Statement of Admission to Alternative Testing Scheme

Nr. ATS059824MI

On the basis of the examination of the documentation submitted, and following the satisfactory outcome of the inspection carried out, it is hereby stated that the following Manufacturer is admitted to the Alternative Testing Scheme, according to the "RINA Rules for Testing and Certification of Marine Materials and Equipment" for the product described below.

Manufacturer

CARRARO SRL
VIA ENRICO FERMI 22
20090 Segrate (MI)
ITALY

Products:

Safety Valves, Pressure and Temperature Regulating Valves; Class I with ND < 50 mm; Class II with ND < 100 mm; Class III

Issued by *RINA Milan Marine* *on*
September 18, 2024

This Statement is valid until
September 17, 2029

This Statement consists of this sheet plus an attachment

Firmato digitalmente da MICHELE FUSCO
DN: cn=MICHELE FUSCO, c=IT, ou=RINA SERVICE SPA, email=FUM@RINA.ORG
Località: Genova

Michele Fusco

RINA Services S.p.A.

RINA Services S.p.A.
Via Corsica, 12 - 16128 Genova
Tel +39 010 53851
Fax +39 010 5351000

ATTACHMENT TO STATEMENT
Nr. ATS059824MI

Place of Manufacturer VIA ENRICO FERMI 22 - 20090 Segrate (MI) - ITALY

INTERMEDIATE SCHEDULED AND UNSCHEDULED AUDITS		
Due Date	**Carried out on**	**Surveyor's signature**
17/09/2025		
17/09/2026		
17/09/2027		
15/09/2028		
Unscheduled		

Issued by *RINA Milan Marine*
On: September 18, 2024

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General conditions for the statement validity

The Manufacturer is admitted to ATS at the following conditions:

1. The Manufacturer has implemented a Quality System according to a national or international standard approved by an accredited certification body or recognised by RINA.

2. For any single Purchaser's Order, the Manufacturer is to make an application to the competent RINA Marine Office using RINA form and indicating "*Firm provided with RINA Alternative Testing Scheme (statement reference number)* ".

3. The products are to be produced, inspected and tested in compliance with the Piano Fabbricazione e Controllo (PFC) No. **PFC REV.6 OF 09/2024** approved by RINA on 17/09/2024. The name of the personnel appointed by the Manufacturer as responsible for any phase of the production and control process is to be clearly stated on relevant **PFC REV.6 OF 09/2024**.

4. In addition to the Manufacturer's standard quality control, all testing activities and inspections to be carried out and all documents to be reviewed by the Manufacturer are to be included in the **PFC REV.6 OF 09/2024** approved by RINA.

5. When required by RINA, products are to be manufactured in accordance with Type Approval Certificates and/or drawings approved by RINA.

6. Remarks on approved drawings, if any, are to be dealt with as the following:

6.1 For Type A remarks written answer is to be submitted to RINA Plan Approval Centre. The competent RINA Marine Office is to be provided with copy of the correspondence and acceptance by RINA Plan Approval Centre.

6.2 All other remarks are to be dealt with by the Manufacturer. The competent RINA Marine Office is to be provided with relevant documented evidence.

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7. On completion of the inspection and tests required by the relevant **PFC REV.6 OF 09/2024**, the Manufacturer is duly authorized to issue the following documents:

7.1 Certificate of Conformity (RINA Form “COLALT”), duly endorsed and marked on Manufacturer’s field. The Certificate of Conformity can also be draft by the Manufacturer by means of Leonardo Test Certificate tool.

7.2 Manufacturer’s relevant inspection and test reports signed by the appointed personnel and all the other required technical documents relevant to the testing.

7.3 Evidence that the remarks on the approved drawings have been dealt with, as applicable.

8. One set of the above documents are to be sent to the competent RINA Marine Office before the delivery of the products. Upon satisfactory review of the above documentation, the competent RINA Marine Office will send back COLALT certificates duly endorsed, stamped and the relevant invoice. In case the Certificate of Conformity has been submitted through Leonardo Test Certificate, the Manufacturer will receive the electronic certificate approved by the relevant RINA Marine Office.

9. Upon receipt of the certificates, the Manufacturer is authorized by RINA to mark their products as defined in the approved **PFC REV.6 OF 09/2024**.

10. For traceability purpose, the Manufacturer is provided with the following RINA stamp to be used for marking the certified products (*):

(*) If the Manufacturer's standard quality control covers all inspections, testing and certification requirements according to the RINA Rules, the Manufacturer's marking procedures may be deemed sufficient for traceability.

11. Any “non conformity notice” or “client / shipyard claim” is to be forwarded to the competent RINA Marine Office with relevant “corrective actions” taken as soon as possible.

12. The validity of the present Statement is subjected to the satisfactory result of the intermediate audits and the Manufacturer premises, carried out according to the table included in this attachment. RINA reserves all the rights to perform unscheduled audits.

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13. Any modification to the initial conditions (e.g. relevant to design characteristics of the product, production and control procedures, suppliers of main components) are to be promptly communicated to RINA, which reserves the right to require additional assessments.

14. In any case, RINA Surveyors are to be allowed to witness during the performance of production and control activities, upon their request.

15. RINA may suspend or withdraw the admission to the Alternative Testing Scheme in the case of modifications to requirements or conditions for initial admission.

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CARRARO®

PFC - PIANO FABBRICAZIONE E CONTROLLO RINA

Rev. N°	6
Data	9/2024
Pagina	1 di 1

Fase	Attività	Esecuzione	Tipo di controllo	Documento di riferimento	Criteri di accettazione	Ente	Tipo di registrazione
1	**COMMESSA CON COLLAUDO RINA**						
1.1	Acquisizione ordine a seguito RdO	UC	Autocontrollo	ITC 042	ITC 042	Carraro	
1.2	Verifica ordine	UC	Autocontrollo	ITC 046	ITC 046	Carraro	Conferma d'ordine
1.3	Classificazione RINA Reg. RINA 2024 pt. C ch.1 sec. 10 tab. 3, 4, 36						
1.3.1	Classe I con DN < 50, Classe II con DN < 100, Classe III	UC	Autocontrollo	REG. RINA	REG. RINA	Carraro	
1.3.2	Se il prodotto è valvola di sicurezza per caldaia, inviare a RINA Genova, i disegni costruttivi per approvazione o utilizzare un disegno approvato se già esistente	CQ	Autocontrollo	REG. RINA	REG. RINA	RINA	Approvazione
	Con le modalità sopra descritte, le attività comuni sono le seguenti:						
2	**Pianificazione e programmazione della commessa**	UP	Autocontrollo	ITC 247	ITC 247	Carraro	
3	**Verifica della disponibilità dei componenti e relativa certificazione delle parti in pressione**	UP CQ		UNI EN 10204	UNI EN 10204	Carraro Fornitore	Distinta di prelievo
4	**Fabbricazione**						
4.1	Esame visivo e controllo dimensionale dei componenti	CQ	Autocontrollo	ITC 002	ITC 002	Carraro	Approvazione su ERP
4.2	Marcatura parti in pressione	CQ	Autocontrollo	ITC 034	ITC 034	Carraro	Marcatura pezzi
4.3	Prova idraulica	CQ OFF	Autocontrollo	ITC 001 REG. RINA	ITC 001 REG. RINA	Carraro	Rapporto di collaudo
5	**Montaggio**						
5.1	Marcatura numero di matricola	OFF.	Autocontrollo	ITC 034	ITC 034	Carraro	Marcatura valvola
5.2	Taratura al banco	CQ	Autocontrollo	ITC di riferimento	ITC di riferimento	Carraro	Rapporto di collaudo
5.3	Verifica tenuta	CQ	Autocontrollo	ITC di riferimento	ITC di riferimento	Carraro	Rapporto di collaudo
5.4	Targhettatura	CQ	Autocontrollo	ITC 034	ITC 034	Carraro	Targhetta
5.5	Punzonatura	CQ	Autocontrollo	REG. RINA	REG. RINA	Carraro	Rapporto di collaudo COLALT
6	**Verniciatura**	OFF.	Autocontrollo	ITC di riferimento	ITC di riferimento	Carraro	
7	**Emissione documentazione finale**	CQ	Autocontrollo	PSGI 1059 COLALT	PSGI 1059 REG. RINA	Carraro RINA	Rapporto di collaudo COLALT - Leonardo

UC - Commerciale - CQ - Controllo Qualità - UP - Produzione - OFF - Officina montaggio e collaudo

Emesso da Responsabile Qualità - Ambiente - Sicurezza
Ing. Valerio Giardulli

PER APPROVAZIONE
RINA
Rudolf Seiberl
RINA Services S.p.A.
12/08/2024

Table 3 : Class of piping systems *(1/7/2002)*

Media conveyed by the piping system	CLASS I	CLASS II	CLASS III
Fuel oil **(1)**	p > 1,6 or T > 150	other **(2)**	p ≤ 0,7 and T ≤ 60
Thermal oil	p > 1,6 or T > 300	other **(2)**	p ≤ 0,7 and T ≤ 150
Flammable Hydraulic oil **(5)**	p>1,6 or T>150	other **(2)**	p ≤ 0,7 and T≤60
Lubricating oil	p> 1,6 or T > 150	other **(2)**	p ≤ 0,7 and T ≤ 60
Other flammable media: • heated above flashpoint, or • having flashpoint <60°C and liquefied gas	without special safeguards **(3)**	with special safeguards **(3)**	
Oxyacetylene	irrespective of p		
Toxic media	irrespective of p, T		
Corrosive media	without special safeguards **(3)**	with special safeguards **(3)**	
Steam	p > 1,6 or T > 300	other **(2)**	p ≤ 0,7 and T ≤ 170
Air, gases, water, non-flammable hydraulic oil **(4)**	p > 4 or T > 300	other **(2)**	p ≤ 1,6 and T ≤ 200
Open-ended pipes (drains, overflows, vents, exhaust gas lines, boiler escape pipes)			irrespective of T

(1) Valves under static pressure on fuel oil tanks belong to class II.

(2) Pressure and temperature conditions other than those required for class I and class III.

(3) Safeguards for reducing the possibility of leakage and limiting its consequences, e.g. pipes led in positions where leakage of internal fluids will not cause a potential hazard or damage to surrounding areas which may include the use of pipe ducts, shielding, screening, etc.

(4) Valves and fittings fitted on the ship side and collision bulkhead belong to class II.

(5) Steering gear piping belongs to class I irrespective of p and T

Note 1: p : Design pressure, as defined in [1.3.2], in MPa.

Note 2: T : Design temperature, as defined in [1.3.3], in °C.

Table 4 : Conditions of use of metallic materials in piping systems *(1/7/2010)*

Material	Allowable classes	Maximum design temperature (°C) **(1)**	Particular conditions of use
Carbon and carbon-manganese steels	III, II, I	400 **(2)**	Class I and II pipes are to be seamless drawn pipes **(3)**
Copper and aluminium brass	III, II, I	200	**(4)**
Copper-nickel	III, II, I	300	
Special high temperature resistant bronze	III, II, I	260	
Stainless steel	III, II, I	300	Austenitic stainless steel is not recommended for sea water systems
Spheroidal graphite cast iron	III, II	350	• Spheroidal cast iron of the ferritic type according to the material rules of the Society may be accepted for bilge, ballast and cargo oil piping • The use of this material for pipes, valves and fittings for other services, in principle Classes II and III, will be subject to special consideration • Spheroidal cast iron pipes and valves fitted on ship's side should have specified properties to the Society's satisfaction, according to the intention of Regulation 22 of the 1966 Convention on Load Lines • Minimum elongation is not to be less than 12% on a gauge length of $5,65.S^{0,5}$, where S is the actual cross-sectional area of the test piece
Grey cast iron	III II **(5)**	220	Grey cast iron is not to be used for the following systems: • boiler blow-down systems and other piping systems subject to shocks, high stresses and vibrations • bilge lines in tanks • parts of scuppers and sanitary discharge systems located next to the hull below the freeboard deck or for passengers ships below the bulkhead deck • ship side valves and fittings • valves fitted on the collision bulkhead • valves fitted to fuel oil and lubricating oil tanks under static pressure head • class II fuel oil systems • thermal oil systems
Aluminium and aluminium alloys	III, II, I **(6)**	200	Aluminium and aluminium alloys are not to be used on the following systems: • flammable oil systems **(6)** • sounding and air pipes of fuel oil tanks • fire-extinguishing systems • bilge system in boiler or machinery spaces or in spaces containing fuel oil tanks or pumping units • scuppers and overboard discharges except for pipes led to the bottoms or to the shell above the freeboard deck or fitted at their upper end with closing means operated from a position above the freeboard deck • boiler blow-down valves and pieces for connection to the shell plating.

(1) Maximum design temperature is not to exceed that assigned to the class of piping.

(2) Higher temperatures may be accepted if metallurgical behaviour and time dependent strength (ultimate tensile strength after 100000 hours) are in accordance with national or international standards or specifications and if such values are guaranteed by the steel manufacturer.

(3) Pipes fabricated by a welding procedure approved by the Society may also be used.

(4) Pipes made of copper and copper alloys are to be seamless.

(5) Use of grey cast iron is not allowed when the design pressure exceeds 1,3 MPa.

(6) Accessories of aluminium or aluminium alloys intended for flammable oil systems may be accepted subject to the satisfactory result of an endurance flame test to be carried out according to the "Rules for the type approval of flexible hoses and expansion joints" issued by the Society.

Note 1: On board oil tankers and chemical tankers aluminised pipes may be permitted in ballast tanks, in inerted cargo tanks and, provided the pipes are protected from accidental impact, in hazardous areas on open deck.

c) Materials for class III piping systems are to be manufactured and tested in accordance with the requirements of acceptable national or international standards or specifications.

d) Mechanical characteristics required for metallic materials are specified in Part D of the Rules for the Classification of Ships.

2.1.3 Use of plastics *(1/7/2011)*

a) Plastics, FRP and GRP may be used for piping systems belonging to class III in accordance with App 2. The use of plastics for other systems or in other conditions will be given special consideration.

b) Plastics intended for piping systems dealt with in this Section are to be of a type approved by the Society.

Table 3 : Class of piping systems *(1/1/2007)*

Media conveyed by the piping system	CLASS I	CLASS II	CLASS III
Fuel oil and JP5-NATO (F44) **(1)**	p > 1,6 or T > 150	other **(2)**	p ≤ 0,7 and T ≤ 60
Lubricating oil	p> 1,6 or T > 150	other **(2)**	p ≤ 0,7 and T ≤ 60
Other flammable media: • heated above flashpoint, or • having flashpoint <60°C and liquefied gas	without special safeguards **(3)**	with special safeguards **(3)**	
Oxyacetylene	irrespective of p		
Toxic media	irrespective of p, T		
Corrosive media	without special safeguards **(3)**	with special safeguards **(3)**	
Air, gases, water, hydraulic oil **(4) (5)**	p > 4 or T > 300	other **(2)**	p ≤ 1,6 and T ≤ 200
Open-ended pipes (drains, overflows, vents, exhaust gas lines)			irrespective of T

(1) Valves under static pressure on fuel oil and on JP5-NATO (F44) tanks belong to class II.
(2) Pressure and temperature conditions other than those required for class I and class III.
(3) Safeguards for reducing the possibility of leakage and limiting its consequences, to the Society's satisfaction.
(4) Valves and fittings fitted on the ship side and collision bulkhead belong to class II.
(5) Steering gear piping belongs to class I irrespective of p and T
Note 1: p : Design pressure, as defined in [1.3.2], in MPa.
Note 2: T : Design temperature, as defined in [1.3.3], in °C.

2.2 Thickness of pressure piping

2.2.1 Calculation of the thickness of pressure pipes

a) The thickness t, in mm, of pressure pipes is to be determined by the following formula but, in any case, is not to be less than the minimum thickness given in Tab 5 to Tab 8.

$$t = \frac{t_0 + b + c}{1 - \frac{a}{100}}$$

where:

t_0 : Coefficient, in mm, equal to

$$t_0 = \frac{p \cdot D}{2Ke + p}$$

with:

p and D : as defined in [1.4.1],

K : Permissible stress defined in [2.2.2],

e : Weld efficiency factor to be:

- equal to 1 for seamless pipes and pipes fabricated according to a welding procedure approved by the Society,
- specially considered by the Society for other welded pipes, depending on the service and the manufacture procedure.

b : Thickness reduction due to bending defined in [2.2.3], in mm

c : Corrosion allowance defined in [2.2.4], in mm

a : Negative manufacturing tolerance percentage:

- equal to 10 for copper and copper alloy pipes, cold drawn seamless steel pipes and steel pipes fabricated according to a welding procedure approved by the Society,
- equal to 12,5 for hot laminated seamless steel pipes,
- subject to special consideration by the Society in other cases.

b) The thickness thus determined does not take into account the particular loads to which pipes may be subjected. Attention is to be drawn in particular to the case of high temperature and low temperature pipes.

Table 4 : Conditions of use of metallic materials in piping systems *(1/1/2017)*

Material	Allowable classes	Maximum design temperature (°C) **(1)**	Particular conditions of use
Carbon and carbon- manganese steels	III, II, I	400 **(2)**	Class I and II pipes are to be seamless drawn pipes **(3)**
Copper and aluminium brass	III, II, I	200	• Not to be used in fuel oil and JP5-NATO(F44) systems, except for class III pipes of a diameter not exceeding 25 mm not passing through fuel oil or JP5-NATO(F44) tanks
Copper-nickel	III, II, I	300	
Special high temperature resistant bronze	III, II, I	260	**(4)**
Stainless steel	III, II, I	300	Austenitic stainless steel is not to be used for sea water systems
Spheroidal graphite cast iron	III, II	350	• Spheroidal cast iron of the ferritic type according to the material rules of the Society may be accepted for bilge and ballast piping • The use of this material for pipes, valves and fittings for other services, in principle Classes II and III, will be subject to special consideration • Spheroidal cast iron pipes and valves fitted on ship's side should have specified properties to the Society's satisfaction • Minimum elongation is not to be less than 12% on a gauge length of $5,65.S^{0,5}$, where S is the actual cross-sectional area of the test piece
Grey cast iron	III II **(5)**	220	Grey cast iron is not to be used for the following systems: • piping systems subject to shocks, high stresses and vibrations • bilge lines in tanks • parts of scuppers and sanitary discharge systems located next to the hull below the maximum ship draft • ship side valves and fittings • valves fitted on the collision bulkhead • valves fitted to fuel oil and lubricating oil tanks under static pressure head • class II fuel oil and JP5-NATO(F44) systems
Aluminiumand aluminium alloys	III, II, I **(6)**	200	Aluminium and aluminium alloys are not to be used on the following systems: • flammable oil systems • sounding and air pipes of fuel oil tanks and of JP5-NATO(F44) tanks • fire-extinguishing systems • bilge system in machinery spaces or in spaces containing fuel oil tanks, JP5-NATO(F44) tanks or pumping units • scuppers and overboard discharges except for pipes led to the bottoms or to the shell above the bulkhead deck or fitted at their upper end with closing means operated from a position above the bulkhead deck

(1) Maximum design temperature is not to exceed that assigned to the class of piping.

(2) Higher temperatures may be accepted if metallurgical behaviour and time dependent strength (ultimate tensile strength after 100 000 hours) are in accordance with national or international standards or specifications and if such values are guaranteed by the steel manufacturer.

(3) Pipes fabricated by a welding procedure approved by the Society may also be used.

(4) Pipes made of copper and copper alloys are to be seamless.

(5) Use of grey cast iron is not allowed when the design pressure exceeds 1,3 MPa.

(6) Accessories of aluminium or aluminium alloys intended for flammable oil systems may be accepted subject to the satisfactory result of an endurance flame test to be carried out according to the "Rules for the type approval of flexible hoses and expansion joints" issued by the Society.