

**PVC  
Technical &  
Engineering  
Solutions**



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## PVC Engineering and Technical Solutions

### Why dokmah PVC ?

- Introduction.
- High Strength.
- Longevity.
- Versatility.
- Sustainability.
- Safety.
- Faster Build Time.
- Earlier revenue generation.
- Lower finance costs.
- All-weather construction.
- Lower overall costs.



## Introduction

PVC is common materials used in tensile constructing structures, and arguments could be made as to why each of these materials might suit a given project.

Steel framing is a construction method in which steel columns and beams are assembled to create a support for floors, roofs, cladding, internal fixtures, finishing and occupants. This article will look at the advantages of steel frames over other construction materials and why they are a common choice in modern buildings.

## Higher strength

PVC and tensile Steel have a higher density which means that for the same dimensions, steel will be heavier. However, a length of 50mm x 100mm steel will be able to carry more load than the same length of 50mm x 100mm timber. In practice, this means that less steel is necessary to provide the same amount of support.

The consequences of this decrease in material use are reduced material shipping costs, reduced labor and simplified design of foundations and other structural supports.



## Longevity

PVC membrane fabric can last longer, assuming that all properly maintained.

## Versatility

Structural steel can be fabricated into different shapes while still maintaining its strength. The use of steel allows for creative and innovative designs. Architects and other designers use this capability to create structures that are not only aesthetically pleasing but also structurally sound.

Structural steel also allows for the creation of large-span buildings such as indoor arenas and aircraft hangars, as well as the capability to build very high skyscrapers, bridges and other structures.

It is also easy to future-proof steel frames because they are more conducive to structural addition or modification, such as renovations or expanding the size of an existing building.

## Sustainability

The use of computer modelling before fabrication reduces the amount of scrap steel produced.

Any scrap that is produced can be recycled for use in other projects. Steel is endlessly recyclable because it does not lose any inherent properties such as strength when it is melted down and recast.

It is possible to reuse timber by transforming it into other things, such as tables or chairs, but there will come a time when the scrap wood is too small or the shape is too awkward to work with. Concrete can also be broken down for use in future mixes, but is only successfully used for works such as pavements.



## Safety

The tensile strength of steel frames allows them to perform well under a range of natural phenomena such as hurricanes, seismic activity and snow loads. These phenomena become more problematic as the structure becomes higher. Steel also performs better in man-made emergencies such as explosions and impact.

On lower structures, timber offers enough flexibility but there will also be a fire risk. Steel is non-combustible so it is not a fire risk but, unlike concrete, its strength becomes compromised when subject to extreme temperatures. However, concrete in itself is not very flexible so its tensile strength must be increased by reinforcing it with steel.

## Faster build-times

Computer-assisted manufacturing of standardized bolted connections and repetitive floor plates make production faster while standardization and regulatory policies have made structural steel components dependable and easy to erect.

The steel frames are prefabricated offsite to fit a certain specification before being sent to the construction site. After they are sent out, they are immediately ready to be assembled by bolting or welding the pieces together, unlike in-situ concrete, where it is necessary to wait for a section to cure before continuing the construction.

There is also no need for temporary formwork which needs to be assembled and then dismantled afterward, delaying the construction as well as producing waste.

Cost-effective, since steel frames are fabricated off-site, on-site labor can be reduced by 10%-20%. Fewer workers also mean fewer accidents.

Shorter construction times result in less financing costs, fewer interest payments, and means that the building can be used or rented as soon as possible for faster payback.



Steel is durable so maintenance costs in terms of repairs and replacements can be lower. Insurance companies may also offer cheaper premium insurance for structures that are constructed with steel because of their ability to withstand decay, pests, and natural disasters.

Space maximization, By being stronger, bays within steel frames can be spaced wider apart, which also creates wider bays. The wider available space allows for more flexible floor designs that can maximize the available space. Although concrete is also strong, it has a more limited floor-to-floor construction height as well as inferior spanning.

In housing, the use of steel can reduce the need for load-bearing timber posts, thereby maximizing floor space in an age of sky-rocketing property prices.

Steel frames have many other benefits. They can be constructed in any weather, and are easily adaptable to sudden design changes. They can also be easier to maintain assuming the frame is accessible for inspection.

However, the advent of hybrid construction materials has resulted in, e.g metal-reinforced timber beams, as well as fibre-reinforced concrete. These 'composite' materials demonstrate that they can not only be stronger than the individual components but are also cost-effective.





## Membrane Shade | PVC is perfect choice

Dokmah is trading in All fabric types as per specification table



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**Sample Fabrics Table**

Fabric Type	Weight (g/Sqm)	Description	Application / Recommendations
E Screen (3500)	410	Light weight PVC coated glass based mesh fabric (welded or stitched).	Internal structures, including ceilings and screens.
Natte 4503	470	Medium weight PVC coated glass based mesh fabric (welded or stitched).	Internal structures, including ceilings and screens.
Satine 5500	535	Heavy weight PVC coated glass based mesh fabric (welded or stitched).	Internal structures, including ceilings and screens.
FR Nylon	250	Lightweight nylon fabric (stitched only).	Internal ceilings, screens and 3-dimensional shapes.
FlagKnit Polyester	115	Very light weight polyester fabric mesh fabric - translucent (stitched only).	Internal screens/printed structures.
Battyline	560	Heavy weight coated woven mesh fabric.	Internal ceiling, pool ceilings (moisture stable).
PVC (Ferrari 702)	750	Exterior canopies. PVC for Banners. Smooth appearance (welded/stitched).	Exterior Structures / Banners. Very good for printed structures.
Trevira (polyester)	68	Woven Polyester Fabric (stitched only).	Interior/Exhibition structures. Including printing. Excellent for back lighting.
Insight	222	Acrylic Canvas material with a woven appearance (stitched only).	Interior/Exhibition structures. Including printing.
Light Weight Vision		Starched cotton fabric. Woven appearance (stitched only).	Interior/Exhibition structures. Including printing.
Standard Mesh	230	Medium weight coated woven mesh fabric (stitched or welded).	Interior/Exhibition structures/banners Including printing.
Supreme Mesh	330	Medium weight moulded PVC coated Polyester Mesh (welded or stitched).	Interior/Exhibition structures/banners Including printing.
Acrylic Canvas	340	Tough Woven fabric for exterior use. Water resistant (stitched only).	Exterior Structures / Sails.
Firex	266	Woven Nylon fabric. Close weave (stitched only).	Interior Structures. Excellent for backlighting.
Acoustis 50	410	PVC coated glass fabric welded or stitched.	Acoustic fabric to reduce the reflection of sound waves in a room. Internal ceilings, screens and 3-dimensional shapes.
Flock Blockout	350	Textile. Light flexible blackout fabric.	Exhibition printed screens, signs and 3-dimensional shapes.
Soltis 86	380	PVC coated polyester mesh fabric.	External blinds, Internal screens, Internal ceilings.
Soltis 92	420	Low Openness factor PVC coated polyester mesh fabric.	External blinds, Internal screens, Internal ceilings.
HT Coated Polyester	212	Coated Polyester Solid Fabric.	Internal ceiling, sculpture - Excellent Dye Sublimation media.
Polyester Canvas	250	Polyester Canvas - with flexible bias weave.	Internal printing - Excellent Dye Sublimation media.





# *Dokmah*

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