TECHNICAL BULLETIN

POLYCARBONATE HEAT-ZONE BACKSPLASH UPGRADES

WHY POLYCARBONATE SOLVES THE PROBLEM

Solid polycarbonate offers dramatically higher heat tolerance with a glass-transition temperature of ~293–302°F. Typical appliance exhaust temperatures (50–90°C / 122–194°F) are well within polycarbonate's stable operating zone. In real-world testing and field use, polycarbonate panels remain flat, rigid, and dimensionally stable where EPVC fails.

WHY EPVC FAILS IN HEAT-ZONE APPLICATIONS:

Extruded PVC (EPVC) softens at relatively low temperatures (approx. 181°F). Air fryers and countertop convection appliances exhaust hot air directly toward the wall, creating localized temperatures that exceed EPVC's stability range. This leads to warping, gloss spots, bowing, and adhesive failure—common field issues when EPVC is used behind modern countertop appliances.

PERFORMANCE ADVANTAGES OF 6 MM SOLID POLYCARBONATE:

- High heat tolerance: stable in temperature environments up to approx. 239–257°F continuous use.
- Impact-resistant: 200–300× stronger than other common plastics, and far stronger than EPVC.
- Will not warp, sag, or blister from air fryer exhaust.
- Compatible with widely available construction adhesives.
- Ideal for continuous duty behind appliances under cabinets.
- Stiff, flat, and robust panel ideal for retrofit installations.

RECOMMENDED ADHESIVES (DRYWALL SUBSTRATES)

Primary: Loctite PL Premium Fast Grab (polyurethane).
Alternate: OSI Quad Max (MS polymer).

Both products provide high-strength, flexible bonds and are rated for temperatures typical of appliance exhaust zones. Avoid solvent-based adhesives, epoxies, and contact cements.

INSTALLATION HIGHLIGHTS:

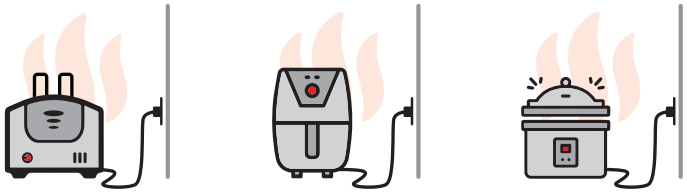
- Maintain a 1/16" perimeter expansion gap.
- Use adhesive pads or serpentine beads with approx. 1/8" bondline thickness.
- Brace panel for 2–6 hours until initial cure.
- Allow 24 hours before placing a heat-producing appliance beneath cabinets.
- Seal edges with Quad Max or 100% silicone to allow movement and prevent moisture intrusion.

HEAT-EXPOSURE SUITABILITY

Designed for use behind:

- Air fryers
- Toaster ovens
- Convection/toast combo units
- Coffee makers
- Electric griddles

Polycarbonate maintains structural and aesthetic integrity where EPVC consistently fails in these environments.



IN SUMMARY

Replacing EPVC with 6 mm solid polycarbonate directly addresses the root cause of heat-induced failures. The upgraded material eliminates warping, bowing, and adhesive delamination caused by modern countertop appliance exhaust heat. This is the recommended long-term, heat-stable solution for all residential and commercial backsplash installations behind high-heat appliances.

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