PRODUCT DATA SHEET

Polyurethane Sealant

INTRODUCTION

Polyurethane sealant is a single-component, moisture curing elastic sealing material. It is ready to use with no mixing required—simply extruded via a caulking gun or applied directly by trowel. Once cured, it forms a highly extensible and strongly adhesive seal that accommodates joint movement and deformation. The product exhibits excellent adhesion to substrates such as concrete, metal, and stone, and is suitable for sealing and waterproofing applications in building expansion joints, curtain wall joints, and underground structures.

APPLICATION

This product is suitable for sealing expansion joints, movement joints, and construction joints in concrete, masonry, and metal structures. Typical applications include building facades, curtain wall joints, window and door perimeters, bridge decks, tunnel segments, parking decks, and underground structures. It is designed for both indoor and outdoor use on substrates such as concrete, stone, metal, and ceramic.

ADVANTAGES

●Elasticity & Recovery: Cures to a highly elastic rubber that accommodates dynamic joint movement (e.g., expansion and bridge joints). Withstands repeated tension, compression, and shear without cracking or debonding.

●Low-Temp Performance: Remains flexible down to even -40℃, preventing embrittlement in cold-climate applications.

●Strong Adhesion & Compatibility: Bonds well to concrete, metal, wood, and plastics (e.g., PVC, ABS) without primer. Low surface tension enables micro-pore penetration, enhancing mechanical anchoring.

●Weather & Chemical Resistance: Excellent UV and ozone resistance; outdoor service life up to 15~20 years with better color stability than silicones. Resists water, oils, and mild acids/alkalis.

●Ease of Application: Single-component grades cure via moisture; two-component grades offer faster cure. Both suit varied site requirements.

●Surface Finishability: Cured film resists traffic abrasion and puncture, and accepts paint and sanding for decoration or maintenance.

PACKAGING & COVERAGE

Specification:	750g/unit
Appearance:	Single component, black paste.
Warranty period:	15 years
Shelf Life:	1 Year

CONSTRUCTION STEPS

1.Surface Preparation

Thoroughly clean dust, oil, laitance, and debris from joints and surrounding surfaces. Ensure substrates are clean, dry, and level. (Use a blower for damp substrates; do not apply on wet surfaces.) Apply at 5℃~35℃ and 40%～80% RH. Low temperatures extend curing; high temperatures reduce pot life.

2.Backing and Masking

Insert closed-cell polyethylene backer rod (1~2 mm wider than the joint to control depth and prevent three-sided adhesion). Apply masking tape along both joint edges to prevent contamination.

3.Sealant Application

Load sealant into the gun. Cut the nozzle at a 45° bevel (orifice slightly smaller than joint width). Insert the nozzle to the joint base and move steadily to apply sealant continuously from bottom to top, ensuring full fill, slight overfill, and air expulsion to prevent voids.

4.Tooling

Within 10–15 minutes (before skinning), tool the surface with a spatula or damp sponge to compact and profile (concave fillet), and remove masking tape immediately.

5.Curing

Tack-free in ~15–30 min at ambient temperature. Initial cure in 24 h; full cure in 7 days. Protect from traffic, water, and mechanical disturbance during curing, especially within the first 24 h.

Precautions:

1. Joint Depth Control: For deep joints (e.g., >6 mm), use a backer rod to control depth and prevent three-sided adhesion, which can cause tensile failure.

2. Width-to-Depth Ratio: Maintain a joint width-to-depth ratio of 2:1 or 1:1. Leave sufficient movement allowance (e.g., 2~3 mm below the surface).

3. Priming: For porous substrates (e.g., concrete, stone) or low-surface-energy materials (e.g., metal, glass), apply a compatible primer to enhance adhesion. Allow the primer to become tack-free before sealant application.

HANDLING & HEALTH

1. Please wear rubber or plastic gloves to avoid contact with skin.
2. Product is for professional use only.

STORAGE & SAFETY

1. This product is eco-friendly and non-flammable.
2. This product must be stored dry, protected from sun and rain.
3. This product should not be stored at temperatures below 5℃.

TECHNICAL DATA

No.	ITEM	DATA
1	Appearance	The sample is a fine, uniform paste, free of bubbles, skinning, or gel.
2	Flowability – Sag (N-type) (mm)	0
3	Tack-free Time (h)	9
4	Extrudability (mL/min)	224
5	Tensile Modulus at 23°C (MPa)	0.55
6	Tensile Modulus at −20°C (MPa)	0.84
7	Elastic Recovery (%)	75
8	Adhesion at Specified Elongation	All three specimens show no failure
9	Adhesion at Specified Elongation After Water Immersion	All three specimens show no failure
10	Adhesion After Cold Pull–Hot Compression	All three specimens show no failure
11	Mass Loss (%)	3.7
12	Density (g/cm³)	1.37

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