



## *Confirmation of Type Approval*

This is to certify that, pursuant to the Rules of American Bureau of Shipping (ABS), on 31/OCT/2006 the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) and a valid Product Design Assessment (PDA) for the below listed product, entitling the product to type approval. The validity of the Manufacturing Assessment is dependent on satisfactory audits as required by the Rules. The Product Design Assessment is valid only for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

For Date of ABS Rules used for evaluation; Please refer to the ABS Rules below.

This Confirmation of Product Type Approval is valid as of the date shown above for the below listed product.

ABS makes no representations regarding type approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that the Client has full responsibility for continued compliance with the evaluation standard, whether the standard is an ABS Rule or a non-ABS Rule. As specified in the ABS Rules, Unit Certification may be required in addition to Product Type Approval. Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

**Draka Norsk Kabel A.S.**

**Model Name(s): BFOU/BFCU/BFPU (i) and (c) 250 V and 1000V**

**Presented to:**

Draka Norsk Kabel A.S.  
Kjerraten 16  
P.O. Box 369 Bragernes  
Drammen  
N-3001  
Norway

**Intended Service:**

Armoured cable for fixed installation on ships and offshore for instrumentation, communication, control and alarm systems. (Mud resistant)

**Description:**

BFOU (i) 250V and 1000V Fire resistant cables-Individual screen with stranded copper or tinned copper conductor to IEC 60228 class 5, sized 0.75 mm<sup>2</sup> to 2.5 mm<sup>2</sup> twisted in pairs/triples and wrapped with polyester tape. Pairs/triples are screened by copper (or aluminium) backed polyester tape with tinned copper drain wire. (Armour: tinned copper wire braid- 1000V) BFOU (c) 250V and 1000V Fire resistant cables-overall shielded. with stranded copper or tinned copper conductor to IEC 60228 class 5, sized 0.75 mm<sup>2</sup> to 2.5 mm<sup>2</sup> twisted in pairs/triple and wrapped with polyester tape. Pairs/triples are laid up and collectively screened by copper (or aluminium) backed polyester tape with tinned copper drain wire. (Armour: tinned copper wire braid) BFCU/BFPU 250V and 1000V Fire resistant with stranded tinned copper conductor to IEC 60228 class 5, Armour: galvanised steel braid (Type BFCU) and phosphor bronze wire braid (Type BFPU)

**Ratings:**

Max operating conductor temperature: 90 °C Operating Voltage: 250V or 1000V (insulation thickness 1.0 mm according to IEC 60092-353 Amendment 1, Annex A)

**Service Restrictions:**

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

**Comments:**

Not Applicable

**Notes / Documentation:** Draka Test documents re: DNV.01-03.60092-376 (2003-05) dated 17 June 2003

**Term of Validity:** This product/model is covered under Product Design Assessment (PDA) Certificate # 04-LD435398/1-PDA, dated 04/Jan/2006. This PDA Certificate expires Jan of 2011. It will remain valid for the 5 years from date of issue or until the Rules or specifications used in the assessment are revised (whichever occurs first).

**ABS Rules:** 2006 Steel Vessel Rules 1-1-4/7.7 , 4-8-3/9 and 2006 MODU 4-3-4/13


**National Standards:**

**International Standards:** IEC 60092-3, IEC 60332-3-22, IEC60331-21, IEC60331-31, IEC 60092-351, IEC 60092-359, IEC 60754-1 and -2, and IEC 61034-1 and -2, IEC 60092-353 Amendment 1, Annex A or IEC 60092-376

**Government Authority:**

**EUMED:**

**Others:**



Manager, ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.