External Fabric

The most commonly used fabrics for tensile structures are compared below

		PVC coated Polyester		PTFE (Teflon) Coated Glass Fibre		Silicon coated Glass Fibre
		A woven polyester base cloth scrim coated both sides with heavily plasticized PVC. Most architectural fabrics are now laquered on the top surface with a protective PVDF fluropolymer. Thicker coatings need to be ground off before welding and are described as non weldable PVDF. Additives in the PVC include fire redardant, plasicers, fungicides and UV stabilisers.		**A woven glass fibre base cloth scrim coated both sides with PTFE.**		**A woven glass fibre base cloth scrim coated 2 sides with Silicon Rubber**
Means of construction		High Frequency (HF) welding or sewing		Bonded using hot melt FEP strip		Bonded using hot melt silicone strip or sewn with PTFE thread
Life span	*	10 - 15 years - Acrylic laquer	***	35+ years	***	35+ years
	**	18 - 20 years - Weldable PVDF Laquer				
	***	25 - 30 years - Non-weldable PVDF laquer				
Price comparison	***	Very cost effective	*	approx 7 x £ PVC off the roll	**	approx 3x £ PVC off the roll
Fire rating	**	B-s2,d0 / EN13501-1	***	B-s1,d0 /EN13501-1	***	B-s1,d0 /EN13501-1
Translucency	*	Typically 8% for Type 2 (1000g/m2)	*	12% for Type 2 (800 g/m2)	**	21% for Type 2/3 (1,165gm/m2) 41% for Type 1 (595gm/m2)
Colour retention	**	Whiteness can dull over time as plasticizers migrate to surface allowing dirt retention. Colours like red more susceptable to fading	**	Whiteness improves over time due to gradual UV bleaching	***	Colourfast - no fade
Colours	***	Large colour range for Type 1 (650 - 800gm/m2) Limited range for Type 2 (900 - 1050gm/m2)	*	Special Order only including silver and black (Sepia colour on the roll which bleaches to white in sunlight)	**	Limited colour range available for minimum runs of 2000 lin m
Temporary structures	***	Perfect for touring and temporary structures	*	Not recommended for relocation	*	Not recommended for location
Range of other options	***	Available as a mesh with wide range of openess factors & colours. Also meshes with a clear coating providing high translucency.	*	Available as a mesh in limited colour options or perforated for acoustic ceilings	*	Available as a mesh or perforated for acoustic ceilings
Environmental	*	All European fabric manufacturers have removed harmful phthalates and heavy metals from PVC.	*	Non recyclable. Currently low global volumes mean specialist reprocessing is not available	**	Raw materials plentiful and no toxic risk
	**	Currently no recycling process apart from shredding for re-use in products such as 'soft' kerbstones, traffic cones, park benches etc. Can be upcycled as agricultural covers etc.		Usually landfilled		Can be shredded for reuse in other products (i.e. Reinforced concrete roofing sheets) Does not leach harmful chemicals to landfill during decomposition

External Fabric

		ETFE Foil **Clear unreinforced film** **Used as alternative to glass - light weight single skin or inflated cushions to aid insulation**		Tenara **A woven extruded PTFE filament base cloth scrim coated both sides with 100% fluoropolymer film. Used mainly for long life retractable roofs.**		HDPE Shade cloth **A woven or knitted, extruded HDPE monofilament, UV stabilised, mesh.**
Means of construction		Heat welded		High Frequency (HF) welding		Sewing only
Life span	***	35+ years	***	35+ years		10 years
Price comparison	**	approx 3x £ PVC off the roll		approx 10x £ PVC off the roll	***	Equivalent to type 1 PVC price
Fire rating	***	B-s1,d0 /EN13501-1	**	B-s1,d0 /EN13501-1		AS1530.2 - 1993 Flamability Index 22
Translucency	***	98% for all thicknesses		45% for Type 2 (1080gm/m2) 45% for Type 1 (925gm/m2)		4% - 20% depending upon colour
Colour retention		N/A (Clear)	***	Colourfast - no fade	*	UV stable for 10 years
Colours		N/A (Clear)		Not currently available	***	Large colour range available
Temporary structures	*	Not recommended for relocation	*	Unsuitable due to expense!	***	Perfect for touring structures
Range of other options		No options available (film can be printed with a frit pattern to reduce solar gain)				
Environmental	*	Recyclable but currently low global volumes mean specialist reprocessing is not currently viable. Can be shredded for landfill	*	Non recyclable		Recyclable

Internal Fabric

The selection of interior fabrics that could be used is extensive including unreinforced stretch PVCs, silks, and other technical fabrics.

		PVC Coated Polyester Mesh **Polyester filaments, coated in PVC then woven in a 'plain' style to produce a mesh fabric of distinctive appearence**		PVC Coated Glass fibre Mesh **Glass fibre filaments, coated in PVC then woven in a variety of styles to produce various textures and 'looks'**		PU coated Glass fibre **Woven glass fibre basecloth scrim, coated one side with PU**
Means of construction		HF Welding or sewing		HF Welding or sewing		Sewing only
Life span	***	10 - 15 years	***	15 - 20 years	**	10 years
Price comparison	*	approx 2x £ PVC off the roll	*	approx 2x £ PVC off the roll	**	Approx 1/2£ of type 1 PVC cost
Fire rating	***	B-s1,d0 / EN 13501-1	*	C-s3,d0 /EN13501-1	***	BS 476: Part 6:1989, Part 7: 1997; Class 0
Openness factor Translucency		5% N/A		3-10% N/A		N/A Approx 20% (Suitable for backlit applications)
Colour retention	***	Colourfast - no fade	***	Colourfast - no fade		N/A
Colours	***	Large colour range	***	Large colour range		White only
Temporary structures	***	Suitable for temporary structures Fully printable with UV cured inks	*	Not recommended for relocation Fully printable with UV cured inks	***	Not recommended for relocation Fully printable with UV cured inks
Range of other options		None		Variety styles, weave patterns.		
Environmental	*	All European PVC fabric manufacturers have removed harmful phthaltes and heavy metals from material processing. Shredded for re-use in products such as 'soft' kerbstones, Traffic cones, park benches etc.	*	All European PVC fabric manufacturers have removed harmful phthalates and heavy metals from material processing.	***	Raw materials plentiful and no toxic risk. Can be shredded for reuse in other products
	***	Available as a fully recycled product				

Internal Fabric

		Polyester Trevira **100% Polyester material Available in a variety of weights, colours and levels of translucency**		Cotton Lycra **90% Cotton, 10% Lycra Variety of finishes from Matt to high gloss and textured.**		Cotton **100% cotton sheeting**
Means of construction		Sewing only		Sewing only		Sewing only
Life span	*	Upto 5 years	*	5 years	*	5 years
Price comparison		From 1/3rd £ of type 1 PVC cost	*	Equivalent to type 1 PVC	***	Ranges from 1/3rd of type 1 PVC cost
Fire rating	*	Inherently flame retardent (IFR) - BS5867 2B		Inherently flame retardent (IFR)	*	Non-durably flame retardent (NDFR) Can be Probanised to achieve BS5867 2B
Openness factor		N/A		N/A		N/A
Translucency		Full range from 90% - Full Blackout		Approx 20%		Approx 20%
Colour retention	***	Colourfast - no fade	***	Colourfast - no fade	*	Will fade if exposed to strong sunlight
Colours		Large colour range	***	Large colour range	***	Large colour range
Temporary structures		Suitable for temporary structures Fully printable with UV cured inks	***	Suitable for temporary structures	***	Suitable for temporary structures Fully printable with UV cured inks
Range of other options		Full range available from 50gm/m2 Voile up to 400gm/m2 Also available as a stretch fabric				
Environmental	***	Recyclable	***	90% Natural product - recyclable	***	100% Natural product - Fully recyclable