

 **SOO**  
www.m2k.co.kr

# 119 PRODUCT SERIES

**Differential capsule production** by  
temperature between 90 °C ~ 140 °C  
10 ~ 350 μm by size

## Automatic fire suppression

Pioneering in fire reduction with innovative materials  
Providing safety to your most precious space

**SOO Co., Ltd.**

 **KOREA**

Ministry of SMEs and Startups |  **KBIZ** Korea Federation of SMEs

 **أديبك** |  **ادنوك**

31 October - 3 November 2022  
Abu Dhabi, United Arab Emirates





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**SOO co., Ltd.** develops extinguishing products in the early stages of fire and products to reduce disaster damage.

We have innovative technology for fire prevention that can occur inside confined spaces.

# SOO



## Leading in disaster damage reduction with automatic fire suppression products

Aims to give back to society before seeking profit  
Shed light on dark places, rather than bright places  
Recognizes that there are no blind spots in safety.

Automatic fire extinguishing system capable of preventing the spread of fire can reduce casualties and property damage.

SOO manufactures special paint, sticker, and rope products that automatically extinguish fires caused by electrical factors in enclosed spaces, e.g. distribution boards and switchboards.

Founded as a technology-intensive venture company in 2016, all employees unite with passion and challenging spirit to create a 'safer world' with a thumbnail 'Add safety to your space'.

We look forward to your support in our bright future as we take a big step towards a safer tomorrow.

2016

2017

2018

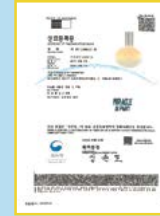
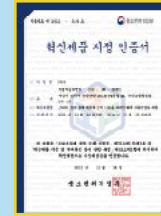
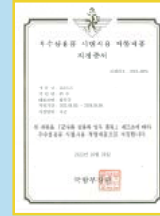
2019

2020

2021

- 07 Established SOO Co., Ltd.
- 04 Venture Business Certification (Technology Guarantee Fund)
- 05 Acquired Patent No. 10-1644707 Both-way water (hydraulic liquid jet device with changeable jet direction)
- 05 Company-affiliated research institute certification (Korea Industrial Technology Association)
- 08 Quality Management System ISO9001 Certification
- 08 Environmental Management System ISO14001 Certification
- 10 2017 Awarded Korea's Best New Product Grand Prize (living goods)
- 10 Awarded Busan Crowdfunding Road Show IR Excellent Company Excellence Prize
- 02 Certified as a company specializing in materials and parts (the Ministry of Trade, Industry and Energy)
- 12 Awarded IR Investment Attraction Contest Grand Prize
- 05 2019 2nd Safety New Technology Contest Grand Prize
- 07 Completed the 3rd U-star program organized by Ulsan Creative Economy Innovation Center
- 03 Three PCT International Applications (PCT/KR2020/004279, PCT/KR2020/004285, PCT/KR2020/005150)
- 04 Selected as a trial purchase product in the technology development product field by the Ministry of SMEs and Startups
- 05 Selected for pilot use in the field of excellent commercial products by the Ministry of National Defense
- 05 Patent Registration No. 10-2113862 : Lacquer composition for initial fire suppression
- 05 Patent Registration No. 10-2113863 : Aerosol-type Lacquer composition for initial fire suppression
- 06 Recognized as KFI 119 Sticker by Korea Firefighting Industry and Technology Institute (small area 20-5)
- 06 Recognized as KFI 119 Rope by Korea Firefighting Industry and Technology Institute (small area 20-6)
- 08 Localization of microcapsules
- 11 Patent application 10-2020-0159211 : Coupler for two-component paint sprayer
- 02 Patent Registration No. 10-2218476 : Safety outlet with fire extinguishing capsule for fire suppression
- 02 Patent Registration No. 10-2218478 : Safety outlet with fire extinguishing medium
- 02 Trademark Application 40-2021-0033192 : Firefighter
- 03 Recognized by the Korea Fire Industry and Technology Institute (small area 21 -8, small area 21 -9)
- 04 Patent registration (No. 10-2237294)
- 04 Epoxy-based paint composition for two-component initial fire suppression and aerosol-type epoxy-based paint composition using capsule-type fire extinguishing agent
- 06 Acquired Busan representative technology startup company certificate
- 06 INNOBIZ certification
- 12 Innovative product designation

**2022** Purchase of own factory  
and We will build a safe world with you.



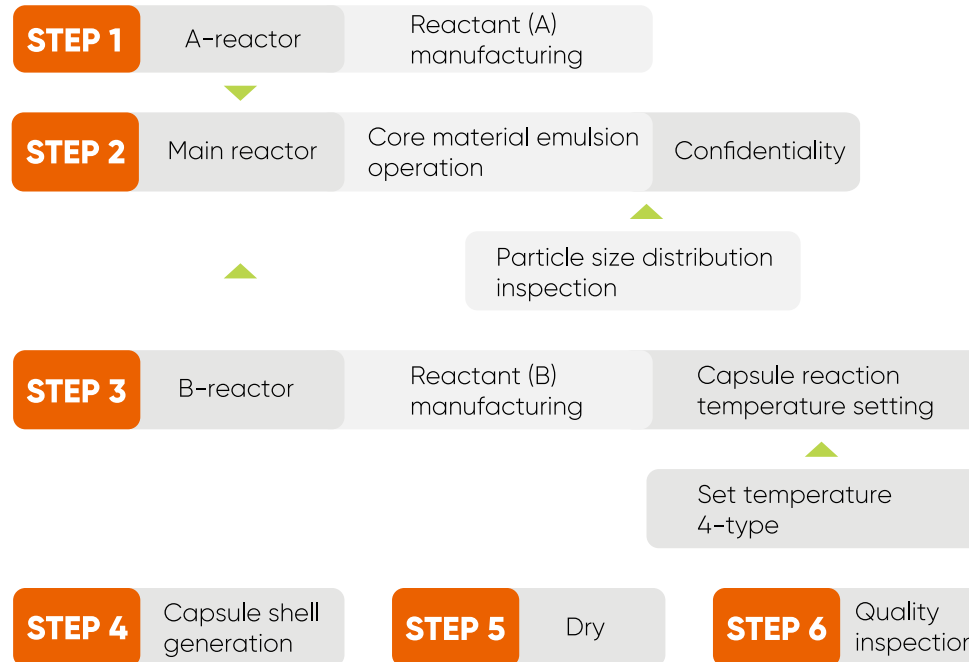
# CERTIFICATIONS & AWARDS





SOO has developed special pigments composed of high molecule sells used in high-performance fire extinguishing agents and microcapsules. A nano-fluorinated ketone (size : 10~350  $\mu\text{m}$ ) Matrix filled with the special pigment automatically releases fire extinguishing agents in the event of fire to automatically extinguish flames.

## Differential capsule production by temperature between 90°C ~140°C / 10~350 $\mu\text{m}$ by size



## Nanotechnology

Micro-capsule

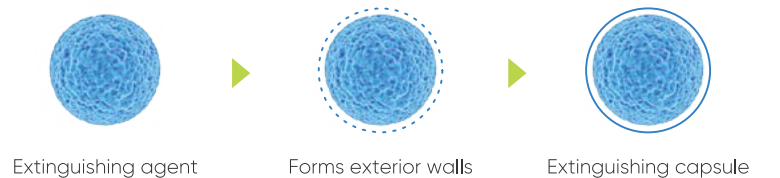


## Nano-fluorinated ketones

Synthetic organic materials are 1.6 times heavier than that of water and do not conduct electricity. Rapidly changes from liquid to gaseous state to actively absorb the thermal energy of flame. Non-toxic and safe for humans and the environment, it evaporates immediately without causing chemical reaction when extinguishing fire. Decomposes in the upper atmosphere by UV light and is gone within five days.

## Insertion of nano-digestive materials into polymer shell

Applied with Microencapsulation Technology to insert liquid, gas, or solids into micro-capsules  
Microencapsulation (10~350 $\mu\text{m}$ )  
Binder materials with strong resistance to foreign material penetration, automatic response to temperature, improves safety/flexibility.



# PROPOSAL

07

119 Series is an automatic fire suppression product

Quick, simple, and easy to use anywhere with risk of fire caused by electricity, such as industrial facilities, electronic devices, household appliances, household goods, and electric devices

**01** Production and supply of customized capsules according to your product manufacturing conditions

**02** Provides capsules by capsule size, strength, and reaction temperature



Extinguishing material with no residue.



No-malfunction system.



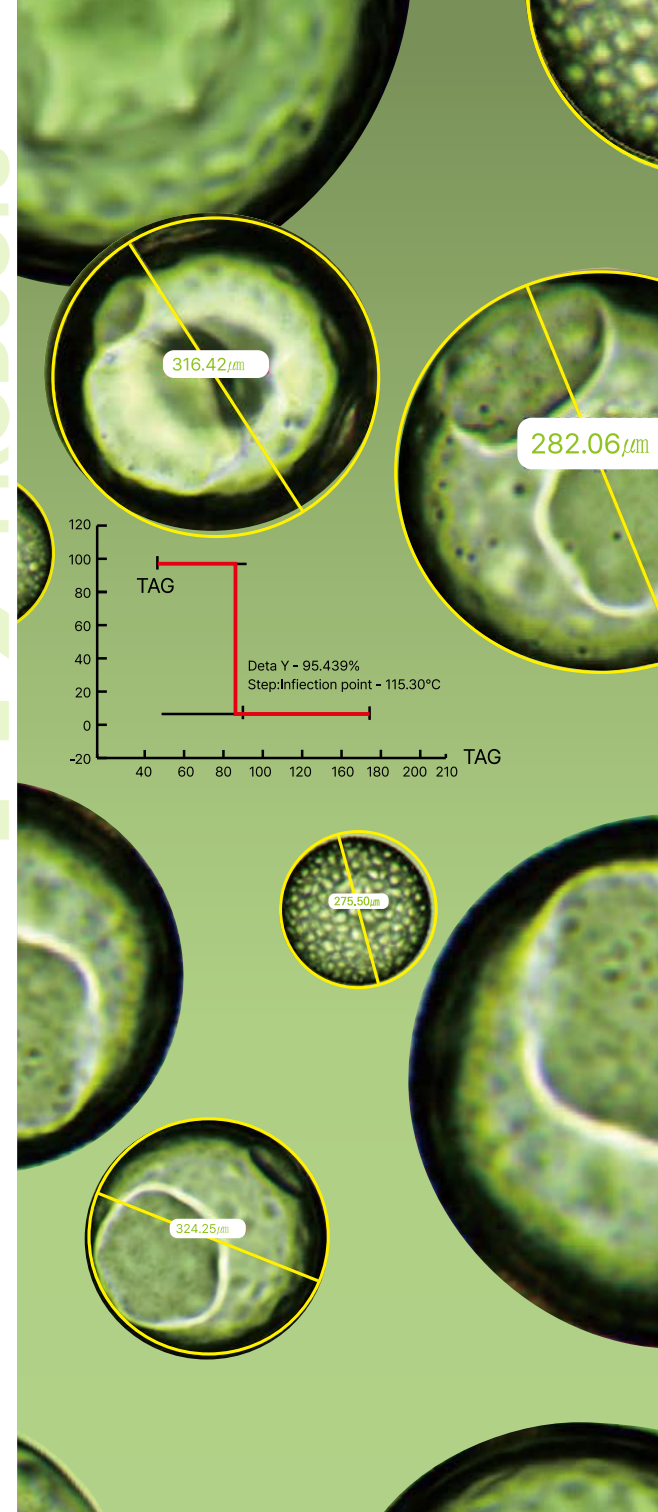
In the event of fire, 119 products automatically respond to temperature and extinguish flames.



Suppression in any situation without the need for power supply.

**90°C ~ 140°C**  
**10 ~ 350µm**

119 PRODUCTS





Our safe future begins with **YOUR IDEAS.**

**Quick, simple, and easy to use anywhere** with risk of fire caused by electricity, such as industrial facilities, electronic devices, household appliances, household goods, and electric devices.

**119**  
SERIES

ROPE  
STICKER  
**MICRO CAPSULE**



# 119 STICKER



Type	Size (mm)	Fire extinguishing capacity (L)	Operating temperature (°C)	Fire rating	Operating environment temperature (°C)	Validity period (month(s))
119 Sticker 20	100×40×1	20	120±5	A,B,C,E	-40/ +65	60
119 Sticker 30	100×100×1	30	120±5	A,B,C,E	-40/ +65	60
119 Sticker 50	150×100×1	50	120±5	A,B,C,E	-40/ +65	60
119 Sticker 65	200×100×1	65	120±5	A,B,C,E	-40/ +65	60

The product is manufactured and supplied to customers in the size, thickness, and color suitable for their purpose.



Clean the installation surface



Remove the sticker



Attach the sticker on the switchboard



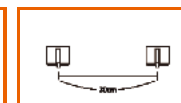
# 119 ROPE



Type	Size (M)	Fire extinguishing capacity (L)	Operating temperature (°C)	Fire rating	Operating environment temperature (°C)	Validity period (month(s))
119 Rope 100	2.3	100	220±5	A,B,C,E	-40/ +65	60
119 Rope 200	3.4	200	220±5	A,B,C,E	-40/ +65	60
119 Rope 300	4.5	300	220±5	A,B,C,E	-40/ +65	60
119 Rope 500	6.3	500	220±5	A,B,C,E	-40/ +65	60
119 Rope 750	8.4	750	220±5	A,B,C,E	-40/ +65	60
119 Rope 1000	10.5	1000	220±5	A,B,C,E	-40/ +65	60



Clean the installation surface



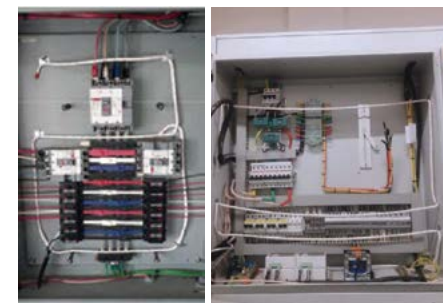
Attach fixing pins at intervals of 30cm



Hang 119 Rope at regular intervals according to the loop



Fix support and 119 Rope with cable ties (if using cable ties)

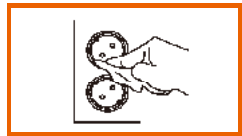


# 119 STICKER

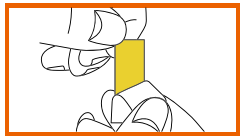
For Electrical Outlet



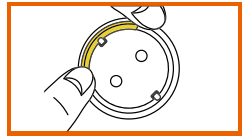
Type	Size (mm)	Fire extinguishing capacity (L)	Operating temperature (°C)	Fire rating	Operating environment temperature (°C)	Validity period (month(s))
119 Sticker for electrical outlet	14×35×0.3	0.1	120±5	A,B,C,E	-40/ +65	60



Clean the installation surface



Remove the sticker



Attach to the top of a wall-mounted outlet (when attaching to an outlet)



Cut it in half and attach to the center of floor multi-tab (if using a multi-tab)

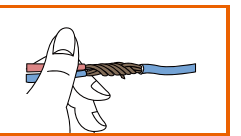


# 119 TAPE

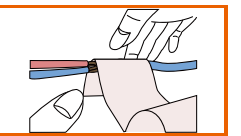
Fire Extinguish



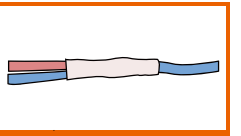
Type	Length (M)	Operating temperature (°C)	Operating environment temperature (°C)	Validity period (month(s))
119 Fire Extinguish Tape 15	1M/10M	120±5	-40/ +65	60
119 Fire Extinguish Tape 25	1M/10M	120±5	-40/ +65	60
119 Fire Extinguish Tape 50	1M/10M	120±5	-40/ +65	60
119 Fire Extinguish Tape 100	1M/10M	120±5	-40/ +65	60



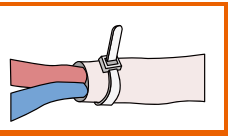
Trim to connect wires



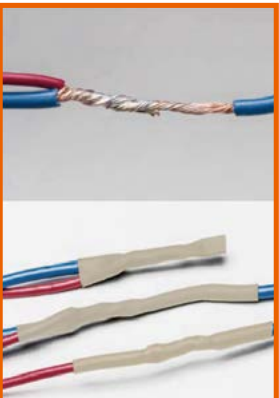
When attaching, allow the fire extinguishing agent part to wrap around connection parts



Attach 119 Fire Extinguish Tape



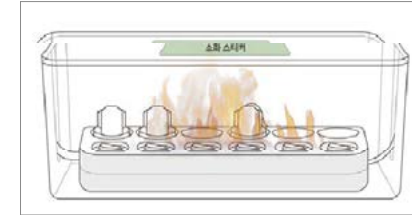
Fix with cable ties



# 119 Automatic Fire Extinguish Multi-Tab Organizer



The extinguishing agent of the extinguishing sticker attached to the inside of the lid of the 119 automatic fire extinguishing multitab organizer automatically reacts to suppress the fire.



In case of fire in multi-tab inside the 119 automatic fire extinguishing multi-tab organizer



The fire extinguishing sticker attached to the inside of the lid detects heat, and ejects fire extinguishing agent by bursting fire extinguishing capsules



Practical storage space (mid-size) is capable of mounting electronic device cables



The stereotype conception is that the multitab area will always be messy. NO LONGER! Install complex cables neatly (large size)

## Prevent fire spreading with one fire extinguisher sticker



Gray/White

White/Gray

Black

Gray

W320xD130xH130mm

W407xD155xH130mm

Type	Size (mm)	Fire rating	Operating environment temperature (°C)
119 Automatic Fire Extinguishing Multitab Organizer (mid-size) can be mounted on the upper part	320×130×130	A,B,C,E	-40/ +65
Unable to mount 119 Automatic Fire Extinguishing Multi-tab Organizer (largesize)	407×155×130	A,B,C,E	-40/ +65



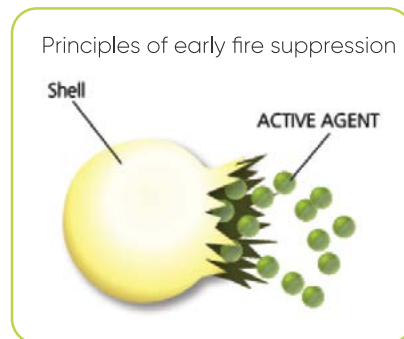
## Classification of fires by rate

Fire classification		Combustibles
Class A	General fire	Solids, including wood, paper, clothes, rubber, plastic, etc
Class B	Oil fire	Fuel oil, lubricating oil, grease, and paint
Class C	Electric fire	Electric spark, electric short
Class D	Metal fire	Combustible metals, such as sodium, magnesium, and aluminum
Class E	Gas fire	LPG

**In** general, fire extinguishing materials are stored safely in capsules.  
**In** the event of a fire, the microcapsule responds to heat and sprays fire extinguishing materials to extinguish the fire.  
**Only** the area of the fire is affected by the fire extinguishing material, not adjacent objects or buildings.

## Principles of early fire suppression




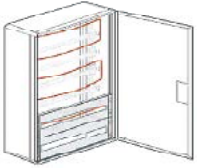
When overheating, sparks, or flames occur (Class A, B, C, and E fires), the microcapsule explodes



- **SHELL** Automatically detects temperature between 120°C-220°C and releases fire extinguishing agent automatically
- **ACTIVE AGENT** Affects with fire activation and suppress chain reactions to extinguish the fire

# FIRE EXTINGUISH CAPACITY AND USABILITY

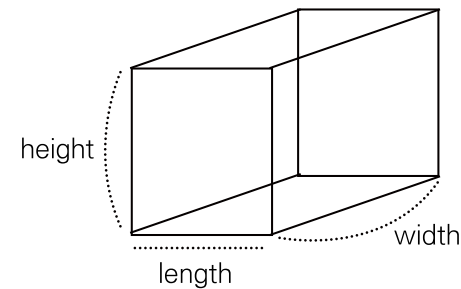
## Comparison of fire extinguishing capacity

Standard	Maximum applicable capacity	For outlet	20L	30L	50L	65L	70L	80L	100L	200L	300L	500L	750L	1000L	Example of use
119 Sticker 	14x35mm	■													
	100x40mm	■	■												
	100x100mm	■	■	■											
	150x100mm	■	■	■	■										
	200x100mm	■	■	■	■	■									
119 Rope 	2.3 M					■	■	■	■						
	3.3 M								■	■					
	4.5 M									■	■				
	6.3 M										■	■			
	8.4 M											■	■		
	10.5 M												■	■	

## Usability comparison table

Standard	Characteristics of each product	20L	30L	50L	65L	70L
119 Sticker	Extinguishing power	■	■	■	■	
	Workability	■	■	■	■	
	Adhesion	■	■	■	■	
	Apply to current facilities with a capacity of 65L or less	■	■	■	■	
119 Rope	Extinguishing power	■	■	■	■	■
	Workability	■	■	■	■	■
	Adhesion	■	■	■	■	
	Apply to current facilities with a capacity of 70L or	■	■	■	■	■

## Comparison of fire extinguishing capacity



H height(cm)  
L length(cm)  
W width(cm)

Ex) Height 50(cm), length 50(cm), width 20(cm)  
volume = 50L = 0.05m³

$$V = H \times L \times W / 1,000$$

## Public organizations & Customer

LG Display LG Chem LG산전

SAMSUNG SAMSUNG ENGINEERING 삼성물산

MANDO Corporation

**LOTTE ALUMINIUM**

CJ CGV CHEILJEDANG

굿네이버스 농협경제지주

사랑의열매 서연이화

HYUNDAI LIVART Canon

벽산페인트 DUTY FREE HYUNDAI DEPARTMENT STORE

부산관광공사 부산시설공단 부산광역시 강서구

안산도시공사 시흥도시공사 성남시

천안시 시설관리공단 거창군

여수광양항만공사 부산경제진흥원 한국산업단지공단

한국동력생산공사 한국수력원자력 한국해양안전본부

부산환경공단 Ings Donggu smile! Geumjeong

대한민국 공군 항공안전단 육군 5군수 지원사령부 해군 제3함대 사령부 ROKAF Aviation Safety Agency

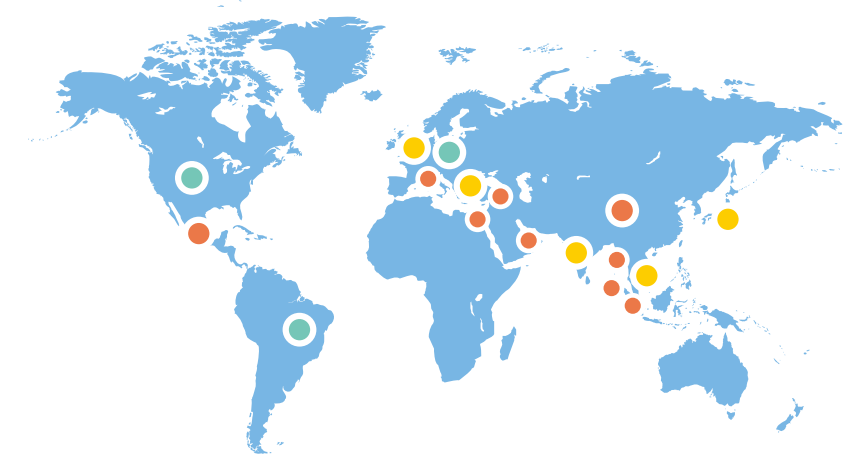
KPS KOEN 한국산림복지진흥원 HRDK 한국산업인력공단

Busan Environment Corporation, Air Force Aviation Safety Corporation, Busan Tourism Organization, Busan Facilities Corporation, Busan Urban Corporation, Army Five Logistics Support Command, Korea Hydro & Nuclear Power, Wolseong Nuclear Power Headquarters, Korea Rural Community Corporation Gangneung Branch, Korea Industrial Manpower Corporation, Ansan Urban Corporation, Naval 3rd Fleet Command, Korea Forest Welfare Promotion Agency, Korea Southeast Power., Yeosu Gwangyang Port Authority, Busan Saha Fire Station, Gwacheon Fire Station, Chungcheongbuk-do Fire Department, Jeju Seogwipo Fire Station, Jeju Western Fire Station, Jeju Eastern Fire Station, Jeju Fire Station, Busan Gangseo Fire Station, Korea Industrial Complex Corporation, and more

## EXPORT



Exports to Vietnam, China, Japan, Thailand, Poland, Israel, Turkey, Iraq, Hungary, United Arab Emirates, Malaysia, Myanmar, Brazil, Mexico, Germany, Indonesia, the United States / as of 2022

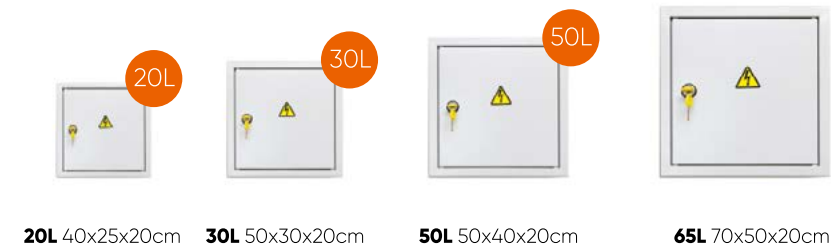




## Installation application



## Products by size



Switchboard sizes applicable with 119 Sticker



For double-door refrigerator 800L Size

Switchboard sizes applicable with 119 Rope

**119**  
SERIES

ROPE  
STICKER  
**MICRO CAPSULE**

 **SOO**  
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**INNOBIZ**  
기술혁신영중소기업



소방산업공제조합



부산대표창업기업  
Busan Leading Tech Startup

Selected as trial purchase products in the technology development product category in 2020 and 2021  
Selected for pilot use in the field of excellent commercial products by the Ministry of National Defense  
Products are available at Venture Country of the Public Procurement Service  
Products are available for clean business