



Product Usage & Processing Guide

Models: PRS-P-p01 / PRS-P-p02 | Brand: ZonMed PRS

1. Product Overview

These are dental heat-pressed (lost-wax) glass-ceramic ingots for professional dental laboratories, used to fabricate indirect restorations. Two models are available: PRS-P-p01 (lithium disilicate) for higher strength requirements, and PRS-P-p02 (leucite-reinforced) for anterior aesthetic restorations.

2. Indications & Model Selection

PRS-P-p01 (Lithium Disilicate):

- Anterior and posterior single-unit crowns
- Inlays, onlays and veneers
- Three-unit anterior bridges
- Three-unit premolar bridges
- Implant-supported single crowns
- Hybrid abutment crowns

PRS-P-p02 (Leucite-Reinforced):

- Anterior single-unit crowns
- Inlays and onlays
- Veneers (full and partial coverage)
- Implant-supported anterior crowns (cement-retained)

3. Technical Specifications

Property	PRS-P-p01 (Lithium Disilicate)	PRS-P-p02 (Leucite-Reinforced)
Biaxial Flexural Strength	350-450 MPa	120-180 MPa
Fracture Toughness (KIC)	2.0-3.0 MPa.m ^{1/2}	1.2-1.5 MPa.m ^{1/2}
Vickers Hardness	550-620 HV	500-580 HV
Elastic Modulus	95 +/- 10 GPa	65 +/- 10 GPa
CTE (25-500 C)	10.2 +/- 0.5 x10 ⁻⁶ /K	9.8 +/- 0.5 x10 ⁻⁶ /K
Density	2.5 +/- 0.1 g/cm ³	2.45 +/- 0.1 g/cm ³
Pressing Temperature	920-950 C	850-880 C

4. Processing Instructions

Step 1 - Wax-Up



Fabricate the wax pattern per standard protocol. Minimum wall thickness: 1.5 mm (anterior), 1.5-2.0 mm (posterior). Bridge connector minimum: 16 mm² (anterior), 20 mm² (posterior). Sprue diameter: 2.5-3.5 mm, length: 5-8 mm.

Step 2 - Investing

Use phosphate-bonded investment specific for press ceramics. Mix under vacuum. Attach the pattern to the ring base at a 45-60 degree angle. Allow complete setting (45-60 min at room temperature).

Step 3 - Burnout

RT -> 250 C (5 C/min, hold 30 min) -> 450 C (5 C/min, hold 30 min) -> 850 C (8 C/min, hold 60 min). Total burnout: approx. 3-4 hours.

Step 4 - Pressing

Place the ceramic ingot and Al₂O₃ plunger into the preheated ring. Press at 850-950 C (model-dependent), 60 C/min ramp, 15-25 min hold, 4-5 bar pressure.

Step 5 - Divesting & Finishing

Cool the ring slowly to room temperature. Divest with glass beads (50 µm) at 2-3 bar. Cut sprues with a water-cooled diamond disc. Remove the reaction layer: Al₂O₃ sandblast (100 µm, 2 bar) or 5% HF etch (20 s, then neutralize). Finish margins with diamond burs. Polish with a ceramic polishing kit. Ultrasonic clean in distilled water or ethanol for 5 min.

Step 6 - Characterization & Cementation

Optional: apply stain/glaze at 750-820 C. For cementation: etch the intaglio with 5% HF (20 s), apply a silane coupling agent (60 s), and bond with adhesive resin cement. Do NOT use glass-ionomer or zinc-phosphate cements.

5. Handling & Safety Precautions

- Hydrofluoric acid (HF) is highly corrosive: perform etching in a fume hood; wear goggles/face shield and nitrile gloves. On skin contact, rinse with plenty of water for 15 minutes, apply calcium gluconate gel, and seek medical attention if needed.
- Dust: use local exhaust ventilation when grinding or sandblasting, and wear a KN95/N95 mask and safety glasses.
- High temperature: wear heat-resistant gloves when handling items from the furnace (>700 C).
- For use by qualified dental technicians/dentists in a professional environment only.

6. Contraindications & Cautions

- Do not use in patients allergic to the product components, cements, or silane coupling agents.



- Use with caution in patients with severe bruxism / excessive occlusal loading without an occlusal guard.
- PRS-P-p02 is not recommended for multi-unit posterior bridges.
- Use with caution where preparation thickness is insufficient or the patient has poor oral hygiene / cannot attend regular follow-ups.
- Professional use only; not for direct application to patients.

7. Storage & Shelf Life

Store at 5-30 C and relative humidity below 70%. Keep sealed in the original packaging, away from light and moisture. Shelf life: 3 years from the date of manufacture.

8. Disposal

Dispose of as inert solid waste in accordance with local regulations (EWC 10 12 01).