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Windows & Doors
Purchase Guide Book



SHAILJA

WINDOWS & DOORS

SHAILJA is a well-known mfg. Company of system windows and doors made out of aluminium, alu-wood and steel, specifically for luxurious individual residence. We design and thoroughly assured our products with certain required quality parameters for high-end windows and doors before making them available to the customer. To fulfill customer's requirements for high-quality windows and doors, we are following strict guidelines at the design stage, in raw materials procurement, in production and even at installation time.

As a consumer, you will not buy SHAILJA products directly but instead, we will ask you to do your research and find the alternative available options and ensure yourself about your final choice...

These Frequently Asked Questions will take you through a logical and sequential process of making the right choice, not just regarding choose your Window Partner, but also about the right time to get into your research. After all, Windows are such an important part of the Architecture and the Interior Spatial Experience!

KNOW YOUR WINDOWS

When choosing windows and doors for your home there are a few materials that you can choose from. This guide will give you information on the most commonly used materials so that you can choose the right option for you.

Aluminium Window:

Aluminium windows used to be the least energy-efficient windows: in winter aluminium frames would lose heat and feel cold to the touch, while in summer aluminium frames would waste air-conditioning and feel hot. This is due to the thermal conductivity that is shared by most metals, including aluminium.



architectural elements equipped with countless functions to regulate the interactions between two environments (external and internal), to ensure general comfort inside the house.

achieve higher sound insulation as well...

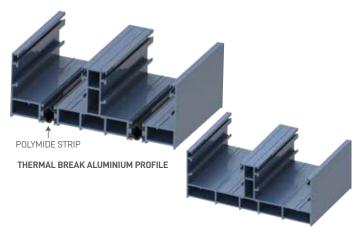
A thermal break profile increases the thermal performance and sound insulating performance of windows.

These windows are more and more technological

However, thermally broken aluminium profiles have a thermal break, which makes them suitable for windows and doors in residential buildings. Thermally broken aluminium profiles are originally made as two separate parts, interior and exterior. During the manufacturing process, these two parts are joined together with an insert made of another material called polyamide - this insert is called a thermal break. Under normal conditions, aluminium transfers heat quickly but with the thermal break, this thermal leak is stopped. For this reason, thermally broken aluminium profiles have lower U values and therefore insulate better and also help to

Benefits of aluminium window:

- · Possibility to make large structures,
- Enhanced security with a wide range of hardware
- A wide selection of colours
- · Durability,
- Toughness,
- · Resistance to water,
- · Nature-friendliness,
- Noise control,
- Excellent thermal performance (with thermally break profiles)
- · Solid appearance,
- · Low maintenance.



COLD ALUMINIUM PROFILE

Alu-Wood Window:



Thanks to the infinite range of solutions available, in terms of woods, forms and colors, and to the high level of customization, Alu-wood window is unique.

Alu-wood window system puts together the aesthetics of wood and advantage of aluminium, which endures for many years without requiring any maintenance treatment. These composites can achieve some good thermal results.

It is a perfect blend of aesthetics and performance.

STARWOOD, Italy is a pioneer for the alu-wood windows in the world.

They are not to everyone's taste and they tend to be amongst the more expensive types of window.

Metal Window:

Natural, solid and precious, long-lasting.

These are the four materials: galvanized steel, stainless steel, Corten steel and brass (architectural bronze).

Contemporary architecture requires a new generation of steel profiles that combines steel window's uniqueness and modern comfort.

Furthermore, while appreciated for their structural resistance and duration over time, necessitating little maintenance, they are also recyclable and reusable.

With their different surfaces and finishes and particular manufacturing present extraordinary potentiality of expression, and are capable of interpreting and transforming the design project into a concrete reality while perfectly blending into the surroundings and many landscapes that differ for environment and climate, tradition and culture.



- Fully welded frames, guaranteeing excellent strength.
- Maximum stability and precision of the profile shapes, guaranteeing the creation of perfect windows and doors.
- High density cast in polyamide + polyurethane isolator, guaranteeing extraordinary thermal insulation also in extreme weather conditions.
- Finish in every mat or bright RAL colors, rust effect, and also customized colors.

SECCO, Italy is one of the leading system company for the metal window.

uPVC Windows



uPVC windows are the cheapest window option now available. What is more, they are highly energy-efficient and need almost no maintenance once installed. However, compared to other window types, uPVC windows have a shorter service life and offer no possibility of renewal.

Benefits of uPVC Windows:

- Low price,
- Energy efficiency,
- Resistance to weather,
- Nature-friendliness,
- Wide choice of colors and laminate,
- Low maintenance.

Drawbacks of uPVC Windows

- · Less durable,
- Not as sturdy,
- Cannot replicate wood 100 %.

Wooden Windows



Wooden windows are appreciated for their natural beauty, but they have a much higher price than uPVC windows. Also, wooden windows require regular maintenance such as painting and varnishing.

Benefits of wooden Windows:

- Natural appearance and coziness,
- Durability,
- Toughness,
- Energy efficiency,
- Nature-friendliness,
- Many design options.

Drawbacks of Wooden Windows:

- High price,
- Low resistance to water,
- Regular maintenance needed.

Comparison of Aluminium window, Alu-Wood, Metal window, uPVC window and wooden window

Window Features	Aluminium Window	Alu-Wood Window	Metal Window	uPVC Window	Wooden Window
Price	+++	++++	++++	++	++
Durability	+++	+++	++++	+	++
Toughness	+++	+++	++++	+	++
Water resistance	+++	+++	+++	+++	+
Energy efficiency	+++	+++	+++	+++	++
Nature friendliness	+++	+++	+++	++	+++
Sound control	+++	+++	+++	+++	++
Design options	+++	+++	+++	++	++
Low maintenance	+++	+++	+++	++	+

Note: More plus (+) signs mean a higher rating.

EXPERTS ANSWER

Find below the answers to your questions before purchasing windows for your home.

Q: Who is to guide me in the selection of windows-doors?

Ans: Your architect or building designer should be able to give you recommendations about the lifestyle of windows and doors you should choose to suit your property's character.

Q: What is the ideal time to look around regarding the requirement of windows and doors?

Ans: The scouting of options should start at the brickwork stage of your construction (in India, we generally use wet construction methods)

Q: How I will get information about the available options to fulfill the appropriate window requirements?

Ans: There are three ways to go about this,

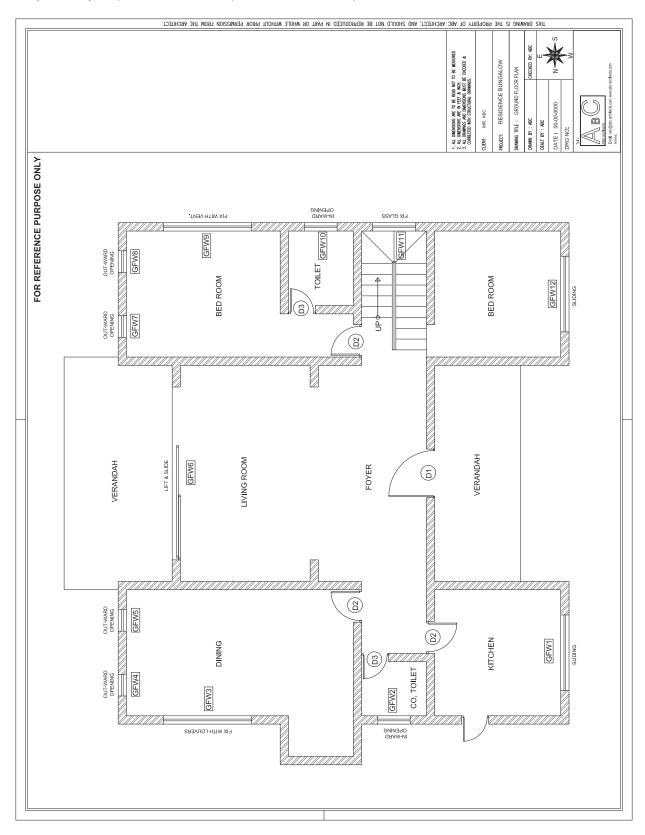
- a) Ask your Architect/ Interior Designer to suggest a reliable brand.
- b) You can also ask within your family-friends circle.
- c) Research on your own through the internet / through local/ national advertisements print & digital.

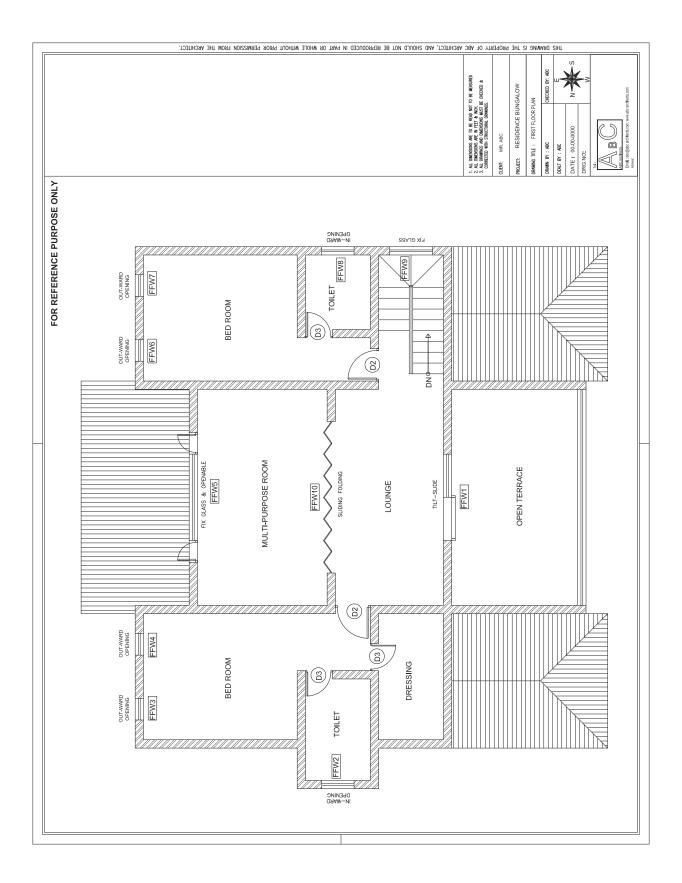
Q: What information must be required to get an accurate quotation?

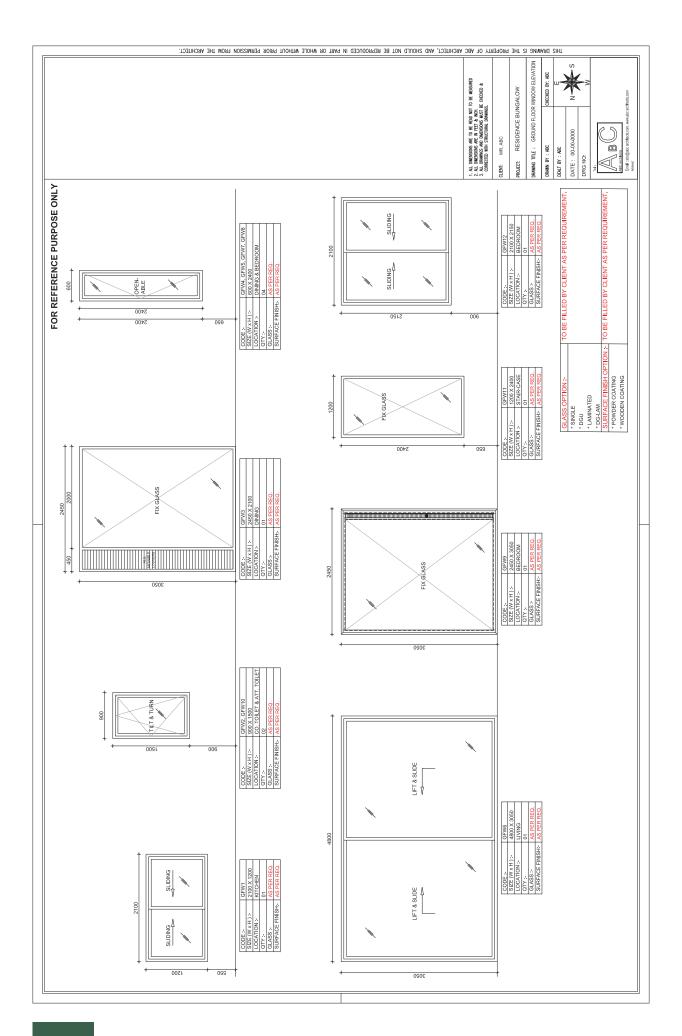
Ans: Following information will need to with you once you start to look for windows requirement. To get an accurate quotation you will need to share the following information. For better comparison, please share the same information to all shortlisted options by you.

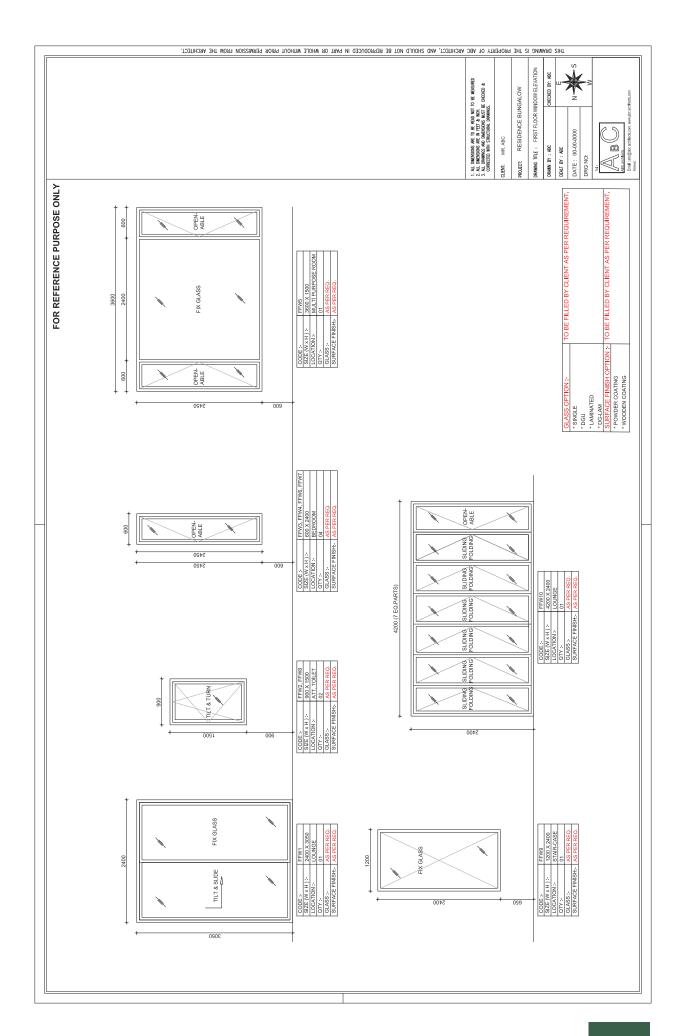
- a) Floor plan of the building site.
 This will help to identify the windows-doors location at building premise at the time site survey.
- b) Elevation of Windows and Doors with dimension.
- c) Complete Windows and doors schedules,
- d) Details about the required surface finish, Glass specifications d) Building site location.

For your ready ref. please find here templet of information required.









Q: From where I will get information for a proper quotation for windows?

Ans: You need to ask your architect/interior designing firm to share all the information with you or share it directly to the window mfg. company.

Q: Which well-known International brand of windows is available in India? How do they work in the Indian market?

Ans: Most International brands are available in India, this includes Schuco, Reynaers, Alumil, AluK, Ponzio, and Cortizo and for minimal windows - Killer, Panorama, Sky-Frame and Vitrocssa are the available options in the Indian market in aluminium.

They all are system supplier companies and do not supply finished products to the end customer across the world. They operate with applicators mostly without warehouse facilities in India. On receiving the order from the end customer, applicators procure required materials from system supplier companies and then fabricate and install the finished products at building sites. Some of the system supplier companies, mostly for slimline are supplied ready-to-install products directly from the origin country and these situation applicators installed the windows at the building site.

SHAILJA is an authorized production partner with STARWOOD, Italy to produce alu-wood for Indian Territory, if Alu-wood windows are in your criteria. With this, SHAILJA assures you about the on-time delivery and after-sales service.

If you are looking for METAL windows other than aluminium, SHAILJA is an authorized partner of SECCO, Italy to produce windows-doors from galvanized steel, stainless steel and brass.

Q: What is the difference between Mfg. Company, Applicator and Fabricators?

Ans: Specialised Mfg. Companies deal only in windows-doors products for high-end individual residences or private corporate buildings. They are designed and develop products with a technical collaboration with well-known design firms and also an in-house design team. They take the utmost care in the selection of suppliers for procuring quality raw materials as per international parameters. They have world-class mfg. Facilities with ultra-modern machines and well-trained brains personnel, which required to produce windows-doors with excellent quality. By engaging a manufacturer as a customer, you will get assured commitment for satisfactory after-sales services.

Applicators: They work as fabricating firms for the system supplier companies to fulfill the demand of market requirements. But it is not enough to serve excellent products to the consumer with commitments for long term like after-sales assurance as many of them are not engaged with the same brand for a longer duration and even many of them are not having required setup for producing products with excellent quality even after joining their hands with such a reputed brand.

In such a situation as a consumer, it is important for you to know how long they are associated with those system Supplier Company, and what they offer you.

Others are typical window fabricators who are fabricating windows and doors from locally available raw materials including profile, hardware and gasket. If you are looking for window-doors for your house then better to avoid working with such a typical fabricator.

Now it's about choosing the right Manufacturer.

Q: How many options do I need to explore and why?

Ans: As a smart consumer you should find out at least 2-3 options to fulfill your windows requirement for getting a better idea about the latest available products in the market and also which will help to compare the price and the quality.

While comparing the quotes from different suppliers, always take into consideration the accessories and fittings such as locks, handles, corner joints, brushes, rollers and gaskets. There is a huge variety and quality available for Aluminium and accessories.

Below are the world's most reputed brands for the accessories and fittings such as locks, handles, gaskets, brushes, rollers and gaskets.



Q: How important is my visit to their experience center (Showroom) and visit the production facility? Ans: Windows play a major role in defining the overall look of the elevations and therefore it's worth prioritizing

that. Choice of windows and doors has to match the home's architecture look and style.

It is strongly recommended to visit their facility with architects to get an exact idea about the products are they offer. With this visit ensure about the quality and other product-related aspects.

It is advisable to make possible to visit of their production and warehouse facility, here you should see how they will take care about the quality during the production process and maybe it is a good chance for you to cross-check the raw materials quality parameters what they claim at the time of techno-commercial discussion.

Q: What kind of products are generally I need to explore to fulfill my requirements?

Ans:

In Sliding:

1) Normal Sliding 3) Minimal 5) Sliding - Folding

2) Lift & Slide 4) Tilt & Slide

In Casement:

1) Outward Open 2) Inward Open with Tilt and Turn

In Louvers & Ventilation:

1) Aluminium movable Louvers 2) Ventilation of RENSON

Flyscreen: In case you require

Q: What information must be checked in the quotation received from suppliers?

Ans: Ensure you know exactly what the quote includes.

Questions could include:

- What glass specification are you getting?
- How will the window or door open and close?
- How will the door or window lock?
- What guarantee / warranty do they offer?
- Have they supplied drawings / diagrams of the final product?

Ensure that all relevant information is detailed in writing so that you can refer to it at a later date if needed.

KNOW ABOUT SHAILJA

Here you can find answers to questions we are often asked by our customers. However, if you have a question not listed below feel free to give us a call or drop us an email with your query and we'll endeavor to help you any way we can.

Q: What is SHAILJA?

Ans: SHAILJA is one of the leading companies in India known for manufacturing high-end windows and doors, specifically for individual luxurious residence with industry experience of more than 17 years. Since its inception, SHAILJA is recognized as a specialized producer of windows and doors with high technical and aesthetic quality as per international standards.

SHAILJA feels honored to introduce the signature products under the brand names of "SOBRIO, LUSSO, and LUSSO+".

Our facility and manufacturing hub is situated on Sarkhej -Rajkot highway, At Matoda and is the most premium industrial location of Ahmedabad. We are just 15 km far from the commercial center and the most visited- S G Highway. Shailja's campus is the largest facility of India in the segment of windows and is well established in a vast area of 75000 sq. with ultra-modern European machines and assembly equipment for producing windows with quality as per international standards.

Q: What are the foundation of Shailja's success and popularity?

Ans: Specializing in the sector of luxurious individual residential windows, over the years Shailja has been able to establish a special bond with every client with its unparalleled product range and unfailing services commitment. Shailja's existing clientele base is its most valuable asset. About 80% of the new client base of Shailja is recommended by the existing client base as a result of the utmost satisfactory products and services by Shailja. Client trust is priceless to Shailja and hence we ensure to stay true to our clients and stick to our words during both pre and post-purchase. Besides providing the best services until product deployment, we never fall back when it comes to maintenance and give our best until the smiles on our clients' faces. We abide by our commitments throughout the purchase and maintenance cycle.

Q: Why the architects and interior designers recommend SHAILJA to their clients?

Ans: Shailja has always been the first choice of renowned architects and interior designers. It is not just the finest range of products that influences the architects and interior designers to choose Shailja but the reasons behind their love for Shailja goes beyond just the product quality. The fundamental requirement of an architect and designer is finding a product that fits perfectly into their visions and Shailja holds that expertise of better understanding their visions and imaginations and provide customized solutions that align well with their requirements. Besides customizations, we ensure to provide absolute technical support with great details. Shailja's wide range of selection from raw materials to the typology of the windows and the trending designs is what distinguishes Shailja from the rest of the industry players. Over the years, Shailja has always been able to stand up to the expectation of every client.

Q: What kind of window materials SHAILJA offer?

Ans: Below mentioned options are available with SHAILJA.

- a) Non-thermal aluminium window under the brand name of "SOBRIO"
- b) Non-thermal aluminium window under the brand name of "LUSSO"
- c) The thermal aluminium window under the brand name of "LUSSO+"
- d) Alu-wood window with technical collaboration of STARWOOD, Italy
- e) Metal window-(galvanized steel, stainless steel, Corten steel and brass) with the collaboration of SECCO, Italy.
- f) The ventilation system of **Renson**

Q: What is the difference between "SOBRIO" and "LUSSO" product?

Ans: "SOBRIO" series is an ideal choice for those people who desire to acquire outstanding products at a reasonable value. Additionally, it is the most suitable range for the makers of luxuries residential buildings and corporate buildings.

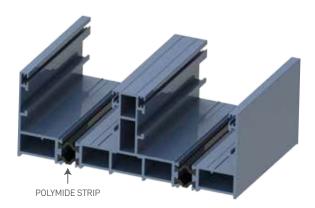
This series is not suitable for windows-doors with extra-large openings.

"LUSSO" and "LUSSO+" series is a premium range of windows-doors with non-thermal & thermal break aluminum profile with the possibility to fulfill requirements for large openings with manual and motorized movements.

Q: What is the thermal break profile? and is it recommended by SHAILJA?

Ans: Thermally broken aluminium profiles are originally made as two separate parts, interior and exterior.

During the manufacturing process, these two parts are joined together with an insert made of another material called polyamide - this insert is called a thermal break.



THERMAL BREAK ALUMINIUM PROFILE

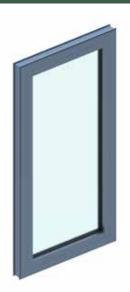
Thermally broken aluminium profiles have lower U values and therefore insulate better and help in achieving higher sound insulation as well. All of our products under LUSSO series are thermally efficient; they meet and exceed all current building regulations.

Moreover, for clients who are willing for high-performance window, we strongly recommend windows-doors with a thermal break profile.

Q: What kind of window typologies are available at Shailja?

Ans: From conventional design to that cutting-edge, classy looking windows, Shailja has something for everybody. Our huge selection range can never disappoint even a bit. Shailja's Window-Door Typologies variety can surely fulfill even rarest of our customer requirements.

Fix Window:



Fixed aluminium windows have excellent heat insulation, sound insulation and water tightness, but feature no opening possibilities. Therefore, they are often fitted in such rooms where additional ventilation is not necessary, e.g. when there are other operable windows. Fixed aluminium windows make to possible in different sizes, from very small to relatively large.

The main drawback of fixed aluminium windows is the difficult cleaning of the exterior surface.

Availab	Available in:				
SOBRIO	\checkmark	Alu Wood	\checkmark	LUSSO+	\checkmark
LUSS0	\checkmark	Metal	\checkmark		

Casement Windows and Doors:

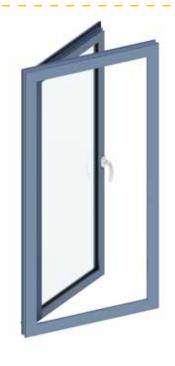
WINDOWS:

A) Outward Open

Outward open windows are hinged on the side and open outwards. Such windows are useful in windy and rainy areas because strong wind and rain make the sash lay tight against the frame. An additional advantage of outward opening windows is free space on the window sills and around the window. Furniture can be put close to the window without the risk of the window accidentally hitting it.

Casement windows (outward/inward) have excellent heat insulation, sound-insulating and water tightness in comparison to normal horizontal sliding windows.





B) Inward open

Inward open windows are hinged on the side and open inside and the exterior surface becomes accessible for cleaning. This makes inward opening windows very attractive to residents of apartment buildings and other high rise buildings.

Casement windows (outward/inward) have excellent heat insulation, sound-insulating and water tightness in comparison to normal horizontal sliding windows.

The main drawback of inward opening windows is that they need space inside the room.

Available in:					
SOBRIO	\checkmark	Alu Wood	\checkmark	LUSSO+	\checkmark
LUSS0	\checkmark	Metal	\checkmark		



C) Tilt And Turn



Tilt and turn windows are tilt inward or open inside from hinged on side. This is the most common type of window in Europe and in GERMANY, it's country of origin. When the handle is turned to 90 degrees the window opens in the side hung mode inside and with the handle turned to 180 degrees the window opens in bottom hung mode.

Availab	Available in:				
SOBRIO	\checkmark	Alu Wood	\checkmark	LUSSO+	\checkmark
LUSS0	\checkmark	Metal	\checkmark		

D) Pivot

A pivot window is a window hung on one hinge on each of two opposite sides which allows the window to revolve when opened. The hinges may be mounted top and bottom (vertically pivoted) or at each jamb (horizontally pivoted). The window will usually open initially to a restricted position for ventilation and, once released, fully reverse and lock again for safe cleaning from inside. This function makes the pivot window most suitable for hospitals and educational institutions.

Available in:			
LUSS0	\checkmark	Alu Wood	\checkmark
Metal	\checkmark		



DOORS:

A) Outward Open



Available in:					
SOBRIO	\checkmark	Alu Wood	\checkmark	LUSSO+	\checkmark
LUSS0	\checkmark	Metal	\checkmark		

B) Inward open



Available in:				
SOBRIO 🗸	Alu Wood 🗸	LUSSO+	\checkmark	
LUSSO 🗸	Metal ✓			

Sliding Windows and Doors:

Generally Sliding windows and doors are designed for space that does not want windows projecting from the wall. The window is designed to have one or two window sashes sliding horizontally within the frame.

The main drawback of the sliding windows is poor sound insulation in comparison to casement windows but it can be achieved with lift and slide sliding.

In sliding windows, multiple options are available from normal sliding to slimline. Some of them are used door also because of the weight loading capacity.

A) Normal Sliding window:



Product include in this segment is preferable to use as the window because of the weight carrying capacity of the sash but with some kind of products also possible to make the door-sized window.

Available in:					
SOBRIO	\checkmark	Alu Wood	\checkmark	LUSSO+	\checkmark
LUSS0	\checkmark	Metal	\checkmark		

B) Lift and Slide doors:



Sliding doors are very popular and contemporary, Lift & Slide Doors are the new method of operation driven by the need for larger panels (from floor to ceiling) and increased thermal performance. The doors sit down directly on the track and the handle has to be rotated through 180 degrees to 'lift' the door up onto its rollers. When rotated to the closed position, the door drops back down onto its seals creating an airtight bond and protecting premises from the elements outside.

This means that the door is positioned perfectly at all times.

Note: Lift and slide doors are available with manual and motor drive option.



C) Minimal windows and Doors:



Minimal windows and doors are virtually frameless, the sliding system with minimalistic facing width of vertical center profile with excellent heat insulation, sound insulation and water tightness.

Availab	ole in:		
LUSS0	\checkmark	LUSSO+	\checkmark

Note: Minimal doors are available with a motor drive option in LUSSO+.

D) Tilt and Slide windows and Doors:

A tilt and slide windows and doors are space-saving solution. It is better solutions for larger openings, where the sash tilts inwards at the top and then slides horizontally behind the fixed pane. They can be opened fully by sliding or tilted inwards for efficient ventilation. Tilt & Slide windows and doors achieve better insulation than standard sliding windows and doors.

Availab	le in:		
LUSS0	\checkmark	Alu Wood	\checkmark
LUSS0+	\checkmark	Metal	\checkmark



E) Slide & Fold doors Or Bifold doors:

Bifold doors are doors that slide open, made from a series of panels that fold up against the wall like a concertina, inspired by the musical instrument of the same name. Bifold doors can be installed inside or outside your home, as a gateway to your garden or conservatory, or even as a way to split a larger room without losing out on that sense of space.





Louver Windows/Ventilation:

A) Louver window:

Louver windows are many suitable options for getting light and air without compromising privacy.



B) Ventilation:

RENSON is one of the most renowned companies in the world that provides ventilation solutions and Shailja is proud to have a vast range of products that are compatible with RENSON's solutions.

Endura® Twist

RENSON® presents an innovative, decentralized window ventilator with efficient heat recovery. The Endura Twist can be mounted horizontally (on top of the window profile) or vertically (perfectly combinable with screens/roller shutters) and can be used in new-build as well as renovation. Thanks to the integrated regenerative alternating technology, two ventilation units ensure the continuous supply of fresh air and simultaneous extraction of used air. Every ventilation unit alternates cyclically between supply and extraction air, which ensures a high-efficiency level. The Endura Twist has low power consumption and low sound generation and is optionally available with demand control (Indoor Air Quality) and filters (G3, F7). Moreover, this product is frost - and condensation-free and low-maintenance.





THL 100 - THL 100V

THL 100 is a thermally broken louvered ventilator, made to measure, installed in a vertical or horizontal position.

The THL 100 creates a natural air circulation: incoming fresh air at the bottom and outgoing humid air at the top of the ventilator.

⚠ Important: You should surely ask our representative to know more about the products like min/max size, weight loading capacity, performance parameters at the time of your visit to our experience center.

Even at SHAILJA, we can produce windows-doors in any shape including curved.

Q: What are the types and range of glasses SHAILJA offers?

Ans: SHAILJA offers a diverse variety of glasses that suits the client's particular requirements. Holding the years of expertise into the field, we refrain from recommending or using any sort of non toughened or normal annealed float glass for windows.

A) Single Glass (Toughened glass Or Heat-strengthened)



Available in:

B) Insulated Glass (DGU)



INSULATED GLASS

Available in:				
SOBRIO	\checkmark	Alu Wood	\checkmark	
LUSS0	\checkmark	Metal	\checkmark	

C) Laminated Glass

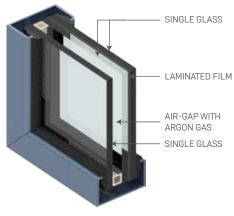
SOBRIO ✓



LAMINATED GLASS

Availab	le in:		
SOBRIO	\checkmark	Alu Wood	\checkmark
LUSS0	\checkmark	Metal	\checkmark

D) DG-Lam (A combination of insulated glass and laminated glass)



DG-LAM GLASS

Available in:			
SOBRIO	\checkmark	Alu Wood	\checkmark
LUSS0	\checkmark	Metal	\checkmark

To add to your knowledge and make an informed decision, we have aggregated additional information on glasses as below.

A) Difference between float glass and extra clear glass.

- Float Glass: This is the most common type of glass, basic float glass is manufactured by melting sand. Other
 ingredients such as soda ash, limestone, salt cake and broken cullet glasses are added to lower the melting
 temperature of silica and promote optical clarity of the finished glass product. A mixed batch of the above
 materials is heated to a temperature of 1450 to 1650° C and formed into large flat sheets by floating molten glass
 on the molten tin, thus giving it precise flatness and transparency.
- Extra Clear Glass: Greenish appearance in the clear glass is due to the presence of small iron content in silica sand. This greenish appearance in float glass is eliminated in extra clear glass by using purer sand & further reducing the iron content in silica sand. The typical iron content for normal float clear glass is 830-850ppm, whereas the extra clear has less than 150ppm. This makes it very clear in vision with a high colour rendering index.

B) Difference between Toughened glass and Heat-strengthened

• Toughened glass: Toughened glass is much stronger compared to the usual float glass; it takes five or six times more power to break it. Additionally, toughened glass does almost no harm if broken, because it shatters into small cube-shaped pieces. This is achieved by heating the glass and then immediately cooling its surface. This is called tempering; therefore, toughened glass is also referred to as tempered glass. When the tempering process is over, it is very difficult to cut the glass, so it is always cut into desired shapes before tempering. Tempered glass is being used increasingly in architecture because of its strength and safety properties. It is usually installed in areas where safety glass is required to reduce the possibility of mechanical or thermal breakage and/ or to assure greater uniform load strength. Worldwide the use of Tempered glass or Safety glass in general has been mandated by building codes. These codes are also made for India and are in the process of being mandated.

Tempered Glass provides greater thermal strength. It offers increased resistance to both sudden temperature changes and temperature differentials up to 240° C compared to normal annealed glass which can withstand temperature differentials up to 40° C only.

• Heat-strengthened: Heat-strengthened glass is similar to tempered glass except that after heating the glass in a furnace as in the case of tempered glass, the cooling is done at a much slower pace. The heating temperature remains nearly the same for both processes. The residual stress on the edge and the glass surface differ in both cases with tempered glass having a higher level of stress. Due to the relatively lower rate of cooling during the strengthening process, heat-strengthened glass develops less stress as compared to fully tempered glass.

C) Difference between Insulated glass (DGU), laminated glass and DG-Lam glass

• Insulated glass: Insulated glass (DGU) is a prefabricated unit made of two or more glass panes, which have been separated by an air gap and edge-sealed together. This is also known as a Double Glazed Unit (DGU) or Insulated Glass Unit (IGU). The two panes of glass are kept separated by a hollow aluminium tube spacer filled with a moisture absorbing material (desiccant) and is hermetically sealed to ensure that the air or gas in the cavity or hollow space between the two glass panes does not escape during hot climate, or outside air is not sucked in during winter or cold climate as a result of expansion & contraction of trapped dry air or gas due to change in

temperature. This edge seal not only binds the individual sheets of glass together to maintain the mechanical strength of the joint but also protects the space between the glasses from outside influences. The air enclosed between the two glass panes is dried with a desiccant. Because of the low heat conductivity of the enclosed dry air between the glass panes, heat transmission through the window is drastically reduced. The sealants delay the moisture getting into the air space and the desiccant absorbs the moisture coming through the seal and during the manufacturing process. Insulated glass can also be made with three panes of glass & two air gaps. This type is known as a triple glazed unit & is used only in regions having an extremely cold climate.

Characteristics of insulating glass:

- Insulation: Saves on heating and cooling, by reducing air to air heat transfer. The enclosed layer of air makes the insulating capability about twice that of monolithic glass. Because of this, the load on the air conditioning is greatly reduced. The use of heat-absorbing or heat-reflective glass will further reduce the load on the cooling system.
- Prevention of Dew Condensation: With monolithic glass, the temperature difference between the outside
 and inside of a room will often lead to condensation. However, the insulating effect of the air layer makes
 it difficult for the glass to become cold enough to have condensation on its surface giving a pleasant view
 through in rainy or high humidity climates.
- Strength: DGU glass will marginally increase the overall strength against wind load pressure.
- Laminated glass: Laminated glass is two or more panes of glass with one or more layers of polyvinyl butyral (PVB) or ionomers sandwiched between them and treated. This sandwich has some unique advantages. The outer glass surfaces are hard and transparent but are strongly bonded to a transparent rubber-like material on the inner surfaces of the sandwich. The glass panes can be basic float glass or tempered or heat strengthened panels. If the glass is broken, fragments remain strongly adhered to the PVB interlayer thereby nearly eliminating the risk of injury from glass and helping to resist further impact or weather damage as it does not generally fall out of the fixing. The most common use of laminated glass is for the front windscreens of all cars. It is now finding more usage in architectural applications because of its distinct characteristics.

Characteristics of laminated glass:

- Safety: Laminated glass does not shatter like ordinary glass. It absorbs impact, resists penetration, and
 remains intact even if broken, holding glass fragments in place and lowering the risk of injury. Global
 building standards increasingly specify stricter safety requirements, especially for overhead glazing where
 any breakage could mean a major hazard from falling glass.
- Security: The rise in urban crime and terrorism also points to laminated glass as increasingly desirable as a material of construction. Laminated glass resists intrusion because the interlayer continues to safeguard the building even after the glass itself is broken. Security glass cannot be cut from only one side, so ordinary glass-cutters are useless as break-in tools. Laminated glass tends to resist impact. In multiple configurations, it can even resist bullets, heavy objects, or small explosions. In most cases, it takes many blows, all in the same spot, to penetrate the glass.
- Sound Reduction: Laminated glass is an excellent noise barrier. The sheer damping performance of the
 plastic interlayer makes laminated glass an effective sound control product. This makes it ideal for
 airports, hotels, data-processing centers, recording studios, and any building near airports, highways, or
 train lines.

- **UV Control:** Ultraviolet light is the leading cause of deterioration and fading of furnishings, pictures, and fabrics. Laminated glass screens out 99% of the sun's damaging rays, protecting interior furnishing, displays or merchandise from the fading effects of UV radiation.
 - Earthquakes & Natural Disaster Protection: Earthquakes often produce a fallout of extremely dangerous shards of broken glass. But laminated glass remains in the frame, maintaining a protective envelope around the home or building to keep the weather out and deter glass shards from flying. Similarly, the heavy winds of tornados and hurricanes easily shatter conventional glass, causing injuries from flying fragments and damage to interiors exposed to the devastating weather outside.
- Earthquakes & Natural Disaster Protection: Earthquakes often produce a fallout of extremely dangerous shards of broken glass. But laminated glass remains in the frame, maintaining a protective envelope around the home or building to keep the weather out and deter glass shards from flying. Similarly, the heavy winds of tornados and hurricanes easily shatter conventional glass, causing injuries from flying fragments and damage to interiors exposed to the devastating weather outside.
- Dg-Lam Glass: DG-Lam glass is a combination of Insulated (DGU) glass and Laminated glass to achieve performance and security.

Q: What are the colors SHAILJA has on offer?

Ans: We have a wide range of colour from Interporn, AKZONOBLE for our customer to choose from with a warranty of 15 to 25 years. We can also do any other colour from the interporn, which is not in our standard shade card however, custom colours attract an additional surcharge and may result in longer lead time.

Q: What security features do SHAILJA's windows and doors have?

Ans: Our complete range windows and doors come with a full security package as standard with multi-point locking mechanism. But it is depending on your selected product to keep your home safe and protected from common burglar attack methods.

Q: Is there a warranty?

Ans: Yes, of course. The entire range of products comes with a comprehensive warranty, covered by a 10 years warranty for defects of workmanship (for example, a leak) and 15 years for any manufacturing/quality defects for moving parts (such as wheels, locking assembly) and gasket. Due to the fragile nature, the breakage of glass after the handover is not covered under the warranty. If a job is done on a supply-only basis, SHAILJA still guarantees the manufacture of the products, but in such case, if installation is done by our Associate then the Associate will take care of any issue related to the installation.

♠ Important: You can surely ask for the same to our representative for more clarity during your visit to our experience center.

Note: This information is listed widely in Terms & Conditions of contract-windows & doors.

Q: Does SHAILJA provide quotation straight from plans? How much time does it take?

Ans: No, it is not possible to make a quotation in absence of the required information. We will ask you to provide the following information.

- a) Floor plan of the building site. This will help to identify the windows-doors location at building premise at the time site survey.
- b) Elevation of Windows and Doors with dimension.
- c) Complete Windows and doors schedules, where colour, glazing, reveals and any other details are stipulated.
- d) Building a site location.

We aim to return all quotations within 3 working days from the day of receiving of required details and it is valid till 15 days from the date of quotation.

The price mentioned in the quotation is prepared on the basis of basic information provided by the consumer. Valid dimensional tolerance is +/- 50 mm, in case there is any difference between the dimension mentioned in the quotation and the dimension taken by our surveyor at the time of the survey.

Note: This information is listed widely in Terms & Conditions of contract-windows & doors.

Q: What is the next step towards order confirmation?

Ans: Your order confirmation would rely on two steps.

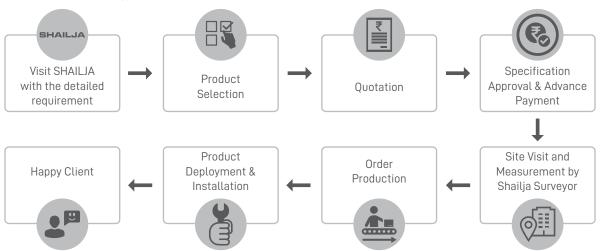
- 1. A signed copy of the order, details along with the approval of necessary documents like window elevation.
- 2. An advance amount as per terms mentioned in our offer documents.

The above mentioned requirements are highly important to move towards an order confirmation. It should be noted that any of the above requirements unfulfilled can obstruct the confirmation unless the requirements are completed.

Note: This information is listed widely in Terms & Conditions of contract-windows & doors.

Q: What is SOP follow by SHAILJA from quotation to installation? OR What should I expect after placing my order?

Ans: Standard Operating Procedure



Q: What is the lead time?

Ans: Generally will take 45 days from the date of the final dimension taken from the site but you will be informed by our representative about the current lead time for supply and installation.

It means you need to take care to give all apertures ready for measurement at least 45 days from the date of your desire date of delivery.

If you require your order by a particular date, please let us know. We strive to deliver our products before or on the deadline.

Q: What is a site survey? Why is it important?

Ans: At SHAILJA, we conduct multiple site surveys starting from the confirmation of order to installation. The first Site survey includes taking precise measurements of each aperture, these measurements are then used for the production.

At the time of the survey the window aperture being fully completed means the following have been done:

- a) Complete Plastering.
- b) Laying down of any stone/tile on the window sill.
- c) The first coat of paint has been done.
- d) The POP should have been applied, in case the aperture has a POP finish.
- e) The flooring should have been completed, in case windows-doors start from floor level.
- f) The opening should be in a straight line, horizontally (Parallel to the floor) and vertically (at right angles to the floor)
- g) In certain circumstances, it is possible to survey without the opening being fully complete, however in this case the manufacturing sizes would need to be agreed and signed off before manufacturing takes place

It means you need to take care to give all apertures ready for measurement at least 45 days from the date of your desire date of delivery.

We will update you, In case our surveyor fined any ambiguities between details (in design, in System, in quantity, in size) mentioned in quotation and details received from the site at the time of survey. In such a situation, need to revised order as per the latest details.

The second site survey will conduct at least 7 days from the date of material dispatch, this survey includes the arrangements for shifting and the safe storage of window. This survey also includes checking the site situation to ensure a smooth installation process.

The third site survey will conduct within 7 days from the installation competition date for a final check of the quality of window functionality and installation. And in case of any issues, they will be resolved immediately.

Q: Is it possible to cancel an order once it has been placed?

Ans: No, You may not cancel this order. So, only sign it if you are sure to purchase the products mentioned in the quotation.

Q: Can I make changes to my order once it has been placed or processed?

Ans: No, once orders are processed, changes cannot be made to the order. The reason for this is that when an order is placed it is allocated a production date and all aluminium material, glass and all other products require to manufacture items are ordered to suit each specific job. All products ordered from SHAILJA are made to order and no items are kept in-stock.

Q: How do I learn about the operation of windows correctly and look after them?

Ans: After the completion of the installation, our engineers will provide you a practical demonstration. Our windows are designed to be as low maintenance as possible for you. Dirty frames and glass simply require a wipe down with a damp, soft cloth and soapy water to keep your windows looking as good as new.

SHAILJA also gives you a care kit that contains a cleaning solution, oil, a cleaning brush and a cloth.

Q: Do you clean up windows-doors after installation?

Ans: No, You may need to clean the windows or doors once the installation is complete.

Notes	



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