



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-8369

This Certificate consists of 4 pages

This is to certify that the
Electric Cable, Power Current
with type designation(s)
BFOU P5/P12 0,6/1 kV, BFCU 0,6/1 kV

Holder of certificate

Draka Marine, Oil & Gas International

Houston, TX 77032, United States

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

IEC 60092-353 (2001-04)

IEC 60331-21 (1999-04)

IEC 60332-3-22 (2000-10)

IEC 60331-31 (2002-07)

IEC 60754-1 (1994-01)

IEC 60754-2 (1997-04)

IEC 61034-2 (2005-04)

NEK 606 (2004) (P types only)

Application

General power and lighting. Control. Halogen free. Low smoke. Mud resistant.

Type	Voltage class (kV)	Temp. class (°C)
BFOU P5/P12 0,6/1 kV	0,6/1	90
BFCU 0,6/1 kV	0,6/1	90

Place and date

Høvik, 2007-05-11

for DET NORSKE VERITAS AS

Frode Berntsen
Head of Section



Local Office
DNV Oslo

This Certificate is valid until

2011-06-30

Ivar Bull
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: E-8369
File No.: 827.10

Name and place of manufacturer:

Draka Norsk Kabel AS
Drammen, Norway

Product description

Type: BFOU P5/P12 0,6/1 kV & BFCU 0,6/1 kV

Construction:

Conductors: Tinned, stranded copper and Mica-tape helically applied directly over the copper conductor

Core insulation: EPR

Filler: Flame retardant halogen-free thermoplastic compound

Metal covering: Tinned, Copper wire braid (O) or Galv. Steel wire braid (C)

Outer sheath: SHF2, SHF Mud

BFOU P5/P12 0,6/1 kV

Number of cores x conductor cross-section mm ²	Overall diameter mm	Number of cores x conductor cross-section mm ²	Overall diameter mm	Number of cores x conductor cross-section mm ²	Overall diameter mm
1 x 16	14,0 ± 1,0	2 x 16/16	22,5 ± 1,5	3 x 240 + E	75,0 ± 3,0
1 x 25	15,5 ± 1,0				
1 x 35	17,0 ± 1,0	3 x 1,5/7	15,0 ± 1,0	4 x 1,5/7	16,0 ± 1,0
1 x 50	19,0 ± 1,0	3 x 2,5/7	15,5 ± 1,0	4 x 2,5/8	17,0 ± 1,0
1 x 70	21,5 ± 1,5	3 x 4/8	17,0 ± 1,0	4 x 4/9	18,5 ± 1,0
1 x 95	24,0 ± 1,5	3 x 6/9	18,5 ± 1,0	4 x 6/9	20,0 ± 1,5
1 x 120	25,0 ± 1,5	3 x 10/10	20,5 ± 1,5	4 x 10/10	22,5 ± 1,5
1 x 150	28,0 ± 1,5	3 x 16/16	23,5 ± 1,5	4 x 16/16	26,0 ± 1,5
1 x 185	30,0 ± 2,0	3 x 25/16	27,0 ± 1,5	4 x 25/16	30,0 ± 2,0
1 x 240	34,0 ± 2,0	3 x 35/16	30,0 ± 2,0	4 x 35/16	34,0 ± 2,0
1 x 300	37,5 ± 2,0	3 x 50/25	35,0 ± 2,0	4 x 50/25	38,5 ± 2,0
		3 x 70/35	40,0 ± 2,5	4 x 70/35	45,0 ± 2,5
2 x 1,5/7	14,5 ± 1,0	3 x 95/50	45,0 ± 2,5	4 x 95/50	49,0 ± 2,5
2 x 2,5/7	15,0 ± 1,0	3 x 120/60	49,0 ± 2,5	4 x 120/60	53,5 ± 3,0
2 x 4/8	16,0 ± 1,0				
2 x 6/8	17,5 ± 1,0	3 x 150 + E	60,5 ± 3,0	7 x 1,5/9	18,5 ± 1,0
2 x 10/10	18,5 ± 1,0	3 x 185 + E	66,5 ± 3,0	7 x 2,5/10	19,5 ± 1,0



Cert. No.: E-8369

File No.: 827.10

Number of cores x conductor cross-section mm ²	Overall diameter mm
12 x 1,5/12	23,0 ± 1,5
12 x 2,5/13	25,0 ± 1,5

Number of cores x conductor cross-section mm ²	Overall diameter mm
19 x 1,5/13	26,5 ± 1,5
19 x 2,5/14	29,0 ± 1,5
27 x 1,5/16	32,0 ± 2,0

Number of cores x conductor cross-section mm ²	Overall diameter mm
27 x 2,5/19	35,0 ± 2,0
37 x 1,5/25	36,5 ± 2,0
37 x 2,5/30	39,5 ± 2,0

BFCU 0,6/1 kV

Number of cores x conductor cross-section mm ²	Overall diameter mm
2 x 1,5	14,0 ± 1,0
2 x 2,5	15,0 ± 1,0
2 x 4	16,0 ± 1,0
2 x 6	17,5 ± 1,0
2 x 10	19,5 ± 1,0
2 x 16	22,0 ± 1,5
2 x 25	25,5 ± 1,5
2 x 50	32,0 ± 2,0
2 x 70	38,0 ± 2,0
2 x 95	42,0 ± 2,5
2 x 120	45,0 ± 2,5
3 x 1,5	14,5 ± 1,0
3 x 2,5	15,5 ± 1,0
3 x 4	17,0 ± 1,0
3 x 6	18,5 ± 1,0
3 x 10	20,5 ± 1,5
3 x 16	23,5 ± 1,5
3 x 25	27,0 ± 1,5
3 x 35	30,0 ± 2,0

Number of cores x conductor cross-section mm ²	Overall diameter mm
3 x 50	34,5 ± 2,0
3 x 70	40,0 ± 2,5
3 x 95	44,0 ± 2,5
3 x 240	66,0 ± 3,0
4 x 1,5	16,0 ± 1,0
4 x 2,5	16,5 ± 1,0
4 x 4	18,5 ± 1,0
4 x 6	20,0 ± 1,5
4 x 10	22,5 ± 1,5
4 x 16	25,5 ± 1,5
4 x 25	29,5 ± 1,5
4 x 35	33,5 ± 2,0
4 x 50	38,5 ± 2,0
4 x 70	44,0 ± 2,5
4 x 95	49,0 ± 2,5
5 x 2,5	18,0 ± 1,0
7 x 1,5	18,5 ± 1,0

Number of cores x conductor cross-section mm ²	Overall diameter mm
7 x 2,5	19,5 ± 1,0
8 x 2,5	21,5 ± 1,5
12 x 1,5	23,0 ± 1,5
12 x 2,5	25,0 ± 1,5
14 x 2,5	26,0 ± 1,5
19 x 1,5	26,5 ± 1,5
19 x 2,5	29,9 ± 1,5
21 x 1,5	31,0 ± 2,0
27 x 1,5	32,0 ± 2,0
27 x 2,5	35,0 ± 2,0
37 x 1,5	36,5 ± 2,0
37 x 2,5	39,5 ± 2,0

Application/Limitation

This type of cable is fire resistant in accordance with IEC Publication 60331-21 and 60331-31.



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The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

Type Approval documentation

Data sheets: Draka BFOU_1kV dated 2004-02-13.
Draka BFCU_1kV dated 2004-02-13.
Test reports

Tests carried out

Type tested according to:

Standard cable: IEC 60092-350, IEC 60331-21, IEC 60331-31, IEC 60332-3-22, IEC 60754-1/2, IEC 61034-1/2 and NEK 606 (2004)

On special request: Cold bend (-40 °C)/impact (-35 °C) test: CSA C 22.2 No 0.3-M1985 and IEC 60331-21 (1000 °C for 3 hours)

Marking of product

To be marked: DRAKA NORSK KABEL or DRAKA 01 – BFOU P5/P12 or BFCU - size - 0,6/1 kV

Certificate retention survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Survey to be performed at least every second year.

END OF CERTIFICATE