



Indian Register of Shipping

CERTIFICATE NO: 2024TAC093

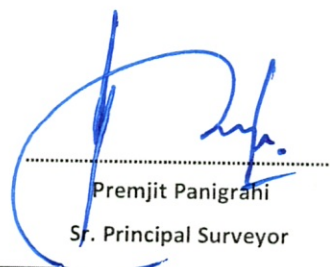
TYPE APPROVAL CERTIFICATE

*This is to certify that the product is in accordance with the applicable rules/standards/codes as described below.
The product is considered to be suitable for use in marine applications and is **included** in the list of approved products.*

MANUFACTURER	Danfoss Power Solutions II, LLC
REGISTERED OFFICE & WORKS	1225 West Main Street, Van Wert OH 45891, USA
PRODUCT NAME	NON-METALLIC FLEXIBLE HOSE WITH END FITTINGS
MODEL NO. / TRADE NAME	FC234
PRODUCT DESCRIPTION	Construction : AQP elastomer tube, brass plated steel wire reinforcement, braided refractory insulation & blue AQP elastomer cover Application : Diesel fuel, gasoline, Hot lube oil, Water Detailed specifications: See ANNEXURE
APPLICABLE RULES/STANDARDS/CODES	Part 4, Chapter 2 of Rules and Regulations for the Construction and Classification of Steel Ships, July 2023
CONDITIONS OF APPROVAL	See ANNEXURE
VALIDITY	The Certificate is valid until 24/10/2029

ISSUE DATE: 25/10/2024

PLACE: MUMBAI


Premjit Panigrahi
Sr. Principal Surveyor

This Certificate is issued upon the following terms and conditions as laid down in the Society's Regulations:-
Whilst Indian Register of Shipping, a Classification Society, along with its subsidiaries and associates (hereinafter referred to as the Society) and its Board/Committees use their best endeavors to ensure that the functions of the Society are properly carried out, in providing services, information or advice neither the Society nor any of its servants or agents warrants the accuracy of any information or advice supplied. Except as set out herein neither the Society nor any of its servants or agents (on behalf of each of whom the Society has agreed this clause) shall be liable for any loss damage or expense whatever sustained by any person due to any act or omission or error of whatsoever nature and however caused of the Society, its servants or agents or due to any inaccuracy of whatsoever nature and howsoever caused in any information or advice given in any way whatsoever by or on behalf of the Society, even if held to amount to a breach of warranty. Nevertheless, if any person uses services of the Society, or relies on any information or advice given by or on behalf of the Society and suffers loss damage or expenses thereby which is proved to have been due to any negligent act omission or error of the Society, its servants or agents or any negligent inaccuracy in information or advice given by or on behalf of the Society then the Society will pay compensation to such person for his proved loss up to but not exceeding the amount of the fee charged by the Society for that particular service, information or advice.
Any notice of claim for loss, damage or expense, as referred to above, shall be made in writing to the Society's Head Office within six months of the date when the service, information or advice was first provided, failing which all the rights to any such claim shall be forfeited and the Society shall be relieved and discharged from all liabilities.



ANNEXURE
(TO CERTIFICATE NO. 2024TAC093 DATED 25/10/2024)

APPROVED SPECIFICATIONS

Inlet Diameter: 6.4 ~ 22.2 mm, Outlet Diameter: 14.8 ~ 31.6 mm

Maximum Working Pressure: 28 ~ 103 bar

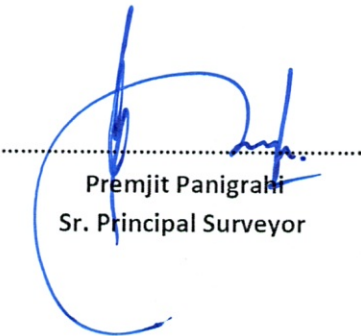
Minimum Bending Radius: 25.4 ~ 89.9 mm

Operating Temperature: -40 °C to +150 °C

Model	Hose I.D. [mm]	Hose O.D. [mm]	Operating Pressure [bar]	Minimum Bending Radius [mm]
FC234-05	6.4	14.8	103	25.4
FC234-06	7.9	17.3	103	31.8
FC234-08	10.3	19.4	86	44.5
FC234-10	12.7	23.7	86	57.2
FC234-12	15.9	27.6	52	69.9
FC234-16	22.2	31.6	28	89.9

CONDITIONS OF APPROVAL

1. The installation of flexible hose assemblies is to be in accordance with the manufacturer's instructions and use limitations with particular attention to the Pt 4 Ch 2 Sec 6.4.6.
2. Flexible hose assemblies for essential services or containing either flammable or toxic media are not to exceed 1.5 [m] in length.
3. Flexible hoses are not permitted in high-pressure fuel oil injection systems.
4. Hose clamps and similar end attachments are not allowed for flexible hoses in piping systems for steam, flammable media, starting air systems, or sea water systems where failure may lead to flooding.
5. Flexible hoses are to be installed in clearly visible and readily accessible locations. Flexible hose assemblies should not be installed in locations where they might undergo torsional deformation (twisting) during normal operating conditions.
6. Where flexible hoses are intended to be used in piping systems conveying flammable fluids, that are in close proximity of heated surfaces, the risk of ignition due to failure of the hose assembly and subsequent release of fluids is to be mitigated as far as practicable by the use of screens or other similar protection to the satisfaction of the Surveyor.
7. Any changes to the approved design parameters or construction are to be intimated and approved by IRS.


Premjit Panigrahi
Sr. Principal Surveyor