				linings	trom mel	minerals	Total weight t			24hrs day	year	24 h day kW/hrs	Year kW/hrs	
SAG MILL 7.0x2.3	metal m=105 t	1 600,00	1,00	105,00	100,00	90,00	295,00	0,60	960,60	24,00	6 600,00	23 040,00	6 336 000,00	
SAG MILL 7.0x2.3	Rubber-metal m=58 t	1 600,00	1,00	58,00	100,00	90,00	248,00	0,50	807,00	24,00	6 600,00	19 369,00	5 326 536,00	1 009 464,00
Total														1 009 464,00



1 009 464.00 kw/hrs
 Total power saving per year



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 B-1 Blok Kapı No:295 İSTANBUL / TÜRKİYE

MILL SURVEY

COMPANY: _____ DATE: _____
 ADDRESS: _____
 COUNTRY: _____
 TELEPHONE: _____ E-MAIL: _____

CONTACT NAME/TITLE: _____
 CONTACT NAME/TITLE: _____

1	CUSTOMER NAME AND ADDRESS			
2	DIVISION			
3	PLANT CAPACITY (T/DAY)			
4	MILL MANUFACTURER AND SERIAL NUMBER			
5	MILL SIZE AND TYPE (DxL, wet/dry, over/low/grate disch)			
6	MILL STAGE (primary, secondary, regrinding)			
7	MILL CAPACITY (T/HOUR)			
8	ELECTRIC MOTOR POWER, kWt			
9	MILL RPM			
10	CRITICAL SPEED			
11	FEED END SIZE, diameter in mm			
12	DISCHARGE END SIZE, diameter in mm			
13	TYPE AND SIZE OF MEDIA, mm			
14	ORE TYPE AND FEED SIZE, mm:			
	FEED SIZE (F80)			
	PRODUCT SIZE (P80)			
15	ABRASION INDEX (Protodyakonov, Moos)			
16	MILL CHARGE VOLUME %			
17	CIRCULATION LOAD %			
18	MANHOLE DOORS			
19	OPERATION TIME PER DAY			
	INSTALLATION DETAILS AND DRILLING LAYOUT	FEED END	SHELL	DISCHARGE END
20	Liners material (steel, rubber)			
21	Plate thickness, nominal			
22	Lifter bar size (WxH)			
23	Plate life			
24	Lifter bar life			
25	Number of rows			

ADDITIONAL INFORMATION:

1. % Solids discharge: _____
2. Grate slot size: _____ Grate % Open area _____
3. Screen oversize size distribution: _____
4. Tons/hour of screen under-size and, if available, size distribution: _____

ADDITIONAL COMMENTS:

USE ONE SHEET FOR EACH MILL TYPE

PREPARED BY: _____



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