DNV·GL

Certificate No:
TAE00000SN

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Cable Tray

with type designation(s)
AFB and ASFB

Issued to
Ackron International Manufacturing (M) Sdn Bhd
Johor, Malaysia

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 **2021-06-14**.

Issued at **Høvik** on **2016-06-15**

for **DNV GL**

DNV GL local station: **Certification of Materials - Singapore**

Approval Engineer: **Ivar Bull**

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.

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Job Id: **262.1-020787-1**
Certificate No: **TAE00000SN**

Product description

Cable ladder										
Type		AFB and ASFB								
Material/Finishing		Mild steel (MS), Stainless Steel 316L (SUS316L) / Hot Dipped Galvanized (HDG)								
No.	Model	Material/ Finishing	W mm	H mm	Rung type	T mm	L mm	CSA Class des. kg/m	SWL Kg/m	Material thickness
1	AFB	(MS) HDG	900	38	A	4,5	3000	"D" 179	216.46	2
2	AFB	(MS) HDG	600	38	A	4,5	3000	"D" 179	221.59	2
3	AFB	(MS) HDG	300	38	A	4,5	3000	"C" 97	132.61	2
4	AFB	(MS) HDG	600	38	A	4,5	3000	"D" 179	221.57	1,5
5	AFB	(MS) HDG	300	38	A	4,5	3000	"C" 97	179.67	1,5
6	AFB	SUS316L	900	38	A	4,5	3000	"D" 179	282.33	2
7	AFB	SUS316L	600	38	A	4,5	3000	"D" 179	251.53	2
8	AFB	SUS316L	300	38	A	4,5	3000	"C" 97	179.67	2
9	AFB	SUS316L	600	38	A	4,5	3000	"D" 179	251.53	1,5
10	AFB	SUS316L	300	38	A	4,5	3000	"C" 97	179.67	1,5
11	AFB	(MS) HDG	900	38	D	4,5	3000	"D" 179	225.87	1,5
12	AFB	(MS) HDG	600	38	D	4,5	3000	"D" 179	203.62	1,5
13	AFB	(MS) HDG	300	38	D	4,5	3000	"C" 97	124.06	1,5
14	AFB	(MS) HDG	900	38	D	4,5	3000	"D" 179	225.87	2
15	AFB	(MS) HDG	600	38	D	4,5	3000	"D" 179	197.63	2
16	AFB	(MS) HDG	300	38	D	4,5	3000	"C" 97	102.67	2
17	AFB	SUS316L	900	38	D	4,5	3000	"D" 179	197.63	1,5
18	AFB	SUS316L	600	38	D	4,5	3000	"D" 179	197.63	1,5
19	AFB	SUS316L	300	38	D	4,5	3000	"C" 97	111.22	1,5
20	AFB	SUS316L	900	38	D	4,5	3000	"D" 179	216.46	2
21	AFB	SUS316L	600	38	D	4,5	3000	"D" 179	197.63	2
22	AFB	SUS316L	300	38	D	4,5	3000	"C" 97	111.22	2
23	AFB	(MS) HDG	900	38	E	4,5	3000	"D" 179	216.46	1,5
24	AFB	(MS) HDG	600	38	E	4,5	3000	"D" 179	185.66	1,5
25	AFB	(MS) HDG	300	38	E	4,5	3000	"C" 97	111.22	1,5
26	AFB	(MS) HDG	900	38	E	4,5	3000	"D" 179	225.87	2
27	AFB	(MS) HDG	600	38	E	4,5	3000	"D" 179	209.61	2
28	AFB	(MS) HDG	300	38	E	4,5	3000	"C" 97	111.22	2
29	AFB	SUS316L	900	38	E	4,5	3000	"D" 179	235.28	1,5
30	AFB	SUS316L	600	38	E	4,5	3000	"D" 179	203.62	1,5
31	AFB	SUS316L	300	38	E	4,5	3000	"C" 97	111.22	1,5
32	AFB	SUS316L	900	38	E	4,5	3000	"D" 179	235.28	2
33	AFB	SUS316L	600	38	E	4,5	3000	"D" 179	209.61	2
34	AFB	SUS316L	300	38	E	4,5	3000	"C" 97	124.06	2
35	AFB	(MS) HDG	900	50	D	4,5	3000	"D" 179	216.46	2
36	AFB	(MS) HDG	900	75	D	4,5	3000	"D" 179	210.00	2
37	AFB	(MS) HDG	900	100	D	4,5	3000	"E" 299	300.00	2
38	AFB	SUS316L	900	50	D	4,5	3000	"D" 179	244.69	2
39	AFB	SUS316L	900	75	D	4,5	3000	"D" 179	210.00	2
40	AFB	SUS316L	900	100	D	4,5	3000	"E" 299	300.00	2
41	ASFB	(MS) HDG	900	38	A	4,5	3000	"D" 179	225.87	2
42	ASFB	(MS) HDG	900	38	E	4,5	3000	"D" 179	216.46	2
43	ASFB	SUS316L	900	38	A	4,5	3000	"D" 179	225.87	2
44	ASFB	SUS316L	900	38	E	4,5	3000	"D" 179	235.28	2
45	AFB	(MS) HDG	900	125	D	4,5	3000	"E" 299	330.00	2
46	AFB	(MS) HDG	900	150	D	4,5	3000	"E" 299	330.00	2
47	AFB	SUS316L	900	125	D	4,5	3000	"E" 299	330.00	2

Application/Limitation

The installation is to be mechanically protected in accordance with DNV Rules and especially on weather decks in cargo hold areas and through cargo holds.
Cable ladders must not to be used as a walkway.

Type Approval documentation

Tests carried out

Tested in accordance with IEC 61537 Impact resistance test, Electrical properties, Resistance to corrosion, Safe Working Load (SWL) and in accordance with NEMA VE 1-2009 and CSA C22.2 No.126.1-09, loading material, Load application, loading to destruction (Method A)

Marking of product

Ackron International Manufacturing – Type designation – Type – Width – Height – Length.

Periodical assessment

The scope of the periodical assessments 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