



Fire stop 3-6548 silicone RTV foam

Data Sheet

RS stock numbers 779-037 and 779-043

Introduction

3-6548 silicone RTV foam is specially formulated to have fire resistant properties coupled with good flexibility under the most demanding conditions. It's most effective when used to seal gaps and holes of all sizes through which cables, wires, ductwork and piping pass. Whilst it has been made to withstand high temperatures and confine such hazards as smoke, fire and gases, it can also be used to seal buildings and rooms from other damaging contaminants like dirt, dust and water.

A two-part product supplied in liquid A and B components in one unit, can be easily mixed on-site, expanding rapidly to surround and completely seal off cables, conduits or piping within only minutes of being applied.

Typical properties

Below are properties of hand mixed equal parts of part A and B at 25°C.

Working time	1.0-2.0 min
Density	14.0-20.0 lb/ft ³

Benefits

- Up to 6 hour fire-rating can be achieved
- Forms an airtight seal – prevents spread of smoke, water and other liquid or gaseous contaminants
- Fast foaming – liquid foams and expands rapidly to fill any size or shape of penetration
- Easy to repair – can be removed and replaced at will for changes or repair. Excellent adhesion to itself
- Long lasting thermoset cure elastomer does not melt or soften at high temperature and has excellent UV and weathering resistance.

Specifications

Has been blast tested in various seal configurations and has been shown able to withstand explosive over pressures of up to 148kN/m² depending on seal design.

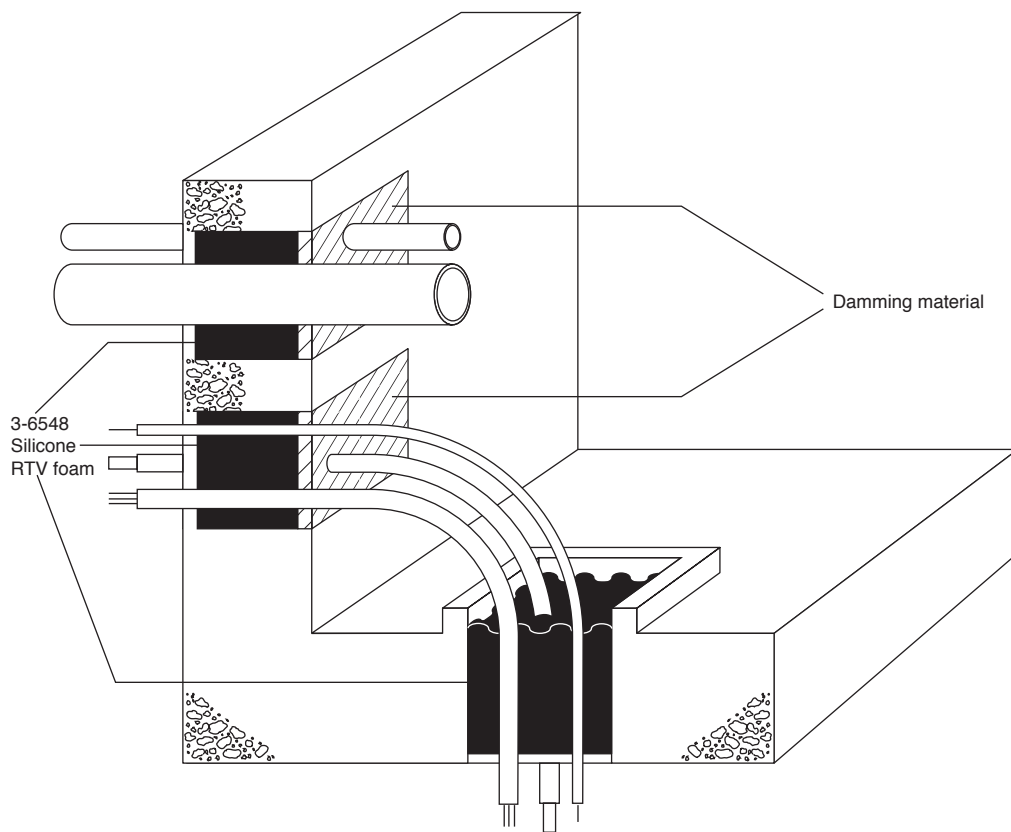
It successfully passes many fire sealing tests, including:

- Factory Mutual Test ASTM E-119 3 hours rating
- BS 476 (part 8 – 1972) – 1 through 6 hours rating
- Mobil hydrocarbon curve – 1 through 6 hours rating
- NelPia (Nuclear Energy Liability Insurance Association) – 3 hours rating
- UL (Underwriters Laboratory) rating per ASTM E-814, 2 and 3 hours
- Swedish National Authority for testing (Statens Provningsanstalt) – 1, 1½ and 2 hours ratings
- SINTEF – 1 hour rating
- CSTB – 3½ hours rating.

3-6548 RTV foam is approved to meet the requirements for use in the construction of nuclear power plants and their safety control systems. It is a FM and UL-classified material. (Factory Mutual Serial No. 26543 from DC Corporation and UL 10 B.)

Other ratings include HF-1 according to UL 94 and a Class I flame spread by ASTM E84.

Typical installation



General characteristics

The silicone-oxygen chemical structure and unique platinum catalyst of 3-6548 Silicone RTV foam ensures excellent fire-resistance.

On exposure to flame, the foam will char and form a silica ash (SiO_2) that actually serves to protect the material underneath, but will not support combustion once the flame is removed.

(The effect is similar to that seen on the silicone heat shields of spacecraft.)

In addition to SiO_2 , the combustion products are largely CO_2 , and only traces of incompletely burnt hydrocarbons. Hence the smoke produced and the toxicity of the decomposition products are very low.

Another unique characteristic of 3-6548 Silicone RTV foam is that it will seal even more tightly when subjected to high temperatures due to the expansion of air within the closed cell structure of the foam itself.

How to use 3-6548 silicone RTV foam

In application, both sides of the penetration are normally dammed using duct tape, mineral fibre wool or a mineral composition damming board.

The correct mixture of A and B components is then injected into the penetration where it expands in 3 to 4 minutes to approximately three times its volume.

After being allowed to cure for at least 24 hours, excess foam may be easily trimmed using a sharp knife and damming materials removed if required.

To add further pipes or cables at a later date, an undersized hole can be cut or drilled out and the cable or pipe simply pushed through. The silicone foam will immediately spring back to surround the intrusion and reseal the penetration. Should any cables or pipes be withdrawn, then the fire seal integrity may be renewed by injecting fresh 3-6548 RTV foam into the resultant cavity.

Other recommended applications include those of thermal and acoustic insulation, valve and actuator protection, offshore oil platform inter-modular sealing and nuclear seismic pad fire sealing.