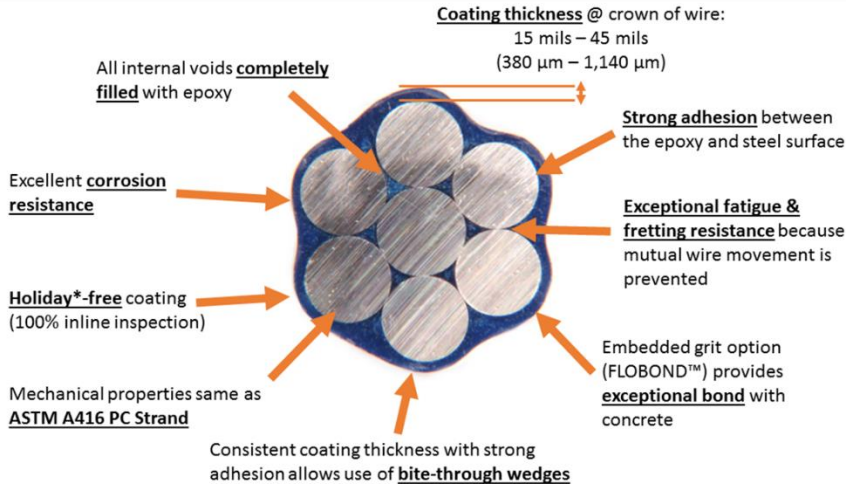




EPOXY-COATED AND FILLED STRAND

Features



*Holiday – Unintended void in epoxy coating

Types and Applications

Type	Applications
 <p>FLOGARD (non-grit)</p>	<ul style="list-style-type: none"> External tendon Stay cable
 <p>FLOBOND (with grit)</p>	<ul style="list-style-type: none"> Internal tendon Pre-tensioning Ground/dam anchor

Dimensions and Mechanical Properties (ASTM A882)

Nominal strand diameter*	Nominal overall diameter	Coating thickness at crown	Nominal unit weight	Minimum breaking strength	Minimum yield strength	Minimum elongation at break	1,000 hours relaxation @ 70% GUTS	Nominal area of steel strand
in. [mm]	in. [mm]	mil [mm]	lbf/kft [kg/km]	lbf [kN]	lbf [kN]	%	%	in ² [mm ²]
0.6 [15.2]	0.646 [16.4]	15~45 [0.38~1.14]	820 [1,220]	58,600 [260.7]	52,740 [234.6]	3.5	≤ 6.5*	0.217 [140]
1/2 [12.7]	0.547 [13.9]		550 [819]	41,300 [183.7]	37,170 [165.3]			0.153 [98.7]
7/16 [11.1]	0.484 [12.3]		420 [625]	31,000 [137.9]	27,900 [124.1]			0.115 [74.2]
3/8 [9.5]	0.421 [10.7]		310 [461]	23,000 [102.3]	20,700 [92.1]			0.085 [55.0]

* Low relaxation type or other strand sizes upon request

Coating Performance

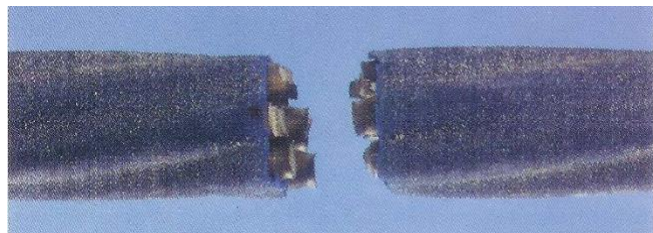
BENDING CHARACTERISTICS OF COATING:

The coating develops no abnormalities even when ECS is wrapped around a mandrel with a diameter of 32 x nominal strand diameter.



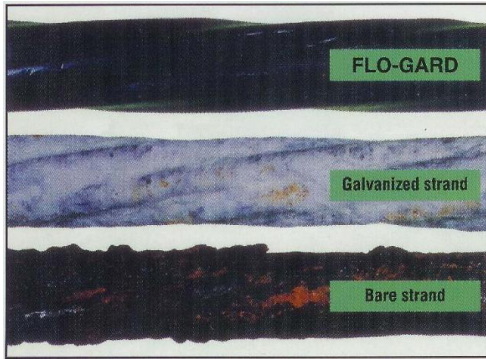
ADHESION AND CONTINUITY OF COATING UNDER TENSIONING:

The coating follows the steel wire and maintains continuity up until the wire breaks. Even after wire breakage, the coating demonstrates uniform behavior with the steel wire.



COMPARISON WITH CONVENTIONAL STRANDS IN ACCELERATED TEST:

Epoxy-coated strand has superior corrosion resistance compared with bare strand and galvanized strand (after 1,000 hours in salt spray test).

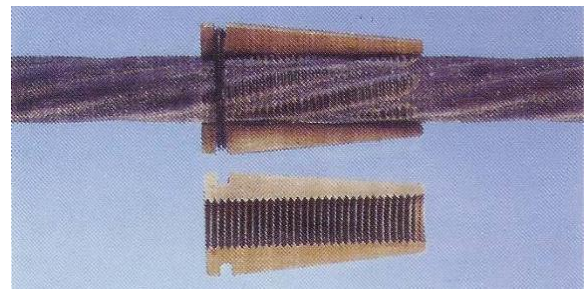


OTHER CHARACTERISTICS:

Item	Test method	Requirements
Chemical Resistance • 3M-CaCl ₂ • 3M-NaOH • Saturated Ca(OH) ₂ • Water	ASTM G20	No blistering, softening, loss of bond or holidays in coating after immersion for 45 days in 20± 1°C distilled water
Abrasion resistance	ASTM G8	No under-cutting of coating
Impact test	ASTM G14	No shattering or bond loss in coating
Salt spray test	ASTM B117	No visible signs or corrosion in coating after 3000 hours under tension 70% of maximum load.

Anchorage Characteristics of Epoxy-Coated Strand

Epoxy-coated strand can be anchored from directly above the coating with a special anchoring tool to provide an anchoring efficiency equal to that of a bare strand.

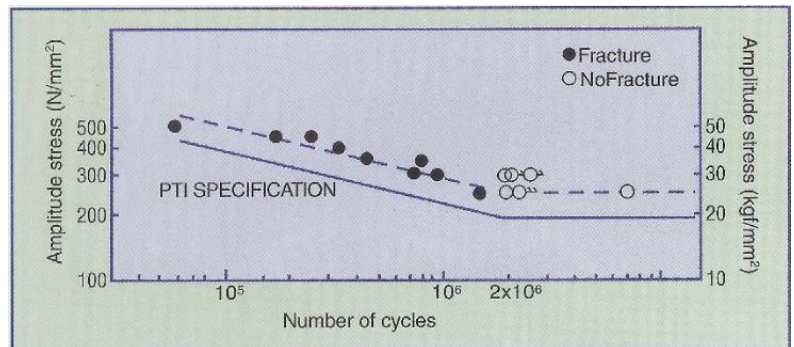


Fatigue Resistance

RESULTS OF FATIGUE TEST (SWPR) 7B 15.2

The epoxy resin filling prevents fretting between the strands as well as between the wedge and steel, providing superior fatigue resistance.

$$\begin{aligned} \text{Maximum Load} &= 261 \times 0.45 \\ &= 117 \text{ kN} \\ &= (12,000 \text{ kgf}) \end{aligned}$$



Bond Characteristics with Concrete (FLOBOND)

FLOBOND with grit embedded on coating surface gives superior bond strength with concrete or grout.

Example of 0.6in. bond test (ASTM A981 for anchor applications)

	Requirement	FLO-BOND (ASTM A882)	Bare strand (ASTM A416)
Bond strength* [lbf]	Min. 8,500	15,574	9,523

*Load at 0.01in slippage. Average of 6 specimens.