

TYPE APPROVAL CERTIFICATE

This is to certify:

That the High Voltage Cable

with type designation(s)
SPYCB, TPYC, FA-SPYCB, FA-TPYC

Issued to

Walsin Lihwa Corporation, Wire & Cable Business Group
New Taipei City, Taiwan

is found to comply with
DNV GL rules for classification – Ships and offshore units

Application :

MV Power.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type	Voltage (kV)	Temp. class (°C)
SPYCB, TPYC	3.6/6 & 6/10	90
FA-SPYCB, FA-TPYC	3.6/6 & 6/10	90

This Certificate is valid until **2021-02-16**.

Issued at **Høvik** on **2016-02-17**

DNV GL local station: **Kaohsiung**

Approval Engineer: **Ivar Bull**

for **DNV GL**

Marit Laumann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-010932-4**
Certificate No: **TAE00000V9**

Product description

Type : SPYCB & TPYC & FA-SPYCB & FA-TPYC 3.6/6 kV or 6/10 kV

Construction:

Conductors: Plain or tinned copper class 2
Conductor screen: Semi-conductive layer
Core Insulation: EPR
Insulation screen: Semi-conductive layer
Metallic screen: Copper Tape
Sheath: ST2
Metal covering: Copper alloy wire braid: SPYCB, FA-SPYCB (single core cables)
Galvanized steel wire braid: TPYC, FA-TPYC (three core cables)

SPYCB & TPYC & FA-SPYCB & FA-TPYC 3,6/6 kV

	No of cores:	Cross sectional area [mm ²]
SPYCB & FA-SPYCB	1	10 – 300
TPYC & FA-TPYC	3	10 – 150

SPYCB & TPYC & FA-SPYCB & FA-TPYC 6/10 kV

	No of cores:	Cross sectional area [mm ²]
SPYCB & FA-SPYCB	1	16– 300
TPYC & FA-TPYC	3	16 – 150

Application/Limitation

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

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-360	2014-04	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.	
IEC 60092-354	2014-08	Electrical installations in ships - Part 354: Single- and three-core power cables with extruded solid insulation for rated voltages 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV)	
IEC 60332-3-22	2009-02	Tests on electric and optical fibre cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A	FA types only: Bunch test Category A

Marking of product

Walsin Lihwa – (size mm²) – FA-SPYCB or FA-TPYC – 3,6/6 kV or 6/10 kV – IEC 60092-354 – IEC 60332-3-22 – Lot No. or:

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Walsin Lihwa – (size mm²) – SPYCB or TPYC – 3,6/6 kV or 6/10 kV – IEC 60092-354 – Lot No

Periodical assessment

The scope of the Periodical assessment 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 Periodical assessment 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.

Periodical assessment to be performed at least every second year.

END OF CERTIFICATE