



**Lightning Protection & Earthing Systems**

*PROTECTION ART*

## About PROTART

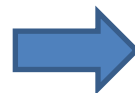
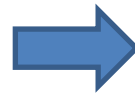
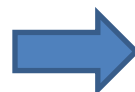
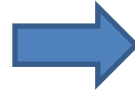

PROTART was founded in 2008 with a purpose to serve the needs and wants of the clients looking for quality and cost effective solutions in the global market. Since the day PROTART was founded, it kept growing in the areas served and widened product ranges. With its strong R&D, manufacturing experience and solid background, PROTART progressed in the international lightning protection market with speed and agility.

## Mission & Vision

PROTART's goal has been and always will be to provide only the highest quality lightning protection system components available anywhere. This commitment to quality is also reflected in our engineering and customer service operations where no short cuts are taken and long term customer satisfaction is of paramount importance.

Protart provides the safest solutions for lightning protection.

## Values

-  Sustainability
-  Quality
-  Development
-  Efficiency
-  Innovation



FACTORY

[www.protart.com.tr](http://www.protart.com.tr)



# Factory



- 3600 m<sup>2</sup> manufacturing facility in İstanbul, Beylikdüzü
- 45 qualified personnels in manufacturing
- 5 personnels in Quality & Control Department
- 3 personnels in R&D Department

# Factory





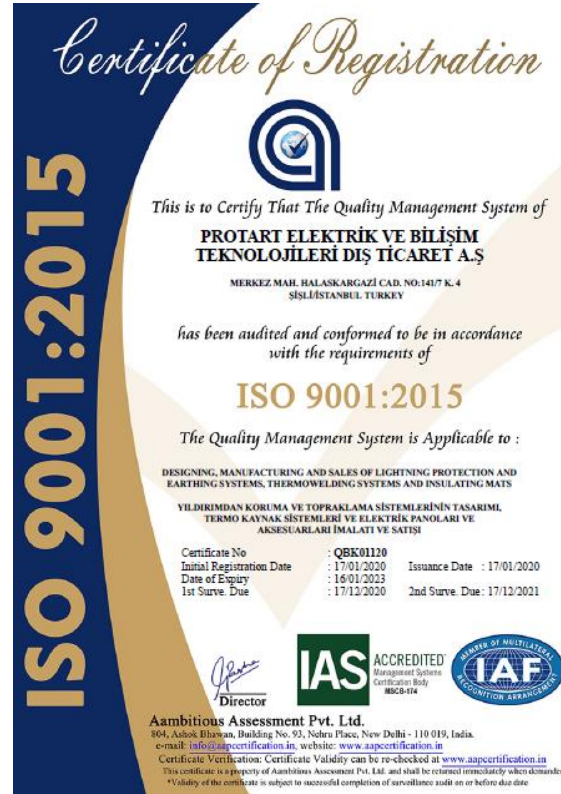


# CERTIFICATES



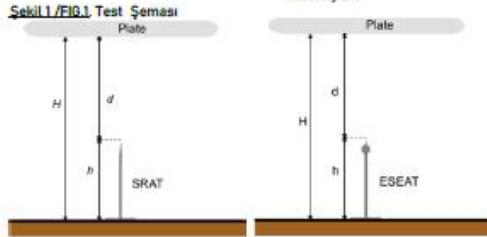


# Certificates



- ISO 9001
- ISO 10002
- CE Confirmation

DENEY RAPORU  
Test Report



Resim-1/Pic-1 Yıldırım Darbe Test Sistemi ve Erken Emisyon Zaman Kazancı Test Görseli/ESE Test Pic.  
\*PROTART-60/3620



OSTİM TEKNİK ÜNİVERSİTESİ  
300 YIL BULVARI 52.70000000000000  
190 12 ÖZGENÇİBAĞIŞI YIĞILCI NO:41 21 22  
TAKSİT: 010 330 00 00 0000000000000000

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Bu rapor, Laboratuvarımızın yazılı izni alınmadan kırıman kopyalanıp çoğaltılamaz. İmzasız ve mühürlü raporlar geçerlidir.  
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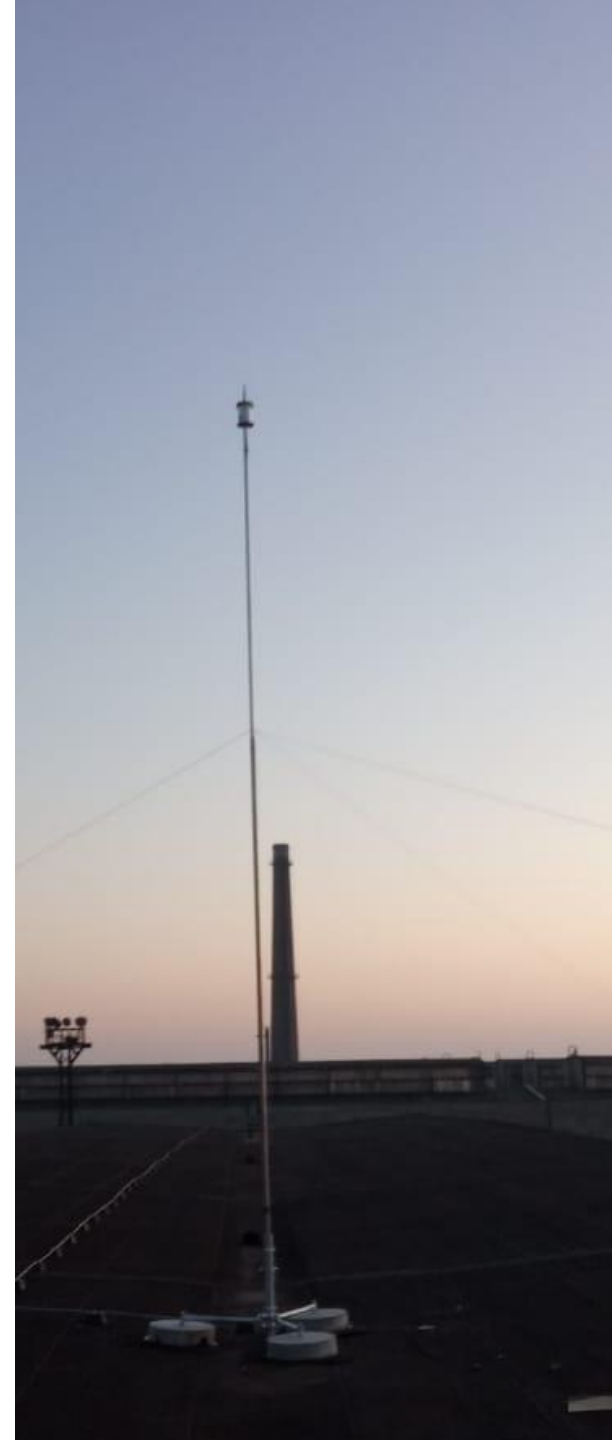
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## Test Reports

- NFC 17-102 Standard Report
- EN 62561-1 Electrical Test Report



# REFERENCE IMAGES

















## PRODUCTS

- Lightning Protection
  - Earthing Systems
- Exothermic Welding Systems
  - Surge Protection Devices
  - Electrical Safety Products
  - Led Obstruction Lights







# LIGHTNING PROTECTION



## Lightning Protection

The principle consists of creating one or more preferred impact points for a lightning strike using low impedance conductor elements. These then conduct and dissipate the lightning current into the ground. This coherent system enables the lightning to be captured and dissipated whilst providing protection to the structure.

These are four types of lightning conductor for protecting structures against lightning:

- Early Streamer Emission (ESE) Type Lightning Rod
- Simple Rod
- Mesh Rod
- Catenary Wire Lightning Conductor

## Protart ESE Lightning Rods

Early Streamer Emission terminal releases positive ions in to the atmosphere which attracts the lightning emissions.

- Stainless steel with superior quality to avoid corrosion
- No battery or external energy required
- Suitable for any weather condition
- Complies with NFC 17-102 Standard.



**PROTART-60**



**PROTART-45**



**PROTART-30**

# PROTART ESE Lightning Rods Protection Radius Table

<i>R<sub>p</sub></i> (m)	<i>PROTART-30</i> <i>ΔL:30 m</i> <i>ΔT:30 μs</i>				<i>PROTART-45</i> <i>ΔL:45 m</i> <i>ΔT:45 μs</i>				<i>PROTART-60</i> <i>ΔL:60 m</i> <i>ΔT:60 μs</i>			
	<b>h (m)</b>	<b>Level I</b>	<b>Level II</b>	<b>Level III</b>	<b>Level IV</b>	<b>Level I</b>	<b>Level II</b>	<b>Level III</b>	<b>Level IV</b>	<b>Level I</b>	<b>Level II</b>	<b>Level III</b>
2	19	22	25	28	25	28	32	36	31	35	39	43
4	38	44	51	57	51	57	64	72	63	69	78	85
5	48	55	63	71	63	71	81	89	79	86	97	107
6	48	55	64	72	63	71	81	90	79	87	97	107
8	49	56	65	73	64	72	82	91	79	87	98	108
10	49	57	66	75	64	72	83	92	79	88	99	109
20	50	59	71	81	65	74	86	97	80	89	102	113
30	50	60	73	85	65	75	89	101	80	90	104	116
60	50	60	75	90	65	75	90	105	80	90	105	120

Note: The most effective height is the distance up to 6 m as shown in the table.

## Protart ESE Lightning Rods

- PROTART ESE Lightning Rods are manufactured from high quality stainless steel which makes it durable against the toughest weather conditions.
- PROTART ESE Lightning Rods consist of 3 parts; Air Terminals, Ion Generator and Roof Connection Pipe. Air Terminal is produced of stainless steel and it has qualified diameter to resist high values of lightning currents. Ion Generator is located in a special section which is inside of stainless body and covered special resin from outer effects. As the atmospheric electric field increases during lightning storm, generator becomes active and ionizes surrounding air.



## Protart ESE Lightning Rod Tester

With PRO TESTER, you are able to determine if there is a short circuit or a fault in the ion generator immediately by simply connecting the cable to the ESE conductor and pressing the button on the testing device. When the tester's button is turned on, the red LED indicates the open circuit fault, the yellow LED indicates the short circuit fault and the green LED indicates full functionality.



## Passive Lightning Protection Systems



In simple rod protection, the lightning rod is made up of a 2 to 8 mm high tapered metal rod that dominates the structure to be protected and which is connected to a conductor and an earthing system.

As the protection radius of this type of lightning conductor is limited to around 30 meters (Protection level IV, height=60 meters), it is normally only used to protect small structures or zones such as pylons, chimneys, tanks, water towers,



## Protart Lightning Strike Counters

- Digital and analogue options
- Simple assembly
- 6 digit display counter
- Can be tested
- Detection currents from 1 to 100 kA
- Can be used E.S.E. or simple lightning protection system



## Supplementary Materials of Installation

Other supplementary materials of external lightning protections are accessories that used in the installation such as lightning poles, adapters, bases down conductors, clamps, etc.



## Procon Insulated Down Conductor

Procon high insulated Copper cables are used as down conductor of lightning protection system and provides high conductivity, high strength, high insulation and low impedance



	Material	Type	Size (mm)	Weight (kg/m)	Colour
<b>PROCON-35</b>	Copper	Tape	27x15mm	0,570	Grey
<b>PROCON-50</b>	Copper	Flat	23,5mm	0,815	Grey



# EARTHING SYSTEMS





## Earthing System

In electrical systems, all parts of installation that is not being under potential is connected to earth with conductors, to this is called "Earthing".

Earthing is made for minimize or eliminate to undesirable step and touch potential hazards is appeared in a isolation fault. In order to reduce the risk of injury to personel or condition of undertaking.





## Earth Conductivity Material PRO-EARTH



PRO-Earth is a completing grounding material that has high moisture holding capacity, is produced to reduce the earth resistance and impedance measurement. It becomes highly conductive after installation.

## 250 mc Copper Coated Steel Earth Rod

Using copperbond earth rods is more economical method of achieving a low earth resistance than using copper rods. It is highly resistant to corrosion and makes the deep driving easy. The threads are formed by a cold rolling process which makes the threads stronger than cutthreads.





# EXOTHERMIC WELDING SYSTEMS

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## Exothermic Welding Products



Exothermic welding process is a very efficient method of making high quality electrical connections. Exothermic welding is used to create electrical molecular bonds various metals such as copper to copper,copper to steel,steel to steel,aluminium to copper and aluminium to aluminium. No external source of power is required when using this material.



# SURGE PROTECTION DEVICES



## Surge Protection Devices

Lightning is mostly known for the direct damage it causes as a naturally occurring event that generally leads to physical damage and fire. However, there are many reasons to take precautions against the indirect damages of lightning in electrical applications.





# ELECTRICAL SAFETY PRODUCTS

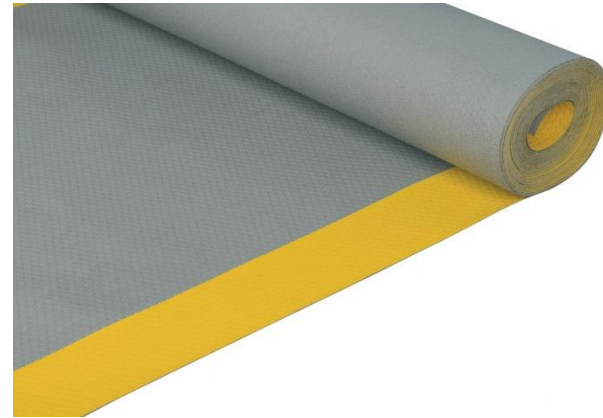
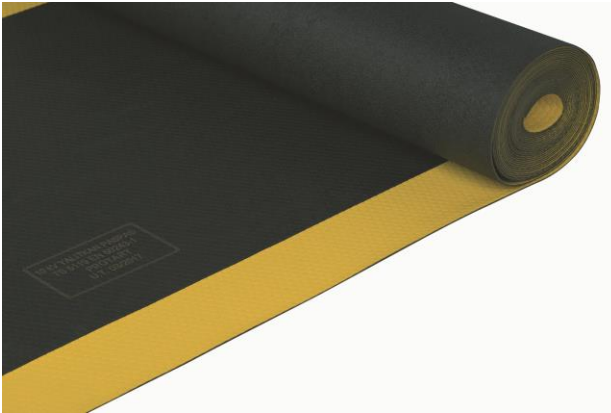
[www.protart.com.tr](http://www.protart.com.tr)





## Electrical Safety Products

Protart electrical safety products are basically produced to provide safety for electrical hazardous area workers. Warning plates and insulating materials made by highly insulated materials according to related standards in order to prevent risk of electric shock or injury.







# LED OBSTRUCTION LIGHTS

[www.protart.com.tr](http://www.protart.com.tr)



## Led Obstruction Lights

An aircraft warning system is a device that allows a stationary object within the airline's field of view alerting by means of light within a certain range.

They are used on high buildings, such as towers, skyscrapers, mountains, etc. that located in the routes of aircrafts must have light warning systems for safety of navigation.

Protart Led Obstruction Lights are produced according to related standards.





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