

Installation & Application Guide for Silicone Sealants

Construction Process Guidance & Best Practices

1. Pre-Application Preparation

Substrate Preparation Guidelines

Proper surface preparation is critical to achieving optimal bonding performance and long-term durability.

Cleaning:

Remove oil, grease, and dust using suitable solvents such as isopropyl alcohol (IPA).

Drying:

Ensure substrate moisture content is below 8% (for concrete surfaces).

Surface Roughening:

Light mechanical grinding is recommended to improve adhesion strength.

Surface Inspection:

Perform a water film test - a continuous water film that remains intact for 30 seconds indicates acceptable surface cleanliness.

2. Full Application Process

Sealant Application Technique

Gun Angle:

Maintain a 45° – 60° angle while applying the sealant at a consistent speed.

Joint Dimensions (General Reference):

Joint width: 8-12 mm

Joint depth: 6-8 mm

Joint Aspect Ratio:

Width : Depth = 1:1 to 1:2

Two-Component Sealants:

Mix strictly according to the specified ratio to ensure uniform curing and performance.

Key Process Control Points

Backer Rod Installation:

Ensure continuous filling without gaps. Joint connections should be cut at a 45° angle.

Primer Application:

Apply primer evenly and allow it to fully dry before sealant application.

Application Continuity:

Avoid interruptions during application to prevent weak bonding points.

Excess Sealant Finishing:

Tool immediately using a moistened finishing tool (soap water recommended) and remove masking tape promptly.

3. Common Issues: Prevention & Solutions

Issue	Possible Cause	Recommended Solution
Air bubbles / pinholes	Moist substrate, excessive application speed	Ensure dry surface, apply at steady speed
Sagging	Excessive sealant thickness, high ambient temperature	Control bead size, use higher-viscosity sealant
Poor adhesion	Contaminated substrate, missing primer	Re-clean surface, apply appropriate primer

4. Curing & Maintenance Guidelines

Environmental Conditions

Application Temperature: $\geq 5^{\circ}\text{C}$

Relative Humidity: 45% – 75%

Curing Stages

Skin Formation:

Avoid touching during initial surface curing.

Full Cure:

Allow sufficient curing time, typically 24 – 72 hours, depending on sealant type and conditions.

Winter Application:

Preheat sealant cartridges to $20 - 25^{\circ}\text{C}$ (room temperature) before use.

5. Quality Inspection Standards

Appearance:

Smooth surface, free of bubbles and cracks.

Adhesion:

No debonding; peel strength meets specified standards.

Joint Dimensions:

Conform to design requirements with continuous, uniform sealant joints.

Special Performance Verification:

For waterproof applications, conduct water pressure testing at 0.7 – 0.8 MPa where applicable.

核心关键词:

silicone sealant application guide, construction sealant installation, sealant surface preparation, curing process of silicone sealant