DNV·GL

Certificate No:
TAE00001V0

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Cable Tray

with type designation(s)
M*RAK - HL,FB & CPL

Issued to
Tri-Star Industries Pte Ltd
Singapore, Singapore

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

Application :

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

This Certificate is valid until **2022-06-03**.

Issued at **Høvik** on **2017-06-04**
DNV GL local station: **Kuala Lumpur** for **DNV GL**

Approval Engineer: **Nicolay Horn**

Andreas Kristoffersen
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.

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Job Id:
Certificate No: **TAE00001V0**

Name and place of manufacturer

SBN Industries Sdn Bhd
81750 MASAI, MALAYSIA

Product description

Material categories	Tri-star material type	IEC 61537 Classification Ref 6.5.2
Hot dip galvanized	HDG (ISO 1461)	6
Stainless steel	SS (AISI 316L)	9D

TYPE:	HL – Heavy Duty Return Flange Type Cable ladder.
Standard surface:	Mild Steel HDG, Stainless steel SS316L
Thickness:	1.5 & 2.0 mm.

Type	Total Width (mm)	Height (mm)	Length (mm)	Weight (kg/m
HL	900	150	3000	30

TYPE:	FB–Flat Bar Type Cable ladder, Slotted & Non-Slotted.
Standard surface:	Mild Steel HDG, Stainless steel SS316L
Thickness:	4.5 mm.

Type	Total Width (mm)	Height (mm)	Length (mm)	Weight (kg/m)
FB	900	38	3000	24
FB	900	75	3000	33

TYPE:	CPL – Open "C" Type Cable ladder.
Standard surface:	Mild Steel HDG, Stainless steel SS316L
Thickness:	1.5 mm & 2.0 mm.

Type	Total Width (mm)	Height (mm)	Length (mm)	Weight (kg/m
CPL	900	150	3000	28

Application/Limitation

The installation is to be mechanically protected in accordance with DNV GL Rules and especially on weather decks in cargo hold areas and through cargo holds.

Cable ladders must not to be used as a walkway.

For installation on board Offshore Units and Ships.

Type Approval documentation

Tests carried out

Loading tests, Electrical continuity test, Impact test and corrosion according to IEC 61537.

Marking of product

M*RAK – Type designation – Width – Material (cover marking).

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.
The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to 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.

Assessment to be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE