H2000 Forks

- High-performance hinge anchorage
- Simple connection to the structure
- Flexible, modular multi-strand system

Architectural stay cable anchorage

Technical data sheet reference no: FT En C I 1 2

FREYSSINET
SUSTAINABLE TECHNOLOGY

Description

The fork is a simple, elegant way of anchoring a cable to a structure. A flat metal section with a hole is all that's required, eliminating the need to create an anchorage chamber.

Freyssinet produces an aesthetic, functional fork solution for the full range of it's anchorage units, providing all of the qualities of a Freyssinet multi-strand stay cable in terms of strength and durability.

Advantages

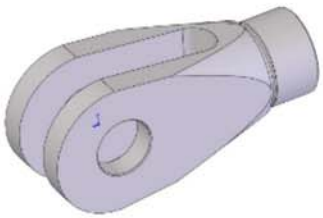
H2000 forks have all of the advantages of the Freyssinet H2000 anchorage range:

- **Individual strand anchoring:** Provides individual protection for each strand. With AB type forks, each strand can be installed and replaced invididually.
- **Corrosion protection:** The strands are invididually protected against corrosion along the whole length of the cable through a combination of galvanising and a continuous HDPE sheath. The gaps are filled with a specially developed wax that ensures semi-adhesion of the sheath to the strand.
- **Waterproofing:** Waterproofing is provided by an active stuffing box that ensures that the dual corrosion protection of the strand extends right into the anchorage.
- **Fatigue resistance:** The system has successfully withstood over two million test cycles at an amplitude of 200 MPa and 45% of strand GUTS.
- **Angular deviation filtering:** A guide system at the entrance to the anchorage reduces the bending stresses in the strand due to the inevitable angular deviation.
- **Adjustment:** Cable length can be adjusted once the stay cable is installed using a turnbuckle system (for EB type forks).

Two types of fork

There are two different types of fork:

- **EB (Encapsulated Block) forks** for small units (12 to 37 strands) on which access to the anchor block is protected by the fork or adjustment turnbuckle. These forks are adjustable or fixed depending on whether or not they have a turnbuckle. The cable must be prefabricated and strand-by-strand replacement is not possible.
- **AB (Accessible Block) forks** cover the entire range (12 to 169 strands) and allow access to the block between the arms of the fork. These forks are not adjustable, but strand-by-strand installation is possible.



The H2000 fork anchorage can be combined, at the other end of the cable, with a standard H2000 anchorage or with another fixed or adjustable fork.

Designation	Encapsulated Block (EB)		Accessible Block (AB)
Fixed (F) or Adjustable (A)	F	A	F
Location Top/tower/arch (T) or bottom/deck (B)	T or B	B preferable	T or B
Cable installation method	Prefabricated	Prefabricated	Strand-by-strand
Designation	H2000 CFH-EB H2000 CFB-EB	H2000 CRB-EB	H2000 CFH-AB H2000 CFB-AB
Diagram			
Units Available	12 19 27 31 37	12 19 27 31 37	12* 19* 27* 31* 37 48 55 61 75 91 127* 169*
Strokes Available		100 mm (+/-50 mm) 150 mm (+/-75 mm) 200 mm (+/-100 mm) 250 mm (+/-125 mm) 300 mm (+/-150 mm)	

H2000 Forks

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Installation

Whether prefabricated or installed strand by strand, the fork cable is assembled on site, optimising resources and supply and transport lead-times. Cable length can be adjusted right up to the time of prefabrication on site, providing great flexibility compared with other technologies.

Depending on the chosen configuration, tensioning can be performed as follows:

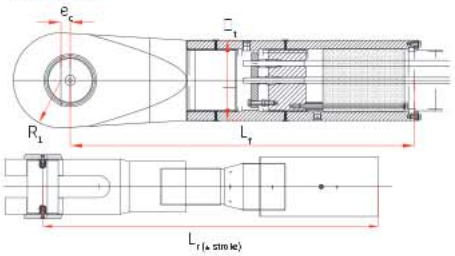
- **Fixed Fork/Fixed Fork:** The cable is entirely prefabricated on site before installation. Tensioning is performed either by striking the structure or by means of a jacking device used to pull on one of the forks until it is in line with its anchor hole in the structure.
- **Fixed Fork/Adjustable Fork:** The cable is prefabricated, lifted and anchored at the top. The bottom fork and its turnbuckle are removed and pre-installed on the bottom gusset. The cable is tensioned and adjusted by means of a special tool used to bring the bottom anchor body and the turnbuckle towards each other; they are then bolted together.
- **Fixed Fork/H2000 Adjustable Anchorage:** The fork acts as the passive end. With an AB fork, the strands can be installed one by one. They are tensioned individually at the anchorage using the Isotension® system. This is the optimum configuration in terms of installation equipment.

References

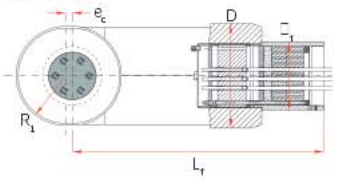
- Santander (2006), Spain, 21 EB forks, 31 and 37-strand units
- Fez-Taza (2010), Morocco, 12 EB forks, 19-strand units
- BC Place (2011), Canada, 144 AB forks, 75-strand units
- Soto de Ribera (2011), Spain, 56 EB forks, 19, 27, 31 and 37-strand units.

Dimensions

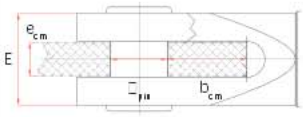
EB Forks



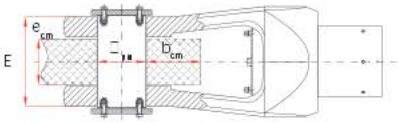
AB Forks



EB Gusset



AB Gusset



		H2000 Forks								
		Pin	Gusset**		Female fork					
Unit	Type	Øpin	ecm**	bcm**	R1	ec	Øt	Lf	Lr***	E	D
12	EB	106	70	141	105	10	190	943	1,257	196	NA
19	EB	139	80	189	138	14.5	236	1,066	1,454	226	NA
27	EB	154	110	209	180	19	281	1,129	1,562	256	NA
31	EB	168	120	224	186	20	292	1,200	1,624	286	NA
37	EB	178	130	241	212	22	317	1,255	1,715	296	NA
37	AB	180	160	202	204.5	29	285	1,512	NA	340	449
48	AB	210	180	235	232	33	328	1,605	NA	390	504
55	AB	220	200	246	242	34	328	1,596	NA	420	524
61	AB	240	210	268	257	35	360	1,662	NA	440	554
75	AB	254	240	286	270	36	372	1,678	NA	480	580
91	AB	285	265	318	309.5	43	416	1,811	NA	545	659
109	AB	320	300	356	337	46	428	1,943	NA	590	714

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