



PRODMASH



▶ **Road Construction**

▶ **Road Work Safety**

▶ **Outdoor Lighting Structures**

▶ **Hot-Dip Galvanization**

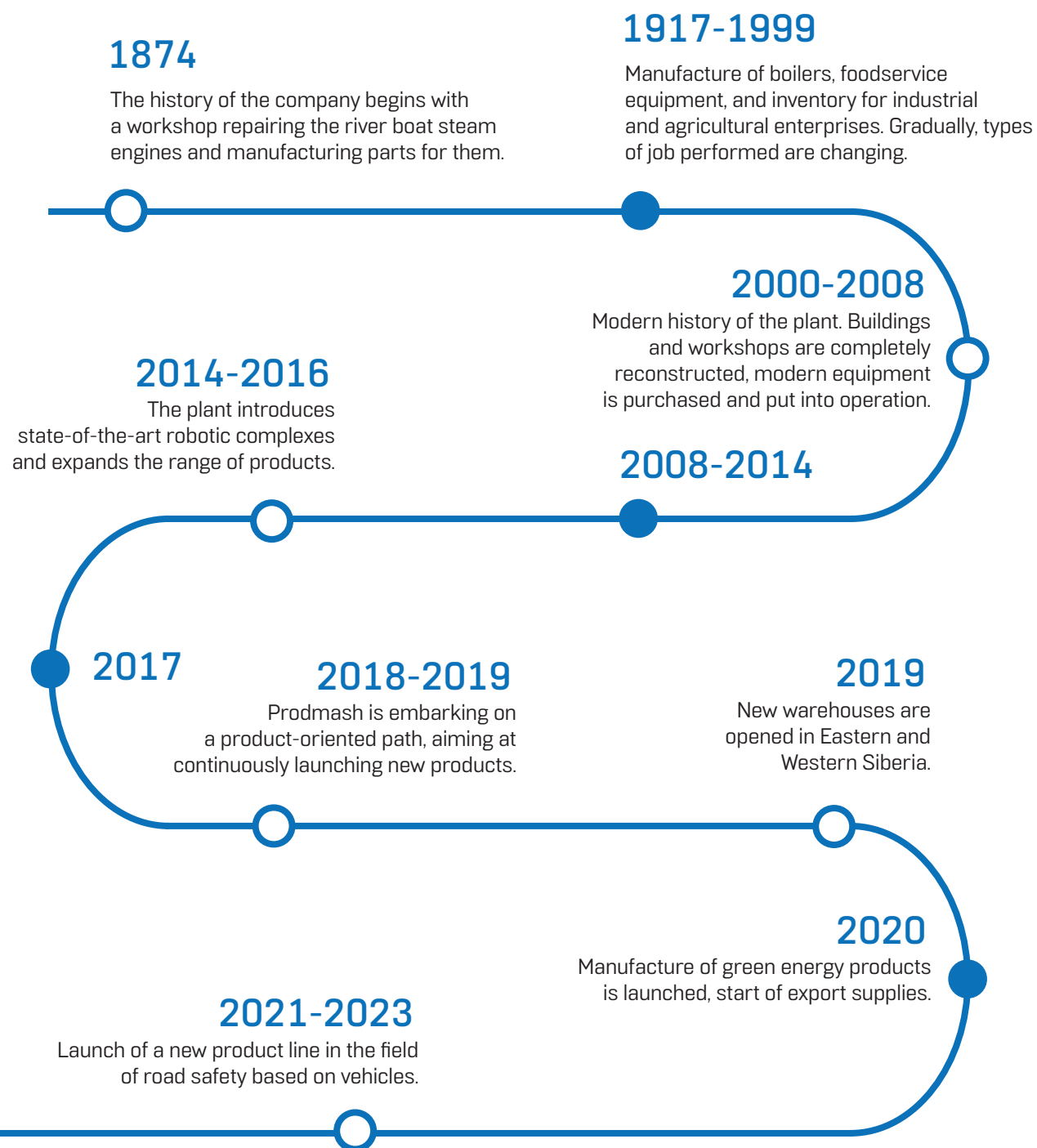
▶ **Industrial Construction**

ABOUT US

Zavod Prod mash is one of the key manufacturers of road steel structures for federal and regional projects.

We specialize in the development and manufacture of steel and composite material products for road and industrial construction, urban infrastructure, green energy, and industrial agriculture.

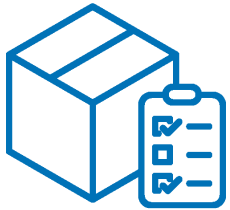
Another key area of Zavod Prod mash is hot-dip galvanizing of large and small steel structures. For more than 18 years, the company has been among the leaders in hot-dip galvanizing in Russia by the output.



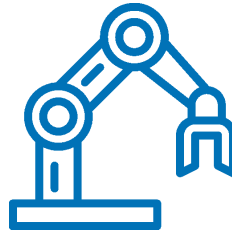


GEORGY MAKAROV
President of the company

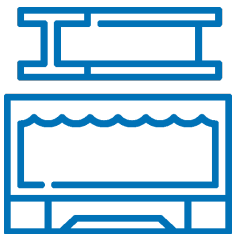
« For many years, we have been striving not just to manufacture road structures, but to create effective solutions to ensure safety on our roads »



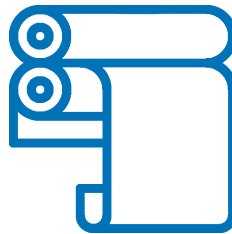
200 tons
daily output



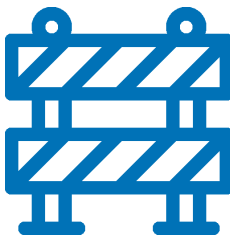
93%
automation indication



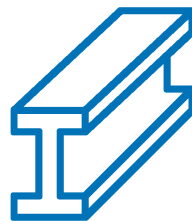
2 hot-dip galvanizing lines
- line for overall products
- automatic line for small-sized products



4 profiling lines
total output up to 46 running meters/min



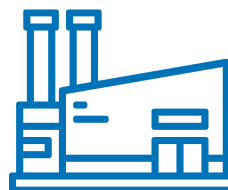
>2000 km
annual guardrail supply



55 000 tons
year output of hot-dip galvanized products



10 000 tons
minimum residual stock in warehouses



14 500 m²
production facilities

ABOUT US

ZVPM.ORG

ABOUT US

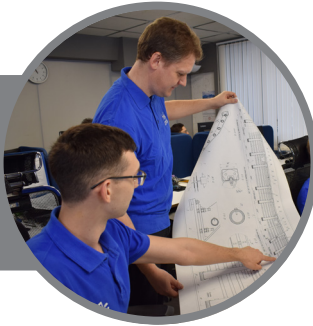
Consultant in the development of industry standards and documents



Development of innovative patented products



Own engineering department working according to customers' technical drawings



Well-established logistics and proper warehouse space



Products are certified according to Technical Regulation of the Customs Union/EN standards



Full cycle of production of steel structures in accordance with GOST and TU



INDUSTRIES



Road Construction



Industrial Construction



Green energy




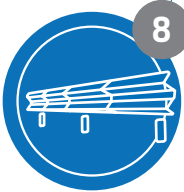



Agricultural Sector

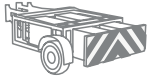


Anti-Corrosion Protection

OUR PRODUCTS:



	<p>6</p> <p>NEW PRODUCTS</p> <ul style="list-style-type: none"> • Trailer truck-mounted attenuator (TTMA) 6 • Gate systems 7
	<p>8</p> <p>ROAD CONSTRUCTION</p> <ul style="list-style-type: none"> • Guardrails 8 • Bridge guardrails 16 • Lightweight dividing guardline 18 • Guardrail accessory 20 • Crash cushions 21 • Pedestrian barriers 24
	<p>28</p> <p>ROAD STRUCTURES</p> <ul style="list-style-type: none"> • Frame supports 28 • Sign supports 30
	<p>31</p> <p>DIVERSE STEEL STRUCTURES</p> <ul style="list-style-type: none"> • Lighting poles 31 • Light arms and embedded parts 32 • Lighting masts 33 • Solar panel mounting systems 34 • Other steel structures 35
	<p>37</p> <p>SERVICES</p> <ul style="list-style-type: none"> • Construction and installation 37 • Hot-dip galvanizing 38 • Duplex coating 40 • Paint coating of steel structures 41



TRAILER TRUCK-MOUNTED ATTENUATOR (TTMA)

NEW

ZVPM.ORG

NEW PRODUCTS

Protection of vehicle drivers, road workers, and high-value machinery



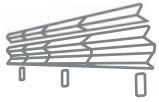
The attenuator serves to mitigate the consequences of a car colliding with workers or equipment during mobile and stationary repair work.

- + Collision speed class—70/90 km/h
- + The design complies with the requirements of GOST R 59291-2021 and TR CU 018/2011

DESIGN ADVANTAGES:

1. The design of the trailer is rated for the collision speed exceeded by 20 km/h
2. Compliance with the safety requirements specified in GOST R 59291-2021
3. The trailer is attachable to any truck with a standard tow hitch
4. Stable and safe operation in case of a car hitting the attenuator
5. High corrosion resistance: all parts are hot-dip galvanized
6. Small size: only 3.5 m long
7. Fast delivery of spare parts or a complete replacement is available
8. All components are manufactured in Russia

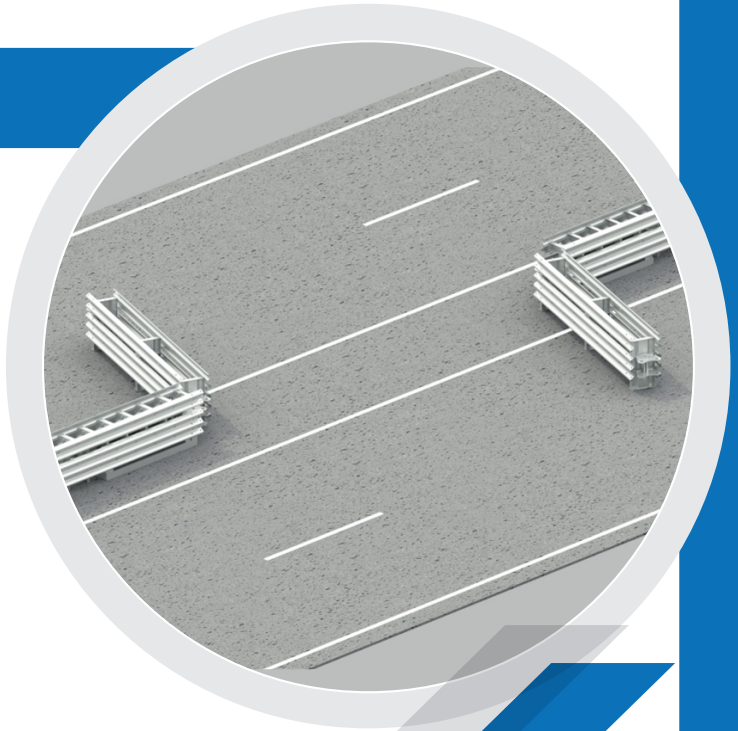




Traffic Bypass Solution

Gate systems are designed to redirect flows and control traffic in hard-to-reach areas both within the cities and on highways.

The major advantage of a gate system over other types of removable barriers is its functionality of a full-fledged road barrier combined with fast opening.

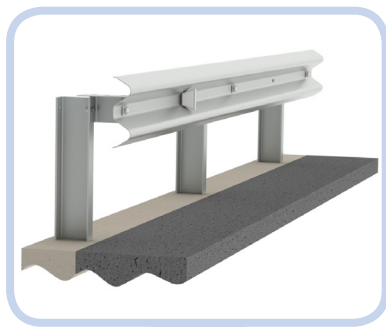


KEY FEATURES

- + Height 1.1m
- + Width 0.64 m
- + Gate width 4.5 to 31 m
- + Holding capacity 300-400 kJ
- + Structural safety was confirmed in situ by a light vehicle hitting the trailer at 130 km/h

Certificate TR CU 014/2011 (No. EAEU BY/112 02.01. TP014 118.01 0000606)





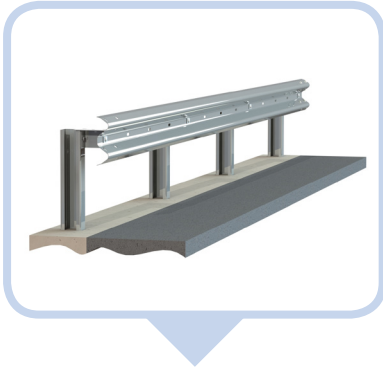
One-side single W-beam guardrail mounted on a hot-rolled U-channel post

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11ДО-0,75Ш12/3,0-W-130	21 ДО/130-0,75x3,0-0,65[0,94]	0,65	0,94
11ДО-0,75Ш12/2,0-W-130	21 ДО/130-0,75x2,0-0,49 [0,84]	0,49	0,84
11ДО-0,75Ш12/2,0-W-190	21 ДО/190-0,75x2,0-1,02[1,15]	1,02	1,15
11ДО-0,75Ш12/3,0-W-190	21 ДО/190-0,75x3,0-0,92[0,98]	0,92	0,98
11ДО-0,75Ш14/2,0-W-190	21 ДО/190-0,75x2,0-0,90[0,94]	0,9	0,94
11ДО-0,75Ш14/3,0-W-190	21 ДО/190-0,75x3,0-1,10[1,19]	1,1	1,19
11ДО-0,75Ш14/4,0-W-190	21 ДО/190-0,75x4,0-1,26[1,38]	1,26	1,38
11ДО-0,75Ш12/1,0-W-250	21ДО/250-0,75x1,0-0,79[0,89]	0,79	0,89
11ДО-0,75Ш12/2,0-W-250	21ДО/250-0,75x2,0-1,23[1,30]	1,23	1,3
11ДО-0,75Ш14/1,0-W-250	21ДО/250-0,75x1,0-0,59[0,73]	0,59	0,73
11ДО-0,75Ш14/2,0-W-250	21 ДО/250-0,75x2,0-1,03[1,06]	1,03	1,06
11ДО-0,75Ш14/3,0-W-250	21ДО/250-0,75x3,0-1,2[1,27]	1,2	1,27
11ДО-0,75Ш16/2,0-W-250	21 ДО/250-0,75x2,0-0,70[0,83]	0,7	0,83
11ДО-0,75Ш14/1,0-W-300	21 ДО/300-0,75x1,0-0,81[0,86]	0,81	0,86
11ДО-0,75Ш14/1,5-W-300	21ДО/300-0,75x1,5-1,05[1,20]	1,05	1,2
11ДО-0,75Ш14/2,0-W-300	21 ДО/300-0,75x2,0-1,39[1,46]	1,39	1,46
11ДО-0,75Ш14/2,5-W-300	21 ДО/300-0,75x2,5-1,38[1,48]	1,38	1,48
11ДО-0,75Ш16/2,0-W-300	21 ДО/300-0,75x2,0-1,15[1,20]	1,15	1,2
11ДО-0,75Ш16/2,0-W-300-M1	21 ДО/300-0,75x2,0-0,94[1,00]	0,94	1
11ДО-0,75Ш14/2,0-W-200-M2	21 ДО/200-0,75x2,0-0,72[0,74]	0,72	0,74
11ДО-0,75Ш14/1,5-W-250-M2	21 ДО/250-0,75x1,5-1,2[1,22]	1,2	1,22
11ДО-0,75Ш14/2,0-W-250-M2	21 ДО/250-0,75x2,0-1,8[1,82]	1,8	1,82
11ДО-0,75Ш16/1,5-W-300-M2	21 ДО/300-0,75x1,5-1,2[1,22]	1,2	1,22
11ДО-0,75Ш16/2,0-W-300-M2	21 ДО/300-0,75x2,0-1,8[1,82]	1,8	1,82



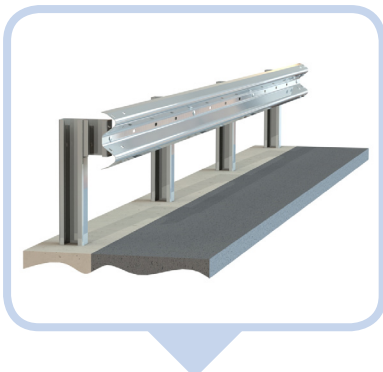
One-side single W-beam guardrail mounted on a Sigma-channel post

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11ДО-0,75СБ(4,0)/1,0-W-250	21 ДО/250-0,75x1,0-0,94[0,97]	0,94	0,97
11ДО-0,75СБ(4,0)/3,0-W-250	21 ДО/250-0,75x3,0-1,1[1,18]	1,1	1,18
11ДО-0,75СБ(4,0)/2,0-W-300	21 ДО/300-0,75x2,0-1,05[1,13]	1,05	1,13
11ДО-0,75СБ(4,0)/4,0-W-130-M1	21 ДО/130-0,75x4,0-1,1[1,18]	1,1	1,18
11ДО-0,75СБ(4,0)/1,0-W-190-M1	21 ДО/190-0,75x1,0-0,82[0,84]	0,82	0,84
11ДО-0,75СБ(4,0)/2,0-W-190-M1	21 ДО/190-0,75x2,0-1,15[1,19]	1,15	1,19
11ДО-0,75СБ(4,0)/3,0-W-200-M1	21 ДО/200-0,75x3,0-1,1[1,18]	1,1	1,18
11ДО-0,75СБ(4,0)/4,0-W-200-M1	21 ДО/200-0,75x4,0-1,28[1,3]	1,28	1,3
11ДО-0,75СБ(4,0)/1,0-W-250-M1	21 ДО/250-0,75x1,0-1,02[1,04]	1,02	1,04
11ДО-0,75СБ(4,0)/2,0-W-250-M1	21 ДО/250-0,75x2,0-1,22[1,25]	1,22	1,25
11ДО-0,75СБ(4,0)/2,5-W-250-M1	21 ДО/250-0,75x2,5-1,28[1,3]	1,28	1,3
11ДО-0,75СБ(4,0)/3,0-W-250-M1	21 ДО/250-0,75x3,0-1,97[2,02]	1,97	2,02
11ДО-0,75СБ(4,0)/1,0-W-300-M1	21 ДО/300-0,75x1,0-1,26[1,3]	1,26	1,3
11ДО-0,75СБ(4,0)/1,5-W-300-M1	21 ДО/300-0,75x1,5-1,30[1,33]	1,3	1,33
11ДО-0,75СБ(4,0)/2,0-W-300-M1	21 ДО/300-0,75x2,0-1,28[1,3]	1,28	1,3
11ДО-0,75СБ(4,0)/2,5-W-300-M1	21 ДО/300-0,75x2,5-1,46[1,48]	1,46	1,48
11ДО-0,75СБ(4,0)/3,0-W-300-M1	21 ДО/300-0,75x3,0-1,82[1,93]	1,82	1,93



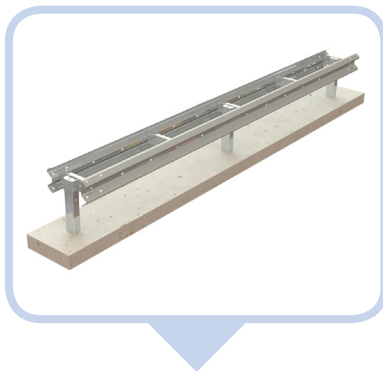
One-side single W-beam guardrail mounted on a C-channel post with a tear-off offset block

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 Д0-0,75С(4,0)/2,0-В-190	21 Д0/190-0,75x2,0-1,05(1,07)	1,05	1,07
11 Д0-0,75С(4,0)/3,0-В-190	21 Д0/190-0,75x3,0-1,15(1,19)	1,15	1,19
11 Д0-0,75С(4,0)/4,0-В-190	21 Д0/190-0,75x4,0-1,30(1,39)	1,3	1,39
11 Д0-0,75С(4,0)/2,0-В-250	21 Д0/250-0,75x2,0-0,93(0,97)	0,93	0,97
11 Д0-0,75С(4,0)/2,0-В-300	21 Д0/300-0,75x2,0-1,32(1,42)	1,32	1,42



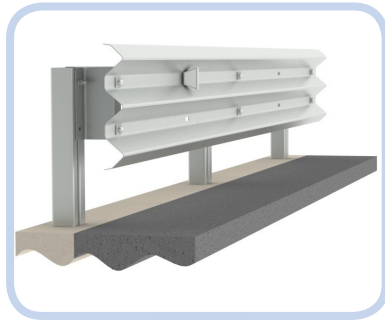
One-side single W-beam guardrail mounted on a C-channel post with a shock-absorber offset block

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 Д0-0,75С(4,0)/2,0-В-190-М1	21 Д0/190-0,75x2,0-0,70(0,79)	0,7	0,79
11 Д0-0,75С(4,0)/3,0-В-190-М1	21 Д0/190-0,75x3,0-1,10(1,17)	1,1	1,17
11 Д0-0,75С(4,0)/4,0-В-190-М1	21 Д0/190-0,75x4,0-1,12(1,18)	1,12	1,18
11 Д0-0,75С(4,0)/2,0-В-250-М1	21 Д0/250-0,75x2,0-0,72(1,00)	0,72	1
11 Д0-0,75С(4,0)/2,0-В-300-М1	21 Д0/300-0,75x2,0-1,28(1,37)	1,28	1,37



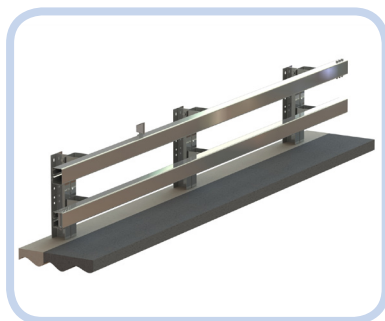
Two-side single W-beam guardrail mounted on a C-channel post with a spacer offset block

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 ДД-0,75С(5,0)/3,0-В-300	21 ДД/300-0,75x3,0-1,1(1,33)	1,1	1,33



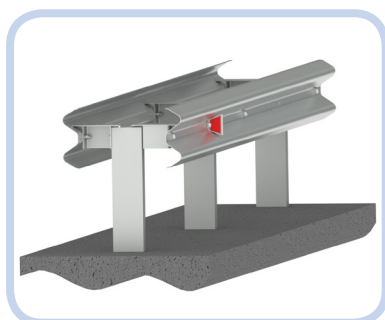
One-side single Thrie-beam guardrail mounted on a Sigma-channel post

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 Д0-0,75СБ(4,0)/3,0-3N-190	21 Д0/190-0,75x3,0-0,7(0,92)	0,7	0,92
11 Д0-0,75СБ(4,0)/4,0-3N-190	21 Д0/190-0,75x4,0-0,84(1,06)	0,84	1,06
11 Д0-0,75СБ(4,0)/2,5-3N-250	21 Д0/250-0,75x2,5-0,98(1,08)	0,98	1,08
11 Д0-0,75СБ(4,0)/3,0-3N-250	21 Д0/250-0,75x3,0-1,1(1,2)	1,1	1,2
11 Д0-0,75СБ(4,0)/2,0-3N-300	21 Д0/300-0,75x2,0-0,98(1,08)	0,98	1,08



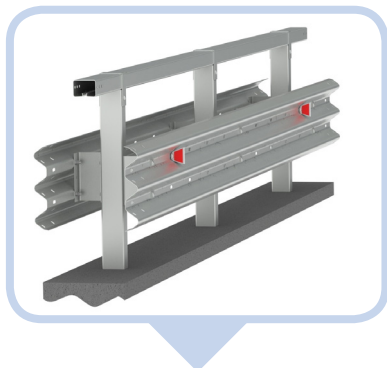
One-side double Sigma-beam guardrail

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 Д0-0,75Д/2,0-С/С-300	21 Д0/300-0,75x2,0-0,7(0,955)	0,7	0,955



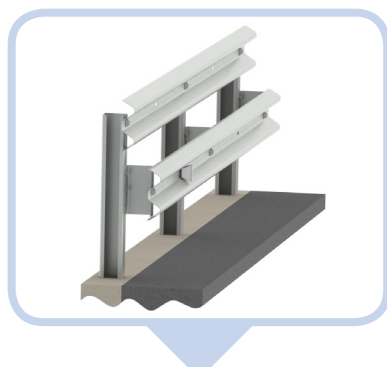
Two-side single W-beam guardrail mounted on a hot-rolled U-channel post

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 ДД-0,75Ш14/3,0-W-250	21 ДД/250-0,75x3,0-0,92(1,07)	0,92	1,07
11 ДД-0,75Ш14/3,0-W-300	21 ДД/300-0,75x3,0-1,33(1,45)	1,33	1,45
11 ДД-0,75Ш14/2,0-W-250-M1	21 ДД/250-0,75x2,0-0,95(1,04)	0,95	1,04
11 ДД-0,75Ш14/2,0-W-300-M1	21 ДД/300-0,75x2,0-1,12(1,32)	1,12	1,32
11 ДД-0,75Ш14/2,5-W-300-M1	21 ДД/300-0,75x2,5-1,13(1,35)	1,13	1,35
11 ДД-0,75Ш16/2,0-W-300-M1	21 ДД/300-0,75x2,0-0,98(1,3)	0,98	1,3
11 ДД-0,75Ш16/2,5-W-300-M1	21 ДД/300-0,75x2,5-1,3(1,53)	1,3	1,53
11 ДД-0,75Ш16/3,0-W-300-M1	21 ДД/300-0,75x3,0-1,3(1,63)	1,3	1,63



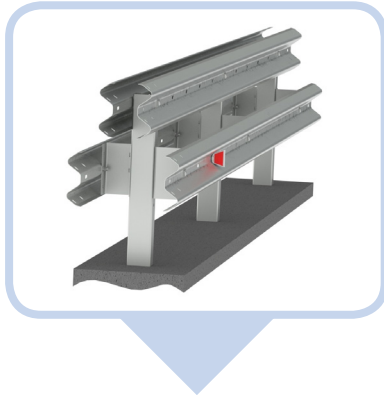
Two-side double Sigma-beam and Thrie-beam guardrail mounted on a C-channel post

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 ДД-1,2С(5,0)/4,0-С/3N-300	21 ДД/300-1,2x4,0-1,59(1,66)	1,59	1,66
11 ДД-1,2С(5,0)/3,0-С/3N-350	21 ДД/350-1,2x3,0-1,59(1,66)	1,59	1,66
11 ДД-1,2С(5,0)/2,5-С/3N-400	21 ДД/400-1,2x2,5-1,59(1,66)	1,59	1,66
11 ДД-1,2С(5,0)/2,0-С/3N-450	21 ДД/450-1,2x2,0-1,59(1,66)	1,59	1,66
11 ДД-1,2С(5,0)/2,0-С/3N-500	21 ДД/500-1,2x2,0-0,53(0,9)	0,53	0,9



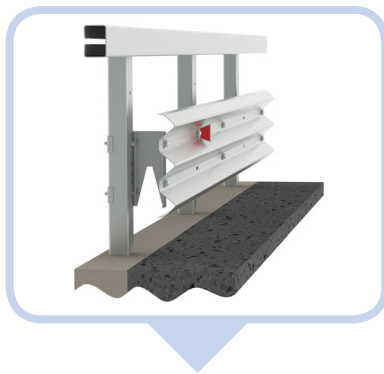
One-side double W-beam guardrail mounted on a C-channel post/hot-rolled U-channel post

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
C-shaped profile			
11ДО-1,1С(5,0)/2,5-В/В-350	21 ДО/350-1,1x2,5-0,82 [0,84]	0,82	0,84
11ДО-1,1С(4,0)/2,0-В/В-350	21ДО/350-1,1x2,0-0,82 [1,25]	0,82	1,25
11ДО-1,1С(4,0)/3,0-В/В-350	21ДО/350-1,1x3,0-0,90 [1,27]	0,9	1,27
11ДО-1,1С(5,0)/2,0-В/В-400	21 ДО/400-1,1x2,0-0,82 [0,84]	0,82	0,84
11ДО-1,1С(4,0)/2,0-В/В-400	21ДО/400-1,1x2,0-0,85 [1,22]	0,85	1,22
11ДО-1,1С(5,0)/3,0-В/В-450	21 ДО/450-1,1x1,5-0,82 [0,84]	0,82	0,84
11ДО-1,1С(5,0)/1,0-В/В-500	21 ДО/500-1,1x1,0-0,81 [1,15]	0,81	1,15
11ДО-1,1С(5,0)/1,0-В/В-300-М1	21 ДО/300-1,1x1,0-0,56 [0,65]	0,56	0,65
11ДО-1,1С(5,0)/2,0-В/В-300-М1	21 ДО/300-1,1x2,0-0,82 [0,87]	0,82	0,87
11ДО-1,1С(5,0)/3,0-В/В-300-М1	21 ДО/300-1,1x3,0-0,85 [0,89]	0,85	0,89
11ДО-1,1С(5,0)/4,0-В/В-300-М1	21 ДО/300-1,1x4,0-0,91 [0,94]	0,91	0,94
11ДО-1,15С(5,0)/2,0-В/В-300-М1	21 ДО/300-1,15x2,0-0,72 [0,80]	0,72	0,8
11ДО-1,1С(5,0)/1,0-В/В-350-М1	21 ДО/350-1,1x1,0-0,63 [0,72]	0,63	0,72
11ДО-1,1С(5,0)/1,5-В/В-350-М1	21 ДО/350-1,1x1,5-0,71 [0,84]	0,71	0,84
11ДО-1,1С(5,0)/2,0-В/В-350-М1	21 ДО/350-1,1x2,0-0,84 [0,92]	0,84	0,92
11ДО-1,1С(5,0)/2,5-В/В-350-М1	21 ДО/350-1,1x2,5-0,86 [0,92]	0,86	0,92
11ДО-1,1С(5,0)/3,0-В/В-350-М1	21 ДО/350-1,1x3,0-0,89 [0,94]	0,89	0,94
11ДО-1,1С(5,0)/3,5-В/В-350-М1	21 ДО/350-1,1x3,5-0,94 [1,05]	0,94	1,05
11ДО-1,15С(5,0)/2,0-В/В-350-М1	21 ДО/350-1,15x2,0-0,77 [0,86]	0,77	0,86
11ДО-1,15С(5,0)/3,0-В/В-350-М1	21 ДО/350-1,15x3,0-0,84 [0,93]	0,84	0,93
11ДО-1,1С(5,0)/1,0-В/В-400-М1	21 ДО/400-1,1x1,0-0,66 [0,78]	0,66	0,78
11ДО-1,1С(5,0)/1,5-В/В-400-М1	21 ДО/400-1,1x1,5-0,73 [0,87]	0,73	0,87
11ДО-1,1С(5,0)/2,0-В/В-400-М1	21 ДО/400-1,1x2,0-0,88 [0,95]	0,88	0,95
11ДО-1,1С(5,0)/3,0-В/В-400-М1	21 ДО/400-1,1x3,0-0,92 [1,02]	0,92	1,02
11ДО-1,15С(5,0)/2,0-В/В-400-М1	21 ДО/400-1,15x2,0-0,83 [0,92]	0,83	0,92
11ДО-1,15С(5,0)/3,0-В/В-400-М1	21 ДО/400-1,15x3,0-0,94 [1,05]	0,94	1,05
Channel			
11ДО-1,1Ш14/2,0-В/В-350	21ДО/350-1,1x2,0-0,75 [1,03]	0,75	1,03
11ДО-1,1Ш14/3,0-В/В-350	21ДО/350-1,1x3,0-0,90 [1,22]	0,9	1,22
11ДО-1,1Ш16/2,0-В/В-350	21ДО/350-1,1x2,0-0,79 [0,97]	0,79	0,97
11ДО-1,1Ш14/2,0-В/В-400	21ДО/400-1,1x2,0-0,88[1,22]	0,88	1,22
11ДО-1,1Ш14/3,0-В/В-400	21ДО/400-1,1x3,0-0,97[1,24]	0,97	1,24



Two-side double W-beam mounted on a C-channel post/hot-rolled U-channel post

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
C-shaped profile			
11ДД-1,1С(5,0)/1,0-В/В-300	21 ДД/300-1,1x1,0-0,47 [0,52]	0,47	0,52
11ДД-1,1С(5,0)/2,0-В/В-300	21 ДД/300-1,1x2,0-0,59 [0,75]	0,59	0,75
11ДД-1,1С(5,0)/3,0-В/В-300	21 ДД/300-1,1x3,0-0,84 [0,89]	0,84	0,89
11ДД-1,1С(5,0)/4,0-В/В-300	21 ДД/300-1,1x4,0-0,73 [0,97]	0,73	0,97
11ДД-1,1С(4,0)/3,0-В/В-350	21 ДД/350-1,1x3,0-0,81[1,10]	0,81	1,1
11ДД-1,1С(5,0)/1,0-В/В-350	21 ДД/350-1,1x1,0-0,53 [0,58]	0,53	0,58
11ДД-1,1С(5,0)/2,0-В/В-350	21 ДД/350-1,1x2,0-0,70 [0,91]	0,7	0,91
11ДД-1,1С(5,0)/2,5-В/В-350	21 ДД/350-1,1x2,5-0,79 [0,91]	0,79	0,91
11ДД-1,1С(5,0)/3,0-В/В-350	21 ДД/350-1,1x3,0-0,73 [0,97]	0,73	0,97
11ДД-1,1С(4,0)/3,0-В/В-400	21 ДД/400-1,1x3,0-0,86[1,12]	0,86	1,12
11ДД-1,1С(5,0)/1,0-В/В-400	21 ДД/400-1,1x1,0-0,55 [0,59]	0,55	0,59
11ДД-1,1С(5,0)/2,0-В/В-400	21 ДД/400-1,1x2,0-0,85 [0,91]	0,85	0,91
11ДД-1,1С(5,0)/2,5-В/В-400	21 ДД/400-1,1x2,5-0,73 [0,97]	0,73	0,97
11ДД-1,1С(5,0)/2,0-В/В-450	21 ДД/450-1,1x2,0-0,89 [1,1]	0,89	1,1
Channel			
11ДД-1,1Ш14/3,0-В/В-350	21 ДД/350-1,1x3,0-0,73[1,05]	0,73	1,05
11ДД-1,1Ш14/3,0-В/В-400	21ДД/400-1,1x3,0-0,78[1,10]	0,78	1,1



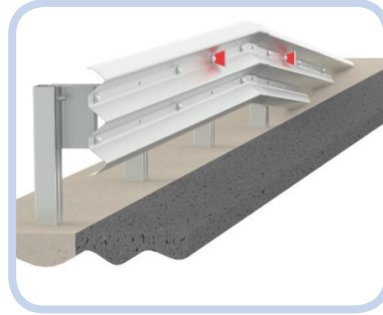
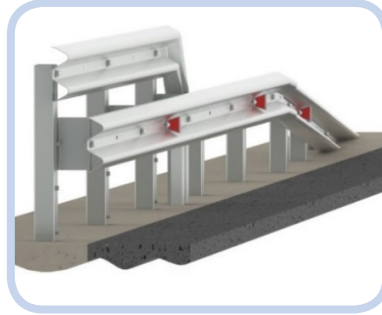
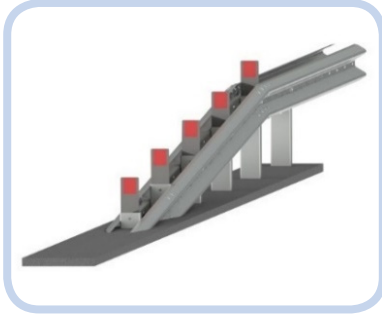
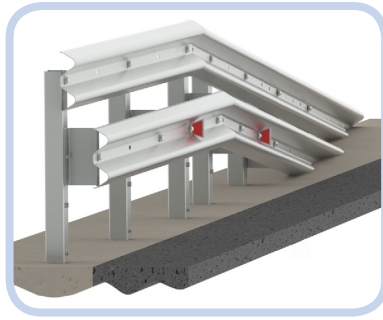
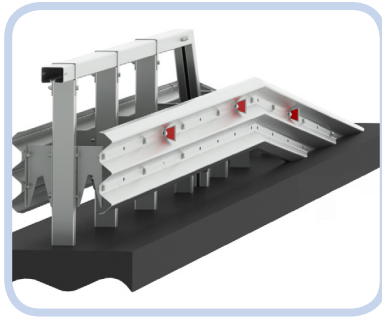
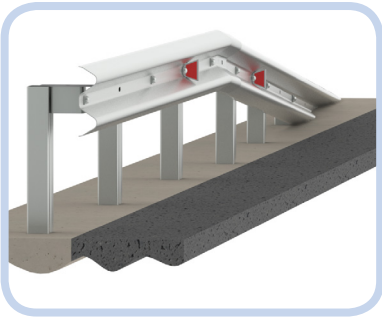
One-side double Sigma-beam and Thrie-beam guardrail mounted on a Sigma-channel post

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11ДО-1,1СБ/2,25-С/3Н-300	21 ДО/300-1,1x2,25-0,40 [0,76]	0,4	0,76
11ДО-1,1СБ/2,0-С/3Н-350	21 ДО/350-1,1x2,0-0,46 [0,95]	0,46	0,95
11ДО-1,1СБ/2,0-С/3Н-400	21 ДО/400-1,1x2,0-0,58 [1,14]	0,58	1,14





End sections

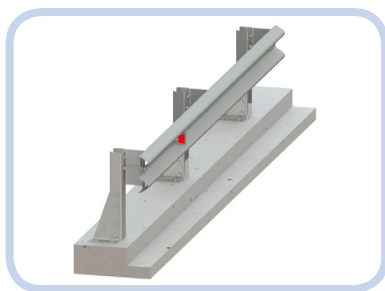




BRIDGE GUARDRAILS

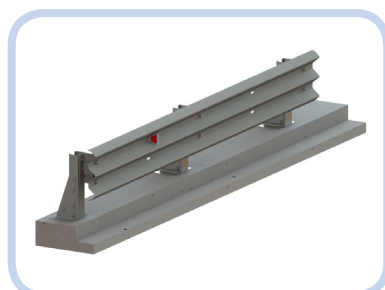
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BRIDGE GUARDRAILS



One-side single W-beam guardrail

Guardrail brand per STO 07525912-110-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 MO-0,75C/1,5-W-250	21 MO/250-0,75x1,5-0,74(0,88)	0,74	0,88
11 MOЦ-0,75C/1,5-W-250	21 MO/250-0,75(0,15)x1,5-0,61(0,80)	0,61	0,8
11 MO-0,75C/2,0-W-250	21 MO/250-0,75x2,0-0,96(1,07)	0,96	1,07
11 MOЦ-0,75C/2,0-W-250	21 MO/250-0,75(0,15)x2,0-0,60(0,77)	0,6	0,77



One-side single Thrie-beam guardrail

Guardrail brand per STO 07525912-110-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 MO-0,75C/2,0-3N-250	21 MO/250-0,75x2,0-0,69(0,89)	0,69	0,89
11 MOЦ-0,75C/2,0-3N-250	21 MO/250-0,75(0,15)x2,0-0,53(0,72)	0,53	0,72
11 MO-0,75C/1,5-3N-300	21 MO/300-0,75x1,5-0,75(0,90)	0,75	0,9
11 MOЦ-0,75C/1,5-3N-300	21 MO/300-0,75(0,15)x1,5-0,54(0,72)	0,54	0,72

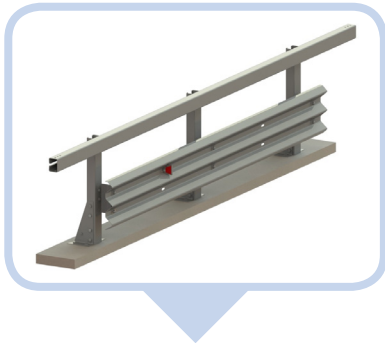


One-side double W-beam guardrail with a reinforced post

Guardrail brand per STO 07525912-110-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11MO-1,1Д/2,0-W/W-400	21 MO/400-1,1x2,0-0,63 [0,74]	0,63	0,74
11MOЦ-1,1Д/2,0-W/W-400	21 MO/400-1,1(0,15)x2,0-0,58 [0,65]	0,58	0,65
11MO-1,3Д/2,0-W/W-400	21 MO/400-1,3x2,0-0,65 [0,77]	0,65	0,77
11MOЦ-1,3Д/2,0-W/W-400	21 MO/400-1,3(0,15)x2,0-0,61 [0,73]	0,61	0,73
11MO-1,1Д/1,5-W/W-450	21 MO/450-1,1x1,5-0,66 [0,76]	0,66	0,76
11MO-1,5Д/1,5-W/W-450	21 MO/450-1,5x1,5-0,67 [0,75]	0,67	0,75
11MOЦ-1,5Д/1,5-W/W-450	21 MO/450-1,5(0,15)x1,5-0,64 [0,73]	0,64	0,73
11MO-1,1Д/1,0-W/W-500	21 MO/500-1,1x1,0-0,65 [0,75]	0,65	0,75
11MOЦ-1,1Д/1,0-W/W-500	21 MO/500-1,1(0,15)x1,0-0,62 [0,70]	0,62	0,7
11MO-1,5Д/1,0-W/W-500	21 MO/500-1,5x1,0-0,68 [0,78]	0,68	0,78

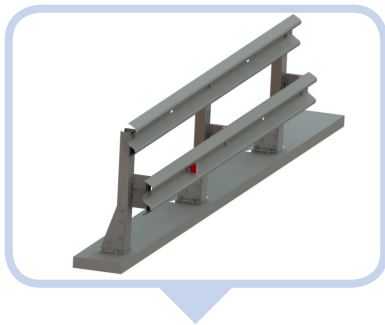


BRIDGE GUARDRAILS



One-side double Sigma-beam and Thrie-beam guardrail

Guardrail brand per STO 07525912-110-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11MO-1,12C/2,0-C/3N-300	21 MO/300-1,12x2,0-0,67 [0,93]	0,67	0,93
11MOЦ-1,12C/2,0-C/3N-300	21 MO/300-1,12(0,15)x2,0-0,64 [0,90]	0,64	0,90
11MO-1,12C/2,25-C/3N-350	21 MO/350-1,12x2,25-0,74 [1,01]	0,74	1,01
11MOЦ-1,12C/2,25-C/3N-350	21 MO/350-1,12(0,15)x2,25-0,71 [0,99]	0,71	0,99
11MO-1,12C/2,0-C/3N-350	21 MO/350-1,12x2,0-0,73 [1,00]	0,73	1,00
11MOЦ-1,12C/2,0-C/3N-350	21 MO/350-1,12(0,15)x2,0-0,68 [0,98]	0,68	0,98
11MO-1,32C/2,25-C/3N-350	21 MO/350-1,32x2,25-0,77 [1,03]	0,77	1,03
11MOЦ-1,32C/2,25-C/3N-350	21 MO/350-1,32(0,15)x2,25-0,73 [1,01]	0,73	1,01
11MO-1,32C/2,0-C/3N-350	21 MO/350-1,32x2,0-0,75 [1,0]	0,75	1,00
11MOЦ-1,32C/2,0-C/3N-350	21 MO/350-1,32(0,15)x2,0-0,71 [1,00]	0,71	1,00
11MO-1,12C/2,0-C/3N-400	21 MO/400-1,12x2,0-0,89 [1,2]	0,89	1,20
11MOЦ-1,12C/2,0-C/3N-400	21 MO/400-1,12(0,15)x2,0-0,81 [1,11]	0,81	1,11
11MO-1,32C/2,0-C/3N-400	21 MO/400-1,32x2,0-0,89 [1,20]	0,89	1,20
11MOЦ-1,32C/2,0-C/3N-400	21 MO/400-1,32(0,15)x2,0-0,84 [1,14]	0,84	1,14
11MO-1,52C/1,5-C/3N-450	21 MO/450-1,52x1,5-0,83 [1,12]	0,83	1,12
11MOЦ-1,52C/1,5-C/3N-450	21 MO/450-1,52(0,15)x1,5-0,79 [1,06]	0,79	1,06



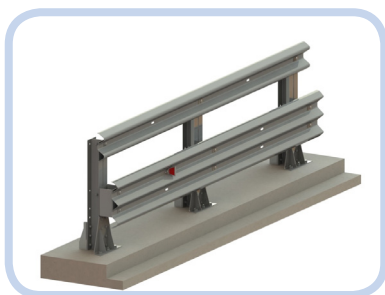
One-side double W-beam guardrail

Guardrail brand per STO 07525912-110-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11MO-1,1C/2,0-W/W-300	21 MO/300-1,1x2,0-0,68 [0,74]	0,68	0,74
11MOЦ-1,1C/2,0-W/W-300	21 MO/300-1,1(0,15)x2,0-0,64 [0,72]	0,64	0,72
11MO-1,1C/3,0-W/W-300	21 MO/300-1,1x3,0-0,73 [0,79]	0,73	0,79
11MOЦ-1,1C/3,0-W/W-300	21 MO/300-1,1(0,15)x3,0-0,67 [0,75]	0,67	0,75
11MO-1,1C/2,0-W/W-350	21 MO/350-1,1x2,0-0,74 [0,82]	0,74	0,82
11MOЦ-1,1C/2,0-W/W-350	21 MO/350-1,1(0,15)x2,0-0,65 [0,78]	0,65	0,78
11MO-1,1C/2,5-W/W-350	21 MO/350-1,1x2,5-0,74 [0,83]	0,74	0,83
11MOЦ-1,1C/2,5-W/W-350	21 MO/350-1,1(0,15)x2,5-0,66 [0,87]	0,66	0,87
11MO-1,3C/2,5-W/W-350	21 MO/350-1,3x2,5-0,73 [0,80]	0,73	0,8
11MOЦ-1,3C/2,5-W/W-350	21 MO/350-1,3(0,15)x2,5-0,64 [0,73]	0,64	0,73
11MO-1,1C/2,0-W/W-400	21 MO/400-1,1x2,0-0,74 [0,81]	0,74	0,81
11MOЦ-1,1C/2,0-W/W-400	21 MO/400-1,1(0,15)x2,0-0,67 [0,88]	0,67	0,88
11MO-1,3C/2,0-W/W-400	21 MO/400-1,3x2,0-0,75 [0,81]	0,75	0,81
11MOЦ-1,3C/2,0-W/W-400	21 MO/400-1,3(0,15)x2,0-0,68 [0,74]	0,68	0,74
11MO-1,1C/1,5-W/W-450	21 MO/450-1,1x1,5-0,75 [1,1]	0,75	1,1
11MOЦ-1,1C/1,5-W/W-450	21 MO/450-1,1(0,15)x1,5-0,69 [0,85]	0,69	0,85
11MO-1,5C/1,5-W/W-450	21 MO/450-1,5x1,5-0,78 [1,07]	0,78	1,07
11MOЦ-1,5C/1,5-W/W-450	21 MO/450-1,5(0,15)x1,5-0,72 [0,99]	0,72	0,99



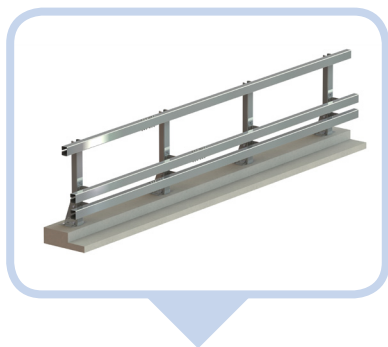
Two-side double W-beam guardrail

Guardrail brand per STO 07525912-110-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11 МД-1,1С/3,0-W/W-300	21 МД/300-1,1x3,0-0,94(1,17)	0,94	1,17
11 МДЦ-1,1С/3,0-W/W-300	21 МД/300-1,1(0,15)x3,0-0,79(0,95)	0,79	0,95
11 МД-1,1С/2,5-W/W-350	21 МД/350-1,1x2,5-1,06(1,16)	1,06	1,16
11 МДЦ-1,1С/2,5-W/W-350	21 МД/350-1,1(0,15)x2,5-0,82(0,95)	0,82	0,95
11 МД-1,1С/2,0-W/W-400	21 МД/400-1,1x2,0-0,88(1,1)	0,88	1,1
11 МДЦ-1,1С/2,0-W/W-400	21 МД/400-1,1(0,15)x2,0-0,80(0,94)	0,8	0,94
11 МД-1,1С/1,5-W/W-450	21 МД/450-1,1x1,5-0,92(1,11)	0,92	1,11
11 МДЦ-1,1С/1,5-W/W-450	21 МД/450-1,1(0,15)x1,5-0,79(0,94)	0,79	0,94



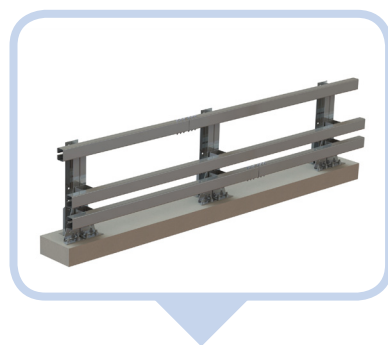
One-side double W-beam and Thrie-beam guardrail

Guardrail brand per STO 07525912-110-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11М0-1,1Д/3,0-W/3N-400	21 М0/400-1,1x3,0-0,29(0,80)	0,29	0,80
11М0Ц-1,1Д/3,0-W/3N-400	21 М0/400-1,1(0,15)x3,0-0,26 (0,72)	0,26	0,72
11М0-1,3Д/3,0-W/3N-400	21 М0/400-1,3x3,0-0,32 (0,87)	0,32	0,87
11М0Ц-1,3Д/3,0-W/3N-400	21 М0/400-1,3(0,15)x3,0-0,28 (0,76)	0,28	0,76
11М0-1,1Д/3,0-W/3N-450	21 М0/450-1,1x3,0-0,36 (0,88)	0,36	0,88
11М0Ц-1,1Д/3,0-W/3N-450	21 М0/450-1,1(0,15)x3,0-0,33 (0,76)	0,33	0,76
11М0-1,5Д/3,0-W/3N-450	21 М0/450-1,5x3,0-0,40 (0,95)	0,40	0,95
11М0Ц-1,5Д/3,0-W/3N-450	21 М0/450-1,5(0,15)x3,0-0,37 (0,82)	0,37	0,82
11М0-1,1Д/2,0-W/3N-450	21 М0/450-1,1x2,0-0,33 (0,79)	0,33	0,79
11М0-1,5Д/2,0-W/3N-500	21 М0/500-1,5x2,0-0,43 (1,08)	0,43	1,08
11М0-1,1Д/2,0-W/3N-500	21 М0/500-1,1x2,0-0,39 (0,90)	0,39	0,90
11М0-1,1Д/2,5-W/3N-500	21 М0/500-1,1x2,5-0,39 (0,91)	0,39	0,91
11М0Ц-1,1Д/2,5-W/3N-500	21 М0/500-1,1(0,15)x2,5-0,39 (0,79)	0,39	0,79
11М0-1,3Д/2,5-W/3N-500	21 М0/500-1,3x2,5-0,41 (1,01)	0,41	1,01
11М0Ц-1,3Д/2,5-W/3N-500	21 М0/500-1,3(0,15)x2,5-0,41 (0,87)	0,41	0,87
11М0-1,5Д/2,5-W/3N-500	21 М0/500-1,5x2,5-0,44 (1,12)	0,44	1,12
11М0Ц-1,5Д/2,5-W/3N-500	21 М0/500-1,5(0,15)x2,5-0,43 (0,93)	0,43	0,93
11М0-1,5Д/2,0-W/3N-550	21 М0/550-1,5x2,0-0,45 (1,11)	0,45	1,11
11М0-1,5Д/3,0-W/3N-550	21 М0/550-1,5x3,0-0,48 (1,14)	0,48	1,14
11М0-1,1Д/1,5-W/3N-600	21 М0/600-1,1x1,5-0,41 (0,93)	0,41	0,93
11М0Ц-1,1Д/1,5-W/3N-600	21 М0/600-1,1(0,15)x1,5-0,40 (0,79)	0,40	0,79
11М0-1,3Д/1,5-W/3N-600	21 М0/600-1,3x1,5-0,37 (1,1)	0,37	1,10
11М0Ц-1,3Д/1,5-W/3N-600	21 М0/600-1,3(0,15)x1,5-0,42 (0,87)	0,42	0,87
11М0-1,5Д/1,5-W/3N-600	21 М0/600-1,5x1,5-0,45 (1,15)	0,45	1,15
11М0Ц-1,5Д/1,5-W/3N-600	21 М0/600-1,5(0,15)x1,5-0,43 (0,94)	0,43	0,94



One-side triple Sigma-beam guardrail

Guardrail brand per STO 07525912-110-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11MO-1,12C/3,0-C/C/C-300	21MO/300-1,12x3,0-0,36 [0,73]	0,36	0,73
11MOЦ-1,12C/3,0-C/C/C-300	21MO/300-1,12(0,15)x3,0-0,32 [0,73]	0,32	0,73
11MO-1,12C/2,0-C/C/C-300	21MO/300-1,12x2,0-0,43 [0,85]	0,43	0,85
11MOЦ-1,12C/2,0-C/C/C-300	21MO/300-1,12(0,15)x2,0-0,31 [0,82]	0,31	0,82
11MO-1,12C/3,0-C/C/C-350	21MO/350-1,12x3,0-0,43 [0,78]	0,43	0,78
11MOЦ-1,12C/3,0-C/C/C-350	21MO/350-1,12(0,15)x3,0-0,37 [0,83]	0,37	0,83
11MO-1,32C/3,0-C/C/C-350	21MO/350-1,32x3,0-0,48 [0,99]	0,48	0,99
11MOЦ-1,32C/3,0-C/C/C-350	21MO/350-1,32(0,15)x3,0-0,36 [0,77]	0,36	0,77
11MO-1,12C/2,0-C/C/C-350	21MO/350-1,12x2,0-0,50 [0,84]	0,5	0,84
11MOЦ-1,12C/2,0-C/C/C-350	21MO/350-1,12(0,15)x2,0-0,35 [0,91]	0,35	0,91
11MO-1,32C/2,0-C/C/C-350	21MO/350-1,32x2,0-0,41 [0,75]	0,41	0,75
11MOЦ-1,32C/2,0-C/C/C-350	21MO/350-1,32(0,15)x2,0-0,32 [0,73]	0,32	0,73
11MO-1,12C/2,0-C/C/C-400	21MO/400-1,12x2,0-0,53 [0,85]	0,53	0,85
11MOЦ-1,12C/2,0-C/C/C-400	21MO/400-1,12(0,15)x2,0-0,27 [0,59]	0,27	0,59
11MO-1,32C/2,0-C/C/C-400	21MO/400-1,32x2,0-0,71 [0,94]	0,71	0,94
11MOЦ-1,32C/2,0-C/C/C-400	21MO/400-1,32(0,15)x2,0-0,25 [0,57]	0,25	0,57



One-side triple Sigma-beam guardrail

Guardrail brand per STO 07525912-110-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11MO-1,1Д/2,0-C/C/C-450	21 MO/450-1,1x2,0-0,69 [0,90]	0,69	0,9
11MOЦ-1,1Д/2,0-C/C/C-450	21 MO/450-1,1(0,15)x2,0-0,42 [0,76]	0,42	0,76
11MO-1,5Д/2,0-C/C/C-450	21 MO/450-1,5x2,0-0,63 [0,85]	0,63	0,85
11MOЦ-1,5Д/2,0-C/C/C-450	21 MO/450-1,5(0,15)x2,0-0,60 [0,95]	0,6	0,95



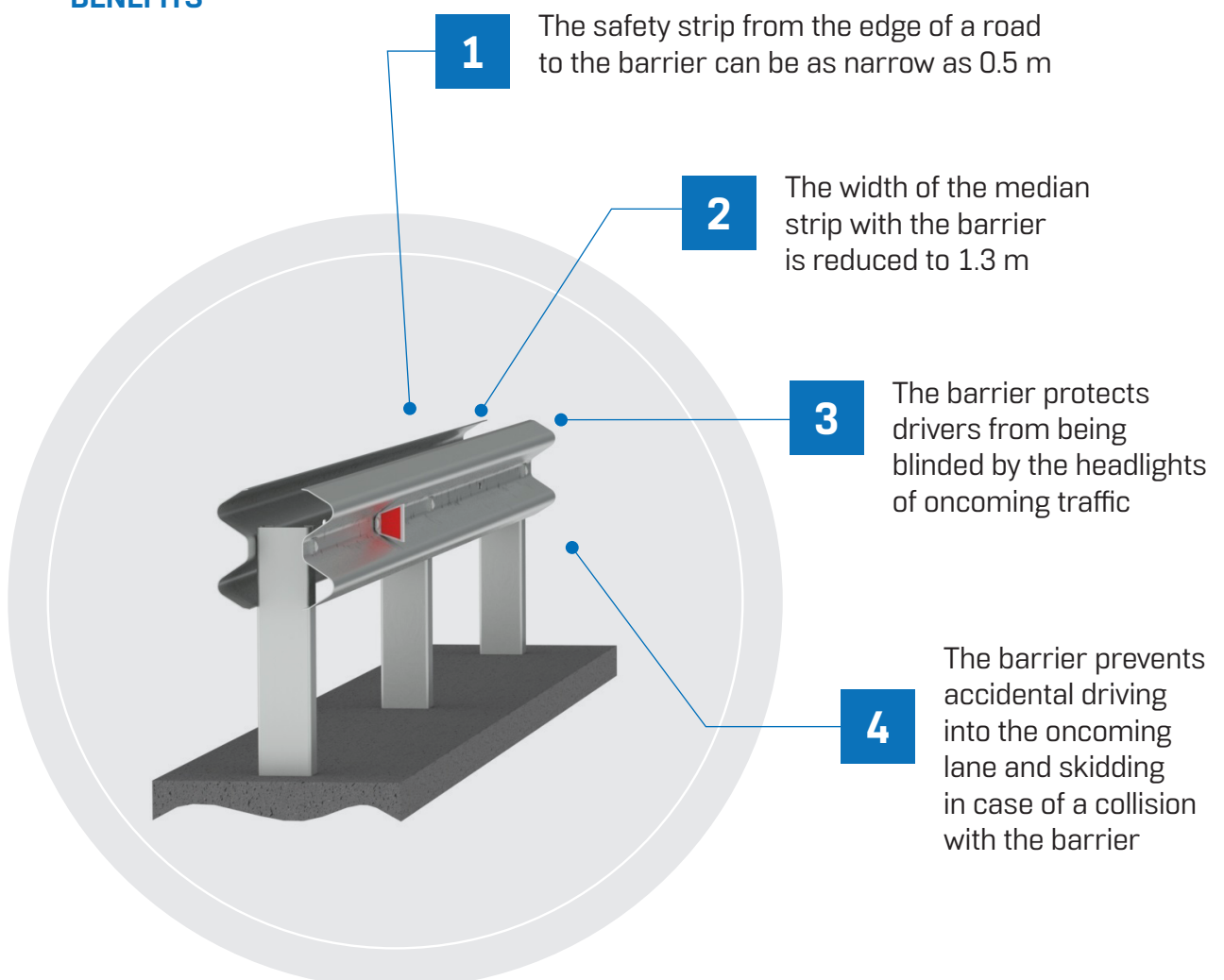
LIGHTWEIGHT DIVIDING GUARDLINE



Prodmash's median barrier for separating traffic flows is classified as a removable beam barrier complying with GOST R 52289-2019 (par. 8.1.2).

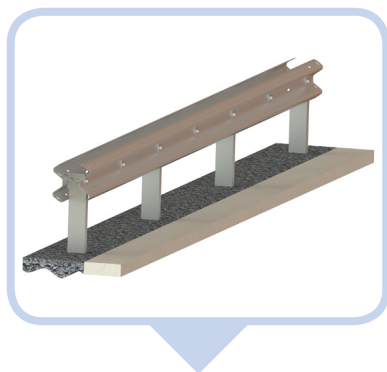


INSTALLATION BENEFITS



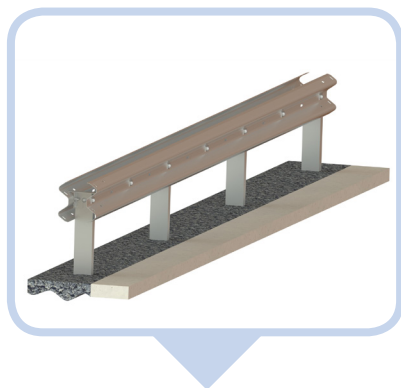


LIGHTWEIGHT DIVIDING GUARDLINE



Two-side single W-beam guardrail mounted on a hot-rolled U-channel post

Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11ДД-0,75Ш14/3,0-W-250-M5	21 ДД/250-0,75x3,0-1,17 [1,26]	1,17	1,26
11ДД-0,75Ш14/1,0-W-300-M3	21 ДД/300-0,75x1,0-0,8 [0,91]	0,8	0,91
11ДД-0,75Ш14/1,5-W-300-M3	21 ДД/300-0,75x1,5-1,04 [1,16]	1,04	1,16
11ДД-0,75Ш14/2,0-W-300-M2	21 ДД/300-0,75x2,0-1,25 [1,28]	1,25	1,28
11ДД-0,75Ш14/2,0-W-300-M3	21 ДД/300-0,75x2,0-1,28 [1,32]	1,28	1,32
11ДД-0,75Ш14/2,0-W-300-M4	21 ДД/300-0,75x2,0-1,42 [1,57]	1,42	1,57
11ДД-0,75Ш14/2,0-W-300-M5	21 ДД/300-0,75x2,0-1,37 [1,45]	1,37	1,45
11ДД-0,75Ш14/3,0-W-300-M2	21 ДД/300-0,75x3,0-1,40 [1,51]	1,4	1,51
11ДД-0,75Ш14/3,0-W-300-M3	21 ДД/300-0,75x3,0-1,16 [1,29]	1,16	1,29
11ДД-0,75Ш14/3,0-W-300-M4	21 ДД/300-0,75x3,0-1,20 [1,34]	1,2	1,34
11ДД-0,75Ш14/3,0-W-300-M5	21 ДД/300-0,75x3,0-1,34 [1,43]	1,34	1,43



Two-side single W-beam guardrail mounted on a C-channel post

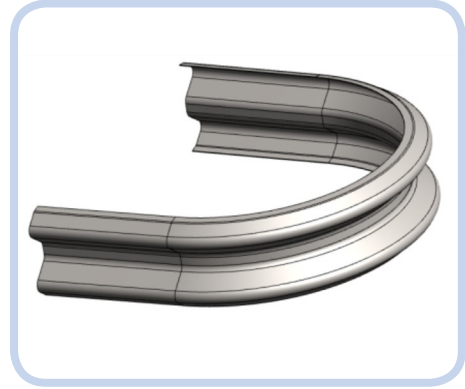
Guardrail brand per STO 07525912-100-2016	Guardrail brand per GOST 33128	Dynamic deflection, m	Effective width, m
11ДД-0,75С(4,0)/3,0-W-250-M5	21 ДД/250-0,75x3,0-1,17 [1,31]	1,17	1,31
11ДД-0,75С(4,0)/1,0-W-300-M3	21 ДД/300-0,75x1,0-0,78 [0,95]	0,78	0,95
11ДД-0,75С(5,0)/1,0-W-300-M3	21 ДД/300-0,75x1,0-0,55 [0,71]	0,55	0,71
11ДД-0,75С(4,0)/1,5-W-300-M3	21 ДД/300-0,75x1,5-1,03 [1,20]	1,03	1,2
11ДД-0,75С(5,0)/1,5-W-300-M3	21 ДД/300-0,75x1,5-0,80 [0,95]	0,8	0,95
11ДД-0,75С(4,0)/2,0-W-300-M3	21 ДД/300-0,75x2,0-1,45 [1,55]	1,45	1,55
11ДД-0,75С(5,0)/2,0-W-300-M3	21 ДД/300-0,75x2,0-1,07 [1,17]	1,07	1,17
11ДД-0,75С(4,0)/2,0-W-300-M5	21 ДД/300-0,75x2,0-1,59 [1,60]	1,59	1,6
11ДД-0,75С(5,0)/2,0-W-300-M5	21 ДД/300-0,75x2,0-1,10 [1,25]	1,1	1,25
11ДД-0,75С(4,0)/3,0-W-300-M2	21 ДД/300-0,75x3,0-1,14 [1,30]	1,14	1,3
11ДД-0,75С(5,0)/3,0-W-300-M2	21 ДД/300-0,75x3,0-1,34 [1,48]	1,34	1,48
11ДД-0,75С(4,0)/3,0-W-300-M3	21 ДД/300-0,75x3,0-1,16 [1,30]	1,16	1,3
11ДД-0,75С(5,0)/3,0-W-300-M3	21 ДД/300-0,75x3,0-1,31 [1,44]	1,31	1,44
11ДД-0,75С(4,0)/3,0-W-300-M4	21 ДД/300-0,75x3,0-1,58 [1,60]	1,58	1,6
11ДД-0,75С(5,0)/3,0-W-300-M4	21 ДД/300-0,75x3,0-1,29 [1,45]	1,29	1,45
11ДД-0,75С(4,0)/3,0-W-300-M5	21 ДД/300-0,75x3,0-1,41 [1,51]	1,41	1,51
11ДД-0,75С(5,0)/3,0-W-300-M5	21 ДД/300-0,75x3,0-1,25 [1,38]	1,25	1,38
11 ДД-0,75С(5,0)/1,5-W-300	21 ДД/300-0,75x1,5-1,25[1,31]	1,25	1,31
11 ДД-0,75С(5,0)/2,0-W-300	21 ДД/300-0,75x2,0-1,82[2,0]	1,82	2



GUARDRAIL ACCESSORY



Transition to parapet



Radial element

KD-5 Light Reflector



KD-5 light reflectors are designed to improve visual orientation and designate the side of the road at nighttime.

KD-5 reflectors were developed by Zavod Prodmash and are manufactured using SMC technology (Sheet Molding Compound) from a high-strength fiberglass and polyester resin composite.

KD-6 Light Reflector



KD-6 light reflectors help to improve road safety and enhance the visual orientation of road users.





CRASH CUSHIONS

Crash cushions provide protection to car passengers and mitigate the consequences of a collision with the engineering structures on the roads.



WHERE TO INSTALL:

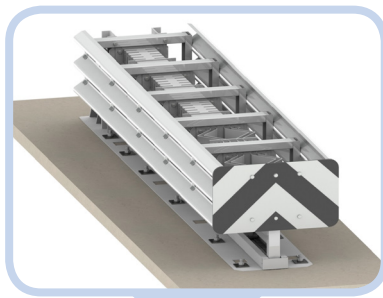
At traffic intersections, in front of massive obstructions, bridge and tunnel abutments, toll gates and other high risk locations.

ADVANTAGES:

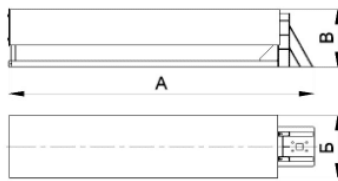
- All constructs have successfully passed full-scale tests in Russia and Europe
- Can be installed both on the concrete bed using chemical anchors, and into the ground with the help of anchor posts
- Supplied with the detailed assembly instructions
- Standard connectors to road barriers are available
- Version with a protective cover is available
- Low maintenance and refurbishment costs
- High maintainability after collision and deformation through the replacement of only 30% of the elements
- Quality is confirmed by European certificates EN 1317/5 and Certificate of Conformity TR CU 014/2011



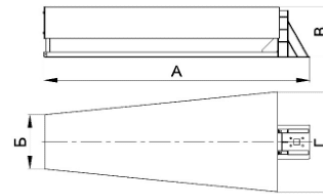
CRASH CUSHIONS



Crash cushions mounted on concrete and into the ground



Crash cushion installed in parallel to the road assembly

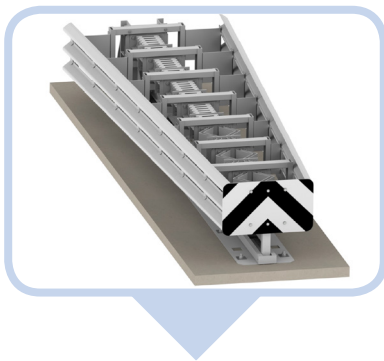


Crash cushion installed non-parallel to the road assembly

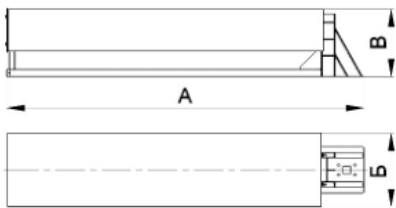
Name	Barrier type	Overall dimensions, mm				Speed class, km/h
		A	B	C	D	
Ф0-ДД-У-П-80	Parallel	4155	880	810	-	80
Ф0-ДД-У-Н-80	Trapezoidal	4155	880	810	1400	80
Ф0-ДД-У-П-90	Parallel	5580	880	810	-	90
Ф0-ДД-У-Н-90	Trapezoidal	5580	880	810	1600	90
Ф0-ДД-У-П-100	Parallel	7000	880	810	-	100
Ф0-ДД-У-Н-100	Trapezoidal	7000	880	810	1800	100
Ф0-ДД-У-П-110	Parallel	7700	880	810	-	110
Ф0-ДД-У-Н-110	Trapezoidal	7700	880	810	1900	110
Ф0-ДД-У-П-130	Parallel	9120	880	810	-	130
Ф0-ДД-У-Н-130	Trapezoidal	9120	880	810	2100	130



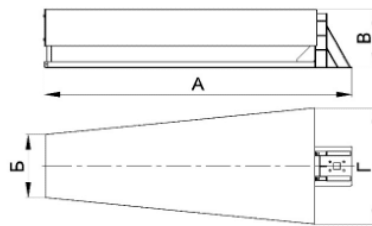
CRASH CUSHIONS



Crash cushions mounted on concrete and into the ground



Crash cushion installed in parallel to the bridge assembly



Crash cushion installed non-parallel to the bridge assembly

Name	Barrier type	Overall dimensions, mm				Speed class, km/h
		A	B	C	D	
Φ0-МД-У-П-80	Parallel	4155	880	810	-	80
Φ0-МД-У-Н-80	Trapezoidal	4155	880	810	1400	80
Φ0-МД-У-П-90	Parallel	5580	880	810	-	90
Φ0-МД-У-Н-90	Trapezoidal	5580	880	810	1600	90
Φ0-МД-У-П-100	Parallel	7000	880	810	-	100
Φ0-МД-У-Н-100	Trapezoidal	7000	880	810	1800	100
Φ0-МД-У-П-110	Parallel	7700	880	810	-	110
Φ0-МД-У-Н-110	Trapezoidal	7700	880	810	1900	110
Φ0-МД-У-П-130	Parallel	9120	880	810	-	130
Φ0-МД-У-Н-130	Trapezoidal	9120	880	810	2100	130



RESTRICTING PEDESTRIAN BARRIER BRANDS PER STO 07525912-036-2019

Road assembly (installation into the ground)		Brand name	Road assembly (installation on concrete)	
Barrier brand per STO 07525912-036-2019	Barrier brand per GOST 33128-2014		Barrier brand per STO 07525912-036-2019	Barrier brand per GOST 33128-2014
		Rhombus Lite 80		
422-ОПО-Д/1,0-2,0 / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019		422-ОПО-Д/1,0-2,0(6) / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019
		Cross		
426-ОПО-Д/1,0-2,0 / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019		426-ОПО-Д/1,0-2,0(6) / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019
		Cross Lite 80		
427-ОПО-Д/1,0-2,0 / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019		427-ОПО-Д/1,0-2,0(6) / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019
		Parallel 80		
430-ОПО-Д/1,0-2,0 / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019		430-ОПО-Д/1,0-2,0(6) / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019
		Cube 80		
440-ОПО-Д/1,0-2,0 / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019		440-ОПО-Д/1,0-2,0(6) / СТО 07525912-036-2019	ОПО-Д/1,0-2,0 / СТО 07525912-036-2019



PEDESTRIAN BARRIERS



CONTAINING PEDESTRIAN BARRIER BRANDS PER STO 07525912-036-2019

Road assembly		Bridge assembly	
Barrier brand per STO 07525912-036-2019	Barrier brand per GOST 33128-2014	Barrier brand per STO 07525912-036-2019	Barrier brand per GOST 33128-2014



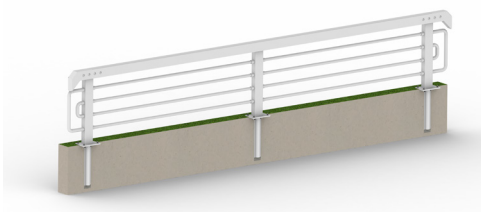
310-УПО-Д/1,1-2,0 / СТО 07525912-036-2019



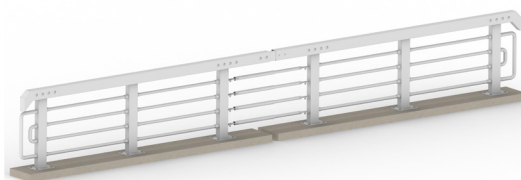
310-УПО-М/1,1-2,0 / СТО 07525912-036-2019

УПО-Д/1,1-2,0 / СТО 07525912-036-2019

УПО-М/1,1-2,0 / СТО 07525912-036-2019



700-УПО-Д/1,1-3,0 / СТО 07525912-036-2019



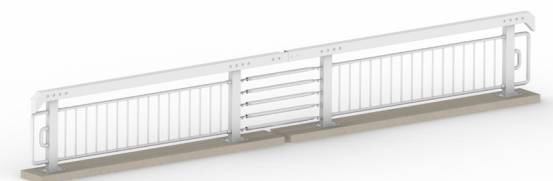
700-УПО-М/1,1-3,0 / СТО 07525912-036-2019

УПО-Д/1,1-3,0 / СТО 07525912-036-2019

УПО-М/1,1-3,0 / СТО 07525912-036-2019



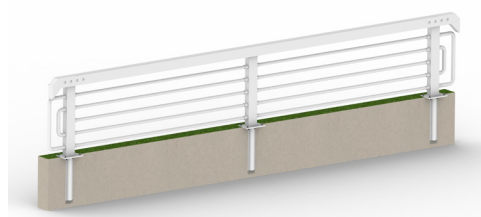
701-УПО-Д/1,1-3,0 / СТО 07525912-036-2019



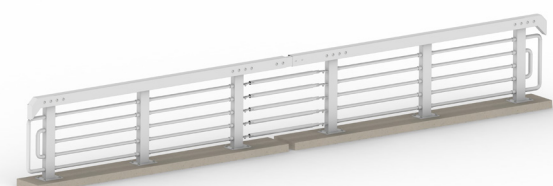
701-УПО-М/1,1-3,0 / СТО 07525912-036-2019

УПО-Д/1,1-3,0 / СТО 07525912-036-2019

УПО-М/1,1-3,0 / СТО 07525912-036-2019



702-УПО-Д/1,1-3,0 / СТО 07525912-036-2019



702-УПО-М/1,1-3,0 / СТО 07525912-036-2019

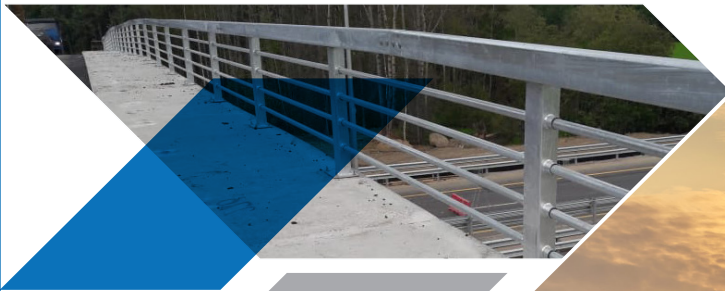
УПО-М/1,1-3,0 / СТО 07525912-036-2019

УПО-М/1,1-3,0 / СТО 07525912-036-2019



RESTRICTING PEDESTRIAN BARRIER BRANDS PER STO 07525912-024-2020

Appearance	Barrier brand per STO 07525912-024-2020	Installation	Brand name
	413-ОПО-Д/1,0-2,0 / СТО 07525912-024-2020	Priming	ORUD 108
	414-ОПО-Д/1,0-2,0 / СТО 7525912-024-2020	Priming	ORUD 133
	415-ОПО-Д/1,0-2,0 / СТО 07525912-024-2020	Priming	ORUD 159
	422-ОПО-Д/1,0-2,0 (6) / СТО 07525912-024-2020	Concrete	Rhombus Lite 60
	422-ОПО-Д/1,0-2,0 / СТО 07525912-024-2020	Priming	Rhombus Lite 60
	426-ОПО-Д/1,0-2,0(6) / СТО 07525912-024-2020	Concrete	Крест 60
	426-ОПО-Д/1,0-2,0 / СТО 07525912-024-2020	Priming	Cross 60





PEDESTRIAN BARRIERS



RESTRICTING PEDESTRIAN BARRIER BRANDS PER STO 07525912-024-2020

Appearance	Barrier brand per STO 07525912-024-2020	Installation	Brand name
	427-ОПО-Д/1,0-2,0(6) / СТО 07525912-024-2020	Concrete	Cross Lite 60
	427-ОПО-Д/1,0-2,0 / СТО 07525912-024-2020	Priming	Cross Lite 60
	430-ОПО-Д/1,0-2,0(6) / СТО 07525912-024-2020	Concrete	Parallel 60
	430-ОПО-Д/1,0-2,0 / СТО 07525912-024-2020	Priming	Parallel 60
	440-ОПО-Д/1,0-2,0(6) / СТО 07525912-024-2020	Concrete	Cube 60
	440-ОПО-Д/1,0-2,0 / СТО 07525912-024-2020	Priming	Cube 60
	450-ОПО-Д/1,0-2,0 / СТО 07525912-024-2020	Priming	Orud-Neo

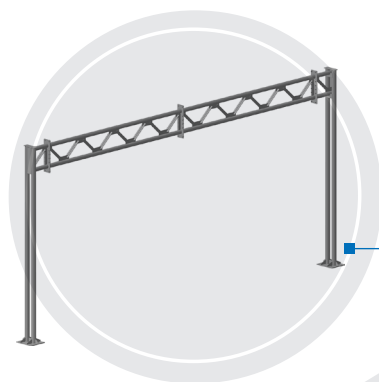
FRAME SUPPORTS



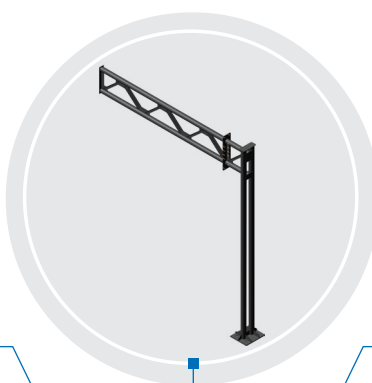
Frame supports for road signs, introduced in STO 07525912-320-2020, were developed on the basis of model solution sketchbook by the Soyuzdorproekt Research Institute, series 3.503.9-80 (issue 2), Steel Frame Supports for the Installation of Informational Road Signs Over the Motorways.

Steel frame supports are designed in compliance with STO 07525912-320-2020 and protected against corrosion by hot-dip galvanization. Frame supports are certified for compliance with TR CU 014/2011, Road Safety.

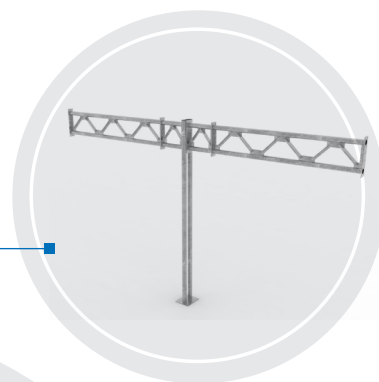
Rectangular



L-shaped



T-shaped



Maximum span length is

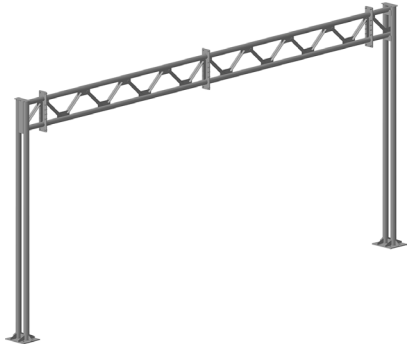


28 m

Customized solutions are possible

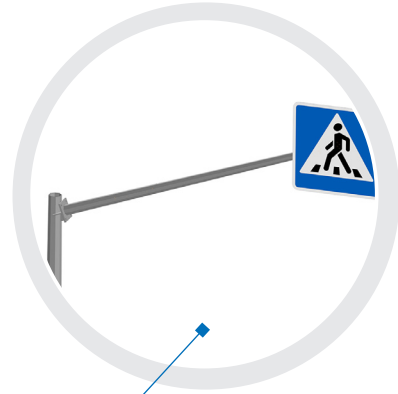
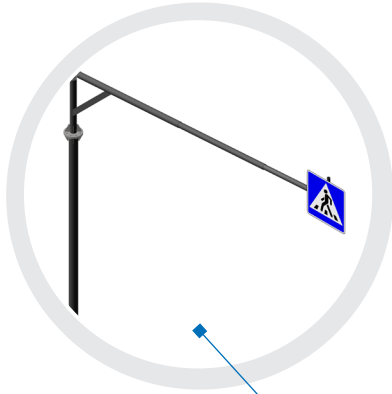
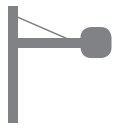
Maximum span height from pole flange is

6,6 m

FRAME SUPPORTS

Frame support brand per STO 07525912-320-2020	Permissible wind area	Stick-out length, m	Height, m	Appearance
PMП / 15,75 – 6,60 – 1	I, II	15,75	6,60	
PMП / 15,75 – 6,60 – 2	III, IV	15,75	6,60	
PMП / 17,50 – 6,60 – 3	I, II	17,50	6,60	
PMП / 17,50 – 6,60 – 4	III, IV	17,50	6,60	
PMП / 17,50 – 5,95 – 5	I, II	17,50	5,95	
PMП / 17,50 – 5,95 – 6	III, IV	17,50	5,95	
PMП / 19,25 – 6,60 – 7	I, II	19,25	6,60	
PMП / 19,25 – 6,60 – 8	III, IV	19,25	6,60	
PMП / 21,00 – 6,60 – 9	I, II	21,00	6,60	
PMП / 21,00 – 6,60 – 10	III, IV	21,00	6,60	
PMП / 21,00 – 5,95 – 11	I, II	21,00	5,95	
PMП / 21,00 – 5,95 – 12	III, IV	21,00	5,95	
PMП / 22,75 – 6,60 – 13	I, II	22,75	6,60	
PMП / 22,75 – 6,60 – 14	III, IV	22,75	6,60	
PMП / 22,75 – 6,60 – 15	I, II	22,75	6,60	
PMП / 22,75 – 6,60 – 16	III, IV	22,75	6,60	
PMП / 24,50 – 5,95 – 17	I, II	24,50	5,95	
PMП / 24,50 – 5,95 – 18	III, IV	24,50	5,95	
PMП / 26,25 – 6,60 – 19	I, II	26,25	6,60	
PMП / 26,25 – 6,60 – 20	III, IV	26,25	6,60	
PMП / 28,00 – 5,95 – 21	I, II	28,00	5,95	
PMП / 28,00 – 5,95 – 22	III, IV	28,00	5,95	
PMГ / 6,30 – 6,05 – 1	I, II	6,30	6,05	
PMГ / 6,30 – 6,05 – 2	III, IV	6,30	6,05	
PMГ / 4,50 – 6,05 – 3	I, II	4,50	6,05	
PMГ / 4,50 – 6,05 – 4	III, IV	4,50	6,05	
PMT / 6,30 – 6,05 – 1	I, II	6,30	6,05	
PMT / 6,30 – 6,05 – 2	III, IV	6,30	6,05	
PMT / 4,50 – 6,05 – 3	I, II	4,50	6,05	
PMT / 4,50 – 6,05 – 4	III, IV	4,50	6,05	

SIGN SUPPORTS



CHARACTERISTICS

- 1 Length and height up to the sign depends on the client's request
- 2 Supports for wind areas I-III as per SP 20.13330
- 3 Stand sections can be cylindrical, faceted, and custom-made
- 4 Certified for compliance with TR CU 014/2011, Road safety

LIGHTING POLES



Pole height ranges from 3 to 30 m.
Permissible: crest load—up to 3 tons

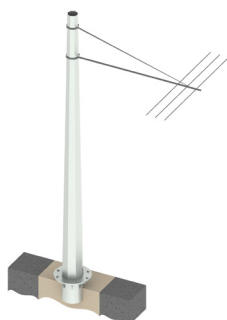
Light poles are certified for compliance with TR CU 014/2011, Road Safety

Type	Shorthand designation	Height range, m	
		min	max
Flange power pole, cylindrical circular	ФС	8,5	11
Straight power pole, cylindrical circular	ПС	8,5	11
Straight non-power pole, cylindrical circular	ПН	2	21
Flange non-power pole, cylindrical circular	ФН	2	30
Flange power pole, cylindrical faceted	ФСГ	8	10
Flange non-power pole, tapered faceted	ФГН	3	16
Straight power pole, tapered faceted	ПГС	9	9
Straight non-power pole, tapered faceted	ПГН	3	16
Flange non-power pole, tapered circular	ФКН	5	11,5
Straight non-power pole, tapered circular	ПКН	5	12
Flange pole, swivel faceted	ПФГ	5	20
Flange pole, cylindrical circular	ФТ	9	9
Straight pole, circular	ПТ	9	9
Flange pole, tapered faceted	ФГТ	9	10



Street lighting poles are designed and manufactured in accordance with STO 07525912-300-2021.

Overhead line support poles are designed and manufactured in accordance with STO 07525912-340-2022.



OVERHEAD LINE SUPPORT POLES

Overhead line support poles are used for contact suspension, power circuits and line feeders, cable systems, fittings and other elements transferring power from traction substations to current collectors of municipal transport facilities.

HINGED LIGHT POLES

The hinge allows to lower the upper part of the pole to the ground, so that all manipulations can be done without additional devices or engineering machinery.

It is advisable to install hinged light poles in the places where the access of heavy machinery is limited: parks, squares, sports fields, railway stations, etc.



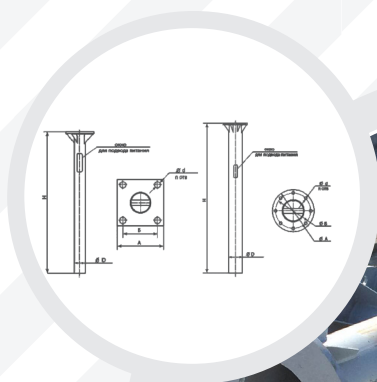
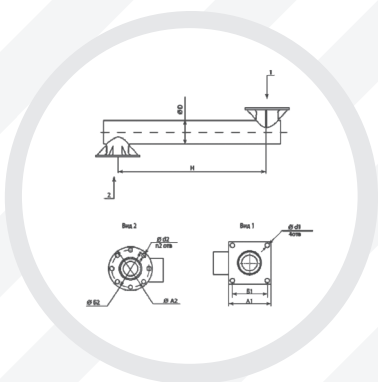


LIGHT ARMS AND EMBEDDED PARTS



LIGHT ARMS

- 1 Comply with STO 07525912-022-2021
- 2 Different types of fasteners
- 3 One- and multi-socket arms
- 4 High-quality tubular steel



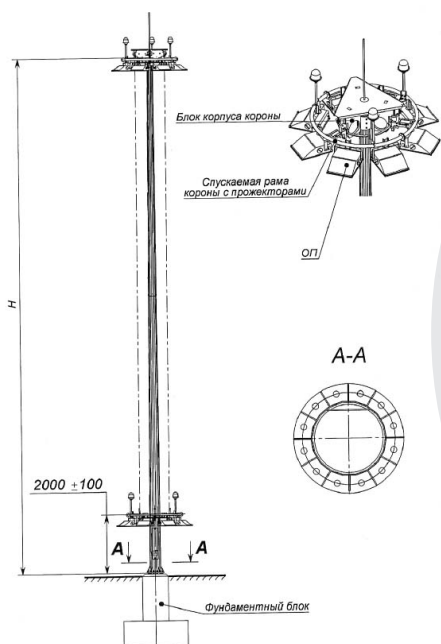
EMBEDDED PARTS

- 1 Comply with STO 07525912-023-2021
- 2 Square and round flanges are available for different load types
- 3 All elements of the embedded parts have anti-corrosion protection in accordance with SNiP 2.03.11 and GOST 9.602 to prolong their service life





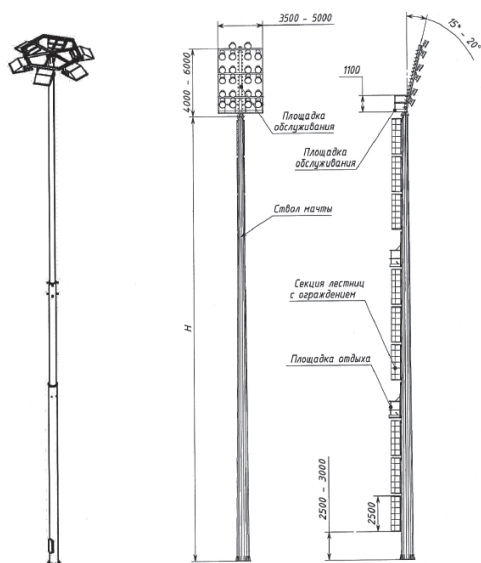
LIGHTING MASTS



Light mast. Diagram 1
With the dismantlable crown



One mast can replace up to ten standard light poles. Our masts are suitable for wind areas I-VII.



Light mast. Diagram 2
With the stationary crown

CHARACTERISTICS

- 1 With stationary or dismantlable crown
- 2 Mast height ranges from 16 to 50 meters
- 3 Weight of installed equipment up to 2.1 tons
- 4 Permissible number of lighting fixtures: up to 18 searchlights for masts with the dismantlable crown and up to 60 searchlights with the stationary crown

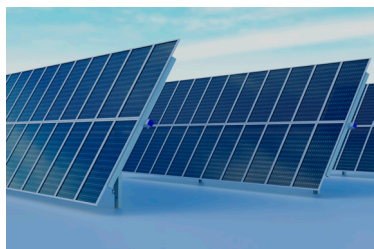


SOLAR PANEL MOUNTING SYSTEMS



Zavod Prodmash designs and manufactures steel structures for the solar energy sector.

Each solution takes into account the tasks set by the customer. We adjust the designs to the conditions in the region of SPP construction in order to optimize each unit in terms of cost of materials and buildability.



STATIONARY MOUNTING SYSTEMS are standard structures for fixing photovoltaic modules. Zavod Prodmash has supplied mounting systems for a number of solar power plants with a total capacity of more than 300 MW.

SINGLE-AXIS SOLAR TRACKER is a new development by Prodmash. This progressive solution helps to increase the amount of electricity generated by the PV modules by up to 20% due to the algorithms for panel automatic orientation throughout the day.



Ease of installation and maintenance



Tracker position control, depending on the weather, illumination, wind strength, snow and precipitation levels



High degree of component localization



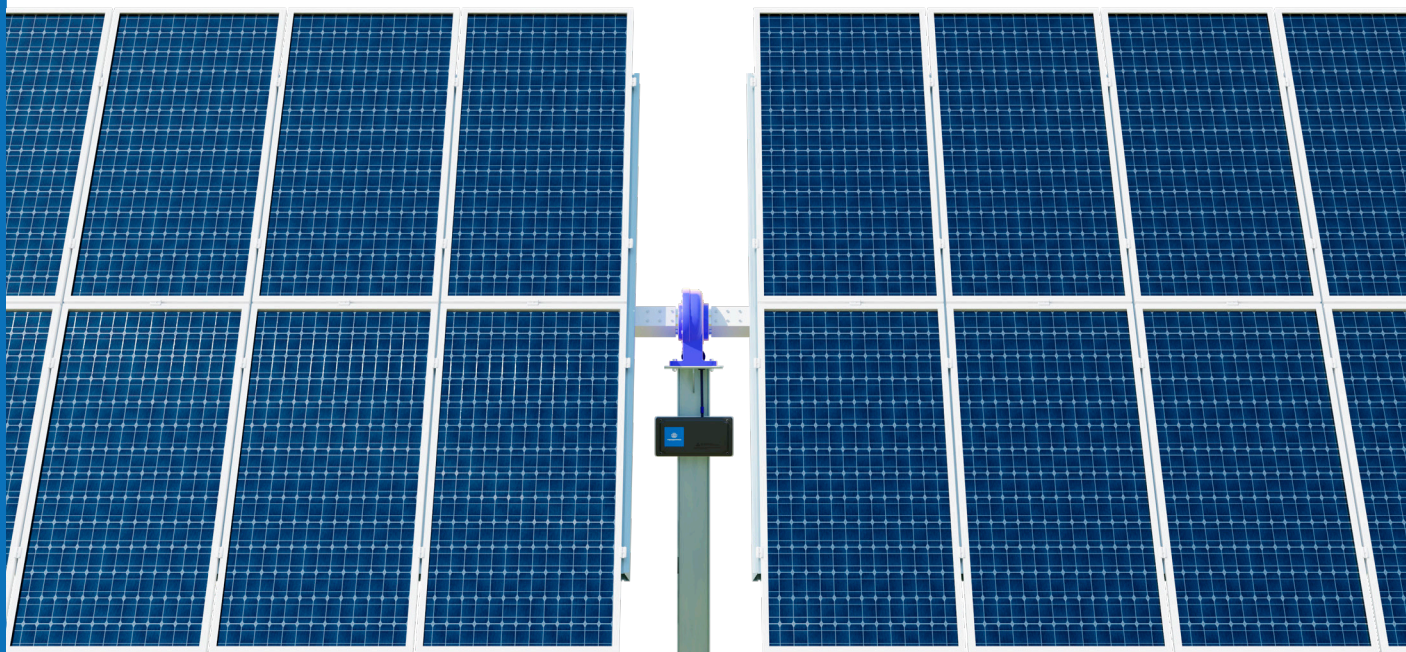
Wireless control system, reducing the total volume of cable lines



Dampers added to the design to abate vibration from wind pulsations



Control of PV module back darkening, increased efficiency when using two-side PV modules





OTHER STEEL STRUCTURES

NOISE BARRIERS

Noise barriers provide protection from the acoustic impact from railways and highways.

The design of noise barrier panels provides for their installation using I-beams and gussets, forming a robust structure with no gaps between the elements.

At the same time, the height and pitch of noise-absorbing barriers can be any, depending on the client's task.



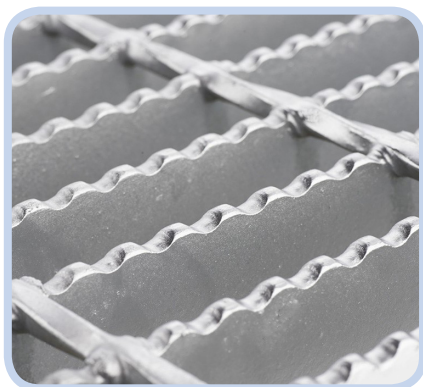
Advantages:

1 Long service life

2 Robust construction with no gaps

3 The height and pitch of the racks can be any, depending on the tasks

4 Panels can be painted any RAL color



STEEL GRATINGS

Steel grating is used as a load-bearing element capable of carrying high loads.

Thanks to high strength, wear resistance, easy installation, and aesthetic appearance, steel grating is widespread in many industries.

Zavod Prodmash is a certified supplier of grating for the ARCTIC LNG 2 project (NOVATEK).



BUS STOP SHELTERS

Zavod Prodmash modular bus stop pavilions with an advertising board and various color options for the frame.



OTHER STEEL STRUCTURES





GREENHOUSE FRAMES

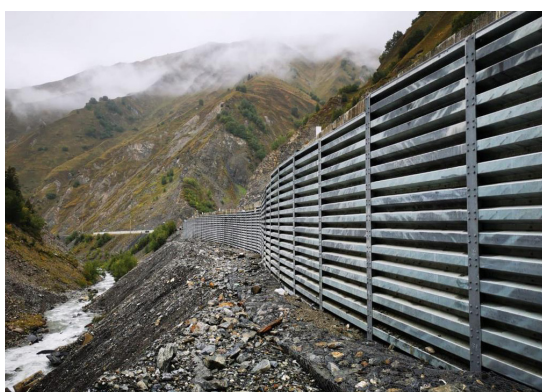
We manufacture greenhouse complexes using a high-tech robotic station IRS IROBS-Prj5191 and a welding robot CLOOS, which allow to strictly observe welding modes and maintain structural geometry.

All load-bearing elements of greenhouses are made of hot-dip galvanized steel profiles.



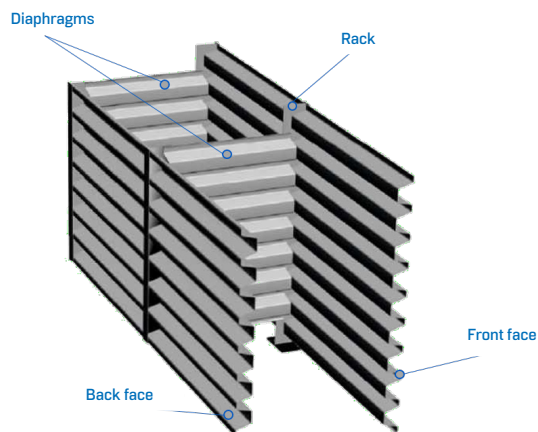
COMPLETED FACILITIES:

-  greenhouse complex in the Kaluga Special Economic Zone
-  greenhouse complex for the Ecoresurs LLC (Smolensk region)




RETAINING WALLS

Retaining walls keep masses of ground in a safe and stable state.



COMPLETED FACILITIES:

-  Federal road A164 near the border with South Ossetia

Applications:

- 1 Road/railway construction**
Prevention of erosion of bridge footing slopes, formation of embankments, protection against landslides, mudflows, and snow avalanches.
Making of motorways/railways.
- 2 Urban construction**
Arrangement of coastlines of rivers, lakes, ponds.
- 3 Warehouse construction**
Arrangement of small warehouses to increase the inert material storage volume.
- 4 Industry**
Loading and unloading ramps, emergency protection structures at industrial enterprises (chemical industry, treatment facilities, etc.)



CONSTRUCTION AND INSTALLATION WORKS

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THE RANGE OF OUR SERVICES INCLUDES CONSTRUCTION AND ASSEMBLY WORKS

Zavod Prodmash provides services for the installation of road infrastructure units:

- traffic barriers;
- pedestrian barriers;
- bridge guardrails;
- gate systems;
- street lighting.



Our team of highly qualified specialists is ready to timely install your road infrastructure units in accordance with the current legislation of the Russian Federation.



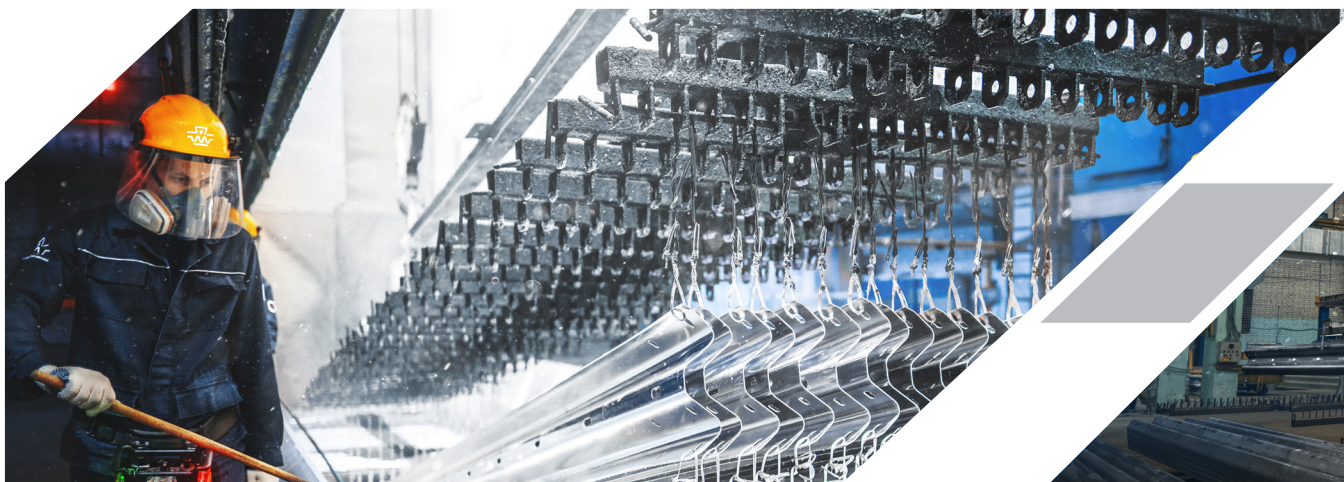
Our specialists took part in the installation works at the following facilities:

- Motorway M-11 Neva;
- Motorway M-9 Baltic;
- Motorway M-51 Baikal;
- Road R-254 Irtysh;
- Road R-255 Siberia, etc.





ANTI-CORROSION TREATMENT BY HOT-DIP GALVANIZING



For more than 18 years, Zavod Prod mash has been providing hot-dip galvanizing services using automated CIC production lines (the Netherlands) with a design capacity of up to 60,000 tons/year



ADVANTAGES OF HOT-DIP GALVANIZING

- 1 high corrosion resistance of galvanized products according to ISO 9001-2011 and GOST 9.307-2021
- 2 items are fully processed, we guarantee quality of our products for no less than 15 years
- 3 short production times
- 4 coating thickness may vary from 40 to 200 microns, depending on the customer's request and the steel grade
- 5 the method is applied for structures made of soft and low-alloyed steels, as well as cast steel and iron
- 6 the coating does not react with petroleum products, solvents, or lubricants
- 7 hot-dip galvanized products have a wide range of applications in energy, construction, urban infrastructure, transport and road construction, oil industry, etc.
- 8 production process is environmentally friendly and lead-free
- 9 tolling agreements are applicable



ANTI-CORROSION TREATMENT BY HOT-DIP GALVANIZING



GALVANIZATION OF WELDED JOINTS

The production of steel structures involves a lot of welding. Hot-dip galvanization helps to prevent corrosion of welded seams. Note that component parts of welded structures can be made of steels of different grades.

Electrode metal differs slightly in chemical composition from the parts to be joined, yet it should be selected considerably to minimize or exclude defects in the welded joints.



GALVANIZING HARDWARE

Hot-dip galvanization of hardware has numerous advantages over electroplating and manufacturing fasteners from stainless steels. Above all, its multilayer intermetallic structure has higher corrosion resistance, high coating-to-base adhesion, as well as good coating thickness and density.

Advantages of hot-dip galvanized coating:

- | | |
|---|---|
| <p>1 self-healing</p> | <p>3 exceeds the strength of stainless steel: prevalent hardware is hot-dip galvanized fasteners of strength class 8.8</p> |
| <p>2 does not chip off on impact</p> | <p>4 easily painted</p> |



DUPLEX COATING



For a keen perception of the working principles and the advantages of duplex coating, it is necessary to understand how the main types of anti-corrosion protection work.

Among the services provided by Zavod Prodmash is the application of **duplex coating**.

Duplex coating is an anti-corrosion complex of a zinc layer combined with one or several paint layers.

It provides protection in ISO 12944 environments C3, C4, C5, and its service life exceeds 100 years.

Zinc coating gives cathodic protection to the steel: in a humid environment, it works as an anode and takes the first hit, preventing the formation of rust. With minor damage to the zinc coating, its protective function is preserved. The galvanized product interacts with the environment, forming zinc oxide, zinc hydroxide, and zinc carbonate on its surface, which additionally protect the coating, but lead to a gradual consumption of zinc.



Polymer coating provides barrier protection for the steel, filling the pores and isolating the zinc surface from the corrosive environment, significantly increasing the service life of galvanized items. In some cases, this allows to apply thinner zinc coating (down to 50-150 microns). And even if the polymer coating is damaged, zinc retains the cathodic protection for the metal.



Prodmash offers a wide range of services for painting steel structures, including:

- powder coating;
- airless spraying using the high-performance Xtreme equipment by Graco.

Advantages of paint coating services at Zavod Prodmash:

- high-scale technical organization of the coating application process, including mechanical and chemical surface preparation;
- step-by-step quality control in compliance with GOST R ISO 8501, ISO 12944;
- cooperation with major manufacturers of paint coatings and an individual approach to the choice of protection complexes for a given warranty period of products intended for operation in various environment aggressivity degrees.

Zavod Prodmash offers services for the scientific and qualitative assessment of the protective properties of coatings. Among the offered methods there are magnetic assessment of coating thicknesses, metallographic analysis of samples, measurement of microhardness and porosity of coatings, as well as accelerated corrosion tests in a salt spray chamber, and Positive Material Identification of steels using the PMI Master optical emission spectrometer.



GEOGRAPHY OF ZAVOD PRODMASH

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- Road R-255 Siberia
- Highway M-51 Baikal
- Highway M-52 Chuysky Trakt



- Highway M-5 Ural
- Road R-354 Yekaterinburg – Kurgan
- Road R-254 Irtysh



- Highway M-11 Neva
- St. Petersburg Western High-Speed Diameter, Ring Road
- Highway M-8 Kholmogory
- Highway M-10 Russia
- Road R-21 Kola



- Highway M-7 Volga
- Road R-239 Kazan – Orenburg – Kazakhstan
- Road R-240 Ufa – Orenburg
- Road R-225 Samara – Buguruslan



- Highway A-350
- Highway A-370 Ussuri
- Highway A-376



- Central Ring Road, Moscow Ring Road
- Highway M-1 Belarus
- Highway M-9 Baltic
- Mikhailovsky bypass route
- Road R-22 Caspian
- Highway M-12



- Road R-215 Astrakhan – Makhachkala
- Road R-217 Caucasus
- Transcaucasian highway A-164



- BAKAD [Kazakhstan, Almaty]



- Highway A-149 Adler – Krasnaya Polyana
- Highway M-4 Don
- Highway A-289 Krasnodar



ADVANCING INTO THE FUTURE BY IMPROVING THE PRESENT



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