



№ 005758

ОРГАН З СЕРТИФІКАЦІЇ
ДЕРЖАВНЕ ПІДПРИЄМСТВО
"ХАРКІВСЬКИЙ РЕГІОНАЛЬНИЙ НАУКОВО - ВИРОБНИЧИЙ ЦЕНТР
СТАНДАРТИЗАЦІЇ, МЕТРОЛОГІЇ ТА СЕРТИФІКАЦІЇ"
(ДП "Харківстандартметрологія")

Серія ХА

СЕРТИФІКАТ ВІДПОВІДНОСТІ

Зареєстровано в Реєстрі ДП "Харківстандартметрологія"

за № UA.XODC.07.0187-19

Термін дії з 22 квітня 2019 р. до 21 квітня 2024 р.

Продукція Ізолятори підвісні скляні тарілчасті: ПС70Е, ПС70И, ПСВ70А, ПСД70Е, ПС120Б, ПС120В, ПСВ120Б, ПС160Д, ПС160К, ПСВ160А, ПС210В, ПСВ210А, ПС300В, ПС300Г, ПСВ300А, код ДКПП 23.19.25.000, код УКТ ЗЕД 8546 10

Відповідає вимогам

ТУ У 26.1-00130441-027:2011 'Ізолятори підвісні скляні тарілчасті', ДСТУ 2203-93 (ГОСТ 6490-93) 'Ізолятори лінійні підвісні тарілчасті. Загальні технічні умови.', СОУ МПЕ 51.103:2007 'Ізолятори лінійні підвісні тарілчасті. Загальні технічні умови', ДСТУ ІЕС 60383-1:2009 'Ізолятори для повітряних ліній на номінальну напругу понад 1000 В. Частина 1. Елементи керамічних і скляних ізоляторів для систем змінного струму. Методи випробування та критерії приймання'

Виробник продукції ТзОВ 'Львівська ізоляторна компанія', 79066, м. Львів, вул. Зелена, 301, код ЄДРПОУ 30823262

Сертифікат видано ТзОВ 'Львівська ізоляторна компанія', 79066, м. Львів, вул. Зелена, 301, код ЄДРПОУ 30823262

Додаткова інформація

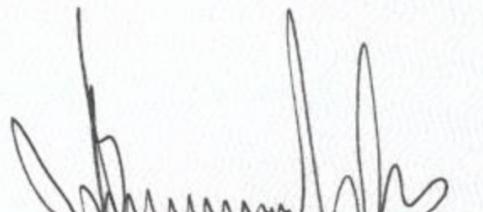
ізолятори підвісні скляні тарілчасті, що виготовляються серійно з 22.04.2019 р. до 21.04.2024 р. з урахуванням гарантійного терміну зберігання, інспектування сертифікованої продукції та її виробництва один раз на рік. Добровільна сертифікація.

Сертифікат видано органом з сертифікації ДП 'Харківстандартметрологія', м. Харків, вул. Миросицька, 36, тел. (057) 756-38-09, наказ №120 від 30.03.2018 р., атестат про акредитацію №10119 від 20.11.2018 р.

На підставі випробувань, що були проведені: ВЛ ТзОВ 'ЛІК', 79066, м. Львів, вул. Зелена, 301, атестат № 2Т1685 від 01.06.2018 р. до 31.05.2023 р. Протокол №1-19 від 04.04.2019 р. Звіт про оцінку СУЯ №04/649 від 15.04.2019 р. Висновок щодо можливості видачі сертифіката від 18.04.2019 р.

Заступник
Керівник органу
з сертифікації




(підпис)

М.В. Зеленцов
(ініціали, прізвище)

Чинність сертифікату можна перевірити в Реєстрі за тел. (057) 756-38-09, 700-37-02, 756-37-84

Прямий контракт

Продавець (Експортер) / Seller (Exporter)

ТЗОВ "Львівська ізоляторна компанія"
LIV INSULATOR COMPANY LLC
 вул. Зелена, 301, м. Львів, 79066
 Zelena str. 301, Lviv, UKRAINE, 79066

Експорт Export 100300

СЕРТИФІКАТ ЯКОСТІ №
QUALITY CERTIFICATE № N/A

Вантажоотримувач, адреса, країна
Consignee address, country

Контракт №
 Contract №

Від

Замовлення №
 Order №

Експедитор
 Forwarder

Дозвіл на вивіз №
 Export license №

Від/of

Листок
 Sheet

Листків
 Sheets

Транспортний документ (найменування і номер)
Transport document (description and number)

Вагон №
 Freight car №

Контейнер №
 Container №

Марки і номери Marks and Numbers	Найменування і код товару Descriptions and code goods	Тип пакування Type of packages	К-сть місць Package Nos	К-сть в одному місці Qty/ item per each package	Кількість товару Quantity	Маса, кг брутто / нетто Mass, kg Gross/Net	Габарити, см Об'єм, м. куб. Dimensions, cm. Volumes, m. cub
	Ізолятор скляний Glass insulator U210B	Дерев'яні пакети Wooden packages	1	250	250		
Всього Total							

It is hereby certified that the quality of goods mentioned in this Quality certificate is in conformity with the IEC 60305, IEC 60383-1 standards

The insulators are in accordance with

Маркування U210
 Marking

Підписи:
 Signatures

Львівська ізоляторна компанія

ВТК

12.06.2023



СЕРТИФІКАТ

Системи менеджменту відповідно до EN ISO 9001:2015

У відповідності з процедурами TÜV AUSTRIA CERT цим підтверджується, що



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вулиця Зелена, 301
Львів, 79066
Україна

застосовує систему менеджменту відповідно до вищевказаного стандарту для такої сфери діяльності:

**Розробка, виробництво і продаж високовольтних підвісних
скляних ізоляторів.**

Реєстраційний номер сертифікату

20100223015111

Дійсний до 2025-09-29

Перша сертифікація: 2019-09-30

Орган з сертифікації
TÜV AUSTRIA CERT GMBH

Відень, 2022-11-10

Сертифікація була проведена у відповідності з процедурами аудиту та сертифікації
TÜV AUSTRIA CERT і підлягає регулярному наглядовому аудиту.
TÜV AUSTRIA CERT GMBH Deutschstraße 10 A-1230 Wien www.tuv.at



Online Verification



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Розробка, виробництво і продаж високовольтних підвісних скляних ізоляторів.

Реєстраційний номер сертифікату

20104223015114

Дійсний до 2025-09-29

Перша сертифікація: 2019-09-30

Орган з сертифікації
TÜV AUSTRIA CERT GMBH

Відень, 2022-11-10

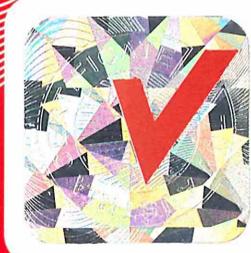
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Львів, 79066
Україна

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Реєстраційний номер сертифікату

20116223015113

Дійсний до 2025-09-29

Перша сертифікація: 2019-09-30

Орган з сертифікації
TÜV AUSTRIA CERT GMBH

Відень, 2022-11-10

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ZERTIFIKAT | CERTIFICATE | CERTIFICAT | CERTIFICADO | CERTIFIKAT | CERTIFICATE | 证书 | 인증서 | شهادة



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Лівів, 79066
Україна

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Реєстраційний номер сертифікату

TA270223015112

Дійсний до 2025-09-29

Перша сертифікація: 2022-11-10

Орган з сертифікації
TÜV AUSTRIA CERT GMBH

Відень, 2022-10-10

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Додаток до атестації про акредитацію
№ 2Т1685
від "01" June 2018

1	2	3	4
		Puncture test in oil Residual strength test Thermal mechanical test R.I.V test	ДСТУ ІЕС 60383-1:2009 (ІЕС 60383-1:1993.IDT) ІЕС 60383-1:1993 ANSI C29.1-1988 ANSI C29.2B:2013 ДСТУ 2203-93 (ГОСТ 6490-93) СОУ МПЕ 51.103:2007 ДСТУ 2203-93 (ГОСТ 6490-93) ІЕС/TR 60797:1984 ANSI C29.2B:2013 СОУ МПЕ 51.103:2007 ДСТУ ІЕС 60383-1:2009 (ІЕС 60383-1:1993.IDT) ІЕС 60383-1:1993 ІЕС/TR 60575 (1977) ANSI C29.1-1988 ANSI C29.2B:2013 ДСТУ 2203-93 (ГОСТ 6490-93) СОУ МПЕ 51.103:2007 ІЕС 60437:1997 ДСТУ ІЕС 60437:2015 (ІЕС 60437:1997, IDT) ANSI C29.1-1988 ANSI C29.2B:2013 ДСТУ 2203-93 (ГОСТ 6490-93) СОУ МПЕ 51.103:2007 ANSI C29.2B:2013



Начальник відділу

О.В. Хроменко

Додаток до атестата про акредитацію
№ 2Г1685
від "01" June 2018

1	2	3	4
		Verification of displacements	ДСТУ ІЕС 60383-1:2009 (ІЕС 60383-1:1993.IDT) ІЕС 60383-1:1993 СОУ МПЕ 51.103:2007
		Galvanizing test	ДСТУ ІЕС 60383-1:2009 (ІЕС 60383-1:1993.IDT) ІЕС 60383-1:1993 ISO 1461:2009 ANSI C29.1-1988 ANSI C29.2B:2013 ДСТУ 2203-93 (ГОСТ 6490-93) СОУ МПЕ 51.103:2007
		Mechanical falling load test	ДСТУ ІЕС 60383-1:2009 (ІЕС 60383-1:1993.IDT) ІЕС 60383-1:1993 ДСТУ 2203-93 (ГОСТ 6490-93) СОУ МПЕ 51.103:2007
		Temperature cycle test	ДСТУ ІЕС 60383-1:2009 (ІЕС 60383-1:1993.IDT) ІЕС 60383-1:1993 ДСТУ 2203-93 (ГОСТ 6490-93) СОУ МПЕ 51.103:2007
		Thermal shock test	ДСТУ ІЕС 60383-1:2009 (ІЕС 60383-1:1993.IDT) ІЕС 60383-1:1993 ANSI C29.1-1988 ANSI C29.2B:2013 ДСТУ 2203-93 (ГОСТ 6490-93) СОУ МПЕ 51.103:2007



Начальник відділу

О.В. Хроменко

Додаток до атестата про акредитацію
№ 2Т1685
від "01" June 2018

SPHERE ACCREDITATION

TEST LABORATORY „L VIV INSULATOR COMPANY” LLC

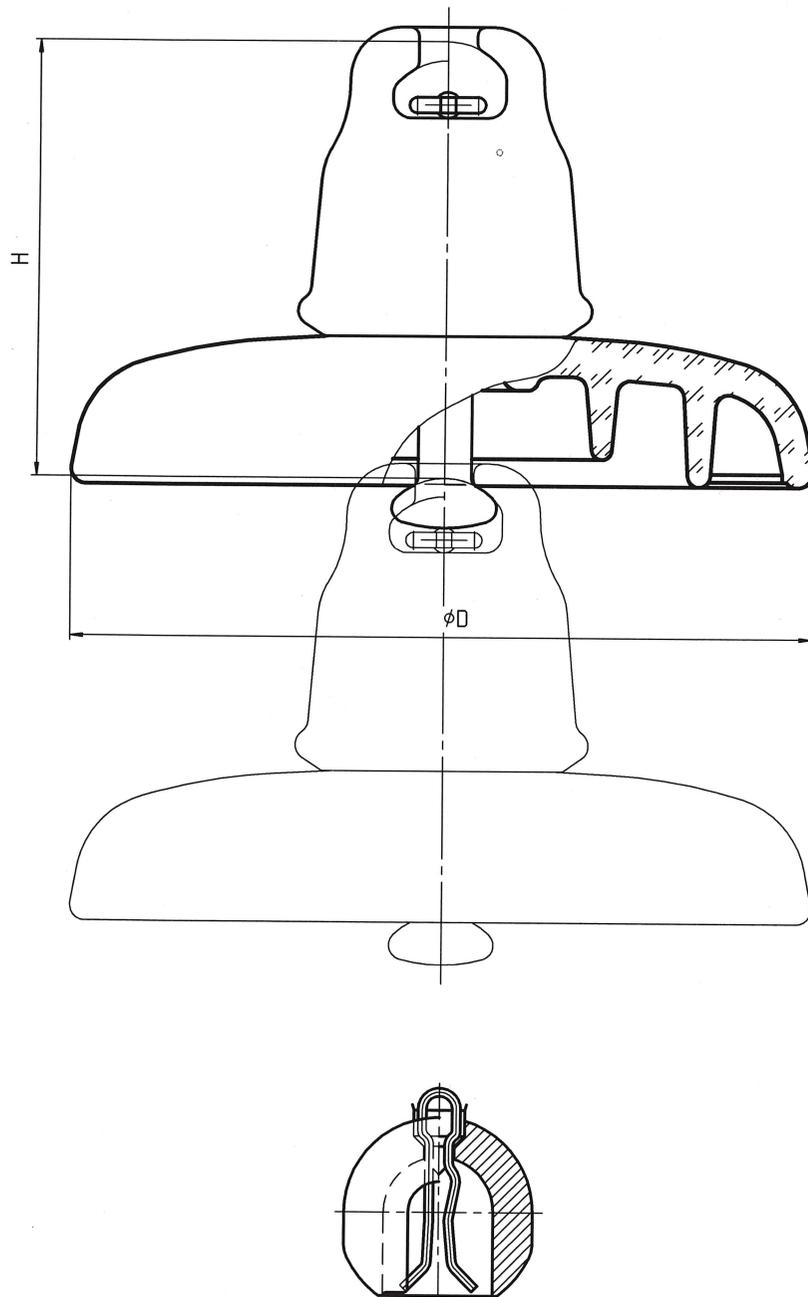
(назва випробувальної лабораторії, центру)

№ з/п	Назва об'єкта (продукції, матеріалу, речовини і т.п.)	Назва випробувань та (або) характеристик (параметрів), що визначаються	Позначення нормативних документів на методи випробувань
1	2	3	4
1	Insulators Suspended Glass	Visual inspection	ДСТУ ІЕС 60383-1:2009 (ІЕС 60383-1:1993.IDT) ІЕС 60383-1:1993 ANSI C29.2B:2013
		Verification of the dimensions	ДСТУ 2203-93 (ГОСТ 6490-93) ДСТУ 3407-96 (ГОСТ 18328-97) СОУ МПЕ 51.103:2007
		Verification of locking system	ДСТУ ІЕС 60383-1:2009 (ІЕС 60383-1:1993.IDT) ІЕС 60383-1:1993 ІЕС 60372:1984 ANSI C29.2B:2013
			ДСТУ 2203-93 (ГОСТ 6490-93) СОУ МПЕ 51.103:2007



Начальник відділу

О.В. Хроменко



DIMENSIONS

- Diameter D,mm 290
 - Spacing H,mm 170
 - Creepage distance,mm 380
 - Coupling standard IEC 60120 20
 - Approximate weight,kg 7,5
- Tolerances according to IEC 60305 and IEC 60383-1

PERFORMANCE CHARACTERISTICS

- Minimum mechanical failing load,kN 210
- Residual strength,kN 168
- Dry lightning impulse withstand voltage,kV 110/110
- Wet power-frequency withstand voltage,kV 45
- Puncture voltage in insulating medium,kV 130

COMPONENTS

- Cap: Cast iron. Hot deep galvanizing $\geq 85\mu\text{m}$ ($\geq 600\text{g}/\text{m}^2$)
- Insulating part: Toughened glass
- Pin: Forged steel. Hot deep galvanizing $\geq 85\mu\text{m}$ ($\geq 600\text{g}/\text{m}^2$)
- Locking device: Stainless steel
- Binding material: Portland cement

MARKING

Marking in compliance with IEC 60383-1

				И-685А-04			
Rev. Sheet	Docum. N°	Signature	Date	Insulator type ПС210В IEC designation U210В	Letter	Sheet	Sheets
Designed							
Inspector							
Approved							
				LIC			

- in heated warehouses, - in enclosed premises, located in the macroclimatic area with a temperate climate - up to 5 years

- under the awnings or in the premises, where the temperature and air humidity disturbance do not differ from variations in the open air (such as tents, metal warehouses without heat insulation) located in all macroclimatic areas, including areas with tropical climate - up to 3 years;

- in open areas, located in all macroclimatic areas, including areas with tropical climate - up to 1 year;

5.3.2. Insulators must be placed on the stationary storing places not later than during 1 month since the date of its arrival, including the time of transportation.

5.3.3. In the storing places boxes with insulators must be put on the level ground in piles, crates with insulators - on pallets.

5.3.4. Under the piles (pallets) are to be supports of 100 mm height from the ground to prevent freezing of boxes and pallets to the ground and to be able to grip it by automatic loader.

5.3.5 It is necessary to provide lanes and driveways for cars and automatic loaders between piles.

5.3.6 Insulators of different types should be stored in different piles.

5.3.7 Maintenance of insulators during the storage period till installation should include regular visual inspection of insulators packaging safety and support of the normal state of the piles with insulators.

5.3.8 During storage in the open air insulators should be installed in a position which makes it impossible for collecting water in their cavities.

6 UTILIZATION

6.1 The following parts of insulator and packing are suitable for reclamation:

- Insulating part - glass,
- Cap - cast iron (ferrous materials)
- Rod and lock - steel (ferrous materials)
- Packaging - wood;
- Steel straps and nails - steel (ferrous materials)
- Polypropylene strips - polypropylene,
- Polyethylene.

6.2 Cement-sand binder can be used as beton filler.

ДКПП 26.15.25.000



LLC «LIC»

GLASS SUSPENSION DISK INSULATORS

MAINTENANCE GUIDE

Maintenance guide is designed for technical personnel servicing overhead transmission lines and power switchboard over 1000 V

Maintenance guide contains description of glass suspension disc insulators made of tempered glass, information about its work, intended use, maintenance, permanent repair, storage, transportation and utilization.

1 SAFETY PRECAUTIONS

When working with glass suspension disc insulators made of tempered glass, personal protective equipment should be used:

- goggles for protection against particulate matters influence;
- combined gloves for protection against mechanical stimuli.

2 DESCRIPTION AND OPERATION

2.1 Application of the insulator

Glass suspension disc insulators made of tempered glass (hereinafter insulators) are designed for fixing and insulation of wires and overhead ground-wire cables on overhead transmission lines and power switchboards, substations of DC and AC voltages above 1000 V and up to 100 Hz at an ambient air temperature from minus 60 ° C to plus 50 ° C. Climatic modification of insulator: for macroclimatic areas with moderate and cold climate; for macroclimatic areas with dry or humid tropical climate.

Insulators meet the requirements of IEC 60305, IEC 60120, IEC 60383.

2.2 Constitution of the product

Insulators must be supplied with splints or W-shaped clasps according to IEC 60372.

2.3 Structure and Functioning

The insulator is shown on picture 1. Insulator consists of an insulating part (1), produced of the insulating glass with further quenching, cap (2) of malleable cast iron and steel rod (3), connected by a cement-sand binder (4). Cap and rod have a high temperature application zinc coating, the thickness is not less than 70 μm (500 g/m^2), for insulators of tropicalized construction – at least 100 μm (700 g/m^2). Rods for DC insulators have anticorrosion plug (5). Insulators for tropical and (or) contaminated areas on customer's requirement also can be completed with anticorrosion zinc plug. Insulator is equipped with splint (6a) or W-shaped lock (6b).

Suspension insulators are assembled in support and tension strings. The number of insulators in the string depends on line voltage, operation

- Blows on fittings and insulation parts of insulators.

5.1.3. By agreement between the manufacturer and customer insulators can be transported and stored without packing with the means of amortization and fixation application in position, that makes it impossible for collecting water in the cavities of insulators provided protection of products from climatic factors of environment and holding to terms 5. 1. 2.

5.2 Rules of transportation

5.2.1. Depending on climatic factors forcing

- Conditions of insulators transportation should correspond to the conditions of storage under the awnings or in the premises, where the temperature and air humidity disturbance do not differ from variations in the open air, located in the macroclimatic areas, including areas with temperate and cold climate, in the atmosphere of any type;

- Conditions of maritime transport - storage conditions in closed or other free ventilation premises with no artificial regulation of environmental conditions, where the temperature and air humidity disturbance are substantially less than in the open air, located in all macroclimatic areas, including areas with tropical climate.

5.2.2 Terms of the transportation and intermediate storage during overloads should not exceed three months.

It is allowed to extend terms of transportation and intermediate storage of insulators during overloads due to storage time in steady-state conditions.

5.2.3 Closed trucks, covered wagons, containers, air transport and cargo holds of ships are used as a means of transport.

5.2.4. Securing of loads in vehicles and transportation should be done according to rules applicable to that kind of transport.

5.2.5 Boxes and crates with insulators should be placed in the vehicle by use of the accessory mounting (braces, lashings, belts) very tight in order to prevent its displacement during the movement.

5.2.6. Loading and unloading of boxes can be made manually or by automatic loaders, crates, collected on a pallet - by automatic loaders.

DO NOT LOAD AND UNLOAD TRANSPORT PACKAGING USING HOOKS OR STRAPS.

5.2.7 It is not allowed to throw boxes and crates with insulators during loading and unloading.

5.3 Storage regulations

5.3.1 Insulators can be stored:

- Application of hydrophobic coating on the insulators (particular requirements only).

4.2 Downstream inspection of insulators is recommended to make using binoculars or similar optical devices enabling to detect small damages on it, such as cracks in the fittings, corrosion of metal parts and etc.

4.3 Having elicited any damage, it is necessary to make upstream inspection, particularly, using funds for the delivery of staff to the insulator for visual inspection.

4.4 In case of detection critical damages during the examination insulators have to be dismantled.

4.5 Critical damages are:

- Mechanical damages (breakdown) of the insulating glass part;
- Remaining residue of the suspension glass insulator, formed after falling of its insulating parts;
- Persistent contamination of insulators, causing strong corona discharge at high air humidity;
- Burns and melting of the glass;
- Traces of melting or damages of fittings and attachment devices of insulators;
- Missing or damage of locks in the string;

4.6 Contaminated during the operation products should be cleared in accordance with 3.2.1.

4.7 Other requirements for maintenance and operation of insulators shall correspond to the Operating rules and regulations of consumers' electric installations and safety regulations for the operation of consumers' electric installations, and other regulations in force in operating organizations.

5 TRANSPORTATION AND STORAGE

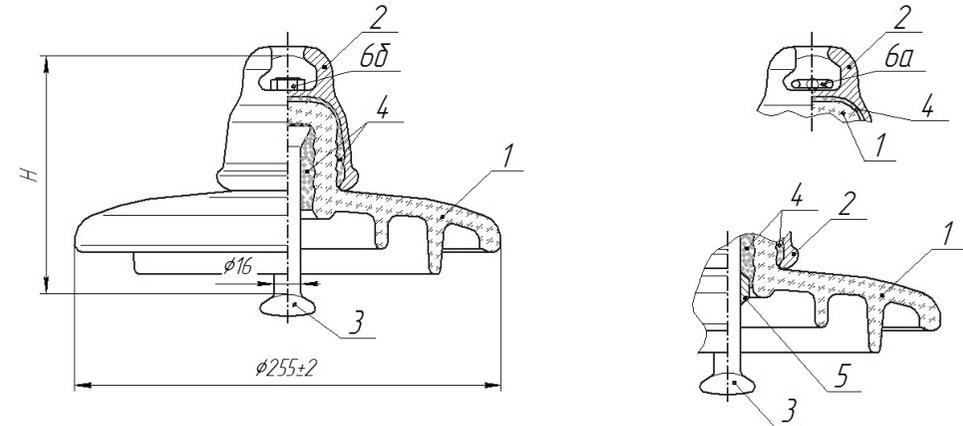
5.1 General requirements

5.1.1. Insulators must be packed when transporting and storing.

5.1.2. During transportation and storage of insulators there should be took action that make impossible:

- Ingress of aggressive substances (acids, alkalis, solvents, sea water, etc.) on the surface of insulators;
- Pollution of insulators and their components;
- Deformation and damage of components of insulators and packaging

conditions and other factors.



Picture 1 – glass suspension disc insulators

2.4 Marking of insulators

Marking of insulators is made by casting method on the insulation part and (or) cap, and contains:

- Insulator type designation;
- Trademark of manufacturer;
- Year of manufacture (the last two numbers);
- Symbolic notation of glass composition (only on the insulation part).

2.5 Packing

2.5.1 Insulators are packed after assembling into strings. The number of insulators in the string depends on its weight and varies between 2 and 5 pieces.

2.5.2 For fulfillment of conditions 5.1.2, insulators should be packed into transport packaging in the form of:

- solid or lath crates, collected into package;
- lath packet;
- special packaging according to the duly approved normative documents.

3 INTENDED USAGES

3.1 Operating constraints

3.1.1 Removed to a place of assembly insulators in transport containers (crates, lath packets, containers) must be unloaded near objects of installation (overhead transmission lines supports, open distribution system portals).

At wetlands transport containers with insulators must be unloaded on

the linings, at dry places they can be unloaded directly onto the ground.

3.1.2 Before installation insulators must be cleared and examined for structural integrity.

3.1.3 It is not allowed to install insulators, which have damaged insulation details in the form of chips, cracks or fitting spoilages.

3.2 Preparation of insulators for use

3.2.1 Cleaning of insulators before installation

3.2.1.1 It is possible to clear insulators of contamination (probably on insulators, packed in crates with no inner packaging) on storing place (warehouse) with the help of fabric.

3.2.1.2 To facilitate the pollutant removal from the insulators surface, the fabric can be moistened by:

- benzine, to remove resinous and adipose dirt;
- a solution of ammonia;
- water with detergent or paste.
- orthophosphoric (phosphoric) acid to remove rust marks from the glass and fittings.

DO NOT APPLY THE PASTE AND DETERGENTS, WHICH CONTENT THE ABRASIVE SUBSTANCES (PUMISE STONE, SAND, ETC.)

3.2.1.3 After the pollutant removal insulators should be carefully wiped with a dry fabric to remove the scurf.

3.2.2 Instructions for mounting

3.2.2.1 Insulators should be mounted in a position that makes it impossible for water accumulation in the cavities of the ribs.

3.2.2.2 It is not allowed to join the insulator with fittings of the line or circuit during the installation, if its dimensions do not correspond to the size of connecting elements of the insulator.

3.2.2.3 During the installation of insulators it is not allowed to use fastening parts with dimensions that do not correspond to the appropriate size of insulators.

3.2.2.4 IT IS INTERDICT FOR MAINTENANCE STAFF TO MOVE DIRECTLY THROUGH INSULATORS DURING THE INSTALLATION AND REPAIR.

3.2.2.5 It is not allowed to carry out actions with insulators, which can cause mechanical damages of the insulating parts or fittings of the insulator.

3.2.2.6 Insulators should not be operated at loads exceeding the

maximal specified characteristic load, defined on the basis of their mechanical destructive force in tension (indicated by markings in the designation of insulators), taking into account the safety coefficient specified for this product.

3.2.3 Mounting

3.2.3.1 Before installation insulators should be coupled in suspension and tension suspension sets according to the documentation for TL or distribution sub-stations.

3.2.3.2 The coupling of insulators with each other and with fittings should be performed on the straight site or wooden platform.

3.2.3.3 Lock-out of connection should be made by means of splints or W-shaped locks according to IEC 60372. Splints or locks should be installed so that the closing ends of splints or locks were positioned in the tension strings - down, in the suspension strings - in the direction of the support riser.

3.2.3.4 When installing insulators, misalignment of axes of two near insulators in the string should be not more than 9°. If misalignment of axes is more than 9°, it is necessary to examine locks of insulators, and in the presence of any damages (crushing) to replace them.

3.2.3.5 Suspension insulators for 220 kV and above voltage class should be coupled in strings (suspension, tension, single-circuit and multichain) on a wooden supports in the form of trenches (triangular, quadrangular, semicircular), lattices or frames, which protect the insulators from damages during assembly and installation.

3.2.3.6 After assembly, it is necessary to check the mobility in the joints of the string, installation of splints and locks in insulators and staples.

4 MAINTENANCE

4.1 Maintenance of insulators and insulator strings should be made according to the duly approved regulatory documents, ensuring the implementation of these preventive measures:

- carrying out systematic inspections during rounds of open distribution system, detours and fly rounds of overhead transmission lines;
- Replacement of defective insulators;
- washing with water of the polluted insulators;
- Manual cleaning or replacement of polluted insulators in case of slicks and dirtying;

Date : 04 November 2021

To whom it may concern

Dear Sir,

This reference certifies that Lviv Insulator Company LLC (LIC) having its production facilities in Lviv, 301 Zelena str., Ukraine has delivered glass insulators for the followings projects:

No.	The name of the project	Type of insulator	Q-ty, pcs	Delivery year
1	Aglomeracja warszawska – Siedlce 400 kV (49.8 km)	U 160BS	18 100	2018-2019
		U 210B	17 750	
		U 160BSP	8 670	
		U 210BP	6 366	
2	PIŁA-KRZEWINA-PLEWISKA 400kV (113km) and Mikułowa – Czarna 400kV (133km)	U 160BS	84 010	2019-2020
		U 210B	53 900	
		U 160BSP	12 120	
		U 210BP	8 676	
3	Chelm - Lublin Systemowa 400kV	U 160BS	6 000	2018
		U 210B	16 800	
		U 160BSP	1 050	
		U 210BP	4 200	
		U 240B	6 900	
4	Żarnowiec – Gdańsk Błonia 400kV	U 210B	1 512	2019
		U 210BP	1 656	
5	Gdansk-Przyjazn 400kV	U 160BSP	1 970	2019
		U 210BP	6 620	

6	Krajnik – Baczyna 400kV	U 160BS	29 800	2020
		U 210B	26 500	
		U 160BSP	2 710	

7	KOZIENICE-MORY-PIASECZNO 220kV	U 210BP	624	2020
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8	Polskie Sieci Elektroenergetyczne S.A. (PSE) warehouse	U 160BS	600	2021
		U 210B	100	
		U 160BL	100	

9	Krajnik – Morzyczyn 400kV	U 160BS	1 982	2021
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The above mentioned glass insulators were produced on alumina cement and were installed in 2018-2021 and showed excellence in operation and performance. There were no claims to the quality of the insulators neither during the construction nor during their period of work. Glass insulators have passed the requirements of international standards IEC 60383-1, IEC 61211, IEC 60120, IEC 60797, IEC 60437, IEC 61467, IEC 60383-2, IEC 61284 and specifications of PSE (Polish power system) . The Laboratory of LIC corresponds to the requirements of ISO/IEC 17025:2017 with highly competent professionals. The business management system of LIC has been certified by an independent body in accordance with: ISO 9001:2015, ISO 14001:2015, ISO 45001:2018.

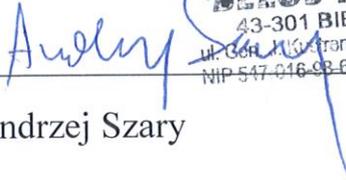
The high quality of each type produced goods is approved by type test reports and special tests, carried out in international independent testing laboratories: Instytut Energetyki (Poland), EGU-HV Laboratory a.s. (Czech Republic), VEIKI-VNL (Hungary), Powertech lab (Canada), Central Power Research Institute (India), CESI S.p.A. (Italy).



PREFORMED LINE PRODUCTS

We hope that we will be dealing with your company in the future as we have a huge excellent experience in cooperation within last 7 years.

In case of any questions, please feel free to contact us during office time at Design Engineer Mrs. Agnieszka Gruszka +48882016204 or mail Agnieszka.Gruszka@belos-plp.com.pl


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43-301 BIELSKO-BIAŁA
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NIP 547-016-98-68 REGON: 070458813

Andrzej Szary
Marketing Specialist

- Your ref:

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To Whom it may Concern

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- Our ref, date:

IDV/SKA-I

2006

/18- Sarajevo

20.6.2018

- Subject:

Quality Confirmation Certificate

Hereby we would like to confirm that the "Lviv Insulator Company LLC" (LIC), having its production facilities in Lviv, Ukraine has delivered the following glass insulators for construction of 400 kV OHL Lastva-Pljevlja (section Cevo-Pljevlja) and associated 110 kV OHL diversions in Montenegro to ENERGOINVEST & ENERGMONTAZA Consortium represented by Leader of Consortium ENERGOINVEST, d.d. – Sarajevo, as follows:

1. U120 B+Zs – standard type – 1890 pcs, 135 single.double strings with 7/14 pcs (year2016), 110 kV
2. U160 BS+ZS– standard type – 32975 pcs, 912 single/double strings with 19/38 pcs (year2016), 400 kV
3. U210 B+ZS – standard type – 31440,1746 double strings with 18 pcs (year2016) , 400 kV

The above mentioned glass insulators were supplied within June- October 2016 to Niksic, Montenegro and have passed all tests according to IEC standards.

The above mentioned insulators/strings were installed upon deliveries in from end 2016 to now and showed excellence in operation and performance. So far no claims have been put on the above mentioned glass insulators performance.

Best regards,


ENERGOINVEST, d.d.
SARAJEVO
10

Ismet Džubur, Manager
Energoinvest, d.d.- Sarajevo
Transmission lines dept.

ENERGOINVEST, d.d. - SARAJEVO
71000 Sarajevo, Hamdije Cemerica 2
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tel.: (**387 33) 610355; 610114; 703301
fax: (**387 33) 659618
E-mail: generalmanager@energoinvest.ba
http://www.energoinvest.ba

Entered into Registry of Cantonal Court *Sarajevo*, under number: UF/I-2672/94 dated 7.9.1994 and UF/I-389/04 dated 30. 03. 2004.
ID / Tax number: 4200214380009; VAT number: 200214380009

Account No: 195001000005563
1410010000083876
3389002207987730
1327310010246821
1610000010300053
1020500000016973
1540011100039043
1344701000121009
1602000001007950
1401010011355920
3060340000675073
1011010000625298
1990490057001709

At: *Razvojna banka Federacije Bosne i Hercegovine*
BOSNA BANK INTERNATIONAL, d.d. Sarajevo
UNICREDIT BANK, d.d. Sarajevo
NLB Banka, d.d. Tuzla
RAIFFEISEN BANK, d.d. BIH, Sarajevo
UNION BANKA, d.d. Sarajevo
Intesa Sanpaolo Banka d.d. Bosna i Hercegovina
ASA Banka, d.d. Sarajevo
VAKUF SKA BANKA, d.d. Sarajevo
SBERBANK BiH SARAJEVO
Addiko Bank
Privredna Banka Sarajevo - d.d. Sarajevo
Sparkasse Bank, d.d. Sarajevo





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Tel: 024 37183941 Fax: 024 37192637

Email: info@hkec.com.vn Website: www.hkec.com.vn

To Whom it may Concern:

Hereby we would like to confirm that the LVIV Insulator Plant, having its production facilities in LVIV, Ukraine has delivery the following glass insulators to our company:

No.	Project	Goods	Year	Voltage level
1	Line 220kV Viet tri – Yen bai	160kN: 5760pcs 70kN: 7978pcs	2006	220kV
2	Line 110kV Hai duong – Lai khe	U70BS: 2922pcs U120B: 1518pcs	2010	110kV
3	Line 110kV Hai duong – Phuc dien	U70BS: 2886pcs U120B: 1512pcs	2010	110kV
4	Line 500kV Danang Quang ngai	U70BLP+ZS: 1097pcs U300B+ZS: 5080pcs	2015	500kV
5	Line 220kV Phu Lam - Cai Lay 2	U70BS: 1631pcs U120B: 13502pcs U160BS: 2268pcs U210B: 5292	2016	220kV
6	Line 500/220kV Hiep Hoa – Dong anh – Bac ninh	U70BS: 5184pcs U120B: 1154pcs U160BS: 1243pcs U210B: 2527pcs U300B: 2527pcs U400B: 4629pcs	2016	500k & 220kV

The above mentioned glass insulator were installed upon deliveries in Vietnam from 2006 to now and showed excellence in operation and performance. So far no claims has been put on the above mentioned glass insulators performance. We confirmed annual self-destruction rate of supplied glass insulators was not exceeding 1 per 10 000 pcs.

HK INVESTMENT AND TRADE JOINT STOCK COMPANY

General Director
NGUYEN THI HONG NGA



Nguyễn Thị Hồng Nga
KÔNG GIÁM ĐỐC