#### SPECIALIZATION IN GROUNDING PRODUCTS SYSTEMS

VOLT-SPB LLC Specialized manufacturer of grounding systems. Our equipment is successfully used at the facilities of the largest national companies, such as Gazprom PJSC, Gazprom Neft PJSC, NK ROSNEFT PJSC, NOVATEK PJSC, Lukoil PJSC, SIBUR Holding PJSC, Norilsky Nikel Mining and Metallurgical Company PJSC, Apatit JSC, Severstal PJSC, Polus PJSC, Polimetall PJSC, Highland Gold Mining Limited, Udokanskaya Med HC JSC, RusHydro PJSC, FSK-Rosseti PJSC, Fortum PJSC, Enel Russia PJSC, Baimskaya Mining Company LLC (KAZ Minerals), Russian Railways OJSC, and the others.

#### **INNOVATOR**

We are developing new models of ground conductors and improving the existing ones on the permanent basis

122 MODELS ELECTRODES

The wide product line allows to organize grounding on objects of any complexity

## **EXPERT**

For 14 years of work, we have created a strong professional team able to solve any grounding

# NUMBER 1

In amount of manufactured electric ground conductors for the period of 2020-2023

# 320 DESIGN INSTITUTES

Collaborate with us on a long-term basis on the entire territory of Russia

# 1000 SQUARE METERS

Own full-cycle production and storage facilities

### **ADVANTAGES OF ELECTRODES**



HIGH **EFFICIENCY** 



**EXPERIENCE** 



MINIMAL

AREA





SIMPLE **ASSEMBLY** 







BUDGET

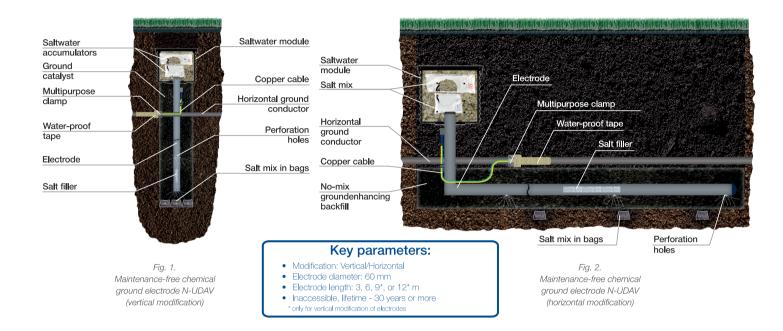
SAVING

# **WE CONTINUE TO GROW**

- Over 14 years, we have been developing new models of electrodes and improving the existing ones with the purpose to be used on our customers' facilities, the best solutions in the field of grounding were applied, providing safe and uninterrupted operation of electric unit
- The current quality management system, positive customer's feedback, tests and certificates of product conformity prove the high level of our company's reliability.

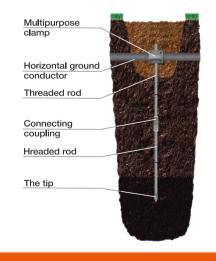
#### MAINTENANCE-FREE CHEMICAL GROUND ELECTRODES "N-UDAV"

Has been manufactured and developed since 2018, and represents an improved version of the electrode UDAV. The first chemical ground electrode UDAV developed by VOLT-SPB in 2012, N-UDAV has the diameter of 60 mm and the wall thickness of 4 mm. Electrodes are connected to the electric circuit with a copper cable and a clamp (bolt connection) or a wiring strip (weld connection), N-UDAV does not require additional backfilling of salt mix, which minimizes maintenance costs. Sales leader among chemical ground electrodes in the company's line for 2020-2023.



## TYPICAL DEPTH ELECTRODE "KOBRA"

Has been manufactured and developed since 2013. It is a ground electrode of vertical orientation with the length up to 15 m. The electrode KOBRA consists of one or several rods with the length of 1.5 m, interconnected with threaded splices. With the purpose to facilitate assembly, a starting tip is installed on one side of the rod, and on the other one, a driving stud for the electrode immersion into soil. This ground conductor showed in soft soils (clay loam, loam, sand clay, peat, marl, etc.)



#### **Key parameters:**

- Modification: Vertical Electrode diameter: 16 mr
- Electrode length: 1,5/3/4,5/6/7,5/9/10,5/12/12,5/15 m
- Inaccessible, lifetime 30 years or more

Fig. 3. Typical depth electrode KOBRA

## **ADVANTAGES OF ELECTRODES**





Easy and fast installation

"KOBRA"





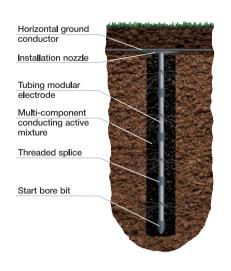
"N-UDAV"



Minimal area (possibility of assembly near walls of buildings and structures)

#### **EXTENSIONAL GRAPHITE ELECTRODE "ASPID"**

Has been manufactured and developed since 2012. It is a ground conductor with vertical orientation with the length up to 12 m. Electrode ASPID consists of one or several rods 1.5/3/6 m long, interconnected with threaded splices. The electrode and the area around it are filled with the low-resistance active mixture MAST. This ground electrode is applied mostly in construction and reconstruction of OHLs in hard-to-reach areas with prevailing marshlands.



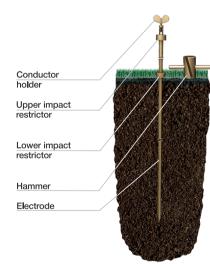
#### Key parameters:

- Modification: Vertical Electrode diameter: not less than 27 mm
- Electrode length: 1.5/3/4.5/6/7.5/9/10.5/12 m\*

Fig. 4. Volume graphite electrode "ASPID"

## **ELECTRODE FOR MOBILE ELECTRIC UNITS "VOLT-ZEP"**

Has been manufactured and developed since 2023. Designed for use to organize the temporary grounding circuit with the subsequent disassembly and the possibility of reuse. It is a set consisting of a quick-release rammer for assembly and ground conductors of vertical orientation with the diameter of 16 mm and length of 1.18/1.5/2 m, length of the ground conductor operating part is 0.6/0.92/1.42 m, respectively. This ground conductor is used for any soil type, except solid rock.



#### Key parameters:

- Modification: Vertical
- Electrode diameter: 16 mm. Electrode length: 1,18/1,5/2 м
- Service life: 12-120 циклов забивок и извлечени

Fig. 5. Electrode for mobile electric units "VOLT-ZEP"

#### **ADVANTAGES OF ELECTRODES** "ASPID" "VOLT-ZEP"







High efficiency compared to conventional ground conductors



#### GROUNDING CALCULATION

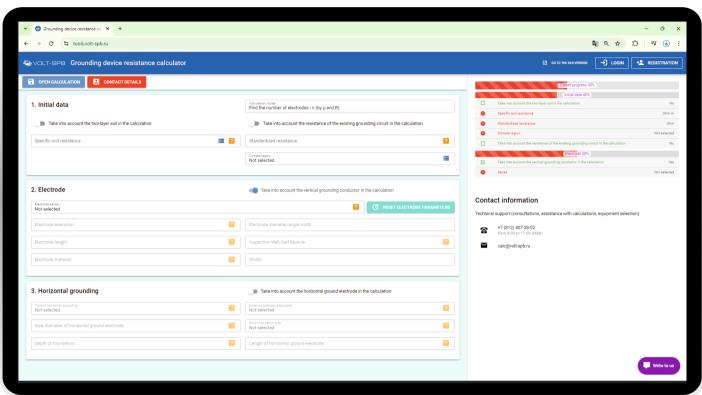
You can calculate the grounding resistance and the required number of electrodes for your project in two ways:





By yourself, using the online calculator on the Website <a href="https://tools.volt-spb.ru/">https://tools.volt-spb.ru/</a> after enteringthe input data



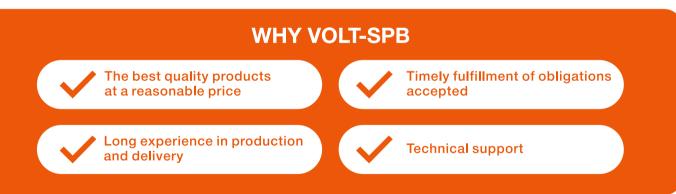






By filling out the questionnaire at www.voltspb.ru or e-mailing all information about your\_request to info@volt-spb.ru





#### **CERTIFICATES**

Grounding systems have the following certificates of conformity, conclusions and test reports:

- •SDS INTERGAZCERT certificate of conformity,
- Certificate of goods origin ST-1 and the permission from the Ministry of Industry and Trade of Russia;
- protocols of Gubkin Russian State Oil and Gas University in terms of confirmation of conformity to GOST R IEC 62561-7-2016 and thirty years of service life.

At all stages of the product life cycle, the company has implemented and maintains the quality management system:

- certificate of the QMS conformity to the requirements of ISO 9001:2015,
- certificate of the QMS conformity to the requirements of STO Gazprom 9001-2018.









VOLT-SPB LLC, Office 36, 5E, A,

Mitrofanievskoe Highway, Saint Petersburg, 198095

TIN 7810582416, RRC 783901001, PSRN 1107847080186

+7 (812) 407-28-52, info@volt-spb.ru, www.volt-spb.ru



# REDUCING RESISTANCE

