DNV·GL

Certificate No:
TAP00001KS

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings

with type designation(s)
EC115, EC215

Issued to
Eaton Germany GmbH
Baden-Baden, Baden-Württemberg, Germany

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Type:	Temperature range:	Max. working press.:	Sizes:
EC115	- 40°C up to + 100°C	225 bar	DN 6 up to DN 51
EC215	- 40°C up to + 100°C	400 bar	DN 6 up to DN 51

Issued at **Hamburg** on **2018-11-08**
This Certificate is valid until **2023-11-07**.
DNV GL local station: **Augsburg**

Approval Engineer: **Christian Kaemmer**

for **DNV GL**

Olaf Drews
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

EC115-Series:
Flexible non-metallic hose consisting of rubber tube, one wire braid reinforcement, synthetic rubber cover.
Fire resistant acc. to ISO 15540.

Inner tube: synthetic rubber
Reinforcement: one steel wire braid
Cover: synthetic rubber

Couplings: 1A TTC; Winner 2 pcs. TTC

EC215-Series:
Flexible non-metallic hose consisting of rubber tube, two wire braid reinforcement, synthetic rubber cover.
Fire resistant acc. to ISO 15540.

Inner tube: synthetic rubber
Reinforcement: two steel wire braid
Cover: synthetic rubber

Couplings: 1A TTC; Winner 2 pcs. TTC

Size and pressure range: EC115 & EC215-Series:

Part Number	DN	Hose I.D.		Maximum working pressure			
		mm	inch	**EC115**	**EC215**	**EC115**	**EC215**
				[bar]		[psi]	
EC115 / EC215 -4	6	6.4	.25	225	400	3250	5800
EC115 / EC215 -5	8	7.9	.31	215	350	3125	5100
EC115 / EC215 -6	10	9.5	.38	180	330	2600	4800
EC115 / EC215 -8	12	12.7	.50	160	275	2300	4000
EC115 / EC215 -10	16	15.9	.63	130	250	1900	3650
EC115 / EC215 -12	19	19	.75	105	215	1525	3125
EC115 / EC215 -16	25	25.4	1.00	88	165	1275	2400
EC115 / EC215 -20	31	31.8	1.25	63	125	925	1800
EC115 / EC215 -24	38	38.1	1.50	50	100	725	1450
EC115 / EC215 -32	51	50.8	2.00	40	90	580	1300

Production places

- POLİMER KAUÇUK SAN. VE PAZ. A.Ş., Çerkezköy Organize Sanayi Bölgesi Karaağaç mah. 6. Sok No:3, Kapaklı / TEKİRDAĞ, TURKEY
- Eaton Germany GmbH, Dr. Reckewegstr. 1, D-76532 Baden-Baden, Germany
- Eaton Corporation, 1225 W. Main Street, Van Wert, Ohio, USA.

Responsibility
Eaton Germany GmbH, Baden-Baden takes the responsibility that the design and production of the hoses, hose end fittings and manufacturing of hose assemblies are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

Application/Limitation

Hose assemblies covered by this type approval certificate are approved for petroleum base hydraulic fluids, water base hydraulic fluids, fresh water.

Flexible hoses are only to be used in short lengths up to 2 m where it is necessary due to vibrations or flexible mounting of the machinery. The hoses shall not replace/be used where permanent piping is possible/required.

Installation

The hose assemblies must only be fitted in places where they are always accessible.
Flexible hoses of these types are not to be used on boiler fronts.
The hoses are to be mounted in accordance with the manufacturer's instructions.
It must be possible to shut off from the system all flexible hoses used in systems for fresh water cooling applications and petroleum base hydraulic oil.
Hose assemblies with couplings made of carbon steel are not to be used at temperatures below -10°C unless the material is normalized.

Type Approval documentation

Tests carried out

Production testing

All hose assemblies shall be subject to a pressure test at 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to the type approval certificate.

Marking of product

For traceability to this type approval, each hose assembly is to be marked with:

Manufacturer's name
Type, Nominal Diameter
Maximum working pressure M.A.W.P.
Date Code
Temperature Rating

Periodical assessment

For retention of the type approval certificate periodical assessments shall be carried out at production places by DNVGL surveyor.
The objective of the periodical assessment is to verify that the design and production conditions for the type approval have not been altered.

Main scope of the assessment:
- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type approval certificate, performance and range of application
- verification of the product marking

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate. In connection with the renewal assessment, a surveyor shall witness / review test reports with respect to the following tests on every 3rd size appropriate test reports to be submitted:
- dimensional check, change in length test,
- pressure test with 1.5 times M.A.W.P. and burst test (witnessed by DNV GL surveyor)