

Different types of polyurethane foam products use different raw materials, have distinct compositions and different properties

| Type of Foam | FLEXIBLE Polyurethane Foam | RIGID Polyurethane Foam | SPRAY Polyurethane Foam |
|-----------------------|---|---|---|
| Applications | <p>Cushioning in</p> <ul style="list-style-type: none"> ▶ upholstered furniture ▶ mattresses ▶ carpet cushion ▶ automotive seating ▶ arm rests and headliners <p>Also, as</p> <ul style="list-style-type: none"> ▶ apparel padding ▶ shoe insoles ▶ filtration ▶ packaging ▶ sponges ▶ applicators ▶ medical and technical applications | <p>Insulation in</p> <ul style="list-style-type: none"> ▶ refrigerator walls ▶ building insulation panels <p>Also found in:</p> <ul style="list-style-type: none"> ▶ decorative and architectural applications <ul style="list-style-type: none"> ▪ molded picture frames ▪ furniture trim and molding ▪ exterior building shutters ▪ detailing created by molding rather than intricate carving ▶ flotation modules for docks | <p>A wide variety of applications including but not limited to:</p> <ul style="list-style-type: none"> ▶ roofing ▶ air barriers ▶ insulation (open cell, closed cell) ▶ spray-in-place packaging ▶ flotation for boats |
| Method of application | Cut from blocks or molded | Mainly injected, molded or poured as blocks | Spray-applied — installed as a liquid and then expands many times its original size |
| Cell structure | Open cell (>90% open cells); lightly cross-linked (Porous) | Closed cell (> 90% closed cells); highly cross-linked (Ranges from semi-porous to non-porous) | Closed cell (> 90% closed cells); highly cross-linked Open cell (predominately >50% open cell); unlike FPF, does not recover when compressed (Ranges from semi-porous to non-porous) |
| Compression | Recovers when compressed | Does not recover when compressed | Does not recover when compressed |
| Density | Low-Medium Density 0.62-4.99 lb/ft ³ | Medium-High Density 2.0-25 lb/ft ³ *25 is for wood-like pictures and carvings | Low-Medium Density 0.5-3.5 lb/ft ³ |
| Feel | From Soft to Supportive | Hard | Medium Hard (closed cell); softer (open cell) |
| CAS Number | None | May apply to certain components | May apply to certain components |
| Resources | Polyurethane Foam Association, pfa.org (for flexible polyurethane foam only) | American Chemistry Council/Center for the Polyurethanes Industry, americanchemistry.com/polyurethanes | Spray Polyurethane Foam Alliance, sprayfoam.org (for spray foam only) |