

Types of Foam Including: Polyethylene, Foam Cushions, Polyurethane Foam, and Packaging Foam.

- **Acoustic foam** is flexible polyurethane foam and serves one of two purposes, depending whether it's attenuated or non-attenuated. Attenuated foam absorbs sound and is good for soundproofing purposes; the non-attenuated foam allows sound to travel through it.
- **Adhesive-backed foam padding** is padding that stays completely intact and provides even pressure distribution. Adhesive-backed foam padding is often used in the medical industry.
- **Bonded foam** is a functional product created by gluing flexible polyurethane particles or shredded flexible polyurethane foam together. The foam block that results is typically peeled into a desired thickness and is most commonly used as carpet cushioning.
- **Closed cell foam** is a type of foam that has cells that are not interconnected. Closed cell foam is good for use as a padding foam and is typically a watertight foam.
- **Cushion foam** is any foam used for cushioning. Uses for foam cushions not only include furniture applications but athletic padding
- **Ethafoam padding** is a closed-cell, expanded, regular (uncrosslinked) polyethylene foam product that is a trademark of Dow.
- **Flexible foam** is polyurethane foam that is used in furniture such as beds, couches and chairs, because it molds itself to the shape of the body, providing comfort and support.
- **Molded foam** is a cellular foam product that holds the shape of the mold cavity in which the molded foam was produced.
- **Open cell foam** is flexible foam in which there are no barriers between cells, and most of the cell walls have been ruptured to a varying extent. The permeable structure allows gases and liquid to pass through the open cell foam.
- **Packaging foam** is a general term applied to foam that provides the highest protection to a product during shipment. Packaging foam is commonly seen in the form of foam peanuts.
- **Plastic foams** are made up of a mass of tiny gas bubbles dispersed in a solid gas phase (matrix). Plastic foams are lightweight and have high strength-to-weight ratios.
- **Polyethylene foam** is a very rigid foam made primarily through an extrusion process.
- **Polyurethane foam** and flexible polyurethane foam is different from polyethylene foam in that it cannot be reheated; it must be shaped into the final product in the foaming process.
- **PVC foam** is a closed-cell foam with very low moisture absorption. It is self-extinguishing, will not rot and has excellent fatigue life and good bond strength with common adhesives and resins.
- **Rigid foam** contains hundreds of millions of closely packed air cells. Rigid foam has excellent thermal performance and is extremely moisture resistant.

Common Foam Terms Including: Polyethylene, Foam Cushions, Polyurethane Foam, and Packaging Foam.

Additive - A material utilized to alter the properties, processing or final use of a base polymer. The quantity of additive is usually articulated in terms of parts per hundred of the total resin in the polymer formulation

Air Flow - The quantity of air that can flow through a two foot by two foot by one foot foam sample with a five inch water pressure differential. Air flow is expressed in cubic feet per minute.

Air Traps - Voids in molded foam parts that are the result of the entrapment of air pockets occurring during mold fill out. Air traps are characterized by shiny, smooth surfaces.

Amine - Category of compounds that catalyze in polyurethane foam reactions.

Anti-Static Flexible Polyurethane Foam - Foam containing electrically conductive material in order to prohibit static electricity buildup or to promote static discharge. Anti-static flexible polyurethane foam is used mainly for packaging electronic components.

Auxiliary Blowing Agent (ABA) - An additive that supplements the main blowing agent water in the production of foam and could create softer or lighter foam.

Ball Rebound - A test technique that measures the surface resilience of flexible polyurethane foam by dropping a steel ball of a specified mass from a certain height onto the foam sample. The ball rebound value is the ball rebound height as a percentage of the height of the fall.

Basal Cells - Large, irregular cells found beneath the surface of the skin of a molded foam part.

Blowing - The method of foaming flexible polyurethane in production. Blowing happens when toluene diisocyanate and water react to create CO₂.

Bonding - Blending of two or more components into a composite. Typically by attaching to other foam grades or polyester fiber.

Buffed - The contouring or shaping of flexible polyurethane foam pieces by the removal of foam with abrasives.

Bun - A section of foam cut from a constantly produced slab stock kind of foam.

Cells - The hollow space left behind in the structure of polyurethane foam encased by polymer membranes or the polymer skeleton after blowing is finished.

CFC-Free Foams - Flexible polyurethane foams produced without using chlorofluorocarbons as auxiliary blowing agents.

Cold Molding - A process in which high-resiliency foam is produced. Pouring is carried out without heat and foam is cured at or near room temperature.

Combustion Modifying Additive - An additive that will decrease the ability of flexible polyurethane foam to ignite or make it burn more slowly.

Compression Force Deflection (CFD) - Also known as compression load deflection (CLD), it is a calculation of the load-bearing capability of a foam.

Convoluting - A process involving special cutting equipment to create a foam sheet with dimples.

Clickability - The capability of a flexible polyurethane foam to return to its natural state from the pinched results of die cutting.

Closed Pour - A process in which the mold lid is closed and locked in molded foam production and the foaming mixture is injected through ports in the lid of the mold

Contour Cutting - The cutting of foam with a specialized saw into patterns from a foam block, creating a custom foam part.

Core - The inner area of foam, away from the outer skin.

Crushing - A procedure, typically mechanical- or vacuum-assisted, in which the closed cells of a high resilience slab stock or molded foam are opened.

Dead Foam - Foam with low resiliency that does not quickly regain its original shape after deformation.

Deformation - A method in which the shape of the foam is altered from its original state through compression or heat.

Die Cutting ([@ iqsdirectory.com/die-cutting/](http://iqsdirectory.com/die-cutting/)) - The cutting out of parts from foam using a process that is similar to stamping out the part. It is good for long duration runs of cut parts that necessitate uniformity in size.

Drilling - The boring of holes into a foam to enhance air flow, provide for greater ease of button application in tufted design and to make the foam feel softer.

Elastomers - Polymers that, when undergoing deformation, resist and recover in a way similar to that of natural rubber.

Flame Lamination - Also called "flame bonding" it is the process of bonding flexible foam to a fabric, film or other material by melting the surface of the foam with a flame source and quickly pressing it to the material before the foam resolidifies.

High Resilience (HR) Foam - A kind of polyurethane foam created with a combination of polymer or graft polyols. This foam is not as uniform in its cell structure in comparison to conventional products, which enhances the comfort, support, resilience and bounce of the foam.

Hot Wire Cutting - The cutting of foam using high-temperature wires instead of a saw blade. Hot wire cutting is generally used for cutting intricate parts.

Isocyanate - A quick way to refer to the group of diisocyanates that are one of the two primary ingredients in the chemical process from which polyurethane foam is produced.

Laminating - A method of bonding layers of foam together in a simple composite. Laminating could be attained with adhesives or with heat processes, such as flame lamination.

Peeling - Method of cutting thin sheets from a foam cylinder.

Skin - The higher-density exterior surface of foam, typically resulting from the foam surface cooling at a higher rate than the core.

Slab Stock - Flexible polyurethane foam produced by the constant pouring of mixed liquids onto a conveyor, which creates a continuous loaf of foam.

Slitting - Method a foam cutter uses for cutting sheets from a rectangular foam block.

Voids - Significant hollow spaces that inadvertently form in foam structures. Voids are typically the result of inaccurate mold filling or inadequate moldability.