



## *Confirmation of Product Type Approval 15/FEB/2010*

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This is to certify that, pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 24/MAR/2014. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 07/FEB/2015 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid 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.

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 this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

### DRAKA NORSK KABEL AS

Model Name(s): RFOU S1/S5 (i) & RFOU S2/S6 (c) 250V RFCU/RFPU (i) and (c)  
250V and 1000V

**Presented to:**

DRAKA NORSK KABEL AS  
POSTBOKS 369  
DRAMMEN  
Norway

**Intended Service:**

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

**Description:**

RFOU (i) 250V and 1000V Flame retardant 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) RFOU (c) 250V and 1000V Flame retardant 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) RFCU/RFPU 250V and 1000V Flame retardant with stranded tinned copper conductor to IEC 60228 class 5, Armour: galvanised steel braid (Type RFCU) and phosphor bronze wire braid (Type RFPU)

**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 Norsk Kabel test documents 906117, DNV.01-0360092-376 (2003-05)

**Term of Validity:** This product/model is covered under Product Design Assessment (PDA) Certificate # 04-LD435398A/2-PDA, dated 08/Feb/2010. This PDA Certificate expires 07/Feb/2015. It will remain valid for 5 years from date of issue or until the Rules or specifications used in the assessment are revised (whichever occurs first). It is valid for all vessels contracted on or before the date of the Rules used in this evaluation.

**ABS Rules:** 2010 Steel Vessel Rules 1-1-4/7.7, 4-8-3/9 and 2008 MODU 4-3-4/13

**National Standards:** NEK TS606:2009 ed4.0

**International Standards:** IEC 60092-351ed3.0:2004, IEC 60092-353 am1 ed2.0:2002, IEC 60092-359 ed1.2:1999, IEC 60092-376 ed2.0:2003, IEC 60332-3-22 ed1.1:2009, , IEC 60754-1 ed2.0:1994, -2 am1 ed1.0:1997, IEC 61034-1 ed3.0:2005, -2 ed3.0:2005

**Government Authority:**

**EUMED:**

**Others:**

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	04-LD435398A/2-PDA	08/FEB/2010	07/FEB/2015



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.