

# SFEX

## Standard for Electrical Fire Safety

**SFEX**  
스펙스테크

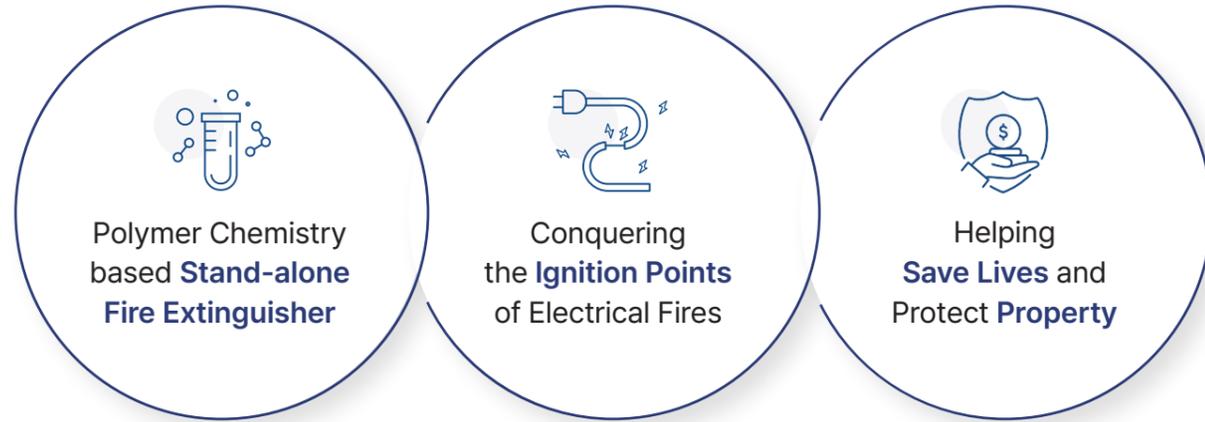


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Initial Suppression of Electrical Fires  
Thermal Runaway Propagation Barrier

# MISSION



# HISTORY

- 2023.07** Opened the Second Factory
- 2022.07** Selected as a BRAND K, National Co-Brand by the Ministry of SMEs and Startups
- 2022.04** Certified ISO 9001 and ISO 14001
- 2021.12** Relocated to expand the first factory
- 2020.01** Registered as a Defense Small and Venture Business (No. 2159) – Defense Agency for Technology and Quality
- 2019.12** Selected by the Ministry of National Defense for Military Use
- 2019.06** Opened the First Factory
- 2018.10** Selected as a Product to be Preferentially Purchased as well as an Excellent Invention by the Korea Invention Promotion Association
- 2018.06** Won the Grand Prize at the '2018 New Safety Technology Exhibition' Held by Korea Occupational Safety and Health Agency
- 2017.12** Received the Presidential Award on the '10th Product Safety Day' led by the Ministry of Trade, Industry and Energy
- 2017.09** Certified as a Venture Company Certified as a Research Institute
- 2017.03** Established SFEX TECH CO., LTD.

# PRODUCTS

**SFEX Capsule**

**SFEX Pad**  
Pad Type Fire Extinguisher

**SFEX Hi-100**  
Fire Extinguisher for Small Electric Box

**SFEX AP Tape**  
Fire Extinguisher for Cable Fire

**SFEX CT Manteau**  
Fire Extinguisher for Cable Fire

**SFEX Granule**

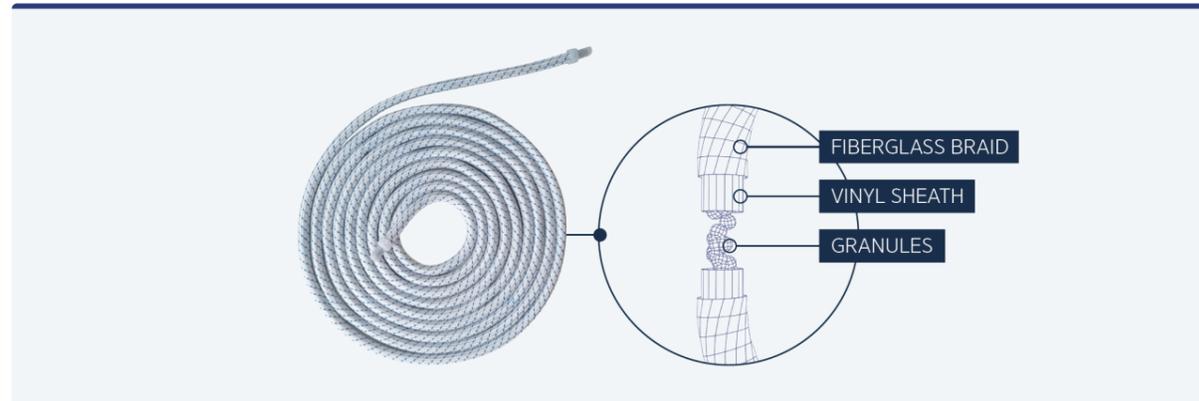
**SFEX Line Rope Type Fire Extinguisher**

**Electrical Panel**   **PLC**   **Solar Inverter**

PRODUCT

# Electrical Panel Stand-alone Fire Extinguishing Solution

## SFEX Line Rope Type Fire Extinguisher



### Overview

- An automatic fire extinguishing device installed in electrical panels to suppress fires at an early stage.
- Its flexible rope-type design allows installation in narrow spaces where ignition is anticipated.

### Features

- **Extinguishing Agent** : SFEX Granule
- **Function** : Fire Extinguishing
- **Form** : Rope Type (All-in-one = Agent Storage Tank + Temperature Sensor + Nozzle)
- **Extinguishing Method** : Chemical Inhibition
- **Operating Method** : Total Flooding System
- **Operating Temperature** : 350°C

### Performance criterion

	Institute	Category	Description	Remarks
Quality	KFI	Type Approval	Type Approval for Fire Extinguishing Equipment for Small Spaces	간소24-15
Performance	KTR	A, B-Class Fire Suppression Tests	A Fire Extinguishing Test Report for 4000ℓ(4m³)	Passed
Service Life	KFI	Life Expectancy	Aging Test	20-year Life Span
Toxicity	FILK	Toxicity Test	Adherence to IMO (International Maritime Organization) Standards	No Hazardous Gases Detected

## SFEX Pad

### Fire Extinguisher for Small Electric Box

#### Overview

- A fire extinguishing device for small electrical panels that promptly responds to initial ignition to suppress fires.

#### Features

- **Extinguishing Agent** : SFEX Capsule
- **Form** : Sticker Type
- **Extinguishing Method** : Cooling
- **Operating Method** : Local Application System
- **Operating Temperature** : 150°C



## SFEX Hi-100

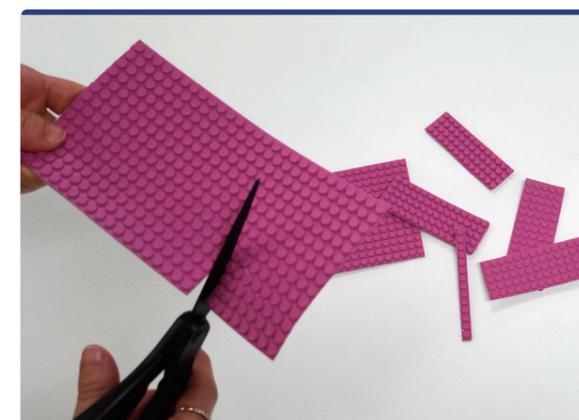
### Fire Extinguisher for Small Control Box

#### Overview

- A fire suppression device for small electrical panels that immediately responds to extinguish fires at the initial stage of ignition.
- The protruding surfaces maximize the contact area with the flames, enhancing its extinguishing power.

#### Features

- **Extinguishing Agent** : SFEX Capsule
- **Function** : Fire Extinguishing
- **Form** : Sticker Type
- **Extinguishing Method** : Cooling
- **Operating Method** : Local Application System
- **Operating Temperature** : 150°C



PRODUCT

# Cable Stand-alone Fire Extinguishing Solution



## SFEX CT Manteau Fire Extinguisher for Cable

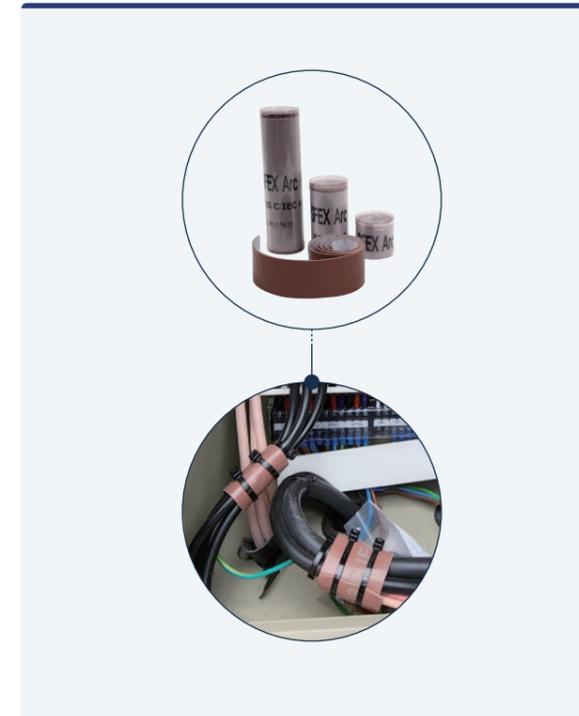
### Overview

- Fire extinguishing device applied to the horizontal sections of cable trays
- World's first cover-type cable fire extinguishing device
- Product approved by Korea Hydro & Nuclear Power's technology review

### Features

- **Extinguishing Agent** : SFEX Capsule
- **Function** : Fire Extinguishing + Fire Blocking + Thermal Runaway Barrier
- **Form** : Cover Type
- **Extinguishing Method** : Cooling + Suffocation
- **Operating Method** : Local Application System
- **Operating Temperature** : 240°C

### Reference



## SFEX AP Tape Fire Extinguisher for Cable

### Overview

- Fire extinguishing device applied to the vertical sections of cable trays
- Wraps around the incoming/outgoing cables of electric panels to prevent fire spread
- Combustion prevention material for non-safety grade cables in Korea Hydro & Nuclear Power

### Features

- **Extinguishing Agent** : SFEX Capsule
- **Function** : Fire Extinguishing + Flame-retardant + Insulating Properties
- **Form** : Tape Type
- **Extinguishing Method** : Cooling
- **Operating Method** : Local Application System
- **Operating Temperature** : 230°C

### Reference



PRODUCT

# Power Outlet Stand-alone Fire Extinguishing Solution



## SFEX Inside Stand-alone Fire Extinguishing Power Outlet

### Overview

- Detects heat and flames to suppress early-stage fires caused by arcs, overloads, tracking, etc. (Patent No. 10-1887396)

### Features

- **Extinguishing Agent** : SFEX Capsule
- **Type** : Built-in Fire Extinguisher
- **Extinguishing method** : Cooling
- **Operation Method** : Local Application System
- **Operating Temperature** : 150°C

### Awards

- 2017 Presidential Award at the 10th "Product Safety Day"
- 2018 Selected as a Priority Purchase Product for Excellent Inventions  
Designated as "Suitable" for military use by the Ministry of National Defense as an excellent commercial product
- 2019 Selected as a pilot purchase product for technology development.
- 2022 Selected as 'Brand K' (national representative joint brand) by the Ministry of SMEs and Startups

## Patents and Certificates



## Products



4구 메인 스위치 DYM-G4C(SC)-SI



6구 메인 스위치 DYM-G6C(SC)-SI



4구 개별 스위치 DYM-NSG4C(SC)-SI



6구 개별 스위치 DYM-NSG6C(SC)-SI



4구 개별 스마트캡 KKM-456-SI-SM-3M



6구 개별 스마트캡 KKM-656-SI-SM-3M



2구 매립 일반형 DYC-G202-SI



2구 매립 방우형 DYC-GB202-SI



2구 매립 스마트캡형 KKC-241-SI



2구 누전/과부하 SHM-NJCDG-16A2-SI



2구 노출형 924872-SI

# Other Products



## SFEX Detector Temperature-sensitive Sticker

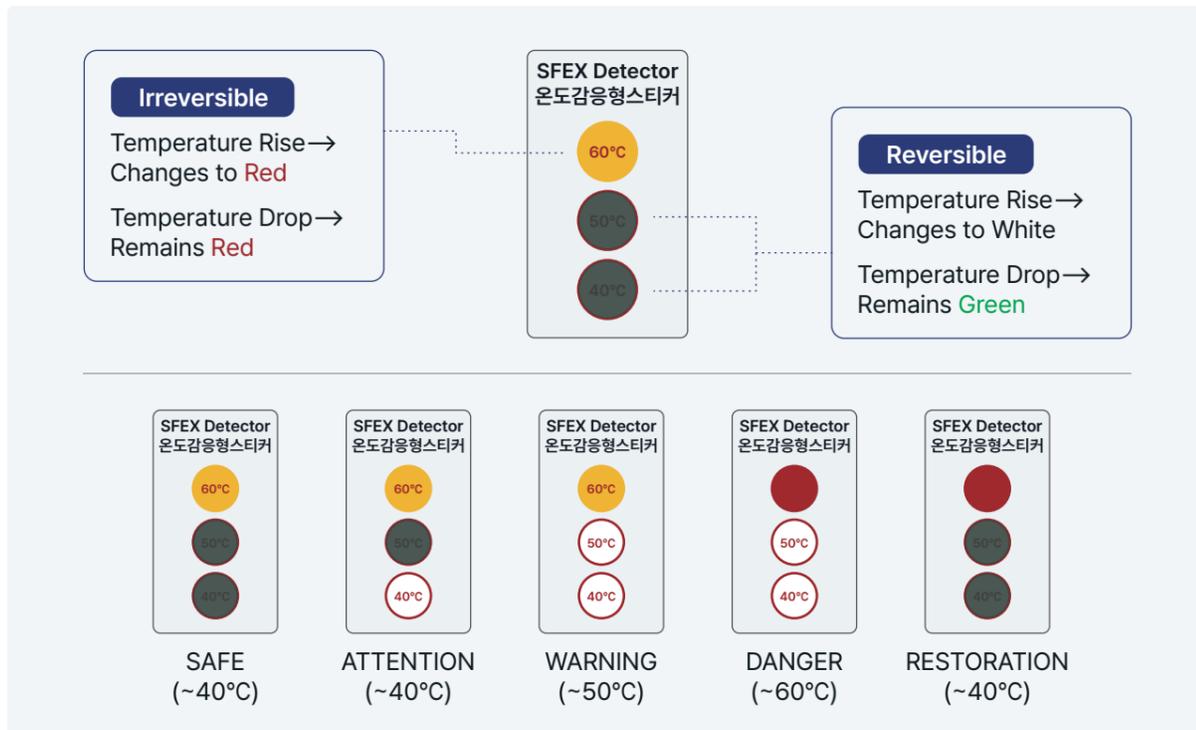
### Overview

- Visually inspect the heat generation at the terminal block fastening area.

### How to Use



### Features



## SFEX Liquid Flame Retardant Spray

### Overview

- Flame retardant spray specifically for clothing and textiles
- On-site verification completed at OO Shipbuilding and OO Fire Station

### Features

- Excellent flame retardancy verified on-site
- Liquid product based on non-toxic materials
- Easy to use

### How to Use

#### 1 Spraying



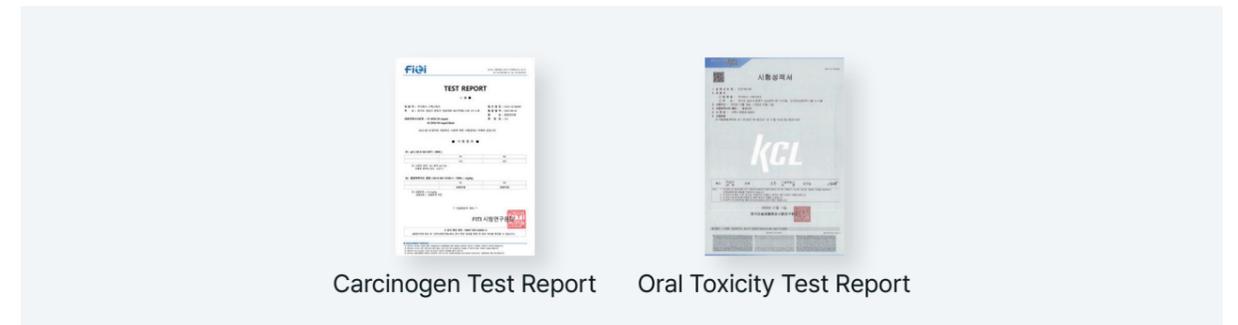
#### 2 Drying



#### 3 Flameproof



### Test Report



PRODUCT

# Thermal Runaway Blocking Solution



## SFEX Thermal Barrier Thermal Runaway Propagation Barrier

### Overview

- The product, with its non-combustible/heat-shielding performance, effectively blocks the propagation of battery thermal runaway and prevents the transfer of flames and heat to the fire compartment in the event of a fire.

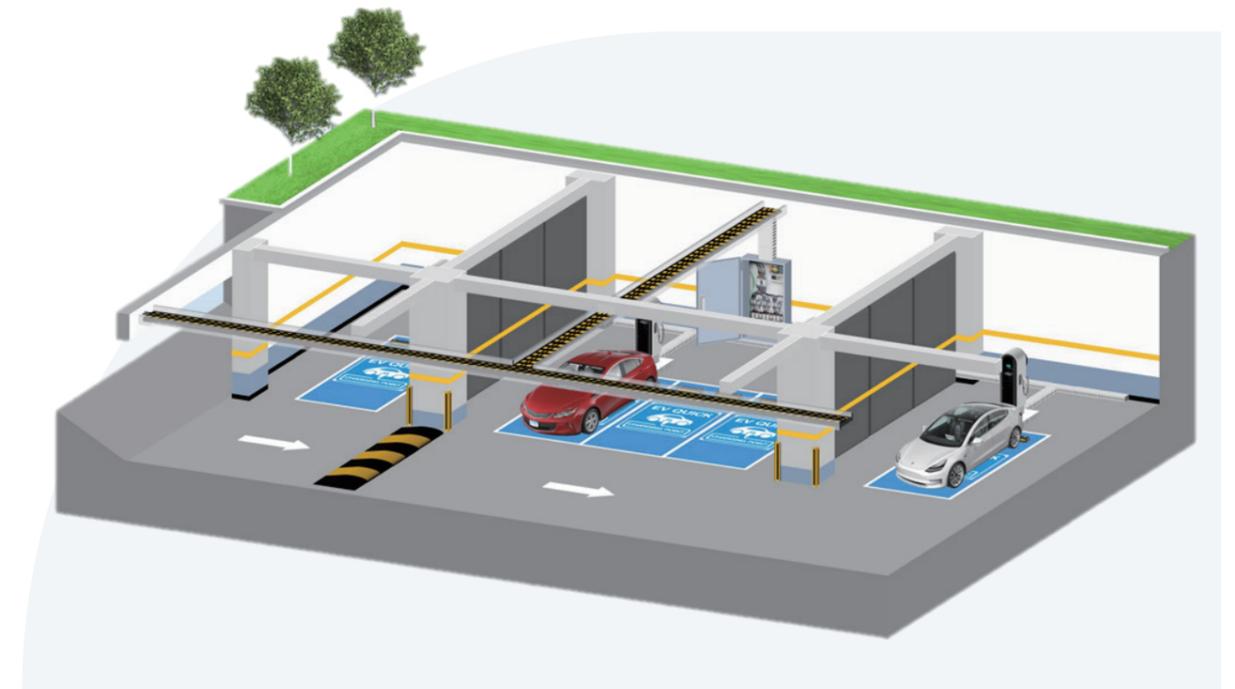
### Features

Classification		TB-25	TB-15	
Product Thickness		25mm	15mm	
Test Method		KS F2257-8:2015	KS F2257-1:2019	
Test Duration		90min	60min	
Fire Resistance Performance	Heat Insulation	Temp. Rise(Avg)	86.2°C	96.5°C
		Temp. Rise(Max)	146.7°C	105.7°C
	Non-heat Insulation	Ignition	Not ignited	Not ignited
		Flame	No Flames	No Flames
Standard Size (mm)		1,200 X 3,000	1,000 X 1,000	
Application		Fireproof Bulkhead (ESS, UPS, Underground Parking Lot)	Cable Protection Device Battery Storage Rack	

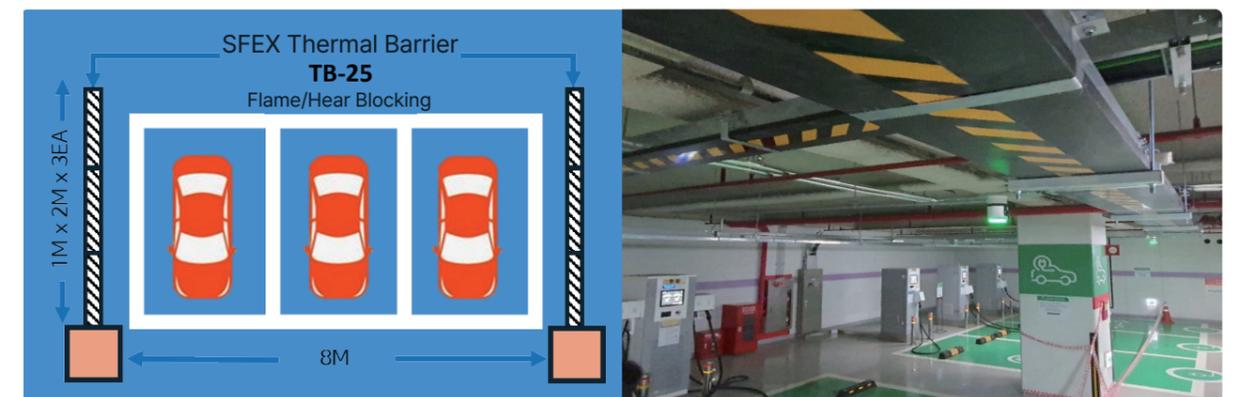
### Test Report



### Application 1 Underground Parking Lot (Electric Vehicle Charging Facilities)



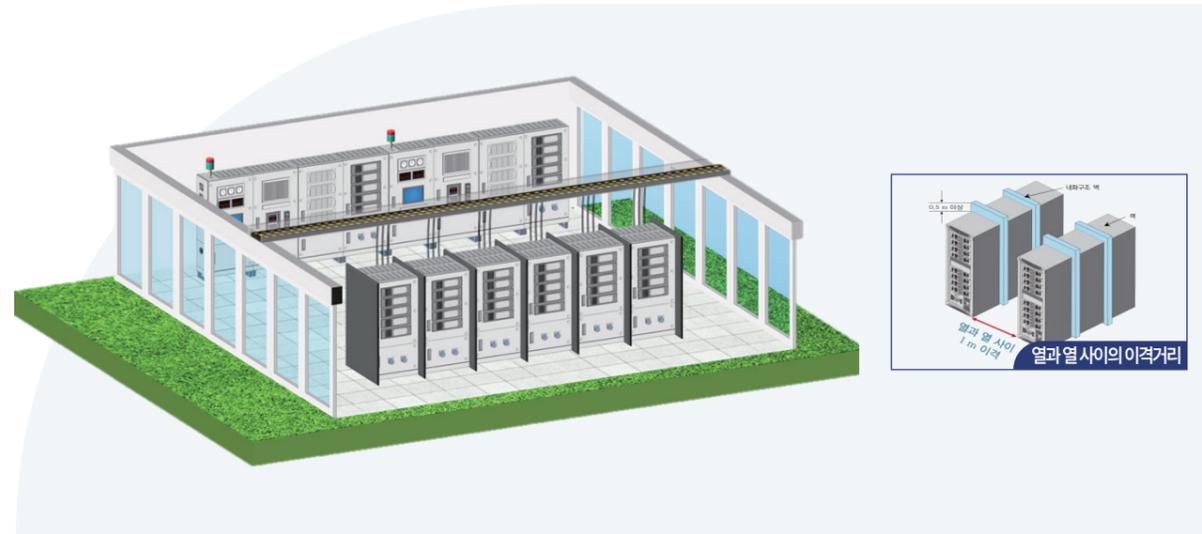
- Applies to fireproof barriers and power line cable trays in each compartment of underground parking lots at risk of fire.



PRODUCT

# Thermal Runaway Blocking Solution

Application 2 ESS Battery Rack



- When a lithium and sodium battery of 20 kWh or more is installed in a place other than a dedicated building, the distance between the secondary battery racks must be at least 1m. However, if a wall with a fire-resistant structure is installed in accordance with the "Rules on Evacuation and Fire Prevention Structure of Buildings," an exception to separation between racks may be allowed.

Application 3 Battery Storage Rack



- Prevention of fire spread by installing thermal barriers in each compartment of battery storage facilities with a high risk of fire.

Reference Electric Vehicle Charging Facility in Underground Parking Lot at COEX Mall

