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Eyewear Frame Glossary

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Eyewear and eyewear frames have their own vocabulary. This glossary includes some key terms related to frames and the frame production process that will serve as an introduction and reference to help you get to know the wide world of frames even better.

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A

Accessories

Chains and straps, eyewear and contact lens cases, eyewear holders, smart eyewear charging pads and remote controls, cleaning spray, microfiber cloths, contact lens solutions, and contact lens travel kits.

Acetate/Cellulose Acetate

A durable, flexible plastic derived from natural fibers, known for being able to come in a variety of colors and patterns.

Aesthetic Lenses

Lenses with less than 20% absorption, used for aesthetic purposes only.

Aluminum

A lightweight and corrosion-resistant metal known for its strength and versatility. Aluminum frames are popular for their durability and sleek metallic finish.

ANSI Standards

American National Standards Institute guidelines for eyewear safety and performance.

ASTM D6866

ASTM D6866 is the standard test method developed by ASTM International (formerly the American Society for Testing and Materials) to determine the biobased carbon/biogenic carbon content of solid, liquid, and gaseous samples using radiocarbon analysis.

B

Bio-Based Acetate

Acetate is a polymer widely used in eyewear products, particularly frames. It is made of cellulose acetate, a fiber made from cotton or wood pulp, with a plasticizer added to improve the material's physical characteristics and workability. Traditional plasticizer comes from fossil-based sources, while the plasticizer in bio-based acetate is a plasticizing solution of plant-based origin (made from cereals, beet and/or sugar cane). Acetate normally has a bio-based carbon content of around 40% due to the natural origin of the cellulose; in bio-based acetate, the bio-based carbon content increases from around 54% to 67%, depending on the supplier's formulation. EssilorLuxottica's bio-based acetate solutions are all tested according to the ASTM D6866 international standard to verify the overall bio-based carbon content of the material.
Standards/certification:
ASTM D6866 (bio-based carbon content).

Bio-Based Carbon Content

Based on C14 analysis, this is a measure of the amount of bio-based carbon in the material/product as fraction weight (mass) or percent weight (mass) of the total carbon in the polymer/product (bio-based plus fossil-based carbon in the product). In other words, it represents the proportion of plant-based carbon in the material compared to the fossil-based one.

Bio-based Polyamide

Polyamide is a polymer used for both frame and lens applications, particularly injected frames, including those for children, and non-polarized sun lenses. It is traditionally derived from fossil-based sources, while bio-based polyamide for frames includes a percentage of bio-based carbon content from plant-based sources, specifically the seeds of the castor plant, which are transformed into castor oil and used as a renewable raw material. The bio-based carbon content can range from a minimum of 46% to a maximum of 59%.

B

EssilorLuxottica's bio-based polyamide solutions are all tested according to the ASTM D6866 international standard to verify the overall bio-based carbon content of the material.
Standards/certification: ASTM D6866 (bio-based carbon content)/DIN CERTCO (bio-based carbon content)

Bio-Based Recycled Acetate CRT

Bio-recycled acetate CRT is a material used in frames, obtained by combining bio-based acetate and recycled acetate CRT. The material has two sustainable features: a percentage of bio-based carbon content (percentage depends on the supplier) and a percentage of recycled content (27%) attributed using the mass balance approach.
Standards/certification: ISCC PLUS, ASTM D6866/ISCC PLUS, ASTM D6866

Bio-Based Rubber

Bio-based ether polyurethane is used in the overmolding process. for parts of the eyewear frame that are in contact with the skin, such as the temple tips. It is made with 28% bio-based content, which represents the amount of the raw material from renewable sources (e.g., corn) that replaces that proportion of material from fossil-based sources.
Standards/certification: ISO 16620-4 (bio-based mass content)

Bio-Circular Polycarbonate

Bio-circular polycarbonate is an alternative to standard polycarbonate that is used for sun lenses (both polarized and non-polarized). It is obtained by adding a certain amount of recovered waste of biological origin (e.g., used cooking oils), used as input for polymer production, to the standard fossil-based feedstock. Bio-circular polycarbonate lenses can be made with a minimum recycled content of around 40%, attributed using the mass balance approach
Standards/certification: ISCC PLUS

B

Biocompatible/Biocompatibility

Biocompatibility means that frame materials and coatings in contact with the skin are non-sensitizing, non-irritating, and safe for the intended use, contributing to the wearer's comfort and safety.

Bridge

The part of the frame that sits on the nose and connects the two rims or lenses. The bridge shape and structure can differ and may be a standard, saddle, or key bridge.

Depending on the fit, it can be classified as low, high, or universal.

Bridge Width

The distance between the lenses, measured across the bridge.

Butterfly

A frame shape that is often oversized and characterized by its wing-like flared edges.

C

Carbon Fiber

Carbon fiber is a technical material that is used to create lightweight, incredibly resistant frames. It's a naturally occurring substance that's a combination of graphite and nylon or acetates. Carbon fiber frames offer the properties of both plastic and metal, depending on the amount of carbon used.

Cat Eye

Cat eye is a frame shape with upswept outer edges, creating a retro look.

C

CE Marking

Indicates that the frame complies with European Union safety, health, and environmental protection requirements.

Clip-On

An accessory with tinted/protective lenses that can be attached to optical frames to convert them into sunglasses.

D

Decoration

Any additional design elements or embellishments added to the frame for aesthetic purposes.

E

Electronics

Electronic eyewear can come in sun, optical, or goggle styles. In each case, the frame or goggles includes integrated electronic and/or technological features.

Eyewear

Eyewear refers to all types of glasses, including eyeglasses, sunglasses, and protective glasses.

F

Frame

The complete structure that holds the lenses, including the front and temples.

Front

The front part of the frame that holds the lenses and includes the bridge.

Front Hinge

The hinge located at the end of the frame front that connects to the temples.

Full Rim

A full-rim frame completely surrounds the lens with metal or plastic, protecting the lenses better than other frame types.

G

Graphene

Graphene is extracted from graphite (the same material used in pencils) and is the world's strongest, lightest material.

H

Hinges

The joints that connect the frame front to the temples, allowing them to open and close. They can be classic (regular or traditional) or flex (integrated or not). Classic hinges are mainly used for sunglasses. They enable the temple to open to a maximum of 90°. Flex hinges are equipped with a small spring that gives the arms a greater range of movement beyond the 90° angle.

These hinges increase comfort for the wearer and are better able to withstand everyday use.

Horn

A natural material derived from the horns of animals such as buffalo. It comes from species that are not at risk of extinction and is collected after the animals' lives have ended naturally. Horn frames are unique due to their natural grain and coloration, offering a luxurious and organic look.

I

Identification Codes

Every frame is provided with an identification code, an essential element for accurately identifying the product and its technical characteristics.
The information contained in the code is useful for both you and your customers and it also complies with legal requirements.

Identification codes can be found on the temples and the information includes brand, frame size, boxing, compliance markings (e.g., the CE mark), model name, frame and lens color, and lens category (sunglasses.

I

Internally Recycled Nylon (95%)

Internally recycled nylon with 95% recycled content is only available for limited capsules (e.g., Arnette); it is almost totally composed of recycled granules, plus 5% additives (color masterbatch and thinner). The recycled percentage derives from the processes to granulate and extrude polyamide waste. This waste, on the other hand, is the result of sorting and collecting sprues from the injection molding process for eyewear frame production. The recycled material has the same quality and performance as a standard polyamide.
Standards/certification: ISCC PLUS

Internally Recycled Nylon (50%)

Internally recycled nylon with 50% recycled content is made from 50% recycled black granules and 50% virgin ones. The recycled percentage derives from the processes to granulate and extrude polyamide waste. This waste, on the other hand, is the result of sorting and collecting sprues from the injection molding process for eyewear frame production. A special formula combines recycled pre-consumer nylon granules with virgin ones, resulting in a polyamide with 50% recycled content. The new material has the same quality and performance as a standard polyamide.
Standards/certification: ISCC PLUS

Irregular

All frame shapes that cannot be categorized as either rounded or angular shapes belong to the irregular category.

ISCC PLUS

ISCC PLUS is a sustainability certification program for recycled raw materials that focuses on the traceability of materials within the supply chain. The ISCC PLUS scheme is becoming the globally recognized standard for the recovery of waste and residues that serve as raw materials for recycled plastics, chemical intermediates, and, therefore, a wide variety of consumer-facing products such as packaging, housewares, toys, etc. Independent third parties ensure that a company complies with ISCC PLUS certification requirements.

L

Liteforce

Liteforce is used in the aerospace and chemical industries due to its outstanding resistance and lightness. Applied to eyewear, these features guarantee frames that are incredibly light and resistant.

M

Miter Joint

The angled joint where the temple meets the front hinge of the frame.

MX Goggles

Motocross (MX) goggles are designed to protect the eyes from dirt, debris, and wind while riding off-road motorcycles.

N

Nose Pads

Small pads attached to the frame, positioned under the bridge on either side, that rest on the nose to provide comfort and support.

Nylon

A synthetic polymer known for its excellent durability, flexibility, and resistance to impact and temperature changes. Nylon frames are lightweight and often used in sports eyewear and smart eyewear due to their robustness and ability to retain their shape, allowing technology to be embedded safely.

O

Optical Frame

A frame designed to hold prescription lenses for vision correction.

Oval

A frame shape with rounded edges and an elongated oval form.

P

Pad Arm

The small connecting pieces that attach the nose pads to the frame.

Pad Plate

The base where the pad arm attaches to the frame front.

Panthos

A hybrid frame shape combining elements of round and oval shapes, typically with a wider top.

Pantoscopic Angle/Tilt

The pantoscopic angle refers to the tilt of the lenses, specifically the angle between the lenses and a vertical plane when the glasses are worn. This adjustment is crucial for optimizing the visual performance and comfort of the glasses.

PEEK (Polyether Ether Ketone)

A high-performance plastic with excellent mechanical and chemical resistance properties. It is strong, lightweight, and biocompatible, making it suitable for medical and aerospace applications as well as high-end eyewear frames.

Pillow

A variant of the rectangular frame shape, with a softer profile thanks to the rounded edges.

Pilot

Frames with a slanted teardrop drop shape that extends down from the bridge toward the outer side of the front.

Propionate/Cellulose Propionate

A lightweight, flexible, and biocompatible plastic made from cellulose. It is less dense than acetate and is often used for its translucency and glossy finish. Propionate frames are comfortable to wear and ideal for sports or active lifestyles.

R

Radiocarbon Analysis (C-14 Analysis)

Radiocarbon dating is used for measuring bio-based content in manufactured products when they contain a combination of recently living material and fossil material. The standard test method for determining bio-based content is ASTM D6866.
Recently, living material (the bio-based component) has carbon-14 in it, while fossil material (derived from petroleum) no longer contains this weakly radioactive carbon isotope. This means that all the carbon-14 in the product comes from the bio-based component. In the case of a product containing both crop-derived and petrochemical components, analysis using the ASTM D6866 standard uses the carbon-14 content to calculate how much of the product is derived from plant components vs. petroleum-derived components.
Example: A product that is made of 100% polyethylene that came from petroleum will have a 0% bio-based content result when analyzed using ASTM D6866, whereas a product made of 100% polyethylene derived from plants will have an ASTM D6866 bio-based content result of 100%.

Readers

Readers are ready-to-wear frames with both lenses in the same basic power or prescription.

Rectangle

A frame shape with straight edges and angular corners that form a rectangular shape.

Recycled Acetate CRT

Recycled acetate CRT is obtained through an innovative recycling technology known as carbon renewal technology (CRT). This chemical recycling process gives new life to post- and pre-consumer waste, transforming different types of plastic waste into primary molecules to obtain the raw material (acetate flake) again.
The final cellulose acetate contains a 27% recycled content, attributed using the mass balance approach.
Standards/certification: ISCC PLUS

R

Recycled Nylon From Suppliers, Bureo Netplus

Bureo's NetPlus nylon is made from recycled fishing nets, with 97% to 100% recycled content. This chemically recycled polyamide avoids the use of virgin plastic materials, shifting towards renewable sources.

Rhinestones

Decorative stones used to embellish a frame.

Rim

The rim refers to the outer frame that surrounds and holds the lens in place, both in full-rim and semi-rimless designs, although only part of the rim is surrounded in semi-rimless frames.

Rimless/Glasant

A frame where the lens is attached directly to the temples and bridge without any surrounding rim. Also called 3P (three-piece) frames.

Round

A frame shape that is completely circular or nearly circular.

Routine Eye Exam/Vision Screening/Eye Exam

Assessment of a customer's/patient's specific vision needs and visual health.

S

Screw

Small fasteners used to secure various parts of the frame, such as hinges and nose pads.

Semi-Rimless

A semi-rimless frame that covers the lens on the upper part only. The frame can be attached to the lenses with screws or nylon wire that supports the top or the bottom of the lens (in this case, the frame type is called Nylor).

Size/Caliber

Refers to the width of the lens opening in the frame, usually measured in millimeters.

Snow Goggles

Goggles designed to protect the eyes from snow glare, wind, and cold, often used for skiing or snowboarding.

Spare Parts

Frame spare parts are replacement components specifically designed for eyewear frames. They include bridges, nose pads, and hinges that can be replaced or repaired to restore the functionality or appearance of the eyewear. These spare parts are essential for maintaining or extending the life of eyewear without needing to replace the entire piece.

Square

A frame shape with angular corners, where the height and width of the front are equal.

Stainless Steel

A durable, corrosion-resistant alloy composed of iron, carbon, and chromium. Stainless steel frames are strong, lightweight, and flexible, often used for their sleek and modern appearance

S

Sun Frame

A frame designed to hold tinted or polarized lenses for protection against sunlight and glare.

Sustainable Product

It is not accurate or true to say that a product is 100% sustainable, because the concept of sustainability is not absolute.

In reality, it is linked to various aspects and can be perceived in different ways; it is dynamic and constantly evolving. It is, therefore important to talk about sustainability attributes or criteria instead.
While new attributes (e.g., designs, manufacturing processes, etc.) are being developed, today, the sustainable product criteria lie within our alternative materials portfolio.

T

Temple

The arm of the frame that extends over the ear to hold the glasses in place.

Temple Core

The metal rod inside the temple that provides strength and flexibility.

Temple Length

The length of the temple arm from the center of the hinge to the lowest point of the temple tip, typically measured in millimeters, following the entire length of the temple as if there were no bend.

Temple Tip

The end part of the temple that sits behind the ear for comfort and stability.

T

Titanium

A high-strength, low-density metal known for its exceptional durability, light weight, and corrosion resistance. It is often used in high-end and sports eyewear for its superior performance.

W

Wood

Wood is handcrafted and treated to obtain smooth surfaces and unique effects on every frame, for one-of-a-kind eyewear.

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