Shenzhen Zhongchuang 3D Technology Co., Ltd.

Add: Room 204, Building 1, Jiatai Health Industrial Park, No.1 Industrial Zone,
Tangwei Community, Fuhai Subdistrict, Bao'an District, Shenzhen City
Tel: +86 15959299121 | Web: www.zonmedtech.com | E-mail: info@zonmedtech.com

TECHNICAL DATA SHEET

Dental Glass Ceramic Blocks

Model: PRS-P-C01 / PRS-P-C02 / PRS-P-C03 / PRS-P-C04

Brand: ZonMed PRS Ecosystem

Product: Lithium Disilicate / Leucite-Reinforced / Feldspathic Glass Ceramic System

Spec: CAD/CAM blocks (12/14/16/18/20 mm) and heat-press ingots (5 per box)

Compatible Equipment: CEREC, inLab, and standard dental CAD/CAM milling systems; Programat, Dekema, Zubler, VITA pressing furnaces

1. Product Features

• High Strength — Lithium disilicate (C01/C02) flexural strength up to 470 MPa, suitable for anterior and posterior restorations including 3-unit bridges.

• Dual Processing Options — C01/C02/C03 compatible with both CAD/CAM milling and lost-wax heat-press; C04 optimized for CAD/CAM milling.

• Excellent Aesthetics — Natural opalescence, fluorescence, and multi-level translucency (HT/MT/LT/MO) matching natural tooth structure.

• Fast CAD/CAM Workflow — C04 fully crystallized blocks ready for immediate finishing after milling; C01/C02 pre-crystallized for easy milling with post-mill crystallization (840–860°C).

• Biocompatible — ISO 10993 certified, non-cytotoxic, non-sensitizing, suitable for long-term intraoral use.

• PRS Open Ecosystem — Compatible with all major CAD/CAM milling systems and pressing furnaces; no equipment lock-in.

2. Technical Specifications

Property	C01 ($LiSi_2$, HT/MT)	C02 ($LiSi_2$, LT/MO)	C03 (Leucite)	C04 (Feldspathic)
Flexural Strength (Biaxial)	350–470 MPa	350–450 MPa	120–180 MPa	110–150 MPa
Fracture Toughness	2.0–3.0	2.0–2.8	1.2–1.5	1.0–1.3
Vickers Hardness	580±30 HV	580±30 HV	540±30 HV	520±30 HV
Elastic Modulus	95±10 GPa	95±10 GPa	65±10 GPa	60±10 GPa
CTE (25–500°C)	10.2±0.5	10.2±0.5	9.8±0.5	9.2±0.5
Density (g/cm^3)	2.5±0.1	2.5±0.1	2.45±0.1	2.4±0.1
Chemical Solubility	30–80 $\mu g/cm^2$	30–80 $\mu g/cm^2$	40–90 $\mu g/cm^2$	50–100 $\mu g/cm^2$
Processing Temp	840–860°C (cryst.) / 920–950°C (press)	840–860°C (cryst.) / 920–950°C (press)	850–880°C (press)	Fully crystallized; ready after milling
Translucency	HT / MT	LT / MO	HT / MT	HT / MT / LT

3. Model Selection & Indications

PRS-P-C01 — Lithium Disilicate (HT/MT)

Indications: Anterior + posterior single crowns, inlays, onlays, veneers, 3-unit anterior/premolar bridges, implant crowns.

Processing: CAD/CAM milling (pre-crystallized state, then crystallize at 840–860°C) or heat-press (920–950°C).

PRS-P-C02 — Lithium Disilicate (LT/MO)

Indications: Posterior crowns, bridges up to 3 units, implant crowns; cases requiring masking of discolored abutments.
Processing: Same as C01. Lower translucency for higher masking power.

PRS-P-C03 — Leucite-Reinforced (HT/MT)

Indications: Anterior crowns, inlays, onlays, veneers; not indicated for posterior bridges.
Processing: Primarily heat-press (850–880°C); also CAD/CAM millable.

PRS-P-C04 — Feldspathic / Hybrid (HT/MT/LT)

Indications: Veneers, inlays, onlays, anterior crowns; excellent aesthetics for minimally invasive restorations.
Processing: CAD/CAM milling in fully crystallized state — ready for finishing immediately after milling.

4. Recommended Processing (IFU Summary)

CAD/CAM Milling Workflow (C01/C02/C04):

Step 1 — Design: Design restoration in CAD software. Minimum wall thickness: 1.0–1.5 mm (anterior), 1.5–2.0 mm (posterior).

Step 2 — Milling: Mount block in CAD/CAM unit. Mill with diamond-coated burs under water cooling.

Step 3 — Crystallization: (C01/C02 only) Place milled restoration in porcelain furnace. Crystallize at 840–860°C per program. (C04: skip — fully crystallized.)

Step 4 — Finishing: Remove sprue, finish margins with diamond burs (water spray). Polish with ceramic polishing kit. Ultrasonic clean.

Heat-Press Workflow (C01/C02/C03):

Step 1 — Wax-Up & Invest: Fabricate wax pattern. Min wall: 1.5 mm. Sprue: 2.5–3.5 mm. Invest with phosphate-bonded investment under vacuum.

Step 2 — Burnout: RT→250°C (5°C/min, 30 min)→450°C (5°C/min, 30 min)→850°C (8°C/min, 60 min). Total: ~3–4 hrs.

Step 3 — Press: Place ingot + Al_2O_3 plunger into preheated ring. Press at model-specific temperature, 4–5 bar, 15–25 min hold.

Step 4 — Divest & Finish: Cool slowly. Divest with glass beads (50 µm, 2–3 bar). Cut sprues, remove reaction layer, finish, polish.

Bonding Protocol (All Models):

Step 1 — Etch intaglio with 5% HF for 20 seconds; rinse 30s and neutralize.
Step 2 — Apply silane coupling agent for 60 seconds; air-dry (do not rinse).
Step 3 — Apply adhesive resin per cement manufacturer instructions.
Step 4 — Use adhesive resin cement (dual-cure or light-cure). Do NOT use glass ionomer or zinc phosphate.

5. Quality Standards & Biocompatibility

- ISO 6872:2015 — Dentistry — Ceramic materials
- ISO 9693:2019 — Compatibility testing for ceramic systems
- ISO 13485:2016 — Medical devices quality management
- Cytotoxicity: Non-cytotoxic (ISO 10993-5)
- Sensitization: No sensitization (ISO 10993-10)
- Irritation: Non-irritating (ISO 10993-23)
- Genotoxicity: Negative (ISO 10993-3)
- FDA 21 CFR Part 872 / EU MDR 2017/745 Class IIa/IIb
- GB/T 30345-2013 compliant

6. Storage & Shelf Life

- Storage Temperature: 5–30°C (41–86°F); Relative Humidity: < 70% (non-condensing)
- Keep sealed in original packaging; protect from moisture and direct sunlight
- Shelf Life: 3 years from date of manufacture under recommended conditions
- Pre-crystallized blocks (C01/C02): Stable at room temperature; do not freeze, avoid temperature cycling
- After opening: No specific degradation; keep sealed to prevent contamination