

Shaped Sealed Units

Any non-rectangular shape — arches, circles, triangles, trapezoids, bespoke

Product Overview

CSU Ltd manufactures sealed units in any non-rectangular shape using flexible warm edge spacer technology. From simple arched window heads and circular portholes to complex compound curves and one-off bespoke designs, our production handles the full range of shaped glazing. All shaped units maintain the same thermal and acoustic performance as rectangular units and use the same dual-seal system, argon gas fill and warm edge spacer options.

Available Shapes

- **True arch:** semi-circular, segmental, Gothic pointed, Tudor flat, elliptical, lancet.
- **Circle:** full (porthole/bullseye), half (lunette/fanlight), quarter (quadrant).
- **Triangle:** right-angle, equilateral, isosceles, scalene.
- **Trapezoid:** angled sides — gable-end windows, dormer cheeks.
- **Rake:** one angled edge matching roof pitch — gable/attic windows.
- **Pentagon / hexagon / octagon:** multi-sided geometric shapes.
- **Radius corners:** rectangular with radiused corners.
- **Compound curves:** S-curves, parabolic, multi-radius.
- **Bespoke:** any custom shape to template or CAD.

Specifications

Property	Specification
Min radius	150mm for curves (tighter on request)
Spacer	Flexible warm edge for all curves (Swisspacer / Super Spacer)
Glass	All types — float, Low-E, toughened, laminated, tinted, patterned
Template	Full-size hardboard/plywood, dimensioned drawing, or DXF/DWG/CAD
Tolerance	±2mm on curved dimensions
Lead time	5-7 working days (10+ for complex shapes)

Gas Fill — Air as Standard, Argon Optional

CSU sealed units are air-filled as standard. Argon gas fill (minimum 90% concentration) is available as an optional upgrade. Argon has 34% lower thermal conductivity than air (0.018 vs 0.026 W/mK), improving thermal insulation by approximately 15%. Argon is an inert, non-toxic, odourless gas that makes up 0.93% of Earth's atmosphere. Krypton gas is available by special order for slim-cavity applications where maximum performance is needed in a narrow gap.

Property	Dry Air (Standard)	Argon (Optional)	Krypton (Special)
Thermal conductivity	0.026 W/mK	0.018 W/mK	0.010 W/mK
U-value benefit	Reference	~15% better	~25% better
Optimal cavity	12-16mm	16-20mm	10-12mm
Depletion rate	N/A	<1% per year	<1% per year
Relative cost	1x	~1.2x (optional upgrade)	~50x (premium)

Spacer Bar Options — Warm Edge vs Aluminium

Traditional aluminium spacers conduct heat rapidly, creating a cold thermal bridge at the unit edge that causes condensation and heat loss. Warm edge spacers use low-conductivity materials, reducing this bridge by up to 94%. CSU recommends Swisspacer Ultimate or Super Spacer TriSeal for all projects.

Spacer	Material	Conduct. (W/mK)	Psi value	Edge Temp vs Alu.
Aluminium	Aluminium alloy	160.0	0.080	Baseline (cold)
Swisspacer Ultimate ★	Composite polymer	0.19	0.030	+3-4°C warmer
Super Spacer TriSeal ★	Silicone foam	0.17	0.028	+3-4°C warmer
Thermix TX.N Plus	Stainless + plastic	0.60	0.040	+2-3°C warmer
TGI Spacer	Stainless + polymer	0.90	0.050	+1-2°C warmer

Warm edge improves whole-window U-value by 0.1-0.2 W/m²K, eliminates edge condensation, and can improve Window Energy Rating by one full band. Available in widths: 6-24mm.

Handling, Storage & Lead Times

- **Storage:** Store vertically on A-frames under cover. Never store flat.
- **Handling:** Suction cups for units over 25kg. Mechanical handling over 60kg.
- **Edge protection:** Protect edges during transport. Avoid glass-to-glass contact.
- **Installation:** Install within 28 days of delivery for warranty validity.
- **Temperature:** Do not install below 5°C. Allow units to acclimatise first.

Product	Standard	Express	Notes
Standard DGU	3-5 days	1-2 days	Most configs
Triple Glazed	5-7 days	3-4 days	Warm edge std
Integral Blinds	10-15 days	—	Made to order
Jumbo Units	5-10 days	—	Size dependent

Product	Standard	Express	Notes
Shaped Units	5-7 days	—	Template req.
Fire-Rated	7-14 days	—	Availability
Walk-On Glass	7-10 days	—	SGP lamination
Smart Glass	10-15 days	—	PDLC film

How to Order

Contact our sales team: 020 8574 9342 | 07305 993794 | sales@csultd.co.uk | csultd.co.uk — quotes returned within 2 business hours (Mon-Fri, 8am-5pm).