DNV·GL

Certificate No:
TAE00000DC

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Clip, Saddle, Band

with type designation(s)
GN-1~6, GC-1~6, SN-1~6, SC-1~6

Issued to
KwangLim Marine Tech. Co., Ltd.
Busan, Republic of Korea

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Mobile Offshore Units
DNV Type Approval Programme Appendix 828.50 Cable Ties
IEC 62275 (2006-10)

Application :

For fixing of cables, outdoor and indoor, onboard ships and mobile offshore units.
Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2019-09-09**.

Issued at **Busan** on **2015-09-10**

for **DNV GL**

DNV GL local station: **Pusan**

Approval Engineer: **Dong Ho Park**

Baeg Soon Choi
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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Product description

GN Series : Galvanized steel (SS400) without PVC coating
GC Series : Galvanized steel (SS400) with PVC coating
SN Series : Stainless steel (SS304 or SS316) without PVC coating
SC Series : Stainless steel (SS304 or SS316) with PVC coating

Loop tensile strength : Refer to the table below.
Min / Max. operating temperature : - 60 ℃ ~ 150 ℃
Contribution to fire : Non-flame propagating
Resistance to UV light
Resistance to corrosion

Part no.	Size (W x L, t) (mm)	Loop tensile strength (N) 1)
GN-1	15 x 300, 0.3 or 0.4	2200
GN-2	15 x 400, 0.3 or 0.4	2200
GN-3	15 x 500, 0.3 or 0.4	2200
GN-4	15 x 600, 0.3 or 0.4	2200
GN-5	15 x 700, 0.3 or 0.4	2200
GN-6	15 x 1000, 0.3 or 0.4	2200
GC-1	15 x 300, 0.3 or 0.4	2200
GC-2	15 x 400, 0.3 or 0.4	2200
GC-3	15 x 500, 0.3 or 0.4	2200
GC-4	15 x 600, 0.3 or 0.4	2200
GC-5	15 x 700, 0.3 or 0.4	2200
GC-6	15 x 1000, 0.3 or 0.4	2200
SN-1	15 x 300, 0.3 or 0.4	2200
SN-2	15 x 400, 0.3 or 0.4	2200
SN-3	15 x 500, 0.3 or 0.4	2200
SN-4	15 x 600, 0.3 or 0.4	2200
SN-5	15 x 700, 0.3 or 0.4	2200
SN-6	15 x 1000, 0.3 or 0.4	2200
SC-1	15 x 300, 0.3 or 0.4	2200
SC-2	15 x 400, 0.3 or 0.4	2200
SC-3	15 x 500, 0.3 or 0.4	2200
SC-4	15 x 600, 0.3 or 0.4	2200
SC-5	15 x 700, 0.3 or 0.4	2200
SC-6	15 x 1000, 0.3 or 0.4	2200

1) Type 2 - Retain 100% strength after testing

Application/Limitation

- When cables are fixed on a tray by means of clips or straps of no metallic material, and these cable are not laid on top of horizontal cable trays or supports metallic cable clips or saddles shall be added at regular distances (e.g. 1 to 2m) in order to retain the cable during a fire.
- Cable ties used for fixing of single core cables must be dimensioned to withstand short circuit electro-dynamic forces.
- Where cargo gases or vapors are liable to damage the cable ties, careful consideration shall be given to the characteristics of the materials selected.

Type Approval documentation
Tests carried out

Loop tensile strength test according to IEC 62275:2006
Flame retardant test according to UL94:2013
Resistance to corrosion test according to IEC 60068-2-52:1996
Resistance to UV light test according to IEC 62275:2006

Marking of product

Manufacturer's name – Type designation

Periodical assessment

The scope of the retention/renewal survey 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 survey are:
- Inspection on factory samples, selected at random from the production line
- 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.

Survey to be performed at least every second year.

END OF CERTIFICATE