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- HR-PS-120 (Medium Density Silicone)
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- HR-BS-924 (Boot Fabric)

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Introduction

Fire-Stop System(Fire Seal) Fire Stop[®]

For special purpose buildings where a small fire can lead to a conflagration, including skyscrapers, hotels, department stores, nuclear power plants, thermal power plants, cogeneration plants, chemical plants, refineries, etc., the demand for a perfect fireproof sealing agent is on the rise.

The basics of the fireproof architectural design lie on installing fire walls and fireproof zones which help a quick extinguishment and protecting various cables, pipelines, and ducts.

Cables, pipelines, and ducts penetrate the inside of a building vertically and horizontally, meaning they become chimneys and smoke pipes through which the fire spreads rapidly. Harmful gases can also take advantage of them, leading to bigger human and property damages.

By effectively sealing the openings of a building through which harmful gases and the fire spread - cables, pipelines, ducts, curtain walls, joints, etc. - a fireproof silicone seal can protect life and property from fire while blocking radiation and harmful gases.

Flood Seal

Water leakage less than ≤ 0.01 Gallon/Min.
@15psi

Ventilation Seal

No leakage at the water pressure of 5 inches

Compartment Pressurization Seal

Water leakage less than ≤ 0.001 CFM/ft/psi @Steam
pressure difference 8psi

Radiation Seal

ASTM E-1027 test

Silicone RTV Foam

What is the silicone RTV foam?

It is Silicone Foam blown and cured at normal temperature. It is designed to make use of the original properties of silicone resin mainly composed of Silicon such as thermal resistance, fire retardance, sound-proofness and airtightness.

Mixing part A and part B at the same rate makes a sticky liquid. This mixture is to be blown and cured two or three times bigger within 1 to 5 minutes and stiffens to become a closed-cell sponge-type elastic body.



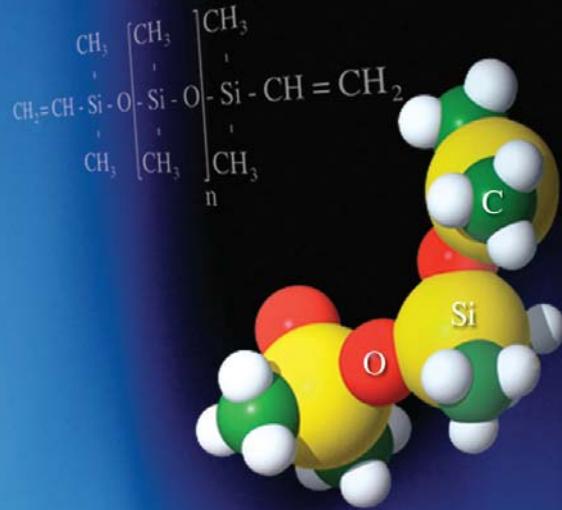
1. Excellent fireproof.

The silicone foam, mainly composed of silicone, have shown an outstanding fireproofness through tests like FS 012, KSF 2842, UL-1479, ASTM E-814, ASTM E-84, etc.

This is because its main component is silicone. The silicone foam blocks heat. Once it is heated, the air inside the cell expands and tightly seals the spaces between walls, preventing the fire from spreading.

2. Excellent gas-tight.

The silicone foam is composed of closed cells. Thus, if heated, it further expands and covers openings tightly, blocking harmful gases and oxygen. In addition, it is highly soundproof, waterproof and moisture proof.



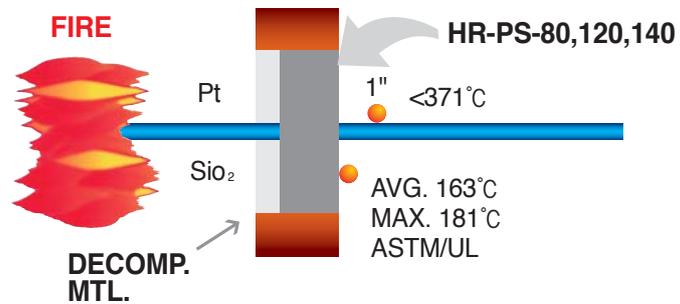
Kinds of Penetration Seal

	HR-PS-80	HR-PS-120	HR-PS-140	Standard
Fire Seal	█	█	█	ASTM E 814 ASTM E 119 UL
Radiation Resist	█	█	█	ASTM E 1027
Radiation Shield			█	
Compartment Seal		█	█	KOPEC- Spec. No. :
Flood Seal		█	█	9-191-A234
Ventilation Seal	█	█	█	

FIRE SEAL

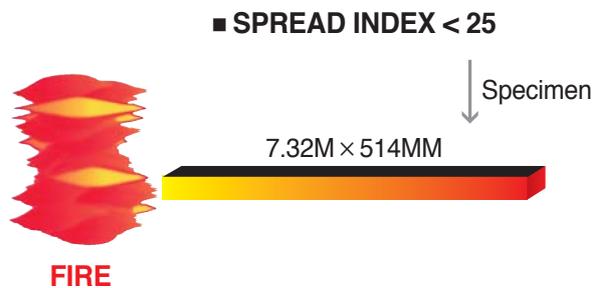
THROUGH PENETRATION FIRE STOP TEST
(ASTM E119, 814, UL1479)

- NO BURN THROUGH
- COLD SIDE TEMP.
 - FIRE STOP MTL <163/181°C
 - PENETRANTS <371°C
- HOSE STREAM TEST



FIRE SEAL

SURFACE BURNING CHARACTERICS TEST
(ASTM E84)



HR-PS-80 (Low Density Silicone RTV)

HR-PS-80 is a two-component type of liquid silicone RTV developed by HRS Co.,Ltd. Excellent fireproof and showing a great ventilation capability. It has been certified as a qualified material for nuclear power plants by Korea Hydro & Nuclear Power Co., Ltd.

Applications of the low-density silicone RTV foam

- Product name: HR-PS- 80
- Features: After part A and part B are stirred for 5 minutes respectively and mixed at the mixing ratio of 1:1 in terms of weight or volume for 1 minute, it would take 24 hours to be completely cured (snap time: about 3 minutes). There might be a slight difference depending on temperature.
- Applications: Sealing material for opening of fire barriers or penetration parts.

Properties	Part A	Part B
Main components	Silicone	Silicone
Viscosity (23℃)	45~90Poise	45~90Poise
Color	Black	Whitish
Specific Gravity (23℃)	1.05~1.10	1.05~1.10
Mixture Ratio	1 : 1	
Working time after mixing	2~5 minutes	
Time for complete cure	24 hours	
Storage Temperature Range	32℃ Max	
Color	Black	
Expansion	200~300%	
Density	14~28 lb/ft ³	
Cell structure	Closed Cell	
Service Temperature Range	-70℃~200℃	
Oxygen Index	>28	
Toxicity	None	
Fire resistance	T/F Class (FS 012, KSF 2842, UL-1479, ASTM E-814)	
Radiation resistance	1 × 10 ⁶ Rad (ASTM E-1027)	
Ventilation Seal	No leakage with 5" of water pressure head	
Flame Spread Index (ASTM E-84)	25 or less	
Asbestos Free	Yes	
Hallogen Free	Yes	

HR-PS-140 (High Density Silicone RTV)

HR-PS-140 is a two-component type of liquid silicone RTV developed by HRS Co.,Ltd. Excellent fire-sealing, flood-sealing, ventilation-sealing, and compartment pressurization-sealing. Especially, it is characterized by having a radiation-blocking function. It has been certified as a qualified material for nuclear power plants by Korea Hydro & Nuclear Power Co., Ltd.

Applications of the high-density silicone

- Productname: HR-PS-140
- Features: After part A and part B are stirred for 5 minutes respectively and mixed at the mixing ratio of 1:1 in terms of weight or volume for 3 to 5 minute, it would take 24 hours to be completely cured (snap time: about 40 to 60 minutes). There might be a slight difference depending on temperature.
- Applications: Sealing material for openings and penetration parts where the fire, pressure, and radiation barrier gamma rays need to be blocked

Properties	Part A	Part B
Main components	Silicone	Silicone
Color	Black	Whitish
Specific Gravity (23 °C)	≥2.25	≥2.25
Before curing		
Mixture Ratio	1 : 1	
Working time after mixing	30 minutes	
Time for complete cure	24 hours	
Storage Temperature Range	32 °C Max	
Color	Dark Gray	
Density	≥140 lb/ft ³	
Service Temperature Range	-70 °C~200 °C	
Oxygen Index	>28	
Toxicity	None	
Fire resistance	T/F Class (FS 012, KSF 2842, UL-1479, ASTM E-814)	
After curing		
Radiation resistance	1 ×10 ⁶ Rad (ASTM E-1027)	
Flood Seal	≤0.01Gallon/Mim. @15psi	
Comoartment Pressurization	≤0.001CFM/ft/psi @Steam pressure difference 8psi	
Ventilation Seal	No leakage with 5" of water pressure head	
Flame Spread Index (ASTM E-84)	25 or less	
Asbestos Free	Yes	
Hallogen Free	Yes	

Application



For Cable Tray(wall)



For Cable Tray(slab)

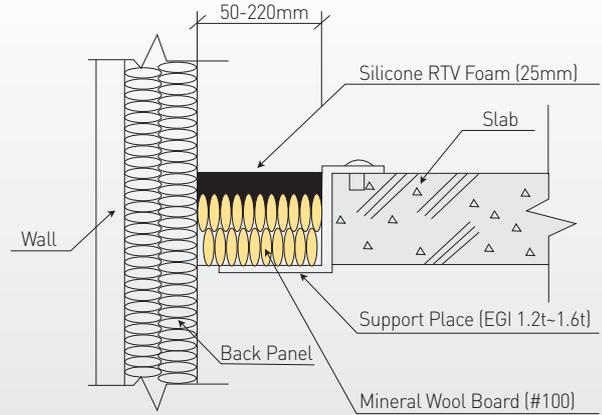


For Pipe and Duct Way

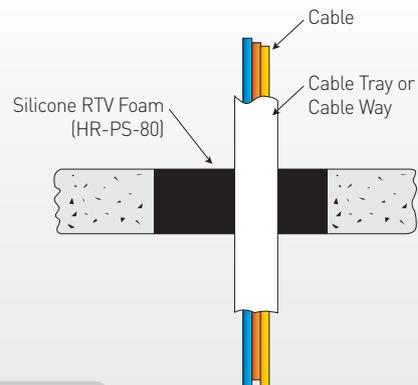


For Panel

For Curtain Wall



1-Layer



2-Layers

