OVERVIEW

WHY ARAMID?

BENEFITS

Brilliantly transparent new façade system

Flexxwall is a brilliantly transparent new façade engineering system. It exploits Tensile Fibre technologies borrowed from Spinlock Ltd. experience in high endurance global sailing and from the offshore oil industry. Because of its unique properties, Flexxwall's fibre cable system removes the need to specify the trusses, framework, drilled glass, expansion compensation and other devices necessary to keep cladding safely attached to a steel structure. 'Sheer brilliance' best describes the effect of removing these internal obstructions from a façade.

Once tensioned, the array of special Flexxwall fibre cables remain dimensionally stable over the full thermal range. Thus, the assembled surface is able to respond dynamically as a single membrane to environmental loads, minimising stresses in the glass and supports. No secondary bracing is needed. A self-diagnostic fibre optic core monitors cable loading and condition from a remote location.

The system has been tested at full scale by ERTL GmbH to CWCT curtain walling standard BS5368 pts 1 and 2 (serviceability, watertightness, dynamic condition and wind resistance safety).

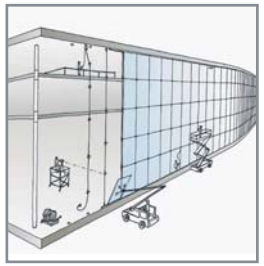
Properties of Flexxwall Aramid fibre cable :

The Flexxwall System consists of an array of high modulus Aramid fibre cables installed in parallel. Aramid materials have a consistent record of performance of over more than 35 years in a wide range of engineering applications, utilising their special properties:

- Outstanding tension-tension fatigue
- Near zero thermal dimensional change
- Excellent fire and chemical resistance
- Electrically and thermally non conductive
- Exceptional strength/weight ratio advantage over any steel alternative
- Very low 'creep' rate through working life

Fast to design and install

Flexxwall is a lightweight modular system made to be delivered as a complete kit for fast, precise installation. Standard components adapt to any panel size or type, yet offer wide opportunities for designers to customise or to add specific detailing of their own.



PROPERTIES

MECHANICAL

DEFLECTION/ EXTENSION

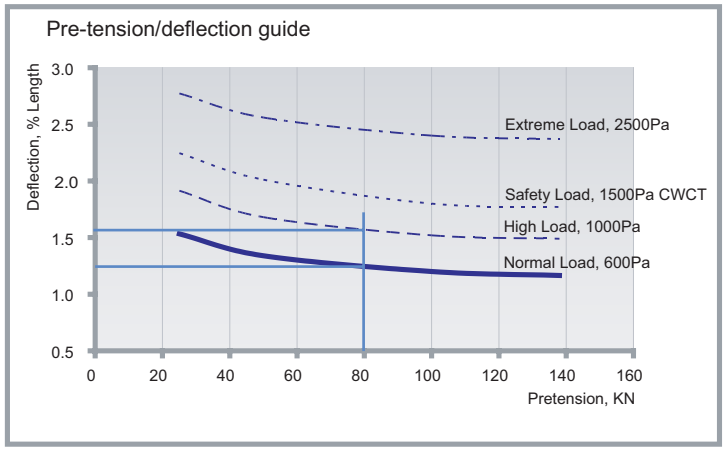
THERMAL & CHEMICAL

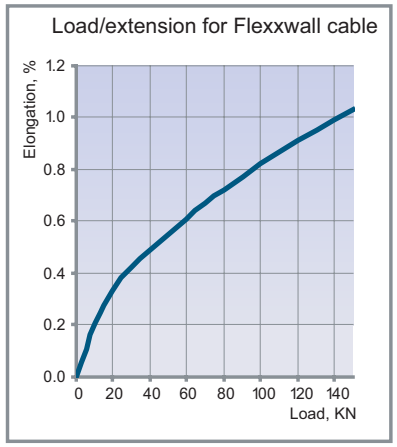
FATIGUE

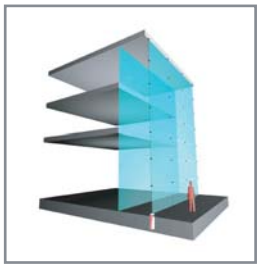
ELECTRICAL

CONTACT

	Tensile Strength	Modulus of Elasticity	Elongation Break (Yield)	Density	Strength/ Weight Ratio
	N/mm2	N/mm2	%	g/cc	
Flexxwall fibre cable	2760	120000	2.1	1.44	1917
Steel cable	2400	200000	1.1	7.86	305







Aramid fibre is an extraordinary engineering material. It is barely affected by long term exposure to extreme temperature with little change in tensile strength or modulus from -40 °C to 160 °C. The fibre starts to carbonize at 425 °C but it will not melt or sustain combustion. The fibre is resistant to common solvents, oils, greases and water. At 20 °C, the resistance to acids and bases is also good.

In tension-tension fatigue Aramid fibre has an outstanding performance. In a load cycle of 5% to 50% of its break strength, the fibre survives 10 million cycles. Similarly the low creep of Aramid fibre ensures an exceptionally long life under continuous load. At a load of 50% breaking, Aramid fibre has a predicted life of more than 100 years.

Aramid fibre is naturally insulating and so will not conduct electricity.

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