

# CHEMFIT FIRESIL N

**One Part Neutral Curing, Flame Retardant Silicone Sealant – For Applications Requiring Flame Retardance in Construction and Industrial Areas**

## PRODUCT DESCRIPTION

**ChemFit Firesil N** is a one part, neutral curing, flame retardant silicone sealant specifically formulated for applications requiring fire resistance in construction and industrial areas. This high-performance sealant cures upon exposure to atmospheric moisture to form a durable, permanently elastic, and fire-resistant rubber seal. The neutral (alkoxy) cure system is non-corrosive, making it safe for use on a wide range of substrates including concrete, mortar, and metals without risk of staining or corrosion. It is highly resistant to UV radiation, weathering, and extreme temperatures, ensuring long-term durability in both interior and exterior applications.

## PRIMARY APPLICATIONS

**ChemFit Firesil N** is recommended for use in conditions such as:

- Applications requiring flame retardance in construction and industrial areas
- Fire-rated movement and connection joints in buildings and facades
- Sealing of cable ducts, pipe penetrations, and electrical panels where fire resistance is required
- Perimeter joint sealing around window and door frames with fire rating requirements
- Industrial applications including automotive, rail, and shipbuilding where fire safety standards apply
- Sealing of expansion joints and smoke/heat evacuation systems

## KEY FEATURES AND BENEFITS

- **One part, moisture curing** – Ready to use; cures with atmospheric humidity
- **Neutral cure** – Non-corrosive; safe for use on concrete, natural stone, and sensitive metals; will not stain or corrode
- **Flame retardant** – Conforms to DIN 4102 B1 (Class B1 flame retardant)
- **Excellent adhesion** – Good adhesion to most construction materials without primer
- **Highly durable** – Resistant to UV radiation, weathering, ozone, fresh water, and seawater
- **Excellent tooling characteristics** – Non-sag, easy to extrude, good handling properties
- **Permanently elastic** – Remains flexible over wide temperature range; accommodates joint movement
- **Solvent-free** – Low odor, environmentally friendly
- **Wide service temperature** – Suitable for extreme temperature conditions
- **Available in 300 mL cartridge** – Convenient for professional application

## PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Chemical base	Silicone
Color	Light grey, white, black (subject to availability)
Density	~1.5 g/cm <sup>3</sup> (1.5 kg/L)
Consistency	Non-sag / Thixotropic
Skin formation time (at +23°C/50% r.h.)	~20 – 25 minutes
Curing rate (at +23°C/50% r.h.)	~2 – 3 mm per 24 hours (1-3 mm/24h)
Shrinkage	~3%
Movement capability	±25%
Shore A hardness	~25
Tensile strength (ASTM D 412)	0.6 – 1.4 MPa (85 – 200 psi)
Elongation at break (ASTM D 412)	300 – 600%
Modulus at 100% elongation	~0.4 N/mm <sup>2</sup>
Service temperature (continuous)	-40°C to +150°C (up to +160°C)
Short-term temperature resistance	Up to +200°C (4 hours)
Application temperature	+5°C to +35°C

## PACKAGING AND STORAGE

### Packaging:

- 300 mL cartridge

### Storage:

- Store in original unopened packaging in a cool, dry environment between +5°C and +25°C (max. +27°C)
- Protect from direct sunlight and frost

**Shelf life:** 12 months from date of manufacture when stored properly

## DOSAGE AND COVERAGE RATES

For a standard 300 mL cartridge:

Joint Width (mm)	Joint Depth (mm)	Approx. Joint Length per 300 mL Cartridge
6 mm	6 mm	~8.3 meters
10 mm	10 mm	~3.0 meters
12 mm	12 mm	~2.1 meters
15 mm	15 mm	~1.3 meters

**NOTE:** Joint design must follow the manufacturer's recommended width-to-depth ratio (typically 2:1 for dynamic joints). Use closed-cell polyethylene backing rod as bond breaker.

## APPLICATION GUIDELINES

### Surface Preparation:

- Substrate must be sound, clean, dry, and free from dust, oil, grease, laitance, curing compounds, and any contaminants
- Remove old sealant and loose particles completely
- For best results, use a suitable cleaner or solvent to ensure substrate is free from any residues

### Priming:

- Primerless adhesion to most non-porous siliceous materials (glass, tiles, ceramics, enamel, glazed tiles), metals (aluminum, steel, zinc, copper), and many plastics
- For critical substrates or where maximum adhesion is required, use a suitable primer
- Users must carry out their own adhesion tests

### Application:

- Cut cartridge nozzle at 45° angle to desired bead size
- Insert closed-cell polyethylene backing rod to control depth and act as bond breaker
- Apply sealant firmly into prepared joint, ensuring complete contact with joint sides
- Tool immediately with spatula moistened with soapy water to achieve smooth finish

### Curing Times (at +23°C/50% r.h.):

- Skin formation: ~20-25 minutes
- Rain resistant: After skin formation
- Through cure: ~2-3 mm per 24 hours
- Full cure: 7-14 days depending on joint cross-section

#### Limitations:

- Not for use where joints are to be constantly immersed in water
- Not resistant to concentrated mineral acids, caustic solutions, organic acids, or hydrocarbon solvents
- Not paintable (typical for high-grade silicones)
- Do not use on substrates that release oils, solvents, or plasticizers

### HEALTH AND SAFETY

During curing, this product releases small amounts of methanol vapor (CAS: 67-56-1). Use in a well-ventilated area. May cause eye, skin, and respiratory irritation. If eye contact occurs, rinse with water for 15 minutes and seek medical attention. For skin contact, wash with soap and water. Use gloves (nitrile), safety glasses, and protective clothing during handling. Contains di-isocyanate; persons handling or using it in a professional context must complete safety training specific to these substances. Refer to the Safety Data Sheet for detailed information.

### CLEANING OF TOOLS

Clean tools and equipment with mineral spirits or a suitable silicone cleaner immediately after use. Cured silicone requires mechanical removal.

### APPROVALS AND STANDARDS

ChemFit Firesil N complies with the following standards:

- **DIN 4102 B1** – Flame retardant classification (Class B1 – hardly flammable)
- **ISO 11600** – Building construction – Jointing products – Classification (F-25E)
- **ASTM C920** – Standard Specification for Elastomeric Joint Sealants (Grade NS, Type S, Class 25)
- **EN 15651** – Sealants for non-structural use in joints in buildings (F-EXT-INT)
- **49CFR238 / NFPA 130** – Flammability and smoke emission requirements per Federal Railroad Administration
- **IMO 653 (16)** – International Maritime Organization approval for marine applications
- **ISO 9001 / 14001** – Quality and environmental management systems certified
- One part neutral curing, flame retardant silicone sealant
- Suitable for applications requiring flame retardance in construction and industrial areas

## LEGAL NOTES

*All technical data provided in this Product Data Sheet is based on laboratory testing under controlled conditions. Actual field performance may vary due to differences in substrates, application methods, site conditions, and environmental factors. ChemFit makes no warranty of merchantability or fitness for a particular purpose. Users shall conduct their own trials to validate product suitability for the intended application. ChemFit reserves the right to modify product specifications without prior notice. For the most current documentation, request the latest Product Data Sheet and Safety Data Sheet from ChemFit.*

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