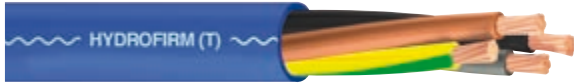


HYDROFIRM (T)

Flexible Cables for use Underwater and for Submersible Pumps



APPLICATION

- Submersible pumps in boreholes, mining, irrigation dams, reticulation systems
- Ponds and fountains
- For fresh, salt & lightly polluted water (60°C)
- Underwater and marine installations
- Sub zero installations (-40°C)
- De-watering & drainage systems
- For pumps with thermistors
- Water Authorities
- Flexible marina power supplies
- Round version suitable for depths up to 2000mts

HYDROFIRM (T)

DESIGN

HYDROFIRM (T) cables consist of finely stranded copper conductors laid up to provide a flexible design. R-EP-90 elastomer insulation enables improved current capacities and a specially compounded EPR sheath inhibits water absorption. A hand stripable bond between insulation and sheath stops any moisture migration along the insulated conductors should the sheath be damaged. HYDROFIRM (T) is suitable for water temperatures up to 60°C and is designed and approved for use in drinking water eg., mineral spring and spa pumps. For particularly aggressive liquids refer to OZOFLEX (PLUS) and PROTOMONT HD. The sheath colour is blue for identification. The cable is in accordance with the Australian Standard AS 1125, AS 3116, AS 3191 and DIN VDE 0282 pt 810.

OPERATING TEMPERATURE

- Minimum permissible ambient temperature -40°C
- Maximum permissible conductor temperature 90°C
- Maximum permissible short circuit temperature 250°C
- Minimum ambient temperature for optimum fully flexible operation -25°C

MINIMUM BENDING RADII

The following minimum bending radii should be observed to ensure operating reliability.

- For fixed installation 4 x cable diameter
- When freely flexing 5 x cable diameter

CURRENT CARRYING CAPACITY

Current ratings are based on continuous operation at an ambient temperature of 40°C. At other temperatures these values must be converted using the following factors. For HYDROFIRM (T) the water temperature should be considered as the ambient depending on the % of cable submerged.

°C	15	20	25	30	35	40	45	50	55	60	65	70	75	80
Factor	1.26	1.20	1.15	1.10	1.05	1.00	0.94	0.88	0.81	0.73	0.65	0.57	0.47	0.34

TENSILE STRENGTH

The maximum allowable tensile stress is 15N/mm². This ensures no conductor damage will occur in operation.

VOLTAGE RATING



- Rated Voltage: $U_0/U = 0.6/1kV$
- Maximum operating voltages in:
 - 3 phase AC operation $U_0/U = 0.7/1.15kV$
 - DC operation $U_0/U = 0.9/1.73kV$
- AC test voltage = 2.5kV

*The cable is designated 450/750V in accordance with VDE/IEC and meets or exceeds the Australian Standard AS 3116 for the voltage rating 0.6/1kV



CORE COLOUR IDENTIFICATION

- Single core - black
- 3 Core - blue, brown and green/yellow
- 4 Core - grey
- 5 Core - grey
- Multi Core - black insulation, sequentially numbered, including a green/yellow earth core



Selection and Ordering Data

	No. of Cores x Conductor Size	Part No.	Approx. No. of Strands x Max. Strand Diameter	Diameter of Bare Conductor	Cable Overall Diameter		Cable Weight kg/km	Unenclosed	
					Min mm	Max mm		Spaced 	Touching 
	mm ²		mm	mm				A	A
HYDROFIRM (T)	1 x 1.5	5DH1 302	28 x 0.26	1.5	5.5	7.0	50	26	20
with black core insulation	1 x 2.5*	5DH1 602	46 x 0.26	2.2	6.3	7.4	62	36	28
	1 x 4*	5DH1 603	52 x 0.31	3.1	7.3	8.4	86	48	37
	1 x 6	5DH1 305	80 x .031	3.8	7.8	8.8	120	61	47
	1 x 10	5DH1 306	77 x .041	4.1	9.5	11.0	180	84	65
	1 x 16	5DH1 307	123 x 0.41	5.7	11.5	13.5	265	110	86
	1 x 25	5DH1 308	190 x 0.41	6.8	13.5	15.5	380	150	115
	1 x 35	5DH1 310	268 x 0.41	8.1	15.0	17.5	500	185	145
	1 x 50	5DH1 311	384 x 0.41	9.6	17.5	20.0	690	230	175
	1 x 70	5DH1 312	545 x 0.41	11.2	20.0	22.5	920	290	225
	1 x 95	5DH1 313	724 x 0.41	13.2	22.5	25.0	1180	360	280
	1 x 120*	5DH1 314	926 x 0.41	14.9	24.0	26.5	1470	420	325

Selection and Ordering Data



	No. of Cores x Conductor Size	Part No.	Approx. No. of Strands x Max. Strand Diameter	Diameter of Bare Conductor	Cable Overall Diameter		Cable Weight kg/km	Unenclosed	
					Min mm	Max mm		Spaced	Touching
									
mm ²	mm	mm	mm	mm	mm	kg/km	A	A	
HYDROFIRM (T) including a green/yellow earth core	3G1.5	5DH1 352	28 x 0.26	1.7	9.6	10.6	140	20	19
	3G2.5	5DH1 353	46 x 0.26	2.2	11.2	12.8	200	28	26
	3G4	5DH1 354	52 x 0.31	3.1	13.1	14.7	285	38	35
	3G6	5DH1 644	80 x 0.31	3.8	14.5	16.0	370	48	45
	3G10	5DH1 645	80 x 0.41	5.0	19.4	21.4	655	66	62
	4G1.5	5DH1 362	28 x 0.26	1.5	10.0	12.0	175	20	19
	4G2.5	5DH1 363	45 x 0.26	1.9	12.0	14.0	250	28	26
	4G4	5DH1 364	51 x 0.31	2.5	14.0	16.0	355	38	35
	4G6	5DH1 365	75 x 0.31	3.2	15.5	18.0	475	48	45
	4G10	5DH1 366	77 x 0.41	4.1	21.0	23.5	825	66	62
	4G16	5DH1 367	123 x 0.41	5.6	25.5	29.0	1250	88	83
	4G25	5DH1 368	190 x 0.41	6.8	31.0	34.0	1800	120	110
	4G35	5DH1 370	268 x 0.41	8.1	35.0	39.0	2360	145	135
	4G50	5DH1 371	384 x 0.41	9.6	41.0	45.0	3250	180	170
	4G70	5DH1 372	545 x 0.41	11.2	46.5	50.0	4300	230	215
	5G1.5*	5DH1 731	28 x 0.26	1.7	11.5	13.1	215	20	19
	5G2.5*	5DH1 732	46 x 0.26	2.2	13.6	15.2	310	28	26

Selection and Ordering Data

	No. of Cores x Conductor Size	Part No.	Approx. No. of Strands x Max. Strand Diameter	Diameter of Bare Conductor	Cable Overall Dimensions		Cable Weight kg/km	Unenclosed Unenclosed	
					Min mm	Max mm		Spaced	Touching
									
mm ²	mm	mm	mm	mm	mm	kg/km	A	A	
HYDROFIRM (T) without green/yellow earth core	3 x 1.5	5DH1 332	28 x 0.26	1.5	9.5	11.0	137	20	19
	3 x 2.5	5DH1 333	45 x 0.26	1.9	11.0	13.0	197	28	26
	3 x 4	5DH1 334	51 x 0.31	2.5	13.0	15.0	280	38	35
	3 x 6	5DH1 335	75 x 0.31	3.2	14.5	16.0	370	48	45
	3 x 10	5DH1 336	77 x 0.41	4.1	19.0	21.5	665	66	62
	3 x 16	5DH1 337	123 x 0.41	5.6	23.5	26.0	1000	88	83

Selection and Ordering Data

HYDROFIRM (T) FLAT

	No. of Cores x Conductor Size	Part No.	Approx. No. of Strands x Max. Strand Diameter	Diameter of Bare Conductor	Cable Overall Width Dimensions		Cable Weight kg/km	Unenclosed Unenclosed	
					Min mm	Max mm		Spaced	Touching
									
mm ²	mm	mm	mm	mm	mm	kg/km	A	A	
HYDROFIRM (T) FLAT including a green/yellow earth core	4 G 1.5	5DH1 522	28 x 0.26	1.5	16.0	18.5	175	20	19
	4 G 2.5	5DH1 523	45 x 0.26	1.9	19.0	21.5	255	28	26
	4 G 4	5DH1 524	51 x 0.31	2.5	22.5	25.5	360	38	35
	4 G 6	5DH1 525	75 x 0.31	3.2	25.5	29.0	485	48	45
	4 G 10	5DH1 526	77 x 0.41	4.1	33.0	36.5	955	66	62
	4 G 16	5DH1 527	123 x 0.41	5.6	41.0	44.5	1220	88	83
	4 G 25	5DH1 528	190 x 0.41	6.8	49.0	53.5	1800	120	110
	4 G 35	5DH1 530	268 x 0.41	8.1	56.5	60.5	2400	145	135
	4 G 50	5DH1 531	384 x 0.41	9.6	66.5	69.5	3270	180	170