



ALUMINIUM CRAFTED BY HYDRO ENERGY

PRODUCT
CATALOGUE 2016

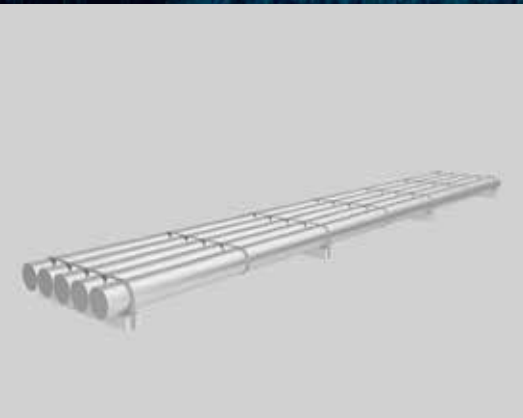
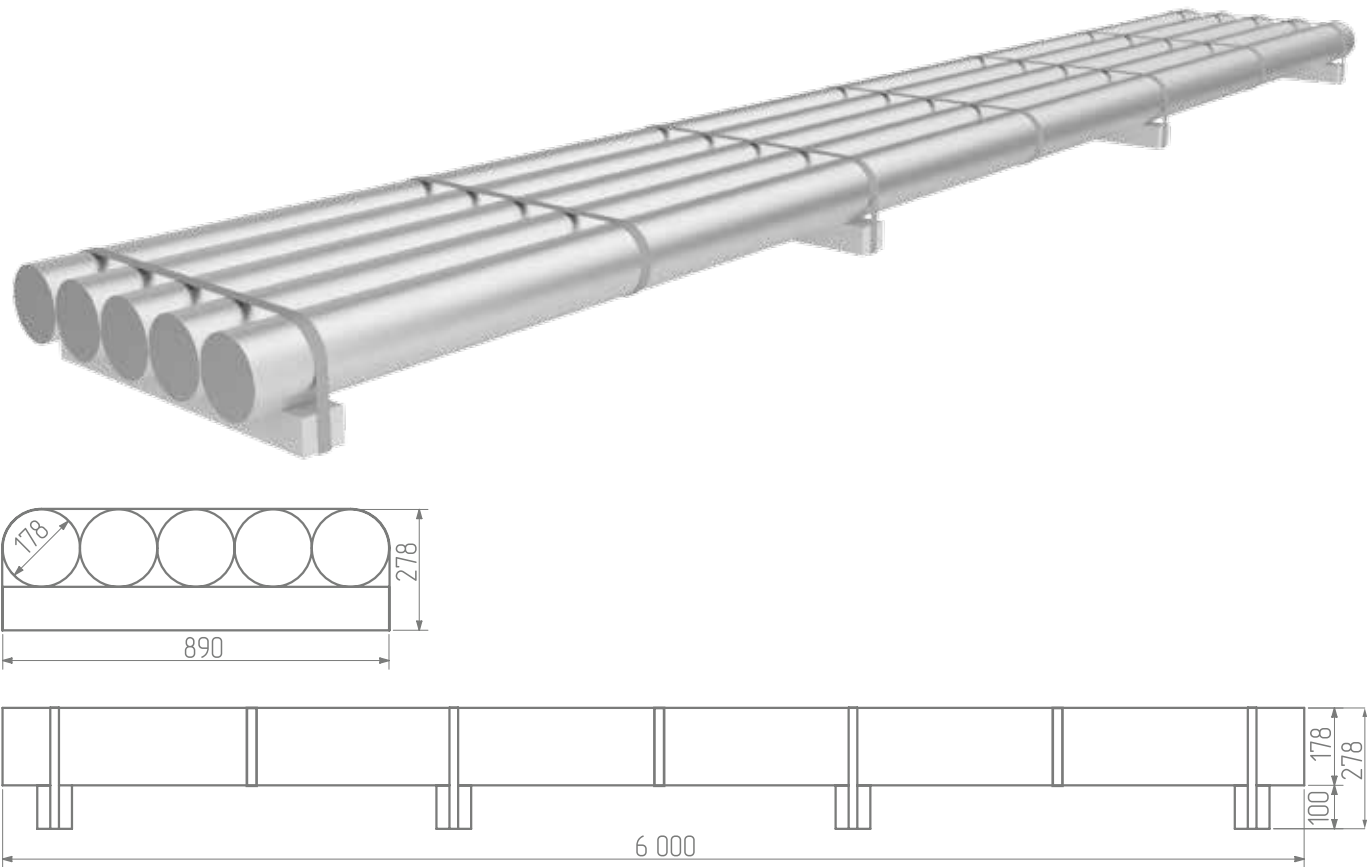


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EXTRUSION BILLETS

SAMPLE OF Ø 178 EXTRUSION BILLET CUT INTO 6 M LENGTH



The packaging depends on billet diameter and length. Typical Ø 178 package

ALLOY SERIES 6xxx (6060, 6063, 6005, 6061, 6082), 1xxx

Cut to length or logs
6xxx homogenized
1xxx non-homogenized
US tested

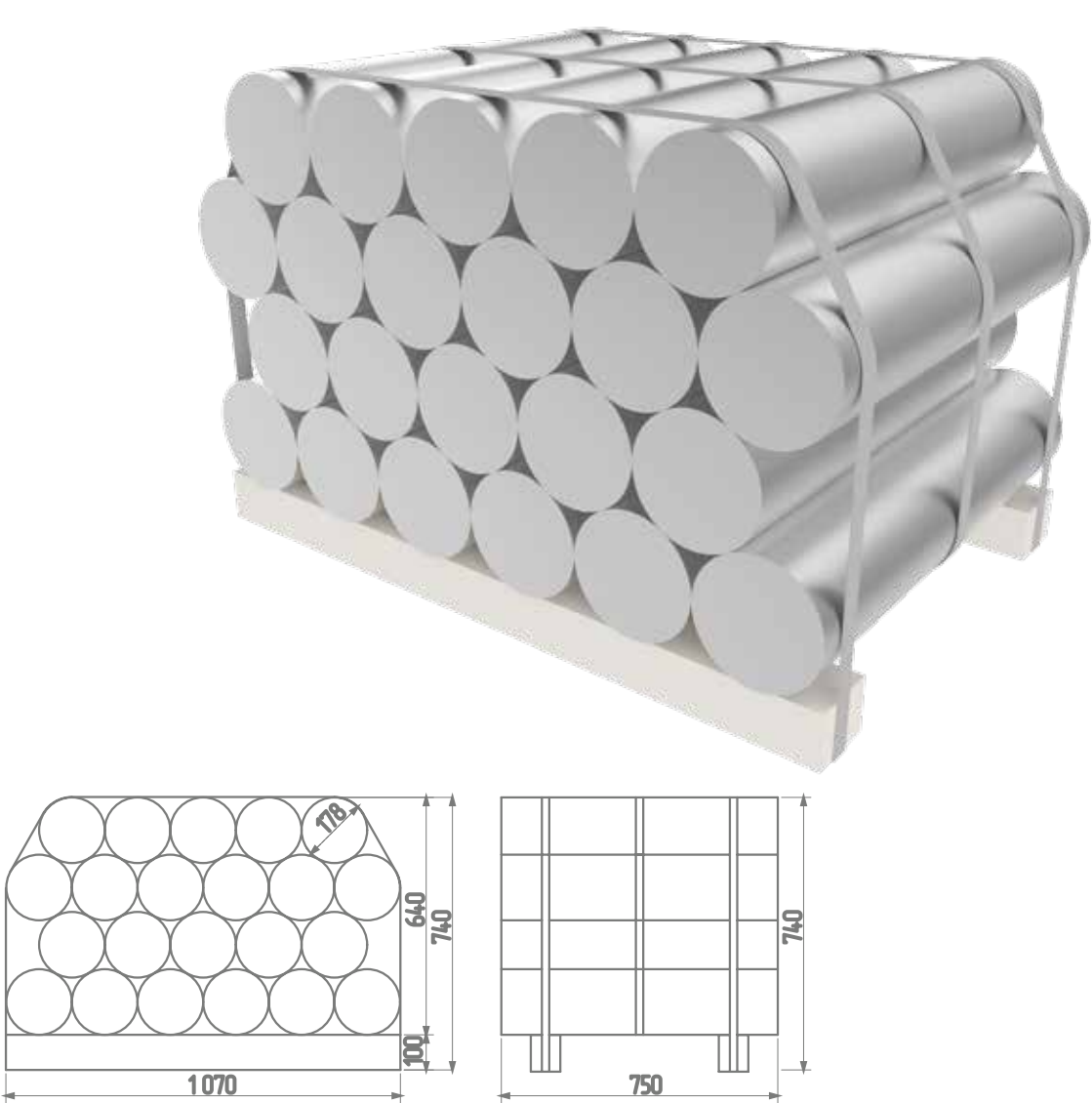
Producer:
Kubal (Sweden), Novokuznetsk,
Sayanogorsk, Volgograd,
Krasnoyarsk*

Plant	Diameters, mm
Sayanogorsk	152, 178, 203, 228, 254
Novokuznetsk	127, 145, 152, 155, 162, 178, 190, 203
Kubal	152, 178, 203, 228
Volgograd	127,145, 152, 178, 190, 203
Krasnoyarsk*	203, 254, 279, 304.5, 355.4, 406, 457

* commissioning in Q3'2017

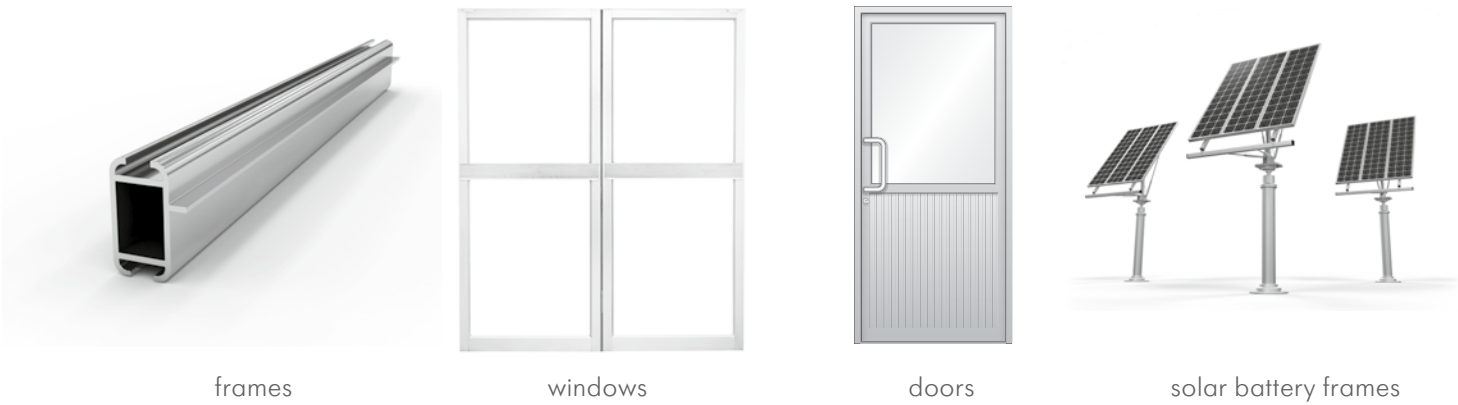
EXTRUSION BILLETS

SAMPLE OF Ø 178 EXTRUSION BILLET CUT INTO 0.75 M LENGTH



Typical package of Ø 178 billet cut into 750 mm length

APPLICATIONS



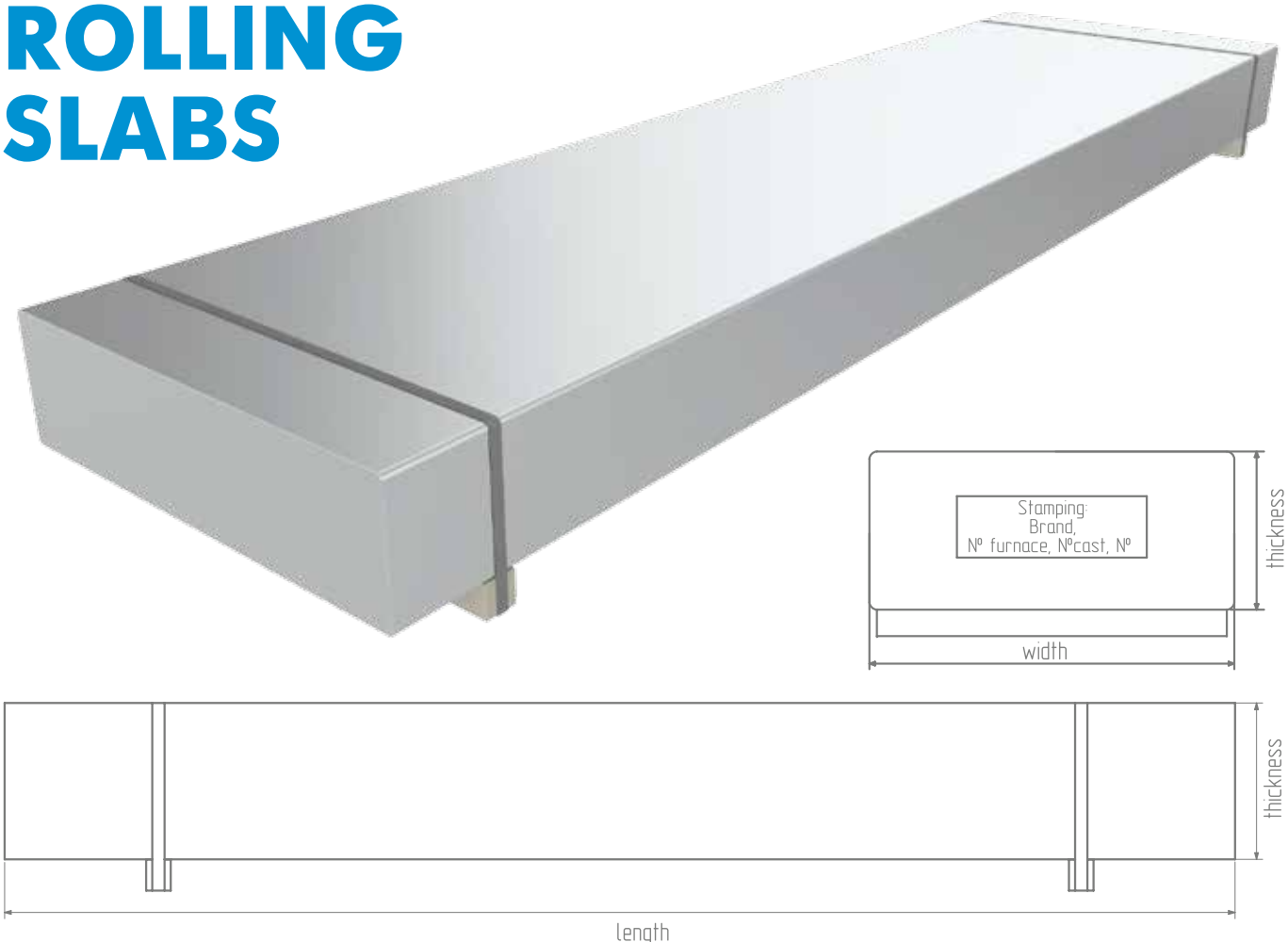
frames

windows

doors

solar battery frames

ROLLING
SLABS



ALLOY SERIES: 1xxx, 3xxx, 4xxx, 5xxx, 6xxx, 8xxx

Double length casting capability:
up to 10' 500 mm of cast length

Advanced quality control
and assurance:
- Magnetic stirrers;
- HD-2000 and RGI/RFI metal
treatment;
- SNIF degassing equipment;
- CFF, PTF and DBF filtration;
- PODFA and LIMCA metal
cleanliness control.

Producing plants:
Bratsk,
Krasnoyarsk,
Sayanogorsk,
Kubal (Sweden)

APPLICATIONS



ROLLING
SLABS

AVAILABLE MOULD SIZES

Plant	Cut length	Dimensions, mm						
Bratsk	up to 6200 mm RUSAL mould	405x1560	406x1050	406x1300	500x1150	500x1330	500x1630	500x1800
		535x1315	540x1040	540x1540	560x1100	560x1230	560x1310	600x1150
		600x1330	600x1400	600x1630	600x1700			
	up to 9100 mm Wagstaff	560x1100	560x1230	560x1310	560x1410	560x1520	600x1400	600x1630
Krasnoyarsk	up to 6100 mm RUSAL mould	270x650	300x1025	400x1260	500x1150	500x1330	500x1560	560x1230
		560x1400	560x1510	560x1630	600x1260	600x1330	600x1560	
	Single length up to 5800 mm Double length up to 9100 mm Wagstaff	500x1800	560x1510	560x1520	560x1630	600x1200	600x1330	600x1450
		600x1550	600x1750	600x1850	600x2200			
Sayanogorsk	up to 7000 mm RUSAL mould	340x990	340x1270	405x1560	406x1050	406x1300	560x950	560x990
		560x1310	560x1410	560x1520	575x1100	600x1350	600x1450	600x1560
		600x1630	600x1750	600x2200				
	up to 6800 mm Wagstaff	500x2130	535x1670	560x1230	560x1310	560x1410	560x1520	560x1920
		560x2000	560x2050	600x1070	600x1350	600x1560	600x1630	600x1750
		600x2200						
Kubal	up to 4100 mm RUSAL mould	330x1300	330x1440	370x950	370x1050	370x1150	370x1250	370x1300
		370x1440	400x1300	400x1440	460x1440	500x1440	525x1440	550x1440
		600x1440						

WIRE RODS

SPECIFICATION

Applications – drawn wire for Electrical & mechanical purposes, CONFORM conductors, steel deoxidizing

Diameters 9.5 mm, 12 mm, 15 mm, 23 mm, 19 mm, 25 mm

Coil dimensions	KAZ	IRKAZ	BRAZ
Height, mm	850	850	900
Outer diameter, mm	>1420	>1420	>1350
Inner diameter, mm	570	550	550
Pallet size, mm	standart: 150 x 1400 x 1400		
Coil net weight, kg	2000-2500	1850	1850



Eye-to-the sky
Eye-to-the wall

Producer:
Bratsk, Shelekhov (ex-Irkutsk), Kandalaksha

Grade	Tensile strength, MPa	Resistivity, Ohm*mm2/m max	Conductivity, % IACS min
EN 1715-2			
AW1080 - H11	80-95	0,02772	62,2%
AW1350AW/1370 - H11	80-95	0,02785	61,9%
AW1350AW/1370 - H12	95-110	0,02794	61,7%
AW1350AW/1370 - H13	105-120	0,02794	61,7%
AW1350AW/1370 - H14	115-130	0,0280	61,6%
AW6101-T1	150 min	0,03260	52,9%
AW8176 - F	60-150	0,02855	60,4%
AW8176 - O	60-150	0,02826	61,0%
TAL	110 min	0,02850	60,5%
ZTAL	120 min	0,02850	60,5%
Al59	135 min	0,02890	59,7%
DEOX	VARIOUS SPECS WITHIN 80-120 MPA	-	-

WIRE RODS

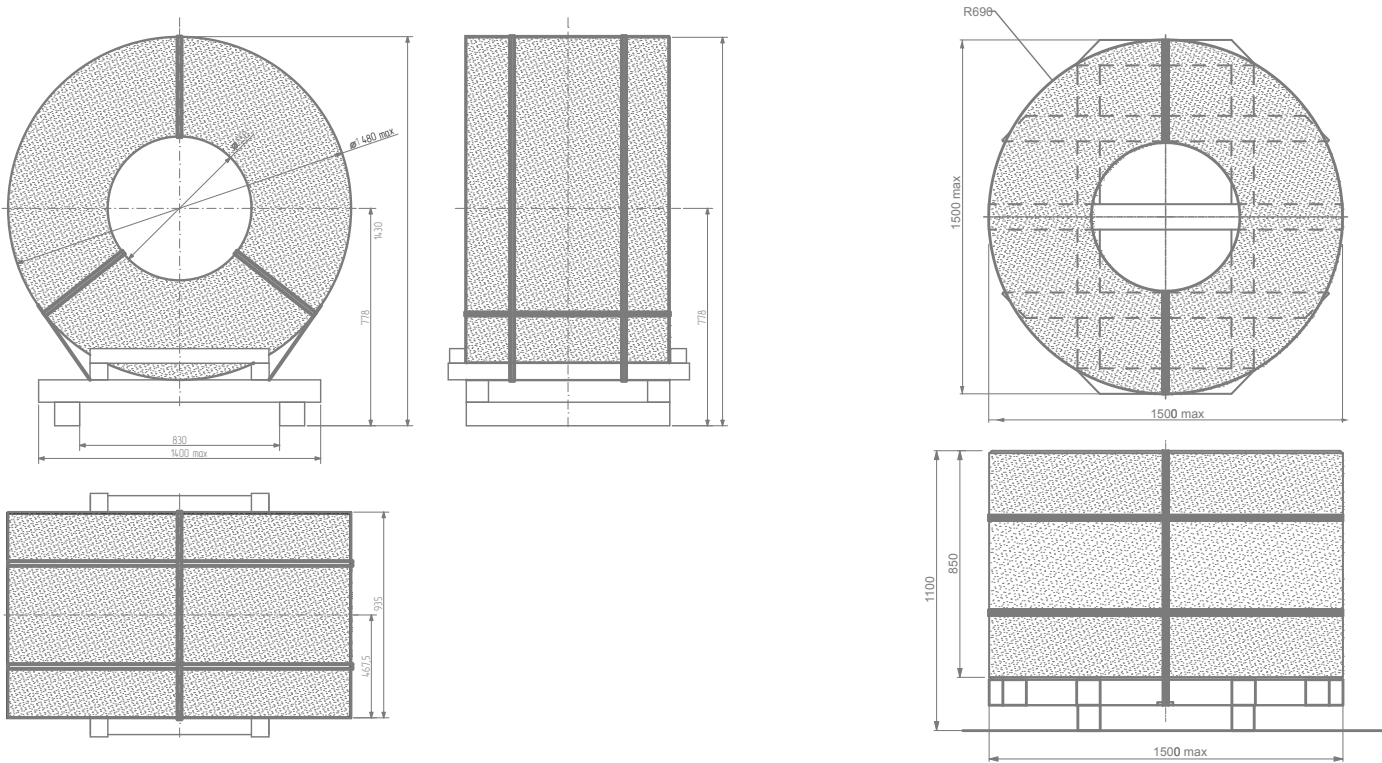
Sample
of wire rod
Eye-to-the wall



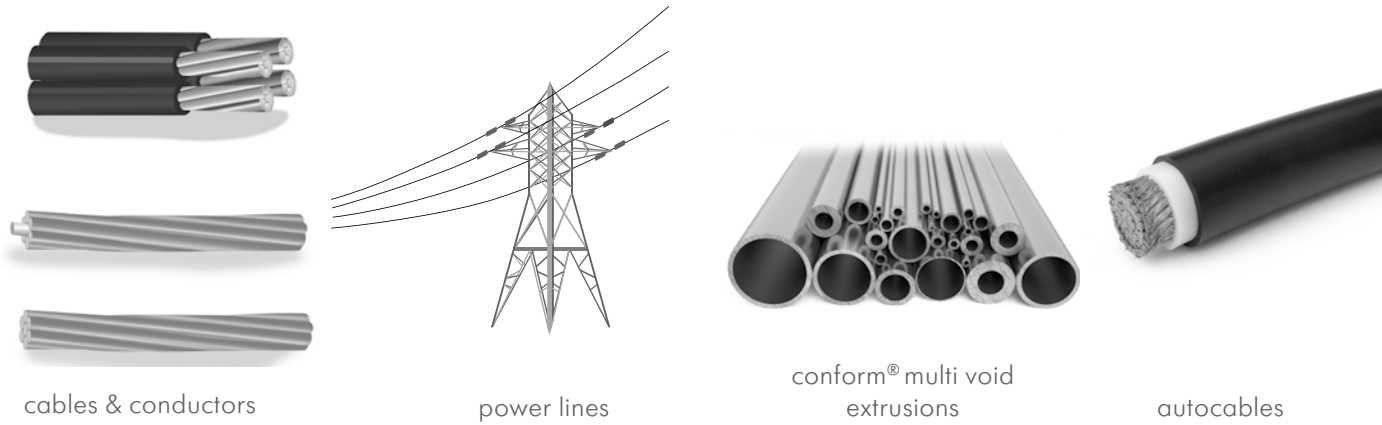
Sample
of wire rod
Eye-to-the sky



LAYOUT



APPLICATIONS

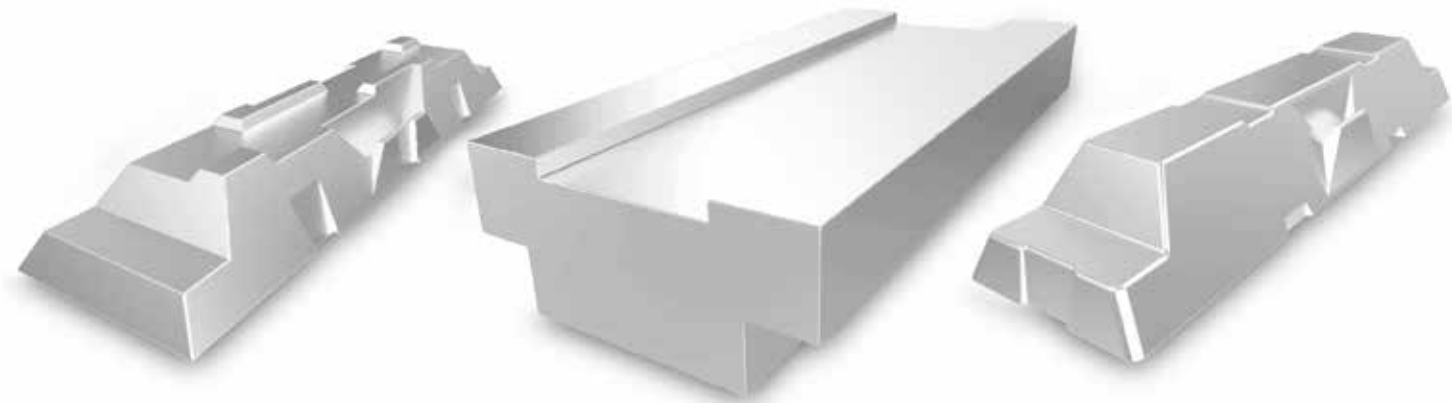


PRIMARY FOUNDRY ALLOYS

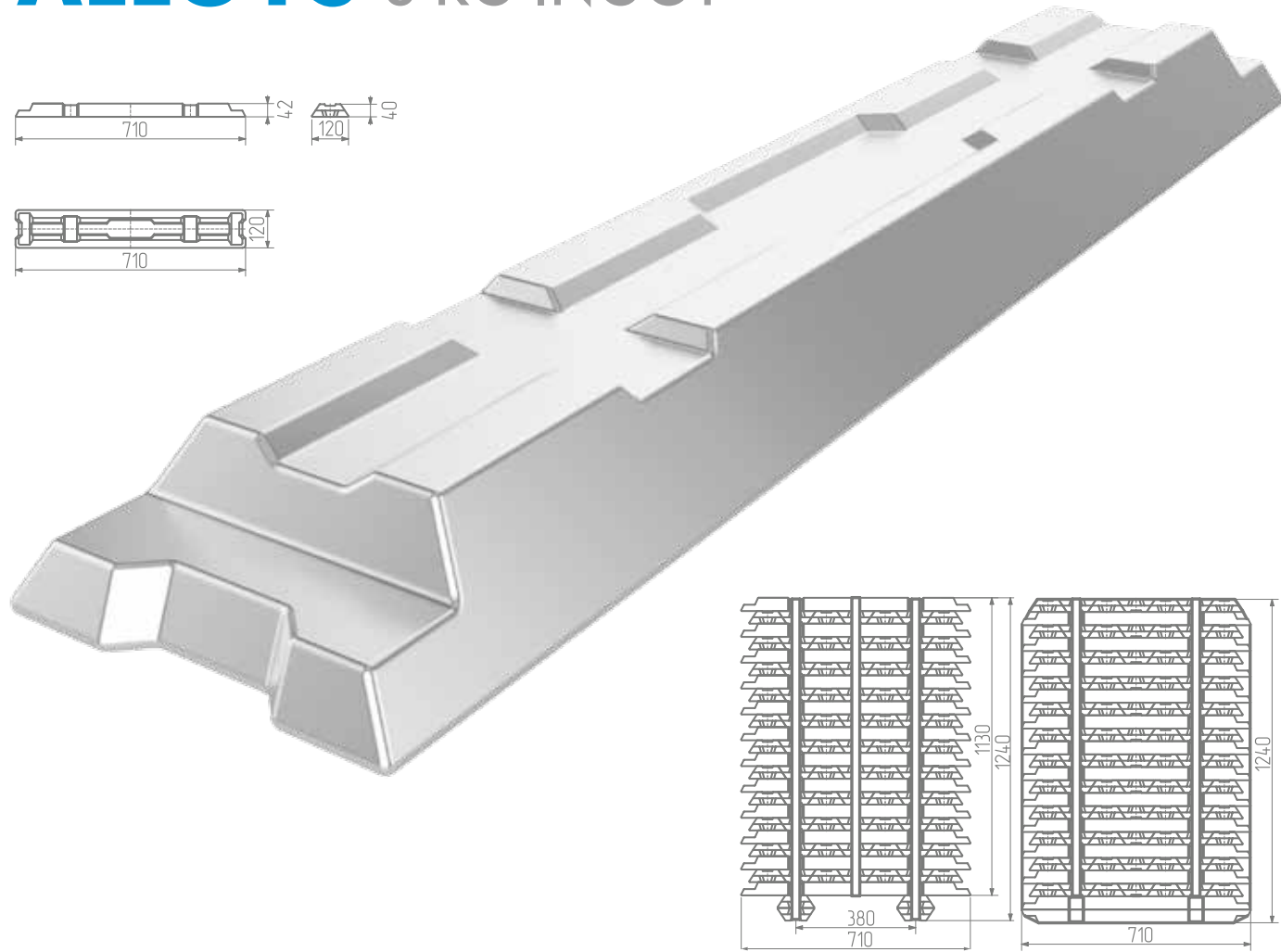
Alloys	6-7 kg	10 kg	15 kg	16 kg	20 kg	Bar	T-bar	Sow/ Jumbo
AlSi7Mg	x	x	x	x	x	x	x	
AlSi11Mg	x	x	x	x	x	x		
AlSiCu	x	x	x	x			x	
AlSi3							x	
Piston	x		x				x	
AlSiMgMn	x	x	x	x				
AlSi10	x	x	x					x

Producers: Shelekhov (ex-Irkutsk), Sayanogorsk, Krasnoyarsk, Novokuznetsk, Khakas.

SAMPLES OF PFA



PRIMARY FOUNDRY ALLOYS 6 KG INGOT



ALLOY SERIES AlSi7Mg, AlSi11Mg, AlSiCu, Piston, AlSiMgMn, AlSi10

Sr-modified/non-modified
Weight 6 kg +/- 1 kg
Full and half bundles are available
Regular bundle weight 1074 kg +/- 100 kg
Half bundle weight 570 kg +/- 50 kg
179 ingots in full bundle – Shelekhov (ex-Irkutsk)
95 ingots in half bundle – Shelekhov (ex-Irkutsk)
109 ingots in full bundle – Novokuznetsk

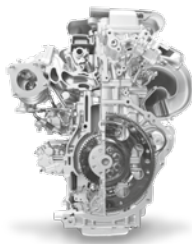
Packed in polyethylene wrapping
with 5 steel or plastic straps respectively
Highest Quality control standards (DI)

Producer:
Novokuznetsk,
Shelekhov (ex-Irkutsk)

APPLICATIONS



weels



engine

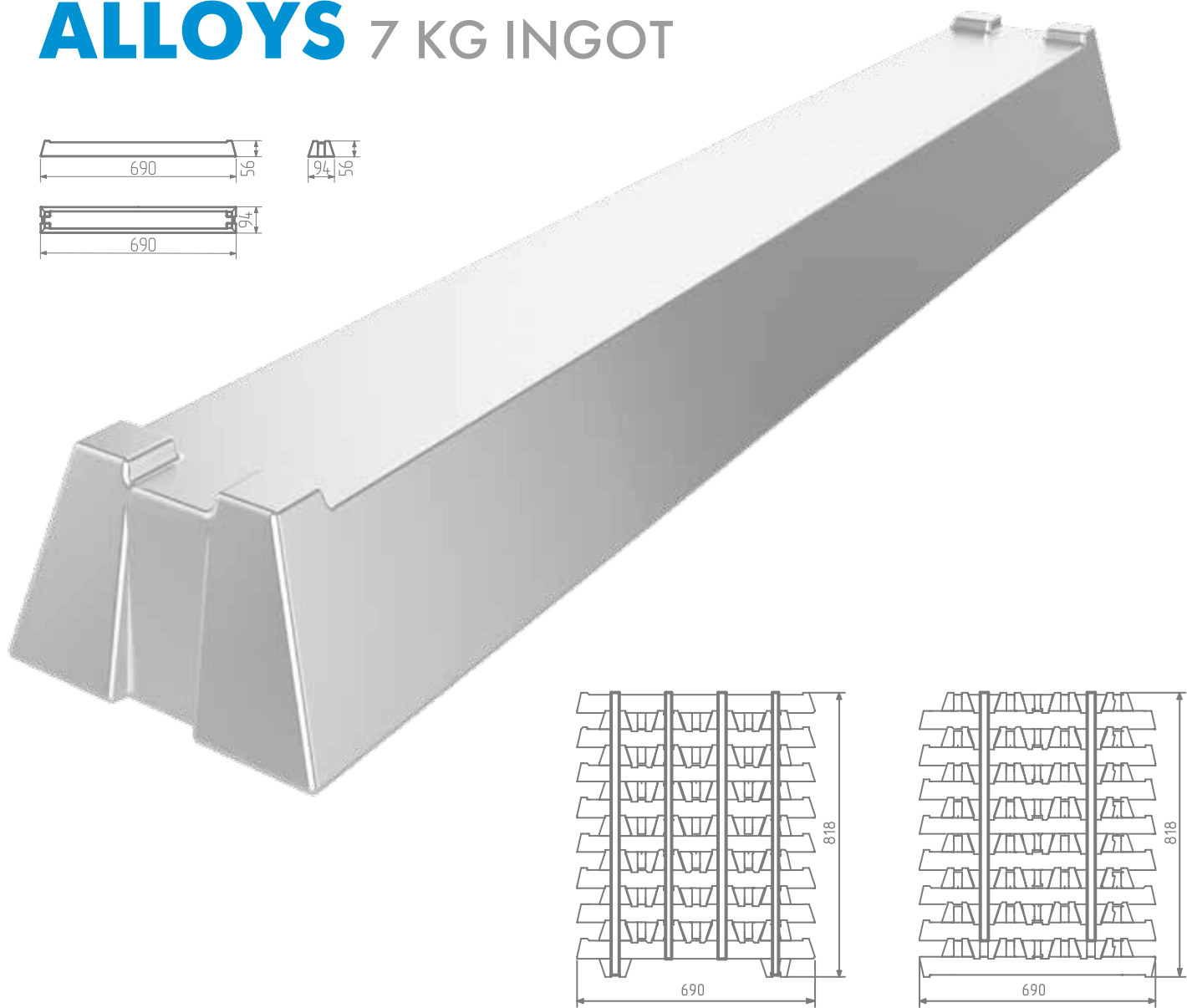


suspension parts



car parts

PRIMARY FOUNDRY ALLOYS 7 KG INGOT



ALLOY SERIES AlSi7Mg, AlSi11Mg, AlSiCu, Piston, AlSiMgMn, AlSi10

Sr-modified/non-modified	Packed in polyethylene wrapping	Producer: Sayanogorsk
Weight 7 kg +/- 1 kg	with 6 steel or plastic straps	
Bundle weight 550 or 750 kg +/- 70 kg		
79 or 107 ingots per bundle		

DID YOU KNOW?

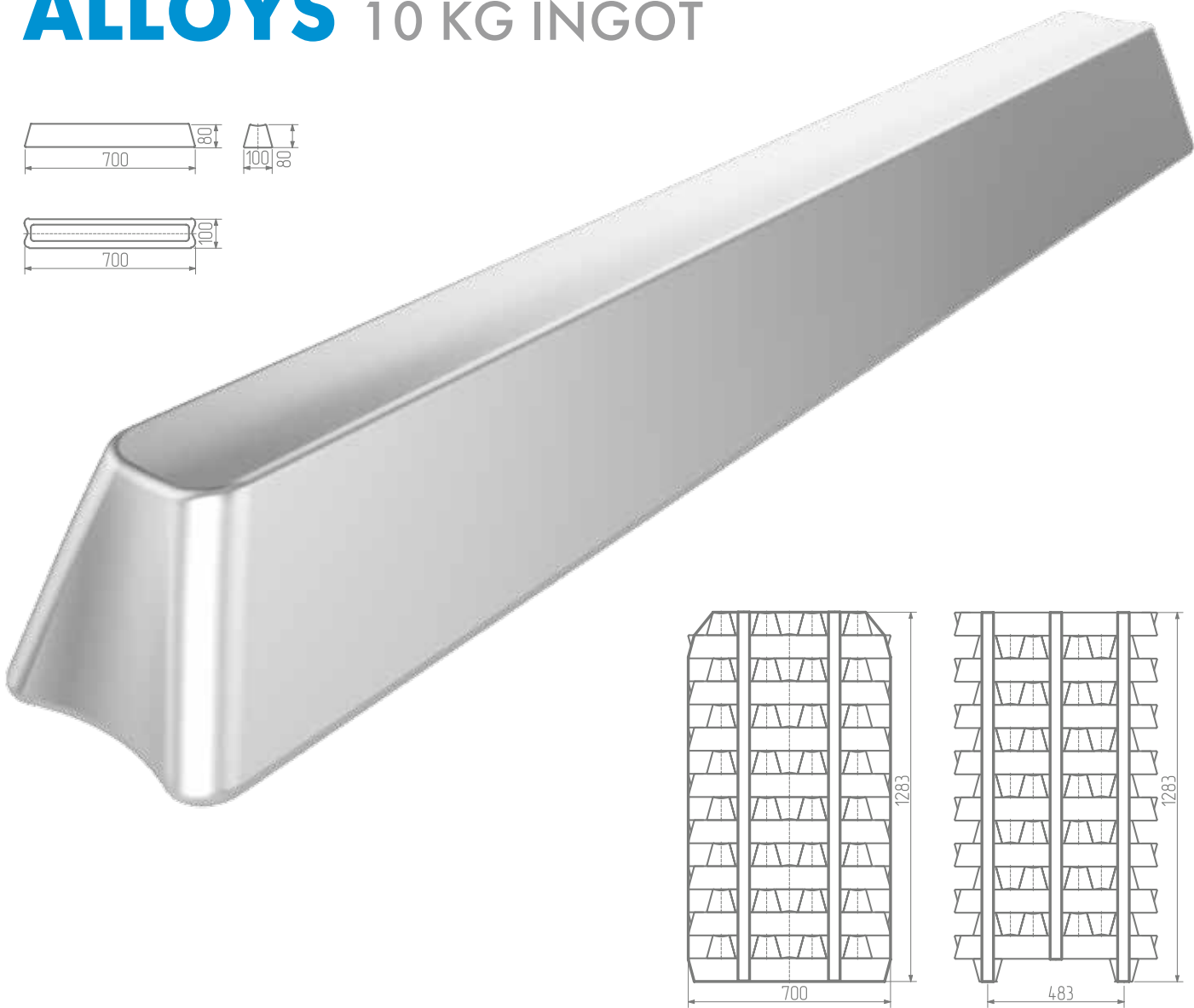
All types of vehicles, from bikes to spaceships, are made using aluminium, allowing people to move at breakneck speeds safely, cross oceans, fly in the sky and even leave our planet. Transport also accounts for 27% of aluminium consumption, the largest share by any sector. Through 2015-2020, global aluminum consumption in transport is forecast to grow at 5-7% annually.

TRANSPORT SHARE IN ALUMINIUM CONSUMPTION

27%



PRIMARY FOUNDRY ALLOYS 10 KG INGOT



ALLOY SERIES AlSi7Mg, AlSi11Mg, AlSi10MgMn, AlSiMgMn, AlSiCu, AlSi10

Sr-modified/non-modified	Packed in polyethylene wrapping	Producer: Shelekhov (ex-Irkutsk)
Weight 10 kg +/- 1 kg	with 5 steel or plastic straps	
Bundle weight 1020 – 500 kg +/- 50 kg	Highest quality control standards	
107-51 ingots per bundle	(Prefil, Volcester)	

DID YOU KNOW?

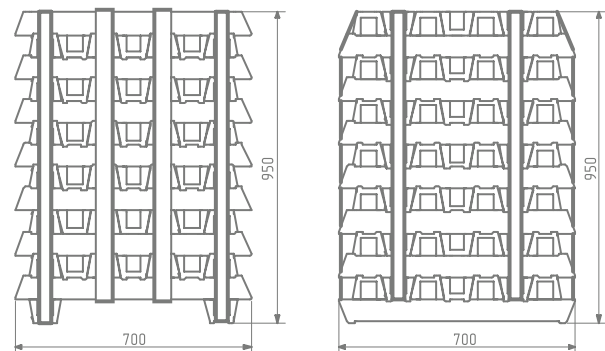
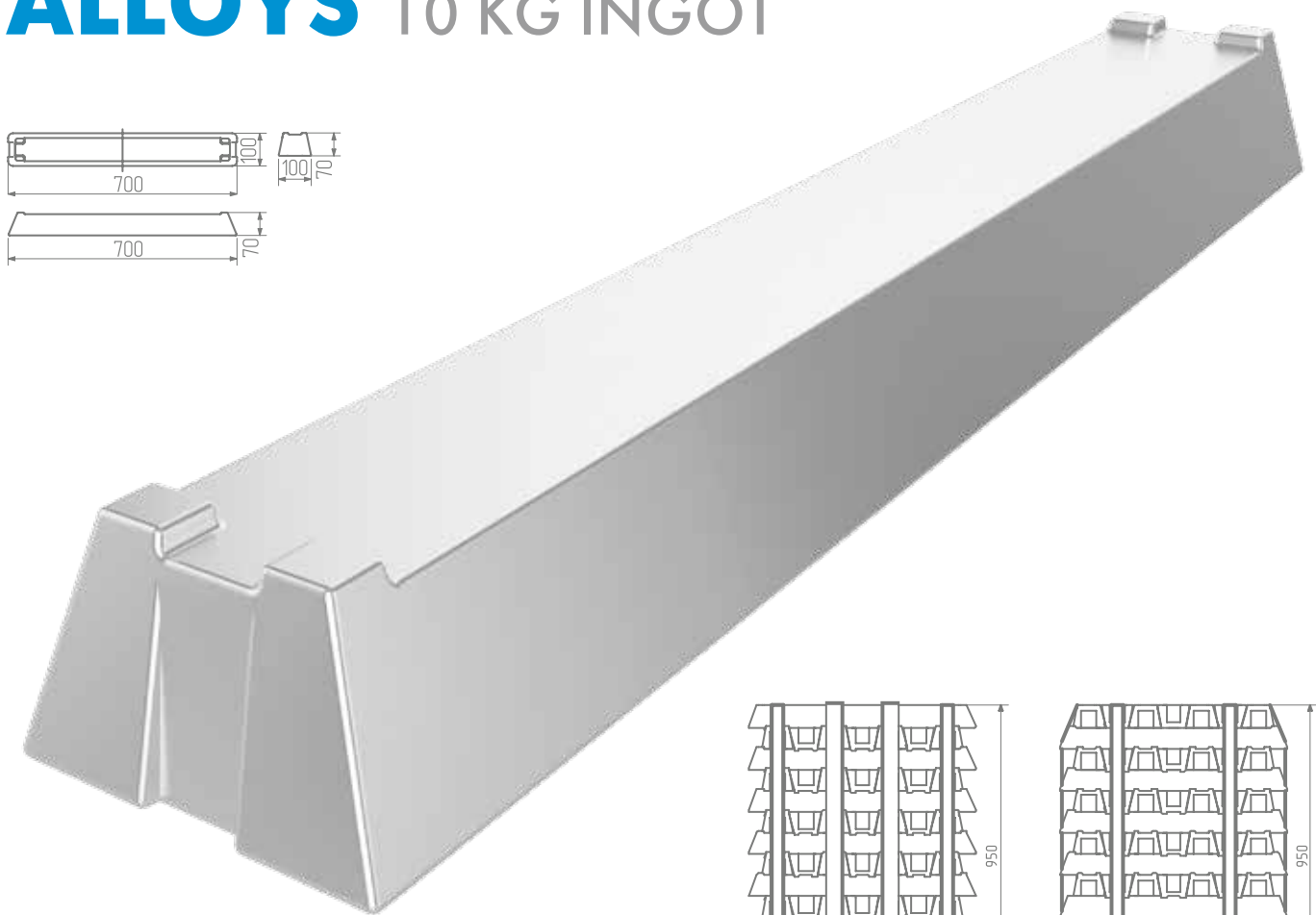
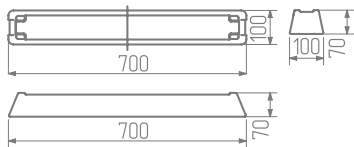
Car parts made from aluminium reduce the car weight up to 24% which makes it possible to reduce fuel consumption up to 2 liters per 1000 km.

CAR WEIGHT REDUCTION UP TO

24%



PRIMARY FOUNDRY ALLOYS 10 KG INGOT



ALLOY SERIES AlSi7Mg, AlSi11Mg, AlSiCu, AlSiMgMn, AlSi10

Sr-modified/non-modified
Weight 10 kg +/- 1 kg
Bundle weight 510 or 930 kg +/-90 kg
51 or 93 ingots per bundle

Packed in polyethylene wrapping
with 6 steel or plastic straps

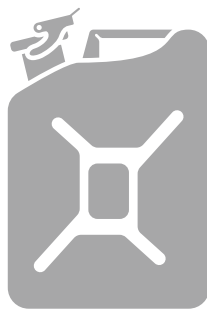
Producer: Sayanogorsk

DID YOU KNOW?

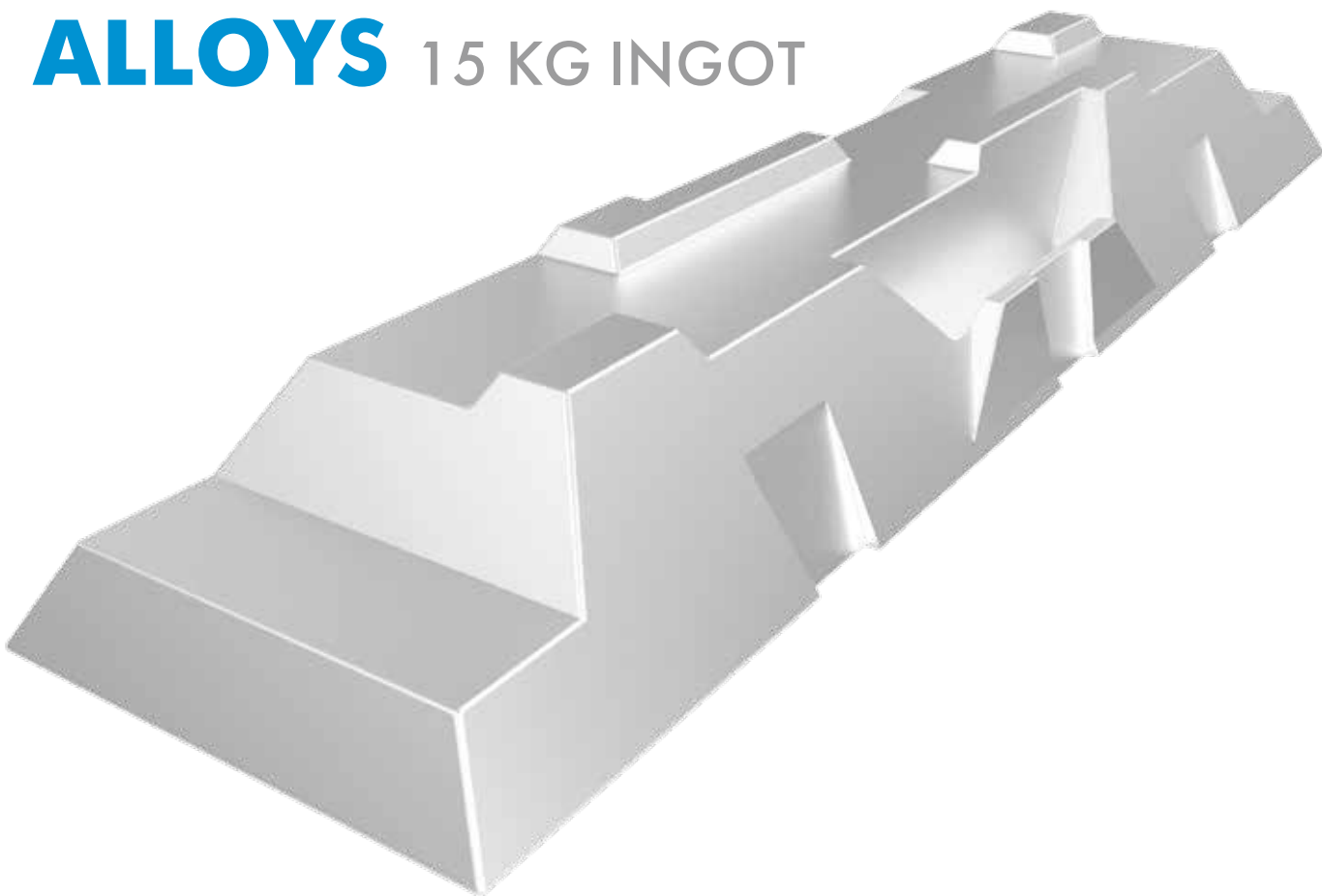
Vehicles utilising aluminium can achieve up to a 20% reduction in energy consumption through life cycle and up to 17% reduction in CO₂ emissions.

ENERGY
CONSUMPTION
REDUCTION
UP TO

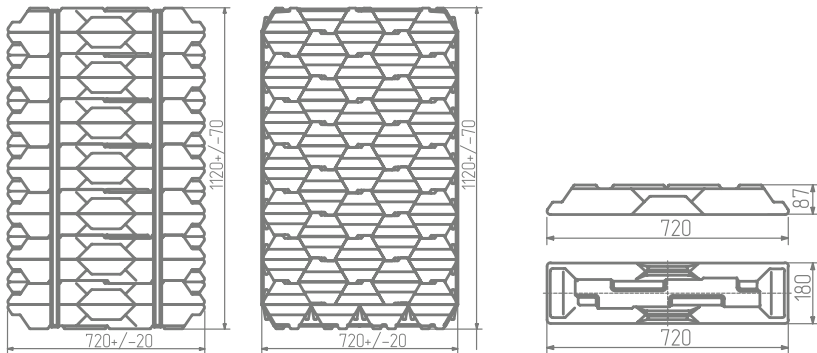
20%



PRIMARY FOUNDRY ALLOYS 15 KG INGOT



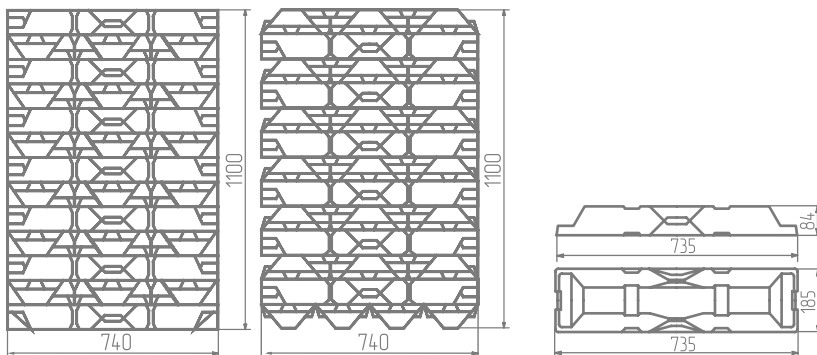
ALLOY SERIES AlSi7Mg, AlSi11Mg, AlSiCu, Piston, AlSiMgMn, AlSi10



Sr-modified/non-modified
Weight 15 kg +/- 1.5 kg
Bundle weight 1035 kg +/- 103 kg
69 ingots per bundle
Packed in 2-4 steel or plastic straps,
polyethylene wrapping
Parallel and crisscross stacking scheme

Producer: Novokuznetsk

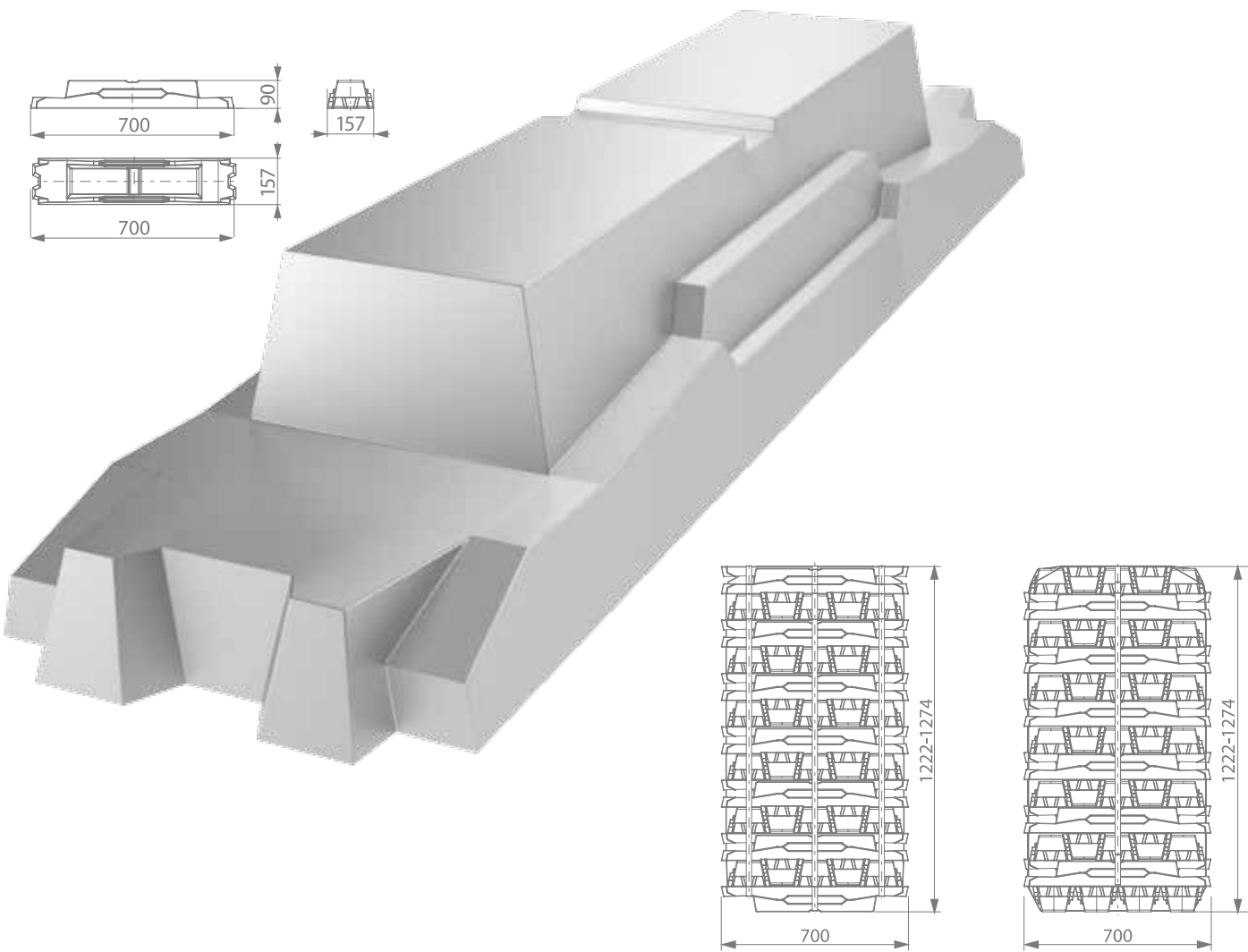
ALLOY SERIES AlSi7Mg, AlSi10Mg, AlSi11Mg



Sr-modified/non-modified
Weight 15 kg +/-1 kg
Bundle weight 510, 660 or 960 kg
34, 44 or 64 ingots per bundle
Packed with 4 steel straps

Producer: Krasnoyarsk

PRIMARY FOUNDRY ALLOYS 16 KG INGOT



ALLOY SERIES AlSi7Mg, AlSi11Mg, AlSiCu, AlSiMgMn

Sr-modified/non-modified
Weight 16 +/-1 kg

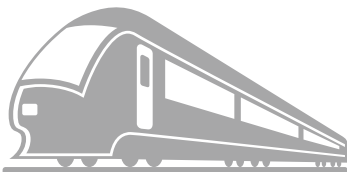
Bundle weight 704, 864 or 1024 kg
44, 54 or 64 ingots per bundle
Packed with 4 steel or plastic straps

Producer: Khakas

DID YOU KNOW?

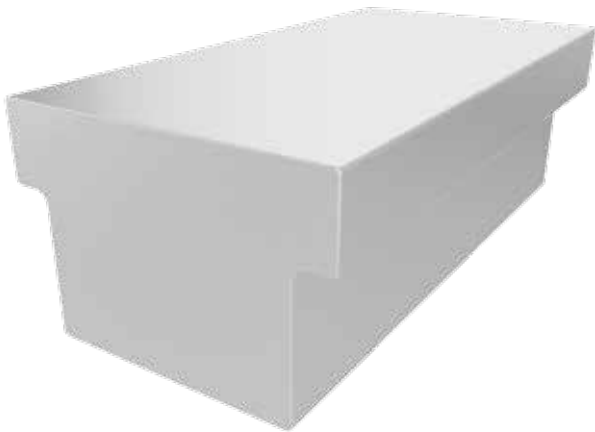
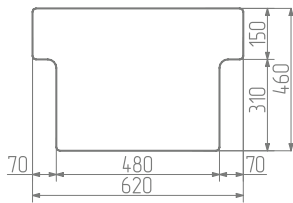
Thanks to aluminium, new high speed rail technologies promise speeds of >600 kmph without compromising safety.

RAIL SPEED
INCREASE
UP TO



>600 kmph

PRIMARY FOUNDRY ALLOYS T-BAR

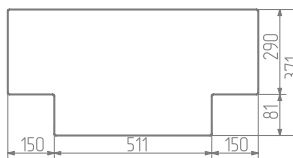


ALLOYS T-BAR AlSi7Mg, AlSi11, AlSiCu, piston, AlSi3Sr

Min weight 727.5 kg
Max weight 772.5 kg

Normal weight 750 kg
Uncut butts

Producer: Novokuznetsk



ALLOYS T-BAR AlSi7MgSr, AlSi3

Length up to 1720 mm
Min weight 495 kg

Max weight 1280 kg
Sawn to customer length

Producer: Krasnoyarsk

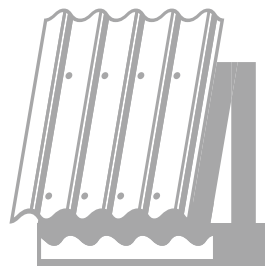
DID YOU KNOW?

Al-3%Si T-bars are used in Galvalume steel coating. Galvalume roofing has two main advantages over the more traditional [zinc] coated galvanized steel roof, namely that it offers superior corrosion resistance and improved heat reflectivity. For these reasons, Galvalume steel roofing is now increasingly replacing more traditional Galvanized roofs. While roofing and siding is the largest single application for Galvalume, it is also used for several diverse applications (automotive, appliance, etc.)

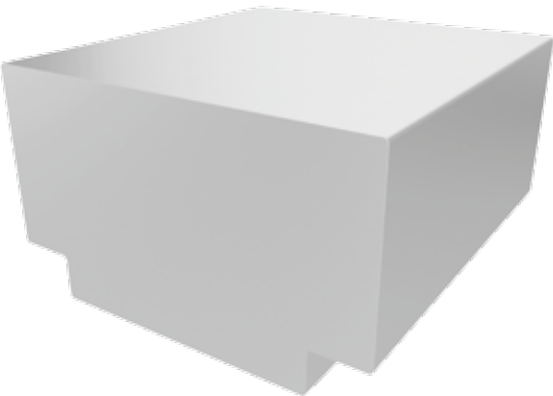
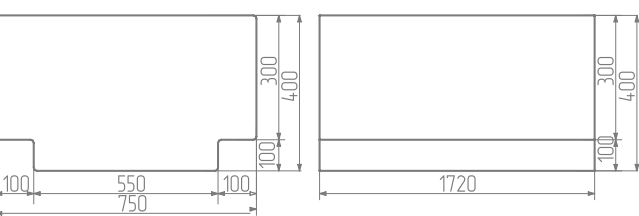
ROOFING & SIDING
REPRESENT

Nº1

APPLICATION
FOR GALVALUME



PRIMARY FOUNDRY ALLOYS T-BAR

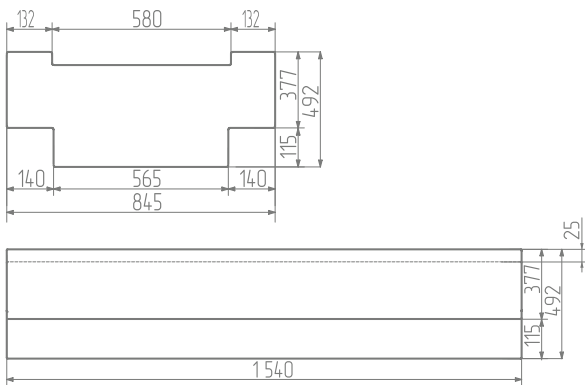


ALLOYS T-BAR AISi7MgSr, AISi3

Min weight 560 kg
Max weight 1290 kg

Length upto 1720 mm
Sawn to customer length

Producer: Krasnoyarsk



ALLOYS T-BAR AISi7MgSr, AISi3

Max weight 1445 kg
Length up to 1540 mm

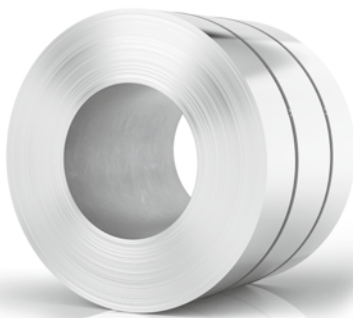
With notch on the top side
Sawn to customer length

Producer: Krasnoyarsk

APPLICATIONS



galvanized roofing sheet



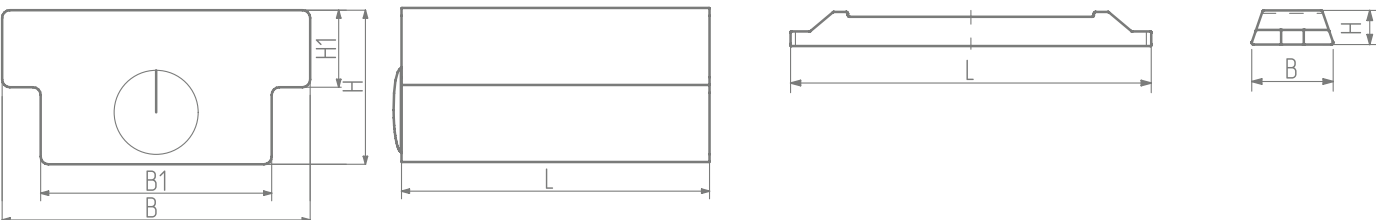
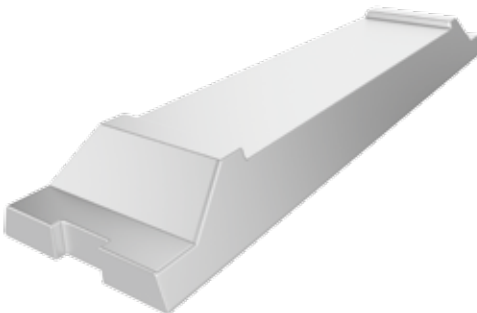
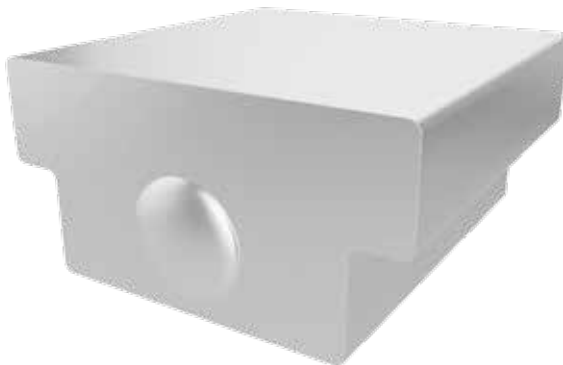
coated steel coil



steel coatings

HIGH PURITY ALUMINIUM

SAMPLE OF HIGH PURITY ALUMINUM T-BAR & INGOT



SPECIFICATION

3-layer technology
Grades 3N8, 4N, 4N6
Regular electrolysis: A92 (P0303, P0304)

Shapes 15 kg ingot, T-bar

Producer: Krasnoyarsk, Sayanogorsk

Title	Dimensions, mm					Weight, kg
	L	B	B1	H	H1	
T-bar	800	800	600	400	200	600
Ingot	740	170		70		15

APPLICATIONS



aerospace

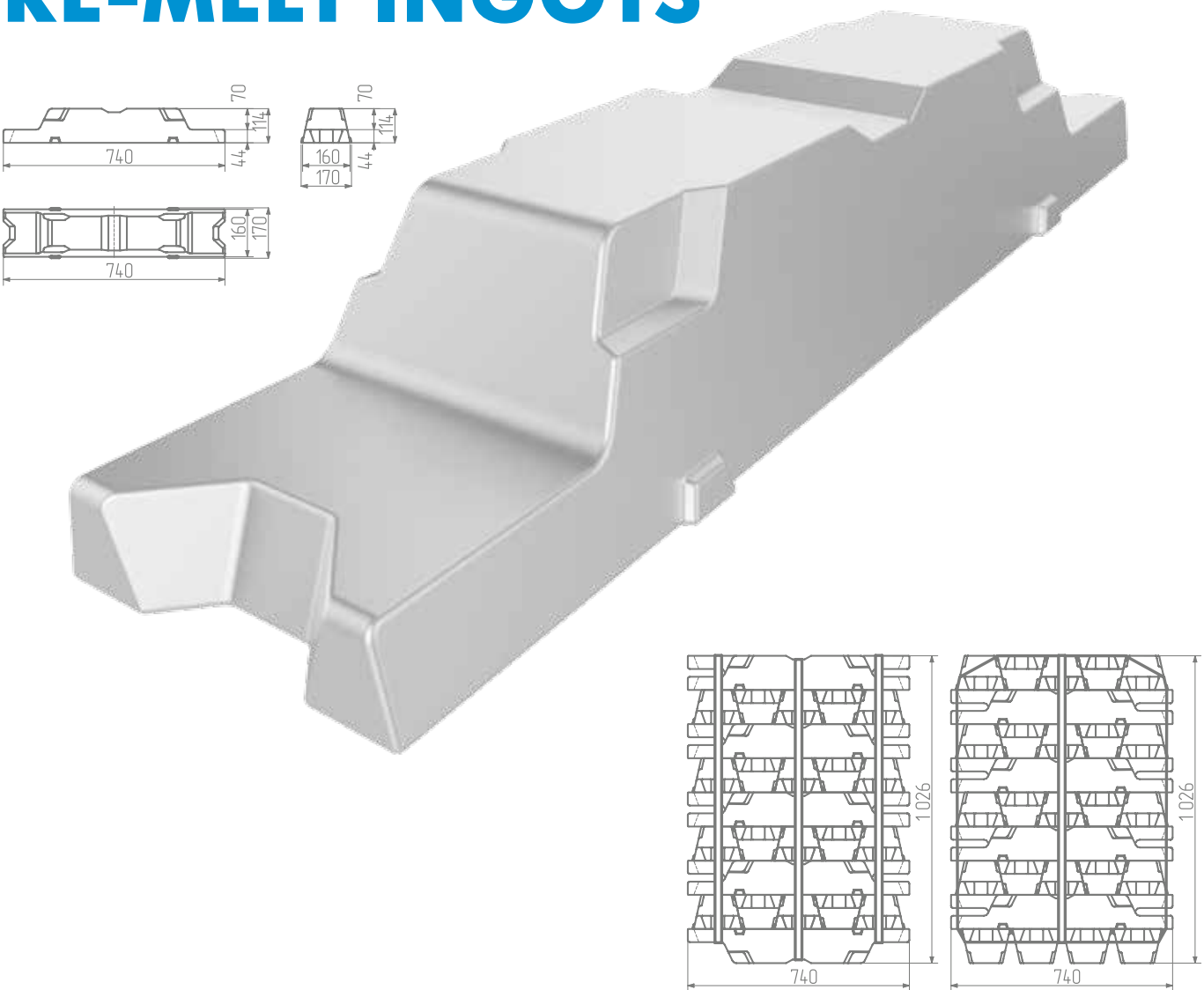


memory disks



condenser foil

PRIMARY ALUMINIUM RE-MELT INGOTS



SPECIFICATION

Unit weight 22.7 kg	Packed with 4 steel straps	Producer: Shelekhov (ex-Irkutsk)
Bundle weight 1000 kg +/- 10%	LME, SHFE registered	
44 ingots per bundle		LME brand: RUSAL I

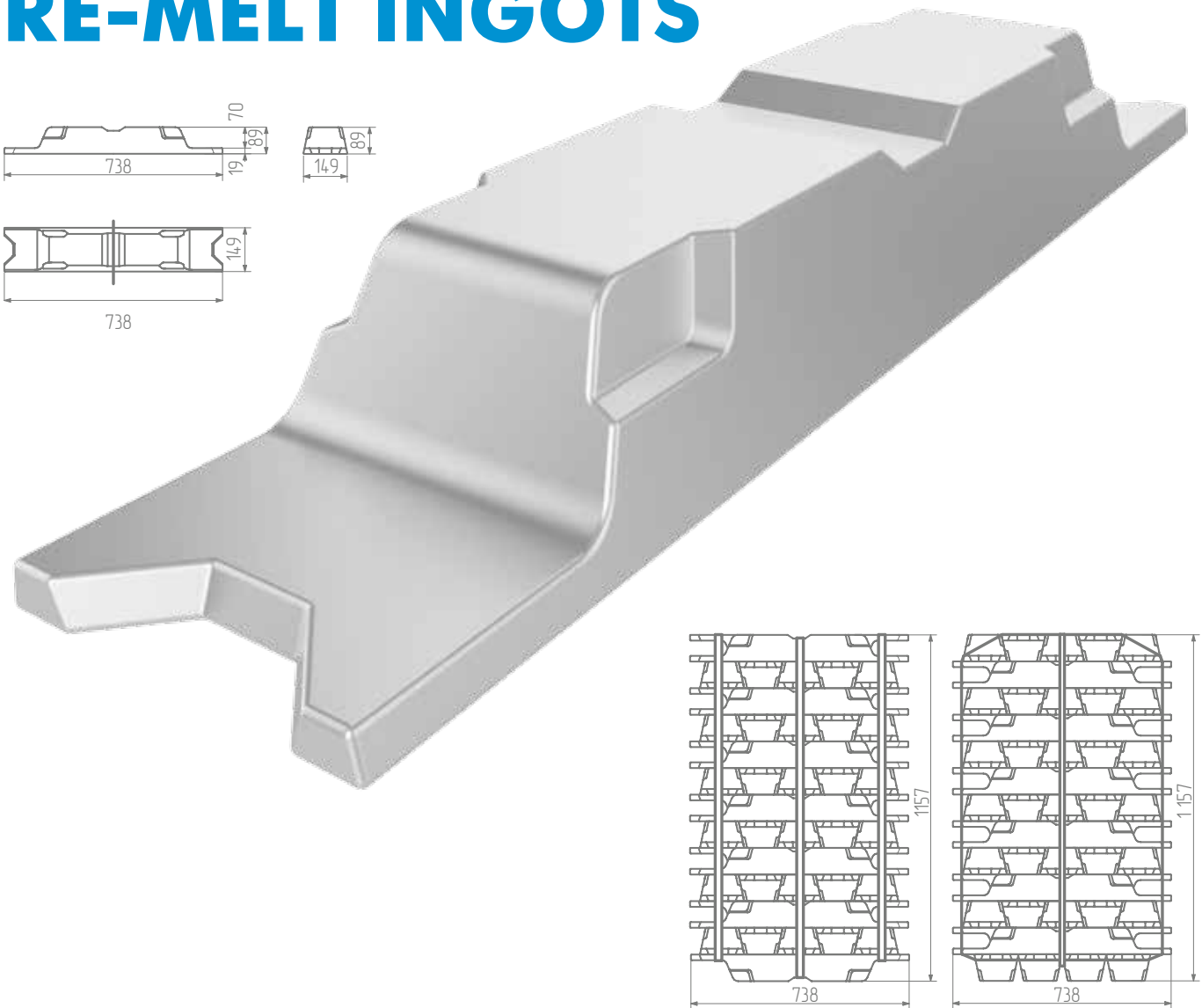
DID YOU KNOW?

Producing aluminium from hydro power generates 3 to 5 times less CO₂ emissions than from coal-based electricity. 10 million tonnes of primary aluminium, 20% of total global production, made from hydroelectricity instead of carbon-based electricity, will save the equivalent of the total emissions generated by 3 countries of similar size to Portugal.

DECREASE IN CO₂
EMISSIONS UP TO
3-5
times



PRIMARY ALUMINIUM RE-MELT INGOTS



SPECIFICATION

Unit weight 15 kg	Packed with 3 steel straps	Producer: Shelekhov (ex-Irkutsk)
Bundle weight 1000 kg +/- 10%	LME registered	
64 ingots per bundle		LME brand: RUSAL I

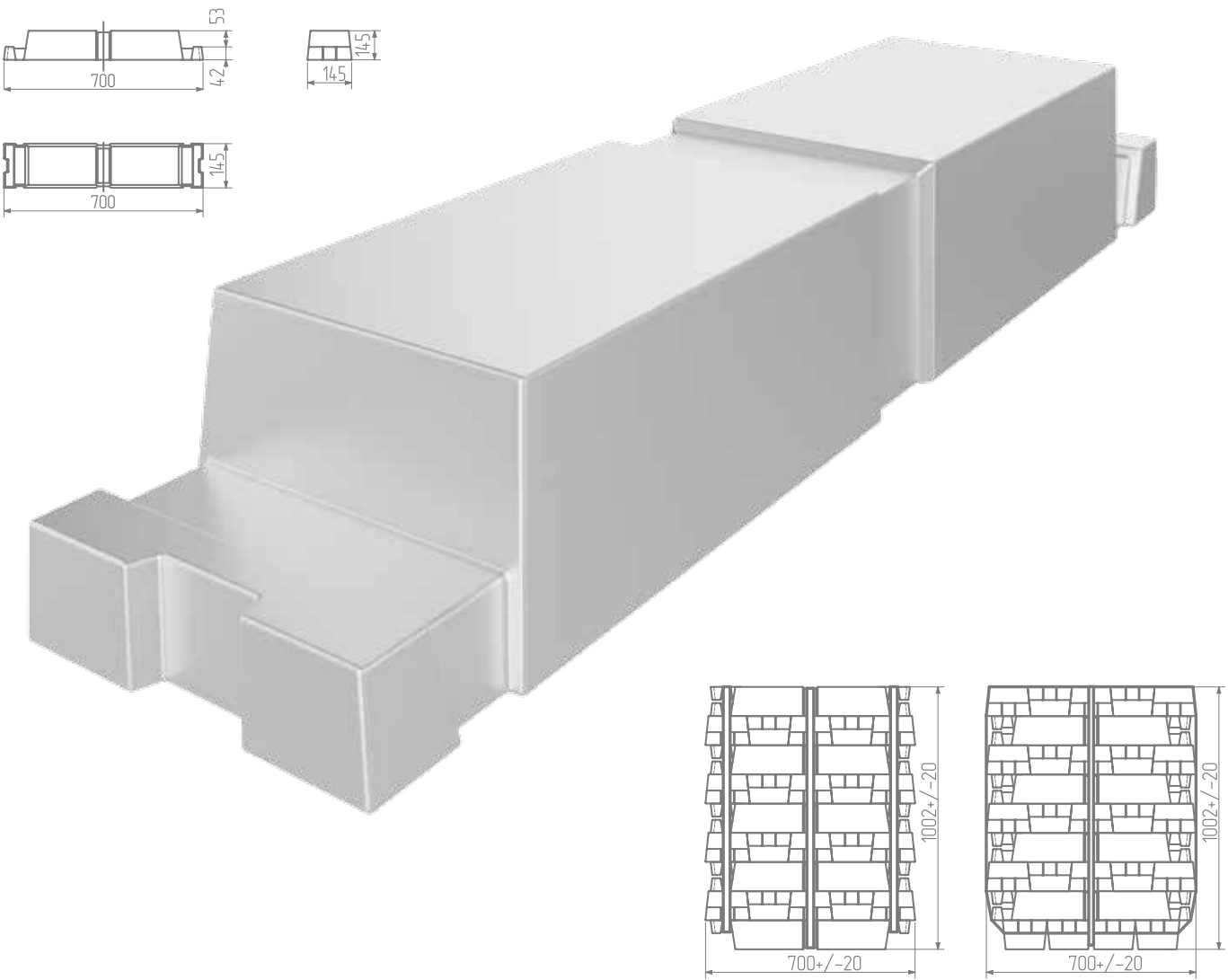
DID YOU KNOW?

Russia is a country full of rivers, streams and lakes; the hydro power potential is enormous. 3/4 of Russia's hydro energy capacity are located in Siberia. With its key production base in Eastern Siberia, RUSAL has a unique competitive advantage.

SIBERIA ACCOUNTS
FOR **3/4**
OF RUSSIA'S HYDRO
ENERGY CAPACITY



PRIMARY ALUMINIUM RE-MELT INGOTS



SPECIFICATION

Unit weight 22.5 kg	Packed with 3+1 steel straps	Producer: Khakas
Bundle weight 990 kg +/- 10%	LME, SHFE registered	
44 ingots per bundle		LME brand: RUSAL KH

DID YOU KNOW?

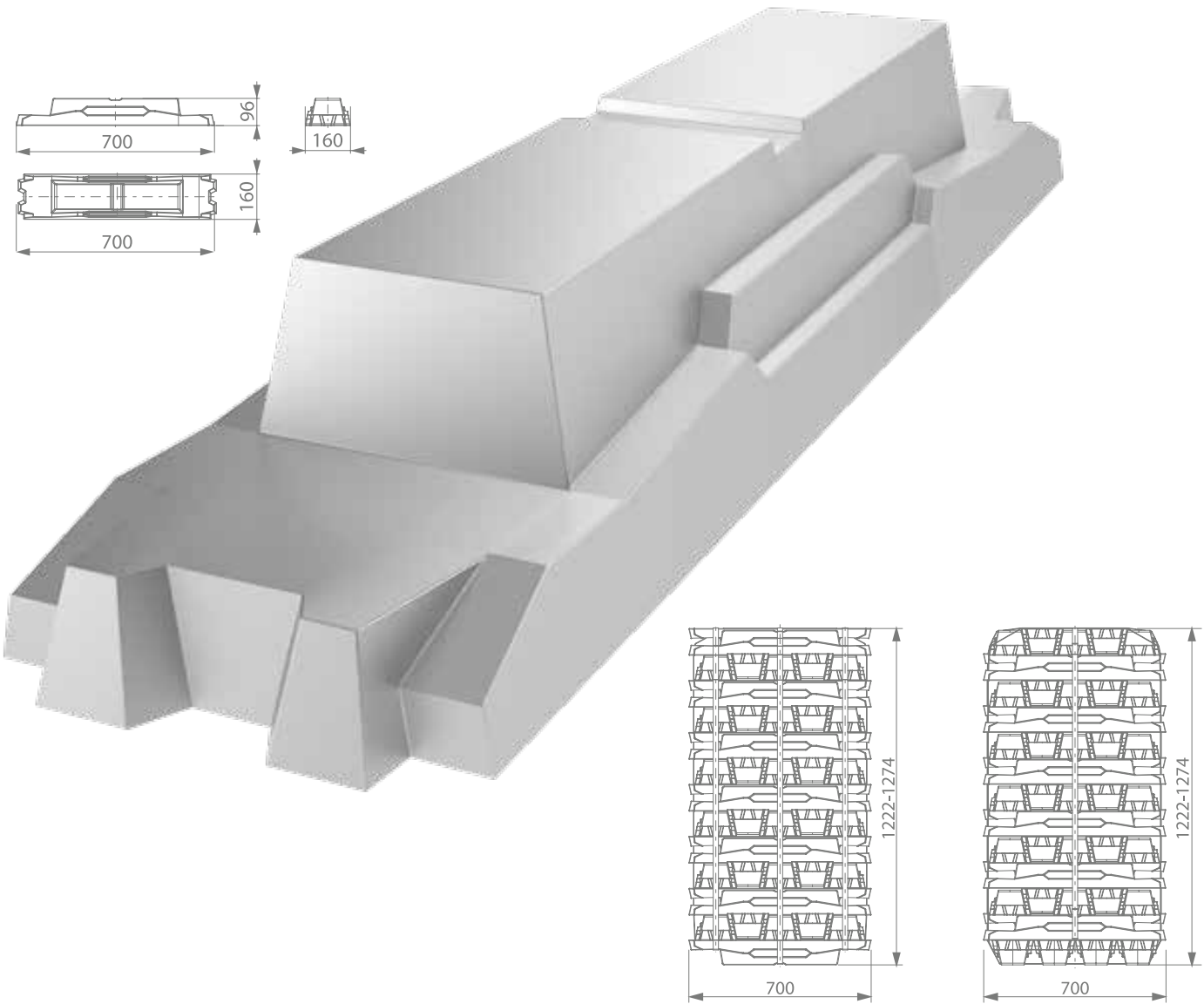
Aluminium can be used in temperatures ranging between -80°C and +300°C, in any climatic conditions, and does not lose its properties.

ALUMINIUM
USAGE TEMPERATURE
RANGES BETWEEN

-80°C ...
+ 300°C



PRIMARY ALUMINIUM RE-MELT INGOTS



SPECIFICATION

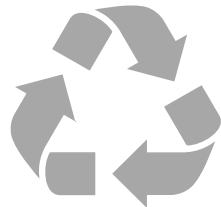
Unit weight 16 kg	Packed with 4 steel straps	Producer: Khakas
Bundle weight 1024 kg	LME registered	
64 ingots per bundle		LME brand: RUSAL KH

DID YOU KNOW?

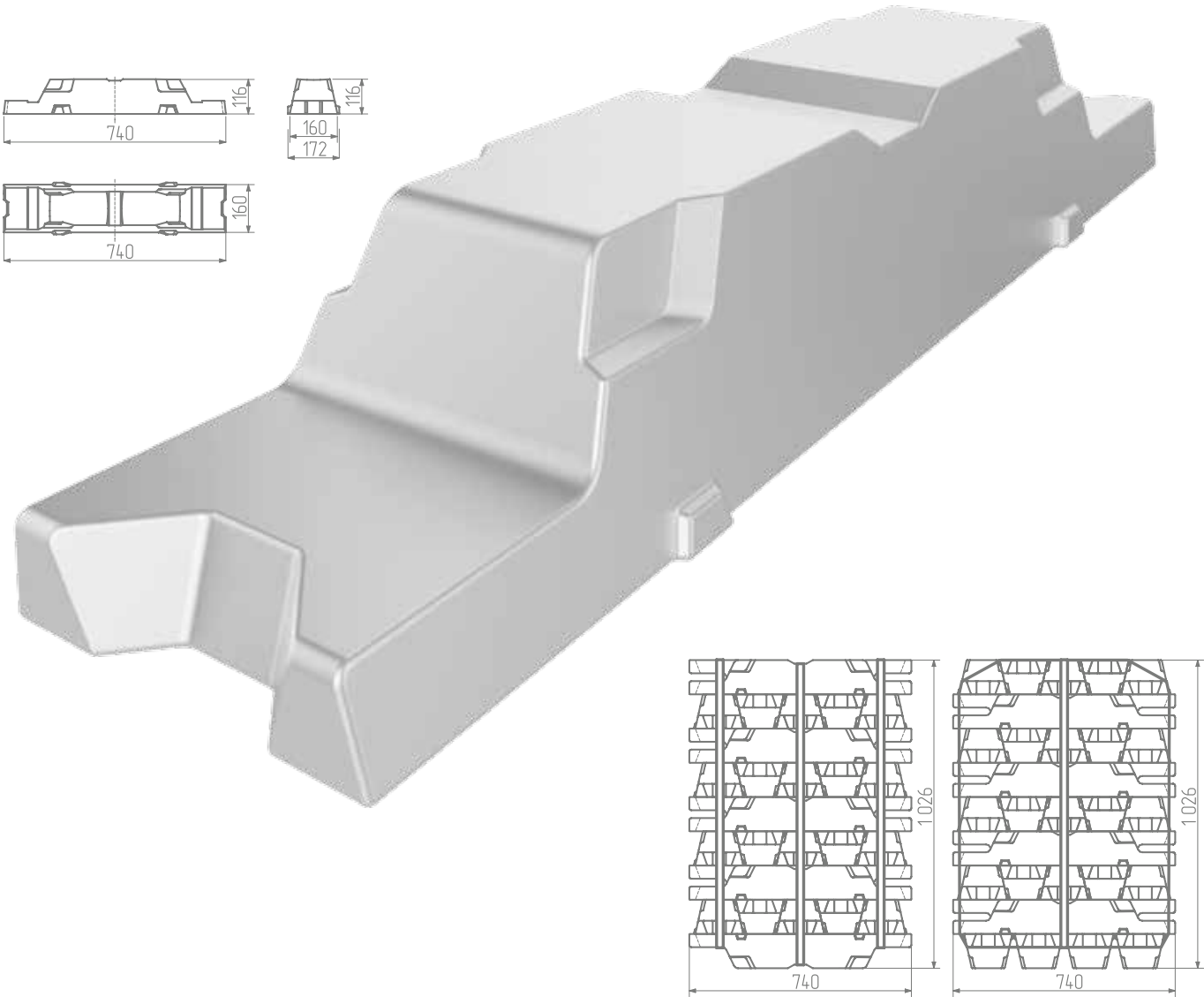
Aluminium is 100% recyclable and, like a Phoenix bird, can be reborn an endless number of times. About 75% of aluminium that has ever been produced on Earth is still in use.

ALUMINIUM
RECYCLABILITY
ACCOUNTS FOR

100%



PRIMARY ALUMINIUM RE-MELT INGOTS



SPECIFICATION

Unit weight 22.5 kg
Bundle weight 990 kg
44 ingots per bundle

Packed with 3+1 steel straps
LME, SHFE registered

Producer: BoAZ

DID YOU KNOW?

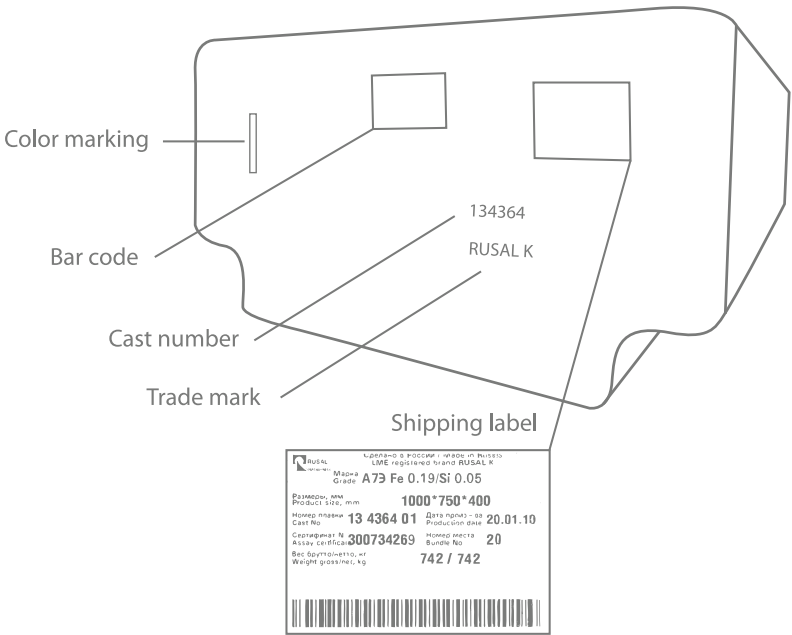
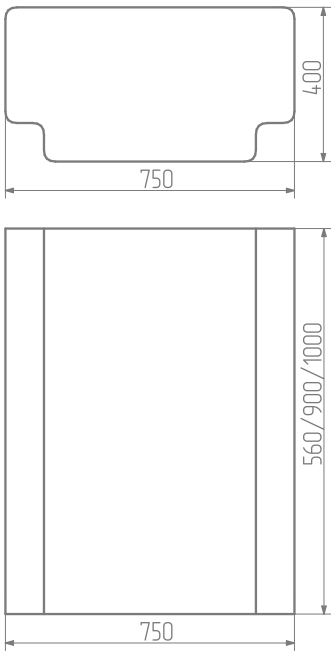
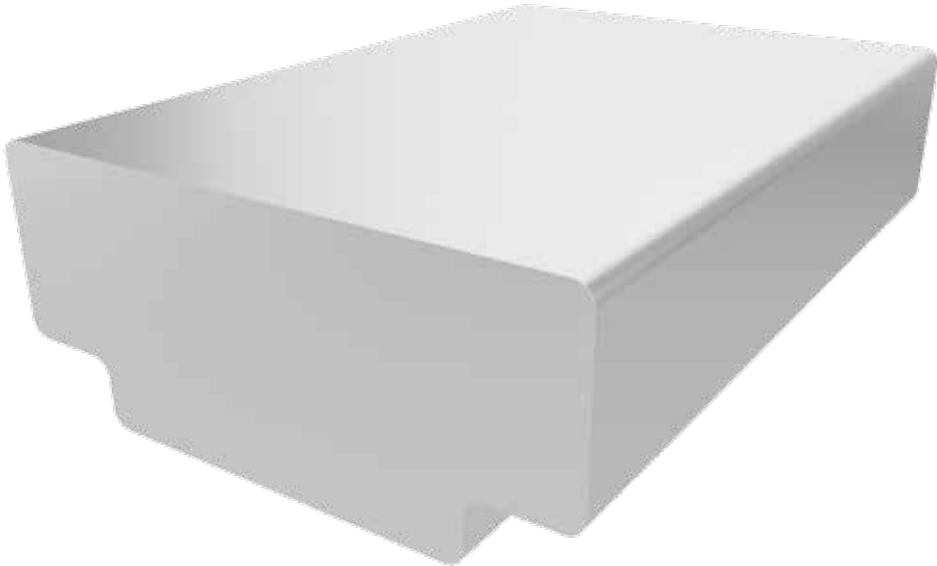
Light, flexible, non-toxic and highly conductive aluminium is a perfect match for sustainable architecture. The minimum design service life of aluminium structures is 80 years.

SERVICE LIFE OF ALUMINIUM
STRUCTURES EQUALS

80
years



PRIMARY ALUMINIUM T-BAR INGOTS



SPECIFICATION

Maximum weight 727.5 kg
Minimum weight 772.5 kg
Normal weight 750 kg

Cut into 560, 900
and 1000 mm length
Various shape modifications
LME registered

Producer:
Krasnoyarsk
Novokuznetsk
Bratsk
Sayanogorsk
Khakas

LME brand:
RUSAL K
RUSAL N
RUSAL B
RUSAL S
RUSAL KH

RUSAL TODAY

KEY FACTS

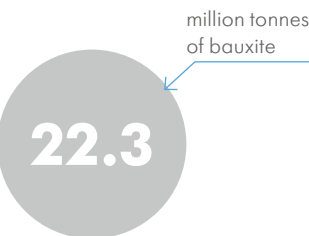
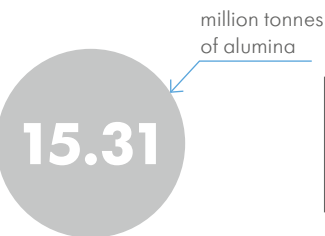
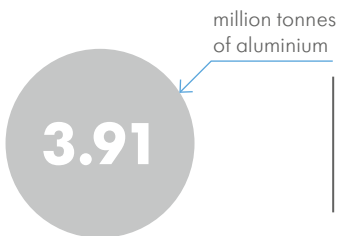
LEADING ALUMINIUM PRODUCER IN 2015

6.7%
of global
aluminium production

6.9%
of global
production of alumina

61,000
employees
globally

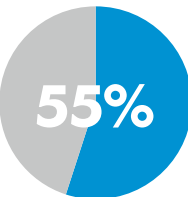
CURRENT CAPACITY OF:



Access to clean environmentally friendly
hydropower — core aluminium producing
facilities located in Siberia




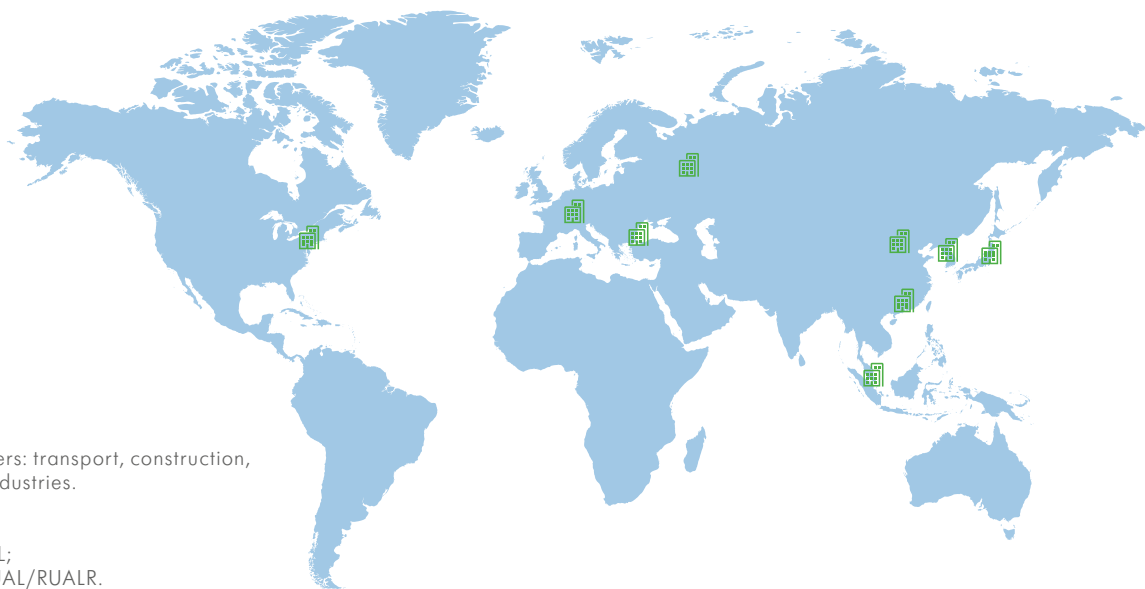
In-house R&D, engineering
and design resources



45% value added products share
targeting 55% by 2020

ASSETS IN 13 COUNTRIES ACROSS 5 CONTINENTS

 Trade offices in Zug, Singapore, New York, Beijing, Hong Kong, Tokyo, Istanbul and Seoul.



Over 700 major end users: transport, construction,
cable and packaging industries.

Listed:

- SEHK: 486;
- Euronext: RUSAL/RUAL;
- Moscow Exchange: RUAL/RUALR.

Certified:

- ISO 9001, ISO 14001, ISO/ TS 16949 (automotive);
- REACH, RoHS, ELV and SVHC compliant supplier.

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