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Safety costs money, the lack of it costs pain...



ОПАСНАЯ
ЗОНА!



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Safety and caution
equipment

IDENTIFICATION OF UNDERGROUND UTILITY LINES

Caution tape – LS
 Detector tape
 Caution tape GAS – LSG
 Caution tape ELECTRO– LSE
 Caution tape TELECOMMUNICATIONS – LSS
 Caution tape OPTICS – LSO
 Caution tapes SEWERAGE, TELEHEATING, WATER SUPPLY – LSK, LST, LSV
 Protective caution tape – LZS
 Cable protection shield – PZK
 Pipeline marker for underground gas pipeline – SOG
 Pipeline marker for underground telecommunications cable line – SOS
 Pipeline marker for underground electric cable line – SOE

CROWD CONTROL & ROAD CONSTRUCTION SAFETY EQUIPMENT

Safety equipment
 Safety tape – LO
 Custom Safety Tape
 Traffic cones – KC
 Plastic marker posts & marker bases, metal posts
 Warning safety fence
 Building safety net

ROAD TRAFFIC CONTROL MEANS

Plastic traffic bollard
 Separator barrier
 Speed reduction hump – IDN PROTECT
 Verge marker post – SDS, SDSU
 Flexible road marker post
 Traffic signs
 Protective & Signal Traffic Lights

CERTIFICATES



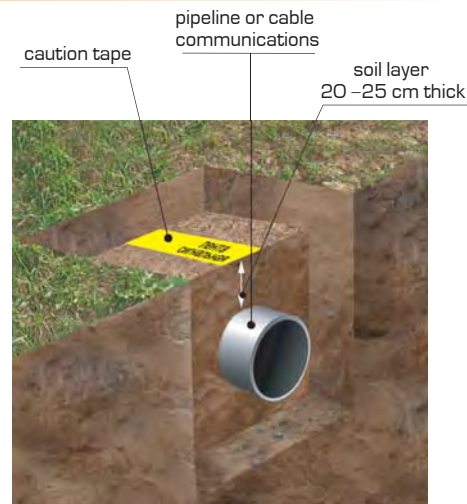
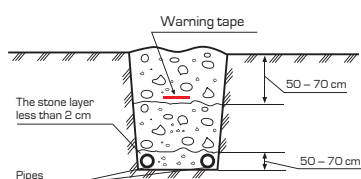
PROTECT Company is one of the leading Russian manufacturers of various kinds of crowd control and construction site fencing.

IDENTIFICATION OF UNDERGROUND UTILITY LINES

caution tape detector tape

CAUTION TAPE – LS

Caution tape provides for easy detection of buried pipeline and underground communications. It's made of the high-pressure polyethylene and has the printed warning message along its length. While excavation works in the area with underground pipeline and utility infrastructure, caution tape signals the communications installed deep in the ground. Caution tape is widely used in Russia and other CIS countries (Commonwealth of Independent States). The caution tape, produced by PROTECT Company, meets necessary requirements for this kind of goods. All products are certified according to Russian quality standards.

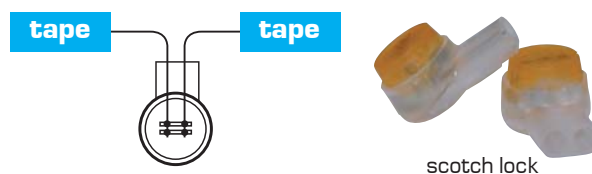


Typical diagram of caution tape laying

DETECTOR TAPE

Detector tape is a modification of ordinary caution tape. The isolated copper conductor, which enables effective tracing of underground infrastructure, is stitched to the caution tape in production conditions. Detector tape is generally used for laying polymer pipelines and optical fiber lines. According to custom specification the detector tape with 1, 2 or 3 conductors can be manufactured (the number depends on the width of the tape). One may connect conductors ends with special scotch locks or simply twist them together and wind with PVC electrical tape (see figure below). In-house field trials of detector tape, organized by our Company, showed good results of tracing of the given tapes by the set of equipment produced in Russia.

| Reel length, m | Width, mm | Thickness, μm | Tradename |
|----------------|-----------|--------------------------|------------------------|
| 250 / 150 | 200 | 50 / 200 | Detector LSG |
| 150 | 200 | 200 | Detector LSK, LST, LSV |



CAUTION TAPE GAS – LSG

Caution tape GAS is used as an underground warning signal while laying a gas pipeline. In Russia the application of caution tape is regulated by "Safety Standards for Gas Transmission and Consumption Systems PB 12-529-03".

Caution tape GAS is a yellow-colored tape with printed warning message.

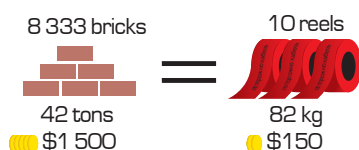
| Reel length, m | Width, mm | Thickness, μm | Tradename |
|----------------|-----------|--------------------------|--|
| 250 | 200 | 200 | LSG "Gazprom Gas Distribution" |
| 250 | 200 | 50 | LSG "KEEP OUT GAS" "CAUTION GAS" "GAS" |



IDENTIFICATION OF UNDERGROUND UTILITY LINES

caution tape

CAUTION TAPE ELECTRO— LSE



Caution tape ELECTRO is used for identification of buried electric cable. Caution tape ELECTRO represents the red-colored tape with printed warning message both in Russian and English: “ATTENTION CABLE”. The width of the applied tape depends on the number of electric cables installed in particular trench. Custom legends and company details in any language can easily be manufactured to client specifications. The usage of caution tape is cost-effective. For the protection of 1 km long electric cable line one needs 8 333 bricks, which makes 42 tons. Instead, one may use 10 reels of LSE-250 with a total weight of 82 kg. This simple example illustrates the fact that the application of caution tape substantially reduces material consumption. Furthermore, it should be kept in mind that such additional costs as machinery maintenance expenses as well as expenditure on loading-unloading works will be eliminated. In Russia the application of caution tape is regulated by “Regulations for Electrical Installation (PUE)”.

| Reel length, m | Width, mm | Thickness, μ m | Tradename |
|----------------|-----------------------------|--------------------|-----------|
| 100 | 150/250/300/450/600/750/900 | 300 | LSE |

CAUTION TAPE TELECOMMUNICATIONS – LSS



Caution tape TELECOMMUNICATIONS is used for identification of buried telecom cable. Caution tape TELECOMMUNICATIONS is an orange-colored tape with printed warning message “CAUTION: BURIED TELECOMMUNICATIONS CABLE BELOW”. The tape must be spread on the layer of soil above the underlying telecom cable. The width of the caution tape depends on the number of buried cables and the outer dimensions of cable system. Company logos as well as any other advertising information can easily be printed on the tape.

| Reel length, m | Width, mm | Thickness, μ m | Tradename |
|----------------|--------------|--------------------|-----------|
| 250 | 40/50/75/100 | 300 | LSS |

CAUTION TAPE OPTICS – LSO



Caution tape OPTICS is used for identification of buried fiber optic cable. Caution tape OPTICS is a yellow-colored tape with printed warning message “CAUTION: BURIED FIBER OPTIC CABLE BELOW”. In Russia the application of caution tape for fiber optic lines is regulated by “Regulations for Construction of Optical Fiber Lines for Railway Telecommunications Networks Applying Plastic Pipe Systems”. One can get detailed information on how to use the caution tape OPTICS in “Guidelines for the Installation of Optical Cable in SILICORE HDPE Conduit”. Company logos as well as any other advertising information can easily be printed on the tape.

| Reel length, m | Width, mm | Thickness, μ m | Tradename |
|----------------|-----------|--------------------|-----------|
| 500 | 40 / 70 | 100 | LSO |

IDENTIFICATION OF UNDERGROUND UTILITY LINES

caution tape
cable protection shield

CAUTION TAPESSEWERAGE, TELEHEATING, WATER SUPPLY – LSK, LST, LSV

Caution tapes SEWERAGE, TELEHEATING, WATER SUPPLY are used for identification of underground public utilities networks. These tapes represent white-colored strips with printed warning message:

“CAUTION! SEWAGE PIPE BELOW” – in black color “CAUTION! CENTRAL HEATING PIPE BELOW” – in red color

“CAUTION! WATER SUPPLY PIPE BELOW” – in blue color

Company logos as well as any other advertising information can easily be printed on the tape.

| Reel length, m | Width, mm | Thickness, μm | Tradename |
|----------------|-----------|--------------------------|---------------|
| 250 | 200 | 200 | LSK, LST, LSV |



PROTECTIVE CAUTION TAPE – LZS

Protective caution tape is recommended for identification of buried electric cable lines with operating voltage levels up to 35 kV. It is produced of solid and durable polymer composition, provides mechanical protection of the cable from hazards and informs of underlying potentially dangerous electric distribution network. On the outer side of the bright red-colored tape LZS there is a printed warning message “ATTENTION CABLE” in two languages: Russian and English. For the protection of 1 km long electric cable line one needs 31 tons of bricks, that causes heavy-freight trucks involvement, hiring laborers and spending considerable time. Instead, one may use some reels of LZS with a total weight of 350 kg, which can be easily handled by two workers.

| Reel length, m | Width, mm | Thickness, μm | Tradename |
|----------------|-----------|--------------------------|-----------|
| 50 | 250 | 2,5 – 3,5 | LZS-250 |
| 50 | 125 | 2,5 – 3,5 | LZS-125 |



CABLE PROTECTION SHIELD – PZK

This shield serves for covering of buried electric cable lines with operating voltage levels up to 35 kV. It provides protection from mechanical hazards and warns against the danger of electric shock, potentially threatening to the construction workers, who labour in the immediate vicinity of high voltage cable lines. Depending on its size, cable protection shield PZK can replace up to 8 bricks. In Russia the usage of shields PZK is regulated by “Regulations for Electrical Installation (PUE)” and “Instructions on Acceptance of New Distribution Point, Transmission Substation and Cable Lines (1-B-3)”. Operational period is 50 years.

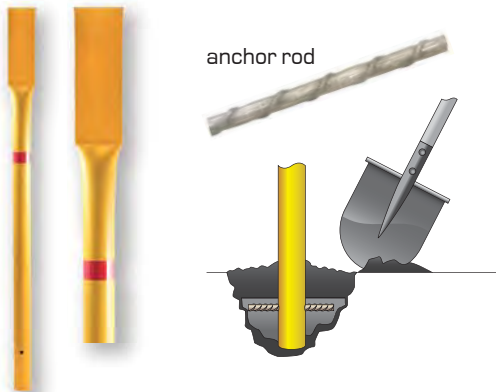
| Reel length, m | Width, mm | Thickness, μm | Tradename |
|----------------|-----------|--------------------------|----------------|
| 480 | 240 | 16 | PZK 240x480x16 |
| 480 | 360 | 16 | PZK 360x480x16 |
| 480 | 480 | 16 | PZK 480x480x16 |



IDENTIFICATION OF UNDERGROUND UTILITY LINES

pipeline markers

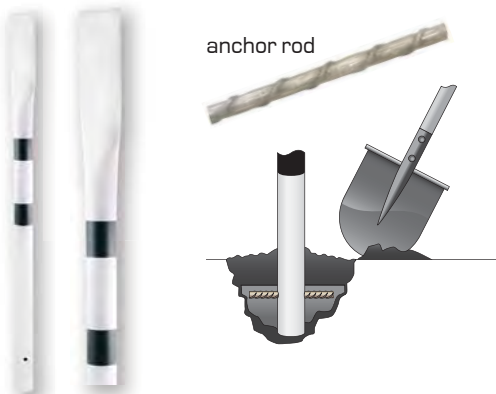
PIPELINE MARKER FOR UNDERGROUND GAS PIPELINE – SOG



Gas pipeline marker serves as overground caution sign of buried gas pipeline location. It is made of bright yellow-colored polyethylene. Gas pipeline marker represents a pipe with pressed flat top, which serves for fixing of a caution plate. One can securely fix the marker on the ground with the help of an anchor rod. Operational life is not less than 5 years. Doesn't require any maintenance like painting, straightening and such.

| Diameter, mm | Height, mm | Tradename |
|--------------|-------------|-----------|
| 108 | 2500 | SOG |
| 83 | 1800 / 2200 | SOG |

PIPELINE MARKER FOR UNDERGROUND TELECOMMUNICATIONS CABLE LINE – SOS



Telecom cable line marker serves as overground caution sign of buried fiber optic cable line location. It is made of white-colored polyethylene and has two black marks. Telecom cable line marker represents a pipe with pressed flat top, which serves for fixing of a caution plate. One can securely fix the marker on the ground with the help of an anchor rod. Operational life is not less than 5 years. Doesn't require any maintenance like painting, straightening and such. It's possible to fasten a caution plate to the marker's top.

| Diameter, mm | Height, mm | Tradename |
|--------------|-------------|-----------|
| 83 | 2200 / 2500 | SOS |

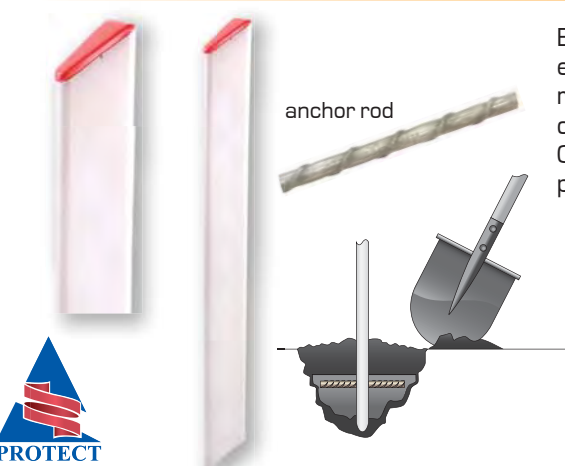
CABLE LINE MARKER WITH PLATE – SKT



Cable line marker (SKT) serves for indication of buried cable lines. At it's top a caution plate is fixed.

| Diameter, mm | Height, mm | Tradename |
|--------------|------------|-----------|
| 83 | 1600 | SKT |

PIPELINE MARKER FOR UNDERGROUND ELECTRIC CABLE LINE – SOE



Electric cable line marker serves as overground caution sign of buried electric cable line location. It is made of white-colored polyethylene and has a red cover. The marker has a triangular cross section. Its height is 1.2 m. One can securely fix the marker on the ground with the help of an anchor rod. Operational life is not less than 5 years. Doesn't require any maintenance like painting, straightening and such.

| Height, mm | Tradename |
|------------|-----------|
| 1200 | SOE |

CROWD CONTROL & ROAD CONSTRUCTION SAFETY EQUIPMENT

safety tape

SAFETY EQUIPMENT

PROTECT is one of the leading Russian manufacturers of various crowd control & road construction equipment such as:

- safety & custom tape
- plastic safety fence
- traffic cones
- plastic marker posts & marker bases
- building safety net
- protective & signal traffic lights



SAFETY TAPE— LO

Safety tape is the most attractive and widely spread warning tool. It's very popular due to its usability, bright colors and reasonable price. Safety tape is used for various kinds of roadwork (road surface repairs, any work conducted in close proximity of travel way, clearing the road debris from the crash), utility works, marking off an unsafe route and holding mass events. Safety tape is made of HDPE (high-density polyethylene) with addition of light stabilizer. This composition ensures tape's being durable, resilient and tear-proof.



LO Econom
LO Standard

| Roll length, m | Tape width, mm | Tape thickness, μm | Trade name |
|----------------|----------------|-------------------------------|--|
| 200 | 50/75 | 35 | LO Econom |
| 100/250/500 | 75 | 50 | LO Standard |
| 250/500 | 75 | 50 | LO Standard with printed text |
| 250 | 75/100 | 50 | LO Standard with printed text referring to the range of the state services |



LO Standard with printed text:
"Under Construction",
"Caution", "Work Zone",
"Keep Out"

LO Standard with printed text referring to the range of the state services:
"Customs Zone", "Danger Zone!
Ministry of Emergency Situations (Russia) tel. 911",
"Keep Out! Traffic collision"

CUSTOM SAFETY TAPE

Custom safety tape performs two basic functions: laying out boundaries and outdoor advertising. It is used for:

- fencing territory for prestige advertising, sports & cultural events
- marking area, which belongs to the customer
- pointing out a route for cultural or sports activities organized by the customer

Custom safety tape is produced in accordance with particular customer's needs, i.e. with the given thickness, roll length and width. The minimum order is 10 000 m. The customer's logo and text is printed in conformity with the given design.

| Roll length, m | Tape width, mm | Tape thickness, μm | Trade name |
|-----------------|----------------|-------------------------------|------------|
| from 100 to 500 | from 40 to 900 | from 35 to 300 | LO |



CROWDCONTROL & ROAD CONSTRUCTION SECURITY EQUIPMENT

traffic cones, plastic marker posts & marker bases

TRAFFIC CONES – KC



Traffic cones are used to create separation or merge lanes during road construction projects or automobile accidents, indicate parking place, organize cultural & sports mass events. A resilient material used for manufacture of the cones guarantees their restoring after mechanical deformation. Operating temperatures interval extends from -30°C to $+60^{\circ}\text{C}$. The following options are available:

- white collar
- reflective collar
- white & reflective collars
- top opening 40mm diam. One can insert plastic marker post or cone topper light into it.

Traffic cones have compact round base. If needed, the cones may be supplied with heavy base and cone topper light.

| Height, mm | Trade name |
|------------|-----------------|
| 320 | Traffic cone–KC |
| 520 | Traffic cone–KC |
| 750 | Traffic cone–KC |



PLASTIC MARKER POSTS & MARKER BASES, METAL POSTS

One can quickly construct security fence in any area, if plastic marker posts are at hand. The orange-colored HDPE (high-density polyethylene) is used for their extrusion. Plastic marker posts may have two retroreflective sheeting stripes. A rubber base or a metal support, which are available for purchase separately, serve as a foundation for the plastic marker post. Our marker posts satisfy the requirements of Russian "Traffic & Roadwork Safety Rules". Polymeric markerbase has 40 mm diam. opening in the middle, into which the marker post can be securely inserted. Metal posts with the hooks, welded on their tops, may also be used as a support for safety fence.



| Diameter, mm | Height, mm | Trade name |
|--------------|-------------------------|--|
| 40 | 1200/1500/ 1800/2000 | Orange plastic marker post |
| – | 350 | R-shaped metal support for marker post |
| – | 1300/1500 | Metal post with welded hook |

CROWD CONTROL & ROAD CONSTRUCTION SECURITY EQUIPMENT

safety fencing

WARNING SAFETY FENCE

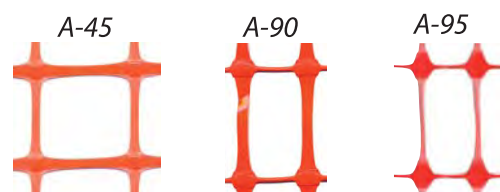
Multifunctional, usable and affordable – plastic safety fence features long-lasting service, rot-proof, corrosion-proof and resistance to UV-rays. Being lightweight and heavy-duty the plastic safety fence is easy to install, pleasant to be dealt with and comfortably portable. Safety fence may be supplied with the set of locking ties & posts (plastic marker posts, rubber marker bases or R-shaped metal supports for marker posts).

Safety fence can be used

- to demarcate a construction site
- to indicate the place of open excavations
- to fix boundaries while land surveying
- to enclose the area, where neighbourhood improvement or landscape gardening is executed
- as a warning barrier to mark the most hazardous parts of multi-storied building

Road construction and maintenance causes the necessity to handle traffic, i.e. separate or merge traffic flows. Alongside with the common safety equipment, such as traffic cones and safety tape, safety fence can present reliable protection and warning system, which provides vehicles and pedestrians safety. Safety fence is harmless and due to its bright color is visible in almost any kind of light. Police and rescue service use plastic safety fence to block out the scene of an incident, a hazard or a damaged object. According to the valid GOST 23407-78 "Technical Instructions for the Safe Construction Site and Installation Work" all the land-based worksites must be demarcated!

| Roll length, m | Width, m | Cell size, mm x mm | Trade name |
|----------------|----------|--------------------|-------------------|
| 25 | 1,3/2 | 45x40 | Safety Fence A-45 |
| 50 | 1 | 90x45 | Safety Fence A-90 |
| 20/50 | 1/1,2 | 95x45 | Safety Fence A-95 |



BUILDING SAFETY NET

Building safety net arrests falling objects for the safety of people beyond or below the net. Besides it serves as an aesthetic shield. Building safety net doesn't have any metal parts. Knitted with heavy-duty HDPE threads the building safety net has an integral-knitted holes, placed in the middle and along the edges, which help to fix the net on the scaffolding and to prevent the sail effect. Due to its solidity and usability building safety net allows multiple usage.

At the construction site it can be used

- to shield construction scaffold
- to prevent hazardous falling of the tools and building materials from heights
- to hamper building dust and debris from polluting environment
- to cover work area against heavy precipitation

| Roll width & length, m x m | Cell size, mm x mm | Trade name |
|----------------------------|--------------------|------------|
| 4x100 | 1,5x10 | FU-35 |
| 3x100 | 5x2 | FU-55 |
| 3x50 | 1,5x1,5 | FU-72 |
| 3x50 | 8x1 | FU-80 |



ROAD TRAFFIC CONTROL MEANS

road maintenance solutions

PLASTIC TRAFFIC BOLLARD

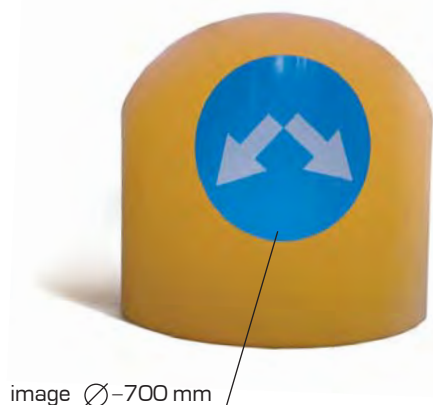


image Ø-700 mm

Plastic traffic bollard can be installed in the points, where two carriageways split, as well as serve for visual guidance, in case some indication of a roadblock (a bridge, potholes, roadworks and such) is needed. It's manufactured from high-strength bright yellow-colored polyethylene, UV-stabilized and resistant to bleaching. Operating temperatures interval extends from -30°C to $+60^{\circ}\text{C}$. Design of the bollard allows filling it with water or sand, that enhances its steadiness and its ability to withstand severe impacts of vehicles. Plastic traffic bollard may come both with a traffic sign image KEEP LEFT OR RIGHT (a PET sticker) and without it.

| Length, mm | Width, mm | Height, mm | Trade name |
|------------|-----------|------------|------------|
| 1200 | 920 | 1250 | BUFFER |

SEPARATOR BARRIER- BV-1.2; NESTING SEPARATOR BARRIER - BVW-1.2 (2.0)

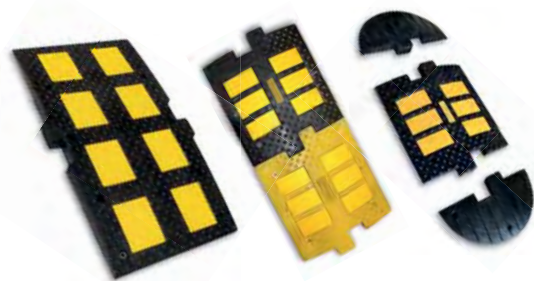


Separator barriers are used for dividing traffic lanes and directing traffic, in addition, they may serve as temporary fencing for road construction site. They are manufactured from high-strength polyethylene, UV-stabilized and resistant to bleaching. Operating temperatures interval extends from -30°C to $+40^{\circ}\text{C}$. Produced in two basic colors: white and red. A ballast in the form of water or sand can be added through the special hole at the top (the stopper is enclosed) to make the barriers a more permanent fixture. Another hole at the bottom allows barrier's emptying.



| Length, mm | Width, mm | Height, mm | Trade name |
|------------|-----------|------------|------------|
| 1200 | 500 | 750 | BV-1.2 |
| 1200 | 500 | 700 | BVW-1.2 |
| 2000 | 500 | 700 | BVW-2.0 |

SPEED REDUCTION HUMP - IDN PROTECT



The item consists of center sections and end caps. Into the hollows on the center section one may stick retroreflective stripes or thermally fix yellow-colored rubber inserts. All the items have fixing holes for fastening to the road surface with anchor bolts. Speed reduction hump is made of black rubber. The outer layer is produced from tire rubber with grainy surface.



anchor bolt
10 * 120 mm



| Length, mm | Width, mm | Height, mm | Trade name |
|------------|-----------|------------|-----------------------------------|
| 500 | 500 | 50 | IDN-500 PROTECT center section |
| 500 | 250 | 50 | IDN-500 PROTECT end cap |
| 900 | 500 | 50 | IDN-900 PROTECT center section |
| 900 | 250 | 50 | IDN-900 PROTECT end cap |

ROAD TRAFFIC CONTROL MEANS

road maintenance solutions

VERGE MARKER POST – SDS, SDSU

These verge markers are the safe and effective method of highlighting road edges, bends etc. They are manufactured in white-colored high-density polyethylene. Features red or white reflector made of retroreflective film. The marker represents a pipe with triangular cross section. One can securely fix the marker on the ground with the help of any anchor fastener or place it on the top of road barrier. Operational life is not less than 5 years.

| Height, mm | Trade name |
|------------|------------|
| 1500 | SDS |
| 1300 | SDSU |



FLEXIBLE ROAD MARKER POST

Flexible road marker posts can be installed on the road, dividing strips or traffic islands; they can be used to delineate parking space and such. Our road marker posts are produced from resilient red-colored polymer, which makes them able to spring back into shape after bending or being compressed by a vehicle. One can use them at any temperature between -50° and $+50^{\circ}$ C. Flexible road marker posts come with reflective bands. They can be attached with anchor bolts (recommended) or glued with two-component epoxy adhesive to the asphalt or concrete surface. Posts service life satisfies GOST requirements and makes 2 and more years depending on operating conditions.

| Height, mm | Trade name |
|------------|------------|
| 750 | SSU 750 |



TRAFFIC SIGNS

Traffic signs are signs erected at the side of or above out-of-town roads as well as in town streets. They are designed to warn drivers and pedestrians against hazardous area, to give instructions or provide information on the current restrictions or other specific traffic conditions.



PROTECTIVE & SIGNAL TRAFFIC LIGHTS

Protective & Signal Traffic Lights make roadwork safety barrier more visible at night due to light emitting. They can be installed both on stationary and temporary safety barrier. The light-emitting routine is managed by an electronic card. Traffic light has two light filters: yellow and red. The device goes on automatically at dusk. Pulse repetition frequency is 0.5 Hz. Operates on 2 "R20" batteries (not supplied with the device). Traffic light can be attached in two ways: hung by the metal loop on its top or placed into a slot with the handle in its bottom. One can connect some traffic lights into protective illuminations using wires. Traffic light cannot be fixed on the top of plastic marker post, but can be secured on the ordinary traffic cone when its top is cut off.

| Dimensions, mm | Trade name |
|-----------------|------------------------------|
| 350x180 | PROTECTIVE TRAFFIC LIGHT |
| length 150, 130 | SIGNAL LANTERN FS-4.1, FS-12 |



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