



PCP
PREMIUM CONSTRUCTION PRODUCTS

Address: PO BOX 136 ARCHERFIELD BC, QLD 4108

Tel: 1800 885 510

Web: www.pcpaus.com.au

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Product Data Sheet

PCP MS 600 Multifunctional Hybrid Sealant and Adhesive

DESCRIPTION

A single-component, low-modulus, solvent and isocyanate free, hybrid sealant curing at room temperature with moisture, formulated for building joints. It provides exceptional weather resistance and elasticity, adapting to seasonal temperature changes without cracking. Non-staining and free from harmful emissions or VOCs during and after curing, ensuring compatibility with substrates such as metal, glass, and masonry. Suitable for expansion joints, curtain walls, and precast concrete applications.

RECOMMENDED USE

- **Building Joints:** Curtain walls, concrete expansion joints, door/window sealing, waterproofing joints.
- **Precision Assembly:** Bonding stone, mirrors, glass, and metal composite structures.
- **Flexible Joints:** Precast panels, timber, metal, marble, PVC, curtain walls, and concrete roof tiles.
- **Expansion Joints:** Buildings concrete, highways, tunnels, runways, and hydraulic engineering projects.
- Traditional Building Expansion Joints.

FEATURES AND BENEFITS

Primerless Adhesion*:

- Compatible with substrates including concrete, metal, plastic (PVC/ABS).
- No primer required (*Surfaces must be free from oil, dust, rust and any loss materials.*).

Superior Weather Resistance:

- UV-resistant.
- Temperature-tolerant from -50°C to +100°C.

High Flexibility:

- Elongation at break $\geq 700\%$
- Movement Capability: $\pm 50\%$ (ASTM C 719).

Eco-Friendly & Safe:

- Solvent-free, silicone-free, PVC-free, isocyanate free.

Easy Application:

- Compatible with manual/electric caulking guns.
- Surface dry time ≤ 40 minutes (Method A) (GB/T 13477.5).



TECHNICAL DATA

Property	Value/Test Result	Test Standard
Appearance	Smooth, bubble-free/no lumps	GB/T 14683-2017 5.1
Solid Content	≥96%	GB/T 13477.19
Curing Rate (24h)	≥3.0 mm/day (23°C/50% RH)	GB/T 13477.3-2017
Density	1.3–1.4 g/cm ³	GB/T 13477.2
Sag Resistance	≤3 mm (50°C, vertical, 4h)	GB/T 13477.6-2002
Tack-Free Time	≤40 minutes (Method B)	GB/T 13477.5-2002
Shore A Hardness	35–40	ISO 868
Tensile Strength	≥0.8 MPa	ASTM D412
Elongation at Break	≥700%	ISO 8339
Elastic Recovery Rate	≥90%	GB/T 13477.17-2017
Tensile Modulus (23°C)	≤0.7 MPa (LM+ grade, custom)	GB/T 13477.8-2017
Extension Adhesion	No failure (60% elongation)	GB/T 13477.10-2017
UV Exposure Adhesion	No failure (300h light exposure)	JC/T 485-2007
Application Temperature	5–40°C	—
Service Temperature	-50°C to +100°C	—

Notes: Test condition, T_s 23°C ± 2°C, RH55% ± 5%, 168h.

PACKAGING&COVERAGE

Sausage Pack: 600 mL

One 600ml sausage of MS 600 provides the following approximate linear coverage based on joint dimensions:

Joint Size (Width × Depth)	Linear Meters per Sausage
12mm × 12mm	3.9m
15mm × 7mm	4.1m
20mm × 10mm	3.0m
30mm × 15mm	1.5m

Notes: Values assume optimal application with no material waste. Coverage may vary slightly due to tooling pressure, joint irregularities, or nozzle trimming.



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APPLICATION

Requirements:

Temperature Control:

- **Ambient Temperature:** Apply MS 600 only when the surrounding temperature is between +5°C to +40°C.
- **Material Storage:** Store sausages in a controlled environment at +5°C to <+40°C for at least 24 hours before use.
- **Avoid Extreme Conditions:** Do not apply if temperatures are expected to drop below +5°C or exceed +40°C within 48 hours of curing.

Tool Readiness:

- Ensure all application tools (e.g., hand guns, caulking guns, sausage guns) are clean, dry, and compatible with MS 600 sealant.

Operational Specifications:

1. Sausage Application (600ml)

Loading the Gun:

- Insert the MS 600 sausage into the applicator gun barrel, ensuring proper alignment.
- Secure the sausage by tightening the gun's plunger mechanism.

Opening the Seal:

- Remove the aluminum clip at the sausage tip.
- Cut the foil seal 3–5mm behind the clip using a sharp utility knife to avoid damaging the nozzle threads.

Nozzle Preparation:

- Attach a tapered nozzle to the gun.
- Cut the nozzle tip at a 45° angle to match the required bead size (e.g., 6mm for 10mm joints).

2. Substrate Preparation

Porous Substrates (e.g., concrete, wood):

- Seal porous surfaces with a compatible primer or sealer to prevent air bubble formation.
- Allow sealer to cure fully (refer to manufacturer's drying time).

Primer Application (if required):

- Apply primer after installing backer rods to ensure proper adhesion.
- Work within the primer's open time (typically 10–30 minutes).
- Critical Note: In rising temperatures, trapped in uncured primer can cause blowouts or bubbles. Ensure primer is fully dry before applying MS 600.

3. Joint Application

Filling Technique:

For joints wider than 10mm, apply sealant in multiple layers:

- First pass: Fill the joint to 50% depth.
- Second pass: Overfill slightly, then tool to ensure contact with all surfaces.

Use a steady, consistent speed to avoid air entrapment.



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Joint Geometry:

- Maintain a depth-to-width ratio of 1:2 (e.g., 5mm depth for 10mm width).
- For joints deeper than 20mm, install backer rods to control sealant depth and prevent three-sided adhesion.

Adhesion Prevention:

- Apply bond breaker tape to the joint base or use closed-cell backer rods to ensure only two-sided adhesion.

4. Surface Finishing

Tooling Process:

- Immediately after application, tool the sealant with a stainless steel spatula or plastic profiling tool.
- Press firmly to force sealant into the joint, eliminating voids and breaking surface bubbles.
- Create a smooth concave finish (dished 1–2mm below the substrate surface).

Masking Tape Removal:

- Remove masking tape within 10–15 minutes of application, before the sealant begins to skin over.
- Pull tape at a 45° angle to avoid tearing the sealant edge.

Curing Support:

- In low humidity (<40% RH), lightly mist the joint with water using a fine spray bottle to accelerate skin formation.
- Avoid direct water jets or oversaturation.

Quality Assurance & Troubleshooting

Air Bubble Prevention:

- Prime substrates thoroughly.
- Tool sealant aggressively, especially in corners.

Temperature Monitoring:

- Use an **infrared thermometer** to check substrate temperature during rapid warming (e.g., sunlight exposure).
- Pause application if substrate exceeds +40°C.

Curing Conditions:

- Maintain relative humidity above 35% during curing (use humidifiers in dry environments).
- Protect fresh sealant from rain, dust, or mechanical impact for 24–48 hours.

Final Notes

- **Concave Finish Mandatory:** All tooling must achieve a smooth, recessed profile to ensure proper stress distribution.
- **Waste Management:** Clean uncured sealant with isopropyl alcohol; cured material requires mechanical removal.
- **Safety:** Wear nitrile gloves and eye protection during application.



JOINT DESIGN

1. Width-to-Depth Ratios

Joints ≤12mm wide:

- Maintain a 1:1 width-to-depth ratio (e.g., 10mm width = 10mm depth).

Joints >12mm wide:

- Use a 2:1 width-to-depth ratio (e.g., 20mm width = 10mm depth).
- **Minimum depth:** 7mm | **Maximum width:** 35mm.

2. Pre-Cast Concrete Joint Height Guidelines

For vertical joints in pre-cast concrete panels, follow these approximate rules:

Joint Height Range (m)	Design Consideration
Up to 2.0m	Standard 2:1 ratio applies
2.0–3.5m	Increase backer rod density
3.5–5.0m	Use hybrid backer rods (open-cell + closed-cell)
5.0–6.5m	Consult engineering specifications
6.5–8.0m	Mandatory structural review

3. Backing Material Requirements

Mandatory Use: Install a **tight-fitting, non-absorbent backer rod** to:

- Maintain proper width-to-depth ratios.
- Prevent three-sided adhesion (sealant must only bond to two surfaces).

Approved Materials:

Open-cell polyurethane:

- Allows ambient moisture to reach **both sides** of the joint for **faster curing**.

- Ideal for humid or temperature-stable environments.

Closed-cell polyethylene:

- Use only if joint moisture exposure is unavoidable.
- **Caution:** Puncturing the outer skin can trap expanding air, causing **bubbling in uncured sealant** during temperature rises.

4. Prohibited Materials

Never use:

- Oil-impregnated backer rods.
- Tar-coated backing materials.
- Absorbent foams (e.g., untreated polyester).

Reason: These materials may inhibit adhesion or react chemically with MS 600.

5. Installation Best Practices

Backer Rod Sizing:

- Select a rod diameter 25% larger than the joint width to ensure compression.
- Example: 15mm joint → 19mm backer rod.

Placement:

- Press rods to the bottom of the joint without stretching.
- Ensure continuous contact with joint walls.

Verification:

- Perform a depth check using a notched gauge before sealant application.



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6. Temperature & Movement Considerations

Thermal Expansion:

- For joints exposed to $>\pm 15^{\circ}\text{C}$ daily temperature swings, increase width by 20% beyond calculated ratios.

Curing Interference:

- Avoid closed-cell rods in joints prone to rapid heating (e.g., south-facing façades).

STORAGE & TRANSPORT

Transport: Store in a dry place, protected from light.

Ship as non-hazardous goods; avoid sharp impacts.

Storage: Keep in dry conditions.

Shelf life: 12 months (unopened).

CAUTION

After Opening: Use on the same day or reseal airtight for storage.

Optimal Conditions: Apply at $5\text{--}40^{\circ}\text{C}$ with 55–75% humidity.

APPLICATION ADVISORY & LIMITATIONS

All guidance regarding product transport, storage, or operational handling is derived from our accumulated technical expertise under standardized conditions.

Users must acknowledge that:

1. Performance Variability

Practical outcomes may deviate from projections due to:

- Material property fluctuations.
- Site-specific environmental variables. (e.g., temperature gradients, humidity levels)
- Application methodology variances.

2. Liability Exclusion

Our company explicitly:

- Offers no warranties regarding field performance consistency.
- Accepts no liability for consequences arising from contextual implementation factors.

3. Mandatory Precautions.

To optimize adhesion performance and material compatibility:

- Conduct comprehensive material suitability testing prior to full-scale deployment.
- Obtain formal validation from our Technical Advisory Division through pre-application consultation.



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AUSTRALIAN CONSUMER LAW

Your purchase is protected by statutory entitlements under Australian Consumer Law that cannot be waived.

These statutory protections include:

- Significant Defect Remedies

Where goods contain fundamental flaws affecting safety or core functionality, you may elect to receive a replacement product or full reimbursement, with compensation for objectively quantifiable related losses.

- Non-Critical Defect Resolution

For defects not constituting fundamental flaws, we will provide repair services or product substitution without charge.

- Complementary Rights

These statutory protections operate independently of and in addition to any contractual warranties or other legal recourse available through judicial processes.

DISCLAIMER

Important limitations apply:

- Technical Documentation

Product specifications and performance data originate from controlled testing environments and should be independently verified; absolute accuracy cannot be warranted.

- Risk Allocation

Customers bear full responsibility for outcomes arising from product operation, storage practices, or maintenance procedures.

- Warranty Parameters

Our contractual obligations are strictly limited to addressing verified production-line defects, governed by expressly defined terms in sales agreements.

CONTACTS

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