Department of Environmental Protection

2600 Blair Stone Road ♦ Tallahassee, Florida 32399-2400

DEP Form: 62-762.901(9)
Form Title: Storage Tank Equipment Registration Form
Effective Date: July 2019
Incorporated in Rule 62-762.851, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name: EMILIANA SERBATOI SRL
Contact Name: GUASTALLI GIULIO
Company Address: Largo Maestri del Lavoro 40
City, State: Modena, Italy Zip: 41011
E-mail: giulio@emilianaserbatoi.it
Contact Number: +393402348275
Product Name: AM-TANK (Above-ground storage tanks for Diesel supply)
Model Number(s): AM-TANK 250 - 800 - 2300
Product Type: Skid mounted Diesel tanks
Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), F.A.C.: Chapter 62-762

Write a brief description of equipment registration request including product limitations:

CONDITION: The installation of this tank must be in accordance with Reference Guidelines in Chapter 62-762, F.A.C. The dispenser must be installed at least 50 feet away from the tank in accordance with NFPA 30A. This tank is equivalent to a UL 147 tank.

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

		Yes	No	N/A
1.	Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	✓		
2.	Documentation of third-party evaluation that the equipment meets DEP Rules?		✓	
3.	Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	✓		
4.	Technical information and drawings included?	✓		
5.	Installation instructions included?	✓		
6.	Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?	✓		
7.	Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?	✓		
8.	Compatible with fuel blends containing >10% ethanol or >20% biodiesel?		✓	
9.	Has the product been approved or registered in other countries or states? (If so provide list)	✓		
10.	Any requirements for company-certified installers or trainers?		✓	
11.	Was this product(s) previously approved or registered by the Department? If yes, EQ-_____		✓	
12.	Any changes or modifications to the equipment since the last submittal to DEP?		✓	

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

Skid mounted self bunded tanks with 13gpm dispensing unit 120V/60HZ, ready to use, plug and play system. In accordance with NFPA 30A, the dispensing portion of this tank must be 50 feet away from the tank.

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

EMILIANA SERBATOI srl
Largo Maestri del Lavoro, 40
[illegible]

Guastalli Giulio, Sales Manager at Emiliana Serbatoi SRL — Printed Name and Title

Signature (right click to sign)

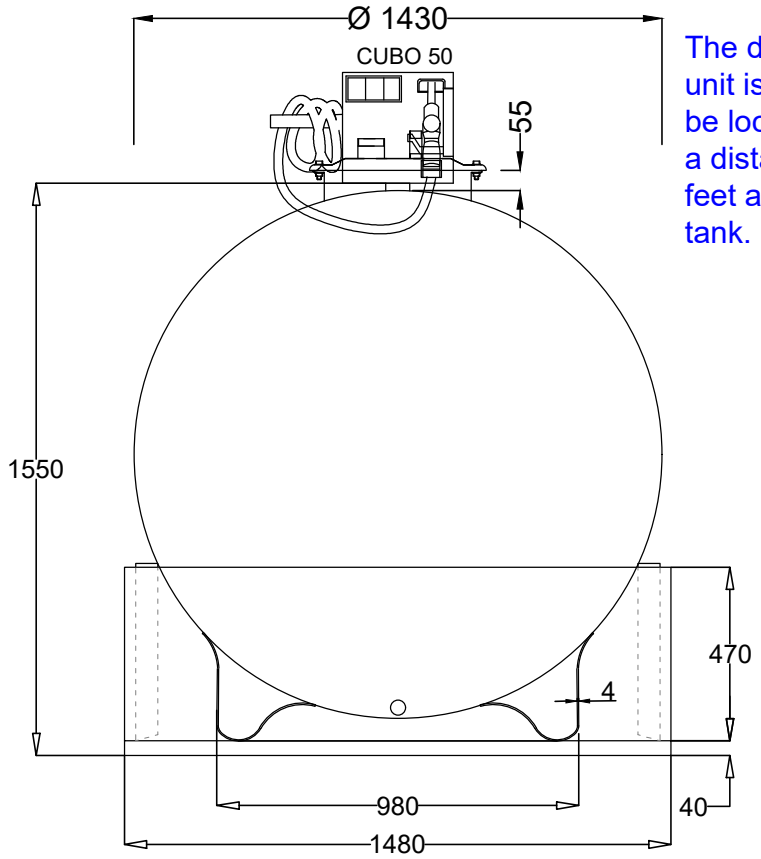
05/26/2020 — Date

For Department Use Only:

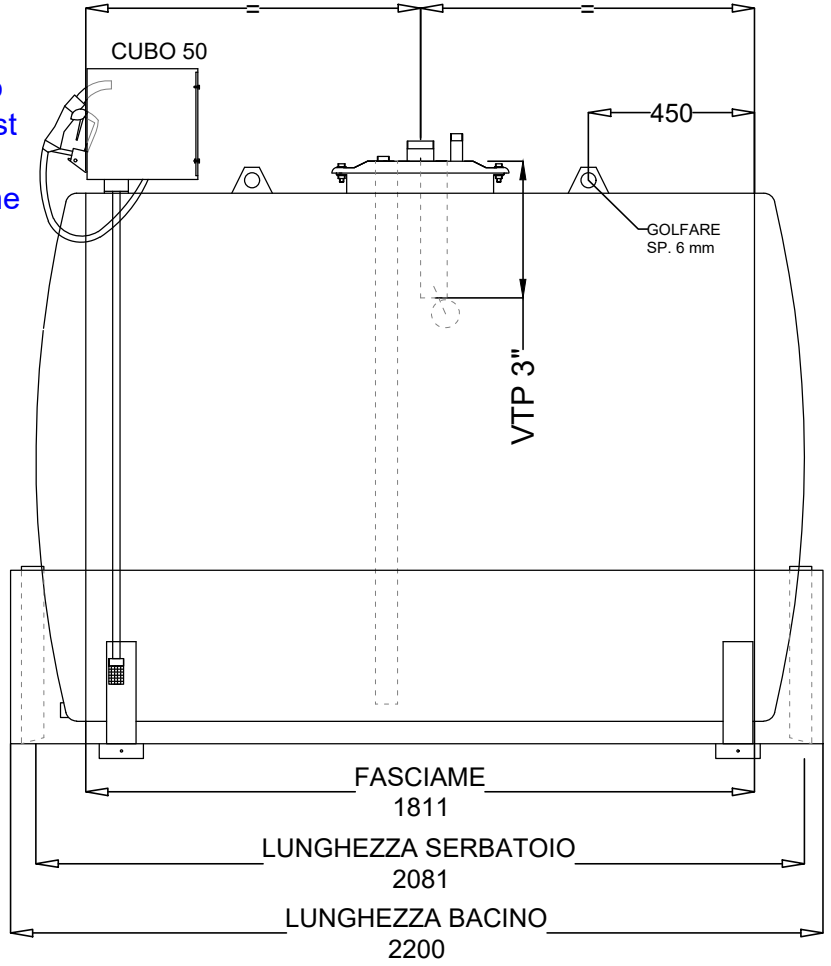
Date Application Received: 5/26/2020 Application complete: Yes: [X] No: [ ]

EQ- 935 Date of complete or incomplete letter sent: 5/27/2020 Date Equipment Requires Renewal: 5/27/2025

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-762.851(2), F.A.C.

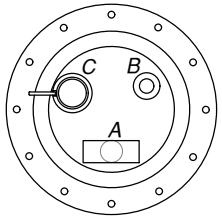


The dispensing unit is required to be located at least a distance of 50 feet away from the tank.



PASSO D'UOMO 400 (STANDARD)

① Ø 485



A) Manicotto da 1"1/2 per indicatore di livello

B) Tronchetto da 1"1/2 per Sfiato

C) Tronchetto da 3" per carico

Descrizione: AM TANK 800	File ES_0267_20		UFFICIO TECNICO — Foglio 1 / Segue /
	Data 14/04/2020	Revisione 00	
Materiale: S 235 JR	Eseguito A.P.	Unità mm	
Spessore: 30/10 mm	Verificato S.V.	Scala 1:20	
Cliente:	Approvato S.V.	Formato A4	

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Largo Maestri del Lavoro, 40
41011 Campogalliano (MO) - Italy
Tel. +39 059 521911
Fax +39 059 521919
www.emilianaserbatoi.com

AM-TANK 800 DIESEL (TF3):

Skid-mounted horizontal cylindrical Diesel tanks manufactured made of carbon steel quality S235JR, watertight electro-welded (submerged arc welding process), provided with anti-roll supports, primed with a rust preventing layer and finished with a layer of white paint. Tanks are delivered pressure-tested and ready-to-use (plug-and-play).

Tanks are equipped with:

- Ø 16" (400 mm) manhole complete with oil gasket and tight bolted cover.
- 3" lockable filling quick cap.
- Mechanical overfill prevention valve calibrated to interrupt the fuel flow at 90% of the tank's geometric capacity.
- Vent device with flame arrestor mesh.
- Mechanical float operated tank contents gauge with planetary gear, adjustable scale in cm.
- Tank drainage point provided with a safety cap for routine maintenance and cleaning.
- Suction point equipped with check valve, strainer and ball valve.
- Equipotential grounding point.
- Containment dike complete with lifting plates, grounding connection point, drain plug for routine maintenance / cleaning and n° 4 housings suitable for fixing the uprights of the roof system.

Fuel Transfer Unit CUBE56: **The dispensing unit is required to be located at least 50 feet away from the tank.**

- 15 GPM Diesel Transfer Pump (120V/60Hz, 650 Watt, 7.5 Amp, Duty Cycle: 20 minutes on/off, 3450 RPM, 48.5 lbs, IP55 rated)
- 3-Digit Mechanical Meter (in gal)
- 13 ft. of dispensing hose
- A60 Auto-nozzle

Features:

- Nominal capacity: 838 gal [3172 lt]
- Tank total length: (including containment dike) 7,20 ft [2,20 m]
- Tank total width: (including containment dike) 4,90 ft [1,50 m]
- Tank total height: (including fuel transfer unit) 6,00 ft [1,84 m]
- Tank total weight**: 1014 lbs [460 kg]

Industry & Facilities Division

INSPECTION CERTIFICATE N° M53727/18 rev.1

BV Job Nr: 18.IT.3104656.139

PROJECT: *//*	***Ref.:*** *//*
BV Client: *EMILIANA SERBATOI SRL*	***Ref.:***
Supplier: *//*	***Ref.:***
Manufacturer: *//*	***Ref:***
Inspection requested by: *EMILIANA SERBATOI SRL*	

SUPPLY / SUBJECT OF INSPECTION	TAG	Q.TY
TANK FUEL 1000	/	/
TANK FUEL 1300	/	/
TANK FUEL 2400	/	/
TANK FUEL 3000	/	/
TANK FUEL 5000	/	/
TANK FUEL 6000	/	/
TANK FUEL 7000	/	/
TANK FUEL 9000	/	/
TANK FUEL 12000	/	/
TANK FUEL 15000	/	/
TANK FUEL 20000	/	/
TANK FUEL 30000	/	/

As per EMILIANA SERBATOI SRL request our scope of works was to verify that the equipments in subject are in compliance with the requirements of EN 12285-2:2005. In order to verify that, the following documents have been examined:

1. Technical data sheet nr. Stec_tank fuel rev.6

Emilina Serbatoi Dwgs no.: ES_0323_17; ES_0313_17; ES_0236_17; ES_0324_17;ES_0314_17; ES_0237_17; ES_0325_17; ES_0315_17; ES_0238_17;ES_0326_17; ES_0316_17; ES_0239_17; ES_0327_17; ES_0317_17; ES_0240_17; ES_0328_17; ES_0318_17; ES_0241_17; ES_0329_17; ES_0319_17; ES_0242_17; ES_0330_17; ES_0320_17; ES_0243_17; ES_0331_17; ES_0321_17; ES_0244_17; ES_0332_17; ES_0322_17; ES_0245_17; ES_0001_16; ES_0364_17; ES_0365_17; ES_0366_17; ES_0367_17; ES_0368_17; ES_0369_17; ES_0370_17; ES_0371_17; ES_0372_17; ES_0373_17; ES_0064_18 Rev.1; ES_0065_18; ES_0070_18 Rev.1; ES_0071_18; ES_0067_18 Rev.1; ES_0066_18 Rev.1; ES_0068_18;ES_0069_18;

After the examination of the above documents we declare that the above equipments have been designed in compliance with the standard EN 12285-2:2005 and are suitable for the loading and storage of Diesel and Gasoline.
An additional examination report of technical documentation nr. P5308/17/CC/cc Rev.1 & P5047/18/CC/cc Rev.1 have been issued to certify the above sentence.

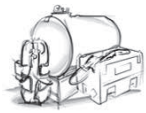
The undersigned, inspector to Bureau Veritas, certifies that the here above mentioned supply was inspected in conformity with the applicable requirements of the purchase order and the contractual requirements governing the mission entrusted to Bureau Veritas without any remarks.

Inspected by:
Name: Paolo SANNIA
Signature:
Date of issue: March 23th ,2018

Checked by:
Name: Matteo NICOLETTI
Signature:

Inspection centre: BV Milan – Italy

Distribution: ☒ BV CLIENT



EMILIANA SERBATOI®
ADVANCED FUEL SOLUTIONS

EMILIANA SERBATOI srl | Largo Maestri del Lavoro 40 | 41011 Campogalliano (MO) Italy | P. IVA e C.F. 01499200366
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MANUALE USO E MANUTENZIONE
USE AND MAINTENANCE MANUAL
MANUEL D'UTILISATION ET ENTRETIEN
MANUAL DE USO Y MANTENIMIENTO
ANWENDUNGS - UND WARTUNGSHANDBUCH

(art. 1.7.4 All. I Direttiva 2006/42/CE)
(art. 9.3 All. I Decreto M.I. 22 Novembre 2017)

TANK FUEL

Il presente manuale di uso e manutenzione costituisce parte integrante del
This manual of use and maintenance an integral part of
Ce manuel d'utilisation et d'entretien une partie intégrante de
Este manual de uso y mantenimiento forma parte integrante del
Dieses Anwendungs - und Wartungshandbuch ist ein integraler Bestandteil des

Contenitore/distributore
Container/distributor
Container/distributeur
Contenedor/distribuidor
Container/Verteiler

Modello TF/ Model TF/ Modèle TF/ Modelo TF/ Modell TF _____

Matricola n./ Serial n./ N° de série/ N° de serie/ Seriennummer _____

IT
EN
FR
ES
DE

INDEX

1. GENERAL DESCRIPTION

1.1. TANK FUEL - DEFINITION

TANK FUEL are Diesel fuel storage and refuelling tanks only for private use built, tested and approved in Italy by the Ministry of Interior according to the Directive 2006/42/EC, provided with EC marking and consisting of:

a) a metal cylindrical tank/container of geometric capacity ranging between 490 and 9000 litres, available both with horizontal and vertical orientation, equipped with a manhole and loading port, certified overfill prevention valve (max. 90%), vent pipe placed at 2.40 m from the walking surface and level indicator
b) a metal containment basin of capacity never less than 110% of geometric capacity of the tank, complete with clamps for fixing to the walking surface;
c) a delivery unit permanently connected to the tank, consisting of an electric pump with blocking device controlled by a minimum level probe, rubber hose and automatic nozzle, electrical panel (single- or three-phase), flow meter, contained in a lockable metal cabinet.

The TANK FUEL **must** be fitted with a suitable roof to protect it against atmospheric conditions or prefabricated precombustible box. The roofand the box can be supplied by di EMILIANA SERBATOI Srl or provided by the user (see Chap. 8.3).
The TANK FUEL **may** be completed with additional accessories, such as:

– additional filter
– hose reel
– electronic level indicator
– electronic refuelling management system
– non-combustible protection shed
– non-combustible prefabricated box.

The following abbreviations are used in this manual:
– TF, abbreviation of TANK FUEL,
– VMP, abbreviation of mono-wall vertical
– VDP, abbreviation of vertical double wall

2. THE MANUAL: CHARACTERISTICS

2.1. CONTENTS AND ADDRESSES

This manual:

– Contains all the useful information necessary for the correct and safe use of TANK FUEL;
– It is a document to be shown upon request by the competent command of the Fire Brigade, if the TANK FUEL is used for activities subject to the release of the Fire prevention Certificate in accordance with Ministerial Decree of 16 February 1992;
– Is addressed first of all to the person responsible for the tank operation.

This manual must be made available for reading and consultation to any operator responsible for carrying out even one of the operations referred to below:

– installation and putting into service (positioning and electrical connection);
– fill;
– fuel delivery;
– maintenance;
– removal from service and/or disposal.

EVERY OPERATOR MUST CARRY OUT HIS/HER OWN ACTIVITIES ONLY AFTER HAVING CAREFULLY READ THIS MANUAL AND FULLY UNDERSTOOD THE CONTENTS IN PARTICULAR THOSE CONCERNING THE HIGHLIGHTED WARNINGS AND PROHIBITIONS.

2.2. CONSERVATION

This manual must be kept perfectly intact in an easily accessible place for the entire duration of the useful life of the TANK FUEL, available to operators for consultation in case of need; the user must give it to the person who takes over the management or use of the tank for whatever reason (eg. in case of sale). In case of loss or deterioration of the manual, even partial, the user must replenish the integrity of the document and request a copy to EMILIANA SERBATOI Srl, indicating the serial number of the TANK FUEL, which is printed on the nameplate.

2.3. SYMBOLS USED

To better highlight certain parts of the text concerning the dangers, prohibitions, instructions or explanations, the following symbols were used:

	Important specification for a better comprehension of the manual and its structure.
	Important instruction, failure to meet which determines the reduction of safety levels. The symbol is also used to strengthen advices or procedures, which if ignored, could result in damage to TANK FUEL or serious breaches of regulations.

	Important instruction, which if ignored, may lead to serious danger for the operator and/or exposed persons.
	Risk of lethal explosion. This symbol is used only to deter any risky behaviour in well-defined exceptional situations.
	Important prohibition, which if ignored, may lead to an immediate danger to the operator and/or exposed persons.
	Useful notes regarding technical characteristics of TANK FUEL and/or instructions for its better use, and/or clarifications of EMILIANA SERBATOI Srl on technical or contractual issues.

2.4. REFERENCES

References to characteristic parts of the TANK FUEL are usually followed by the number in brackets corresponding to the position of that particular part on the descriptive photos in paragraph 9.4 and in its legend. Eg: “Containment basin” (13), according to the fig. 1.

2.5. ADDITIONAL MANUALS

This manual may not be the only reference manual for the user of TANK FUEL, but it may be combined with the EC manual of the Manufacturer of the delivery unit, if the delivery unit installed is different (commercial origin or constructed by EMILIANA SERBATOI Srl itself). (See chapter 4 EC DECLARATION OF CONFORMITY – EC MARKING).

If the prescriptions contained in this manual don’t correspond exactly with those supplied by the manufacturer of the different delivery unit, the user shall be expected to follow the most restrictive prescriptions.

With this manual are provided in any case all additional manuals related to particular units and/or devices installed as optional parts (e.g. flow meters, management system etc.).

3. APPLICABLE REGULATORY FRAMEWORK

3.1. SUMMARY TABLE

Law / Rule	**Subject**
M.D 31 July 1934, no. 228	Safety rules for mineral oils
Ministerial circular letter of 10 February 1969	Road fuel pumps
M.D. of 22 November 2017	Approval of the technical rule on fire prevention for the installation and operation of containers/pumps, for private use, for the delivery of category C liquid fuel.
Presidential Decree of 1 August 2011, no. 151	Regulations simplifying the procedures relating to fire prevention, pursuant to article 49, paragraph 4-quater, of Decree-Law no. 78 of 31 May 2010, converted, with amendments, into Law no. 122 of 30 July 2010.
Leg. Decree 81/2008	Implementation of Article 1 of Law no. 123 of 3 August 2007 on the protection of health and safety in the workplace (Consolidated Act on Occupational Safety)
Leg. Decree 106/2009	Supplementary and corrective provisions of Legislative Decree no. 81 of 9 April 2008, regarding the protection of health and safety in the workplace
Dir. 2006/42/EC	“Machinery” Directive
Leg. Decree 16/2010	Implementation of Directive 2006/42/EC
Dir. 2014/30/EU	Electromagnetic Compatibility Directive
Dir. 2014/35/EU	Low voltage directive
UNI EN ISO 12100:2010	Safety of machinery – General principles of design. Risk assessment and risk reduction
EN 60204-1	Safety of machinery – Electrical equipment of machines
UNI EN ISO 13857:2008	Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs.
UNI EN 349:2008	Safety of machinery – Minimum Gaps to Avoid Crushing of Parts of the Human Body

CEI EN 60204-1:2006	Safety of machinery – Electrical equipment of machines – Part 1: General requirements
CEI EN 60079.10.1	Criteria for assessing the possibility of formation of potentially explosive atmospheres
CEI EN 61439-1:2010	Low-voltage switchgear and controlgear assemblies (BT panels)
CEI EN 60529	Protection levels provided by fences – IP codes
CEI EN 55015	Noise measurement methods

The present regulatory framework and should be considered as purely indicative. EMILIANA SERBATOI disclaims any responsibility for the consideration of all other laws and regulations applicable to the specific activity of user, whose knowledge of and respect for the user has total and exclusive responsibility, in particular concerning the safety.

3.2. APPLICATION LIMITS

The legislative and regulatory framework considered in § 3.1 refers to the application of the Directive 2006/42/CE by EMILIANA SERBATOI Srl with respect to the delivery units considered in this manual. If a different delivery unit is installed, please refer to the references in laws and regulations cited by its Manufacturer in the Declaration of Conformity EC issued in accordance with § 4.2, even if the Manufacturer of the different delivery unit is EMILIANA SERBATOI Srl itself.

4. EC DECLARATION OF CONFORMITY EC MARKING

4.1. NAMEPLATE

The user is responsible for the good preservation of all the labels and stickers of the TANK FUEL. In case of deterioration, the user must request for a copy to EMILIANA SERBATOI Srl

EMILIANA SERBATOI

L.go Maestri del Lavoro, 40 - CAMPOGALLIANO (MO) Italy
Tel. 059 521911 - Fax 059 521919
www.emilianaserbatoi.com

TANK FUEL mod.	
Matr. N°	*Anno*
Capacità geometrica	*litri*
Materiale Fe 360 B (S235JR) - spessore 3 mm	
Pressione di collaudo 1 bar	

Approvazione M.I. prot. NS. 8338-4113 sott. 189 del 25.05.1992
Rinnovo M.I. prot. DCPST/A7/6049/AT/09189 del 21.04.2011
Approvazione M.I. prot. DCPST/A7/15307/AT/09189 del 22.11.2013
e successivi rinnovi ed estensioni

4.2. CONFORMITY TO THE PROTOTYPE AND CERTIFICATE OF TESTING

EMILIANA SERBATOI

CERTIFICATO DI CONFORMITA' AL PROTOTIPO APPROVATO
E
CERTIFICATO DI COLLAUDO

Si attesta che il contenitore-distributore mobile metallico per carburanti liquidi di categoria "C" denominato **TANK FUEL** costruito in **conformità al prototipo approvato** dal Ministero dell'Interno con Prot.NS.8338-4113 sott.189 del 25.05.92 e relativi rinnovi ed estensioni, avente le seguenti caratteristiche :

Modello : **Matricola:**

Capacità	lt.	
Diametro	mm.	
Altezza fasciame	mm.	
Passo d'uomo	mm.	400

Anno di costruzione

E' STATO SOTTOPOSTO

alla prova pressione non inferiore a 1 kg/cm² ed è risultato a tenuta perfettamente stagna

Si rilascia il presente certificato per gli usi consentiti dalla legge

Campogalliano,

Emiliana Serbatoi S.r.l.

4.3. DECLARATION OF CONFORMITY (FAC-SIMILE)

EMILIANA SERBATOI

DECLARATION OF CONFORMITY

(Pursuant to Directive 2006/42/CE, Annex IIA)

The Manufacturer	EMILIANA SERBATOI srl
Based in	L.go Maestri del Lavoro, 40 - CAMPOGALLIANO (MODENA)
Taxpayer's code and VAT number	1495200366

DECLARES THAT THE MACHINE

Called	TANK FUEL
Model	
Serial Number	
Year of manufacturing	
Power supply	50 Hz

Is compliant to Directive 2006/42/CE, to Directives 2014/30/CE (electromagnetic compatibility) and 2014/35/CE (low voltage) and to the legislative provisions that transpose them.

It is also compliant to the following harmonised standards :

UNI EN 12100:2010;
UNI EN ISO 13849-1:2008 + AC:2009;
CEI EN 60204-1:2006;

Campogalliano,

4.4. DECLARATION OF CORRECT INSTALLATION (FAC-SIMILE)

DECLARATION OF CORRECT INSTALLATION

The Manufacturer: EMILIANA SERBATOI srl
Based in: L.go Marchi del Lavoro, 40 - CAMPOGALLIANO (MODENA)
Taxpayer's code and VAT number: 1495200366

DECLARES

that the pump unit for Diesel fuel
Brand:
Model:
Year of Manufacturing:
Power supply: 50 Hz

for which a separate and attached Declaration of Conformity was issued by the Manufacturer in accordance with the Directive 2006/42/CE, has been installed by us in a workmanlike manner, in full compliance with the instructions provided in this regard by the Manufacturer pursuant to paragraph 1.7.4.2 of the same Directive, in permanent and immovable connection to the tank of our construction:

Called: TANK FUEL
Model:
Serial Number:
Year of Manufacturing:

Campogalliano,

5. DECLARATION OF CONFORMITY WITH APPROVED TYPE

Every Tank Fuel for its construction features, components and devices used, is exactly corresponding to a type ap- proved by Italian Ministry of Interior according to the Ministerial Decree of 31 July 1934 and the Ministerial Decree of 22 November 2017.
EMILIANA SERBATOI Srl provides, therefore, all the documentation required by different applicable laws together with specific declaration of conformity with approved type, in which are mentioned the references of the Act of Approval. This Act is periodically renewed at maturity with approval of any extensions to take into account of all variants adopted from time to time (constructive modifications and/or introduction of different devices and equipment).

6. RESPONSIBILITY

6.1. RESPONSIBILITY OF EMILIANA SERBATOI SRL

6.1.1.

EMILIANA SERBATOI Srl is responsible for the supply of a correctly manufactured product, produced with reliable materials and components, compliant with the legislation in force **at the time of delivery**.

6.1.2.

In particular EMILIANA SERBATOI Srl is responsible for the preventive evaluation of risks related to the functioning and maintenance of the fuel delivery unit and for the inclusion in this manual of the most appropriate instructions and warnings in order to minimize residual risks.

6.1.3.

EMILIANA SERBATOI Srl **is not responsible** for any fact or situation attributable to:

- the failure to follow the instructions, prescriptions, warnings and prohibitions contained in this manual, in particular regarding the use of the TANK FUEL for uses different to those described under “Allowed uses and Forbidden uses” (See Chap. 6); operations carried out or omitted by the user or particular behaviour different to what is indicated by the intuitive warning labels and self-adhesive pictograms applied to the TANK FUEL (See Chap. 7)
- the incorrect maintenance or maintenance carried out by unqualified personnel
- the use of non-original spare parts
- the tampering of safety devices, protections, casings or alteration of calibration if set
- the modifications not expressly authorized in advance by EMILIANA SERBATOI Srl

6.2. USER RESPONSIBILITY

The USER is the person who, for whatever reason, is responsible for the operational management of the TANK FUEL.
The initial User is the customer/buyer who may entrust **under its sole responsibility** the management of the TANK FUEL to third parties who meet the prescribed requirements. The User has the exclusive duty and responsibility to:

a. Verify the conformity of the TANK FUEL to the order requirements, of the presence of the EC marking and of the Manufacturer’s EC declaration of Conformity.

b. Complete the TANK FUEL with any building work that may be required (roof included) as well as prepare any kind of additional equipment required by current legislation regarding:
   - Cover TANK FUEL with the roofing
   - Fencing of the TANK FUEL
   - Extinguishers
   - Safety signs
   - Personal protective equipments

c. Make the appropriate commissioning of the TANK FUEL, as specified in Chapter 11, and connect it to electrical system complying with the requirements of Ministerial Decree 22 January 2008, n. 37. Only as a result of positive assessment of checks and controls carried out according to the report of commissioning (see fac-simile in Chapter 19.1), the user or the qualified person in charge can sign the report before authorizing fuel delivery.
d. Divulge this manual, make it permanently available and easily accessible to all authorized users, verifying occurred understanding and prohibiting the use of the TANK FUEL to all those who may be considered not having the necessary knowledge and skills.
e. Forward to the alleged request for permission to the Fire Brigade if the TANK FUEL is used for activities subject to the Presidential Decree of 1 August 2011, no. 151;
f. Use and/or make others use the TANK FUEL in full compliance with the instructions, prescriptions, warnings and prohibitions contained in this manual, in particular as regards the "Allowed uses and Forbidden uses" (See Chapter 7), and in line with the warning labels and self-adhesive pictograms applied to the TANK FUEL (See Chapter 8), integrity of which must be regularly checked.
g. Adopt effective measures against unauthorized use and supervise the correct behaviour of authorized personnel.
h. Carry out the correct maintenance of the TANK FUEL with the use of original spare parts and recourse to the specialized personnel, respecting the original configuration of the TANK FUEL, avoiding to make modifications of any kind without the prior approval of EMILIANA SERBATOI Srl.
i. Fully know all the laws and regulations relating to the user's activity completely independent of any kind of information provided in this regard by EMILIANA SERBATOI Srl.

Failure by the user to observe the obligations laid down in points 6.2 c, e, g constitutes for EMILIANA SERBATOI Srl a reason to cancel the contractual guarantee.

7. ALLOWED USES – FORBIDDEN USES

7.1. USE

The current legislation (see § 3.1 "Applicable legislative and regulatory framework") allows the use of TANK FUEL for exclusive supply of vehicles for private use, in compliance with precise limitations and construction and operating regulations (see § 11.8 "Requirements according to the intended use".
Under no circumstances can the TANK FUEL be used to refuel:
- passenger cars, for both public and private use
- boats and boats
- aircraft.

Any improper use will constitute a violation of the current fire and tax regulations. See also § 6.2 "Responsibility of the user", points e), i).

7.2. TYPE OF FLUIDS

7.2.1. ALLOWED FLUIDS

Diesel fuel - Diesel UN 1202 (flash point min. 55 ° C according to EN 590:1993)
(Liquido di Categoria C ai sensi del D.M. 31 Luglio 1934).

7.2.2. FORBIDDEN FLUIDS

a) Any combustible liquid with a flash point between 55°C and 65°C which, when subject to a fractional distillation test, presents more than 2% distillate at 150°C.
b) Flammable liquids (with flash point < 55° C), e.g.

Petrol – AVGAS 100 LL	(UN 1203)
Aviation fuel	(UN 1863)
Kerosene	(UN 1223)
Methanol	(UN 1230)

c) Solvents
d) Liquids with viscosity > 20 cSt
d) Water
f) Food liquids
g) Corrosive chemical products.

7.3. ENVIRONMENTAL CONDITIONS

Temperature from – 20°C to + 60°C
Relative humidity max 90%.

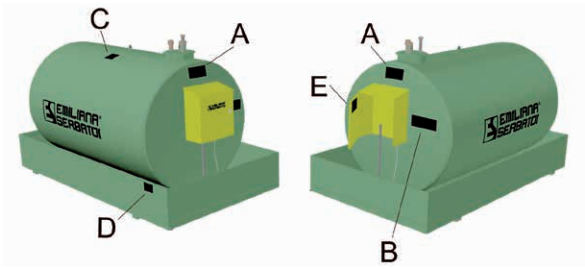
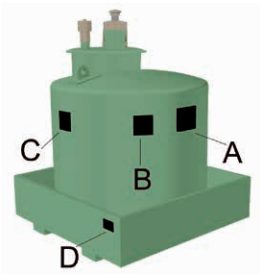
7.4. FUNCTIONING

By-pass mode max 1-2 minutes.

8. LABELS AND INSCRIPTIONS

The TANK FUEL is supplied complete with the prescribed labels and graphic stickers containing the main instructions for use:

[A] Nameplate TANK FUEL + EC marking
[B] Sticker showing the instructions for use
[C] Sticker showing the hooking point when the tank is lifted from above
[D] Sticker showing the earthing point
[E] Sticker showing the main warnings for use

TANK FUEL 1 ÷ 9	VERTICAL TANK FUEL
	

[A] **TANK FUEL** NAMEPLATE
See cap. 4.1.

9. CHARACTERISTICS

9.1. TECNICAL SPECIFICATIONS OF THE TANK

- Material: Carbon steel Fe 360 B (EN 10025 S235 JR)
- Thickness: 3 mm
- Manhole: Diam. 400 mm
- Pressure test:n1,0 bar
- Lockable loading port 3", with integrated overfill prevention valve (calibrated to interrupt the fuel flow at 90% of the tank's geometric capacity)
- Vent device placed at 2.40 m from the walking surface with flame arrestor mesh
- Mechanical float operated tank contents gauge (optional: electronic level gauge)
- Pump emergency block operated by minimum level gauge.

9.2. CAPACITY OF THE TANK

Modello	(1)	(2)	(3)
	Max. filling volume (l) allowed (90%)	Min. residue (l) for pump blocking	Capacity (l) of the containment basin 110%
TF490	440,5	71,7	548
TF1L	883,6	98,0	1072
TF1	1143,0	101,0	1430
TF2	2233,6	161,2	2640
TF3	2855,1 754.24 gal	174,5	3300 871.77 gal
TF5	4891,9	250,0	5852
TF5D	4359,2	224,2	5435
TF6	5258,3	271,9	6540
TF7	6466,2	305,7	7700
TF9	8325,0	329,0	9900
TF1L VMP	881,9	83,9	1085
TF1 VMP	1204,2	105,1	1472
TF2 VMP	2234,7	137,2	2673
TF3 VMP	2772,9	170,5	3298

TF5 VMP	4489,0	217,4	5550
TF6 VMP	5696,0	221,3	7108
TF9 VMP	7905,1	236,8	9926
TF9B VMP	7848,6	265,1	9702
TF1 VDP	1210,9	104,1	==
TF2 VDP	1950,2	152,6	==
TF3 VDP	2691,9	152,6	==
TF5 VDP	4468,7	217,3	==
TF9 VDP	7698,8	265,1	==

(1) Maximum amount of Diesel fuel that can be contained taking into account the intervention of the overfill prevention valve.
(2) Minimum amount of Diesel fuel below which the pump doesn't work (pump emergency block operated by minimum level gauge).
The countries in which the Ministerial Decree 21-11-17 is not implemented can install reservoirs with a 50% or 100% capacity.

The difference between the values in column (1) and (2) corresponds to the maximum quantity of Diesel fuel to refuel the tank when operational (from empty to full).

9.3.DIMENSIONS

See p. 93

9.4.CONSTRUCTION DETAILS (PHOTO – LEGEND)

9.4.1. TANK FUEL 490

Position n°	Denomination	photo n°	Position n°	Denomination	photo n°
1	TANK	1	**18**	LOCK	1
2	DOME	1 - 3	**19**	SUCTION PIPE	1-2
3	FLANGE	3	**20**	FLEXIBLE CONNECTION	4
4	LOCKABLE LOADING PORT	3 - 5	**21**	ELECTRIC PUMP	4
4/1	OVERFILL PREVENTION VALVE	5	**22**	PUMP SWITCH (only for single-phase)	4
5	BREATHER PIPE (VENT) at 2,4 mt	3 - 5	**23**	RUBBER HOSE	4
6	FLOAT LEVEL INDICATOR	3- 5	**24**	NOZZLE	4
7	LIFTING LUG	1 - 3	**25**	FLOW METER	4
8	LADDER (from TF5 onwards)	1	**26**	SWITCH BOX	4
9	HANDRAIL (from TF5 onwards)	1	**27**	SWITCH/DISCONNECTOR (O/I)	4
10	SUCTION BALL VALVE	2	**28**	EMERGENCY BUTTON	4
11	CLAMPS FOR GROUND FIXING	6	**29**	WARNING LIGHT	4
12	TANK DRAINAGE PLUG	2	**30**	POWER SUPPLY CABLE	4
13	CONTAINMENT BASIN 110%	1	**31**	PLUG	4
14	CONTAINMENT BASIN PLUG	1	**32**	MINIMUM LEVEL PROBE	2
15	EARTHING SOCKET	1 - 2	**33**	EARTHING WIRE (1)	2
16	CABINET (fixed part)	1 - 4	**34**	EARTHING WIRE (2)	4
17	OPENING DOOR	1 - 4	**35**	EARTHING WIRE (3)	4

FOTO 1A

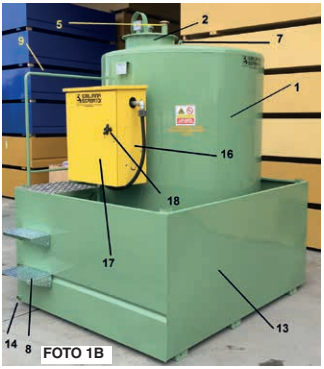


FOTO 1B


FOTO 6

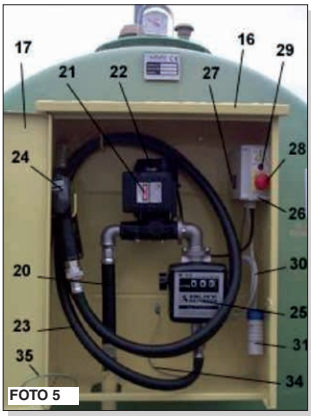


FOTO 5

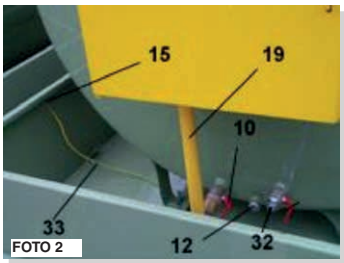


FOTO 2

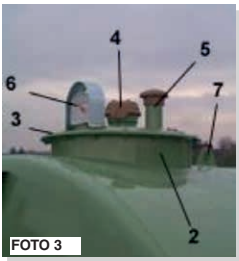


FOTO 3

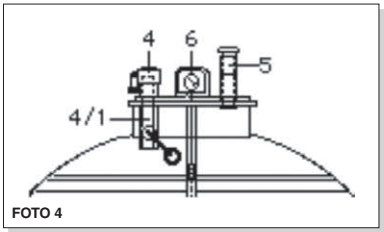


FOTO 4

9.4.2. TANK FUEL VDP

Position n°	Denomination	photo n°	Position n°	Denomination	photo n°
1	TANK	1	**18**	LOCK	1
2	DOME	1	**19**	SUCTION PIPE	1-3
3	FLANGE	1	**20**	FLEXIBLE CONNECTION	3
4	LOCKABLE LOADING PORT	2	**21**	ELECTRIC PUMP	3
4/1	OVERFILL PREVENTION VALVE	2	**22**	PUMP SWITCH (only for single-phase)	3
5	BREATHER PIPE (VENT)	1-2	**23**	RUBBER HOSE	3
6	FLOAT LEVEL INDICATOR	2	**24**	NOZZLE	3
7	LIFTING LUG	1	**25**	FLOW METER	3

8	LADDER (only for TF9)	1	**26**	SWITCH BOX	3
9	HANDRAIL (only for TF9)	1	**27**	SWITCH/DISCONNECTOR (O/I)	3
10	SUCTION BALL VALVE	2	**28**	EMERGENCY BUTTON	3
11	CHAIN	2	**29**	WARNING LIGHT	3
12	==		**30**	POWER SUPPLY CABLE	3
13	CUPBOARD CONTAINMENT TRAY	1	**31**	PLUG	3
14	==		**32**	MINIMUM LEVEL PROBE	1
15	EARTHING SOCKET	1	**33**	EARTHING WIRE	2
16	CABINET (fixed part)	1	**34**		
17	OPENING DOOR	1	**35**		1

FOTO 1

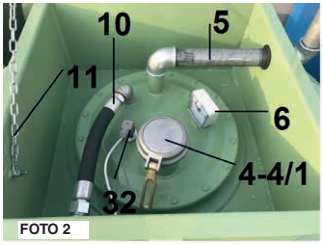


FOTO 2

FOTO 3

10. HANDLING – TRANSPORT

10.1. HANDLING

The TANK FUEL has to be handled **only and exclusively when it is empty.**
It must be handled by lifting it from above with lifting systems attaches to the hooking point located on the top of the tank and marked with a sticker (see Ch. 8 “Labels and inscriptions”).
The resistance of lifting means (belts or chains) must be suitable and certified.

10.2. TRANSPORT

The TANK FUEL can be transported **only and exclusively when it is empty.**
Transporting it when full, or even partially full, would be a violation of both the regulations applicable to TANK FUEL as refuelling tank, and of those relating to the transport of dangerous goods (ADR, RID, IOMDG, IATA).
For the transport may be used all transport systems compatible with the weight and dimensions of TANK FUEL, provided that it is properly anchored to the vehicle platform using appropriate systems under responsibility of the transporter.
The roof must be necessarily removed for the transport.

In addition to the regulatory prohibition, TANK FUEL is not structurally suitable to withstand the stress caused by transport even when it is only partially full. It has not the structural characteristics of a road tank.

10.3. DISPLACEMENT OF TANK FUEL

If you need to move the TANK FUEL in a new location, remember that:

– The new site should be always chosen according to the criteria described in § 11.1
– The roof must be previously removed
– The movements must be performed by using the lifting lugs (7), and in compliance with the requirements described in § 10.1
– Transport from the old to the new site must be conducted in compliance with the requirements described in § 10.2
– The repositioning must occur according to the provisions of § 11.2
– The roof should be repositioned in accordance with the requirements of § 11.3
– The procedure of putting into service must be fully repeated according to the provisions of §§ 11.2 – 11.4 – 11.5

11. PUTTING INTO SERVICE

The putting into service of the TANK FUEL may require compliance with the provisions of the D.M. 22/11/2017 summarized in § 11.8.

11.1. CHOICE OF THE LOCATION (> § 11.8)

11.1.1.

The TANK FUEL must be placed outdoors on firm level ground, away from concentrated sources of heat and the possible presence of flammable materials or substances.

DO NOT PLACE THE TANK FUEL IN PLACES WHERE THERE IS DANGER OF FORMATION OF EXPLOSIVE ATMOSPHERES (EN 60079-10). It is up to the user perform a preliminary assessment of the risk of explosion, checking carefully the environmental and working conditions, and adopt the most appropriate precautionary measures to prevent the formation and accumulation of explosive atmospheres.

11.1.2.

The surrounding area must be sufficiently large to enable easy maneuvering of vehicles to be refuelled, without risks of collision, and without limiting the movements of operator during refuelling.

11.1.3.

The territory around the TANK FUEL must be provided with a buffer zone, of minimum width of 3 m, without vegetation and cleared of any materials that could be a danger of ignition or danger in case of fire.

11.1.4.

In case of refuelling operations performed in the evening or at night, it is necessary to equip the TANK FUEL with adequate lighting, which makes clearly visible the commands on the electrical panel and warning labels in the front.

Please respect scrupulously the requirement of sufficient lighting also to discourage the reckless use of open flames or other improper systems that could represent extremely dangerous situations.

11.2. POSITIONING (> § 11.8)

Handling operations (lifting, movement) must be carried out as described in section 10. Make sure that the contact is uniform and stable when placing to the ground. The Tank Fuel must be installed on a flat surface, must be protected by suitable fixed defense to prevent accidental shocks and must be firmly anchored to the ground to avoid displacements during filling and general operation.

11.3. ROOFING

The TANK FUEL must be provided with a structurally suitable roofing able to withstand high wind conditions, made of fireproof material and able to protect both the tank and the containment basin from the atmospheric agents; for the recommended dimensions, please see the table in § 9.3 – "Dimensions").
In the case of roof provided by EMILIANA SERBATOI Srl, please refer to the assembly instructions supplied together with the roof.

11.4. EARTHING

An efficient electrical connection between the ground plate and the bolt (15) arranged on the side of the containment basin (13) must be made, and also specially marked (See chapter 8 "Labels and inscriptions").
If the ground rod does not exist, it is necessary to predispose one.
In any case, the preparation and the ground connection operations are reserved exclusively to qualified operators, who must act in accordance with current regulations (> § 11.8).

Because of improper installation of grounding may arise serious risks to electrical system and damages to the structure of the TANK FUEL itself, caused by possible electrochemical corrosion even perforating.

11.5. ELECTRICAL CONNECTIONS (> § 11.8)

The delivery unit must be connected to the power line through the provided plug (31). In case of delivery unit other than delivery unit of EMILIANA SERBATOI Srl, electrical connection must be made in accordance with the instructions of the manufacturer of the delivery unit attached separately.
The power line upstream from the TANK FUEL must, however, be adequate to absorption indicated in the table of the electric pump, it must be equipped with and efficient differential switch and suitable for the characteristics of the electric pump, and the electrical socket should have properties of protection not less than IP 44.

The coupling plug/socket must be stably maintained in a protected position, for example carefully placed inside of metal cabinet; in any case the coupling plug/socket cannot be left on the ground, particularly exposed to the risk of immersion in water (e.g. puddles).

It is absolutely forbidden to connect directly the control panel of the TANK FUEL with electrical power supply line by removing the provided plug (31), since the plug serves the precise function of disconnection in accordance with § 5.3.2 b of EN 60204-1; its elimination, therefore, alters the essential safety requirements of the delivery unit, resulting in the need for a review of conformity to EC standards.

In case of three-phase power supply, please check with short pulses on the switch "O/I" (27) that the direction of rotation of the motor corresponds to the indication on the crankcase of the electric pump.
Otherwise, please modify the connections inside the plug. Any operation of verification and/or modification must be carried out only by a qualified electrician.

11.6. INSTALLATION AND ADDITIONAL CHECKS (> § 11.8)

11.6.1.

Make sure there is available and the minimum provision of fire extinguishers indicated in the table of § 11.8.

11.6.2

Please verify and check all possible complementary provisions included in the prospect of §11.8 in function of the intended type of use of TANK FUEL, including fire prevention permissions, if required.

11.6.3.

Provide the TANK FUEL with a cable, cross section > o = 16 mm2, of adequate length (> 4 m) with clamps, to be used for the equipotential connection between the TANK FUEL and the road tanker, or with the frame of the vehicles to be refuelled, respectively, on the occasion of the supply or the dispensing of the fuel.

11.7. FIRST FILL

11.7.1.

Before the fill, make sure the switch (27) on the electrical panel (or on the delivery unit if of different manufacturer) is not in the position "I" and that the electrical panel of the TANK FUEL is de-energised.

11.7.2.

Check that the drainage plug (14) of the containment basin is closed.

11.7.3.

Access to the loading port (4), loosen the ring nut and screw in place of the ring the end of the hose of the road tanker.
The TANK FUEL 7 and TANK FUEL 9 are equipped with a ladder (9), that facilitates the access of the operator to the loading port.

11.7.4.

Set the delivery on the amount required, which must never exceed 90% of the geometric capacity of the tank (limit that when exceeded triggers the overfill prevention valve integrated in the loading port)

11.7.5.

It is advisable to stop the fill before the intervention of the overfill prevention valve. In this regard one can rely on the indications of the level gauge (6) placed on the top of the manhole.

11.7.6.

When the fill is completed, interrupt the flow of the fuel by intercepting it with the special shutter located at the end of the hose.

11.7.7.

At the end it is necessary to make the described operations in reverse order: first loosen the hose from the loading port and then screw in its place the previously removed ring nut.

When approaching to the reaching of the maximum level allowed, reduce progressively the dispensing flow rate, so as to make safer an eventual intervention of the overfill prevention valve. However, the maximum speed of fill shall never exceed 400 l/min.

In case of accidental spillage od Diesel fuel from the hose on the external wall of TANK FUEL, clean it as described in § 14.3.1 "Cleaning". Any fuel flowed in containment basin shall be collected with appropriate means, put into a suitable container and disposed as described in § 16.2 "Disposal".

11.8. REQUIREMENTS IN FUNCTION OF THE INTENDED USE

Requirements	Reference standard
	Ministerial Decree 22 November 2017
Installation in open-air areas	YES, with the prohibition of placing on driveway ramps, terraces and areas above closed places
Laying pitch	Flat surface
Anchoring to the ground	Solid anchorage to the ground planned
Surrounding free area	Surrounding area with a width of not less than 3 m, completely free from any kind of material and without vegetation that could constitute a fire hazard.
Safety distance from buildings, ignition sources, deposits of combustible and/or flammable materials not included in activities subject to fire prevention checks	

Distance from buildings and/or premises also partially used as civil dwellings, commercial business, public authorities, meeting, entertainment venues, deposits of combustible and/or flammable materials constituting activities subject to fire prevention checks	
Safety distance from railway and tramway lines	
Vertical projection distance from power lines exceeding the following limits: 1000 V rms for alternating current, 1500 V for direct current	
Fence	Suitable fixed protection to prevent accidental shocks
Insertion in prefabricated fireproof box	Permitted. The distance of the Tank Fuel from the walls must be such as to guarantee accessibility for maintenance and inspections. The box must be equipped with permanent ventilation openings of a surface not less than 1/30 of that provided in the plant.
Safety signage and labeling	Obligation to display: - prohibition of approach by strangers; - prohibition of smoking and open flames. The safety signs must comply with the provisions of the Legislative Decree no. 81/08. Fixed sign showing the rules of conduct and telephone numbers of the firefighters and the company responsible for the management and maintenance of Tank Fuel
Vent	The vent of the balance pipe must flow at least 2.40 m from the floor, be equipped with a suitable flame-guard and placed at a distance of 1.5 m from buildings or deposits of combustible and/or flammable material.
Load relief valve (90% of geometric capacity)	Expressly provided
Electric systems	Construction and installation in accordance with the provisions of Law no. 186 of March 1, 1968, and Decree no. 37 of the Minister for Economic Development of January 22, 2008, where applicable.
Protecting the electropump against dry running	Power supply is expected to be interrupted in the event of insufficient draught
Extinguishers (minimum equipment)	At least 2 portable fire extinguishers with a fire-extinguishing capacity of not less than 21A-89B. In case the Tank Fuel has a total capacity exceeding 6 m^3, it is necessary to add n. 1 fire extinguisher with extinguishing capacity not less than B3, not more than 20 m from the tank.
Equipotential bonding during refuelling	YES

12. CONTROLS AND FUNCTIONING

12.1. DESCRIPTION OF CONTROLS

12.1.1. SWITCH/DISCONNECTOR

It consists of a button (27) with two positions “O-I”, present on the electrical panel.
It may not be present in case of delivery units produced by manufacturers other than EMILIANA SERBATOI Srl (in this case the disconnecting device consists of the power plug itself).
In position “I” (illuminated) it supplies power to the electrical panel.
In position “O” (off) it cuts off the power to the electrical panel.
In case of a mono-phase electric pump 230 V, its function is to enable the on/off operation which can be carried out using the switch (22) on the body of the motor pump.
In case of a three-phase electric pump 400 V (without a specific on/off control), the switch (27) acts as a switch to start and stop the pump.

12.1.2. SWITCH ON/OFF

It is present only in case of a mono-phase electric pump and it consists of a yellow switch with two positions “I-O”, located on the electric pump. In case of TANK FUEL 490 the switch is operated directly from the nozzle holder.

12.1.3. EMERGENCY BUTTON

By pressing the red emergency mushroom-shaped button (28) the operator will block the electric pump and at the same time the red warning light (29) will turn on and the green light of the switch (27) will turn off. The use of the emergency button is reserved only for emergency situations such as:

- faulty operation of the automatic nozzle
- detection of fuel leakages from any point of pipings
- detection of anomalies in the functioning of the pump
- any other situation which the operator considers dangerous

After stopping the pump with emergency button, the restart is possible only with manual recovery, which is to turn the mushroom-shaped button ¼ turn clockwise (as showed by arrow on the button).

12.1.4. WARNING LIGHT

Red warning light (29) is located immediately behind the emergency mushroom-shaped button and it turns on when the emergency button

is pressed or when the pump is blocked due to low level of fuel inside the tank or when the level gauge breaks down.

In case of fuel delivery supported by EMILTOUCH, the power supply of the motor pump to the approval of the device.

12.2. FUNCTIONING

The user must carefully follow the steps listed below, in the exact order reported:

- Let the vehicle draw near to the TANK FUEL at a distance of the length of the refuelling hose.
- Make sure that the area around the TANK FUEL and the vehicle is free from strangers and from any source of ignition.
- Open the dispensing cabinet
- Check in advance the amount of fuel to be refuelled and verify its compatibility with the level of fuel inside the TANK FUEL
- Ensure a proper equipotential connection between the TANK FUEL and the refuelled vehicle, by using for example a cable, min. section 16 mm2 with clamps.
- Make sure that the ball valve (10) is in the “Open” position (prescription not applicable to TANK FUEL 490 e VDP).
- Make sure the warning light (29) is off and, if so, check the possible causes; only after the verification has been concluded, the emergency button can be released.
- Check that the nozzle (24) trigger is released and if it is blocked in the open position, release it.
- Remove the filler cap from the vehiclès fuel tank and introduce the nozzle with the released trigger
- Turn on the electric panel by putting the switch (27) in position “I”, and check that it lights up. In case of a three-phase electric pump, this operation turns on the motor pump in by-pass mode.
- In case of a single-phase electric pump, turn on the motor pump by placing the switch (22) in position “I”, unless the switch was left by mistake in that position from the previous refuelling.
- Place yourself next to the vehiclès fuel tank and start the refuelling by pressing the nozzle trigger and controlling the flow meter (25).
- If a full tank is required, the operator can block the trigger in open position waiting for it to release when the tank is full.
- In any case avoid making small top ups as these would not be correctly indicated by the flowmeter.
- Completed the refuelling, **do not pull out the nozzle** until you have switched off the electric pump by placing in “O” position both the switch of electric pump (22) [in case of a single-phase motor pump] and the switch (27) of electric panel and making sure that they are turned off.
- Release the residual pressure in the fuel delivery hose by opening the nozzle for a few moments. A small amount of Diesel fuel will discharge in the fuel tank of the vehicle.
- Roll up the fuel delivery hose (or put it inside the containment basin) and put the nozzle in the holder inside the dispensing cabinet.
- Remove the cable of equipotential connection
- Lock up the dispensing cabinet
- Retighten carefully the filler cap of the refuelled vehiclès fuel tank.
- Proceed with accurate cleaning of the soil and the vehicle, which may have been contaminated by fuel spillages.
- If the TANK FUEL is not intended to be used for another refuelling in a short period of time, it is advisable to place the ball valve (10) in “Closed” position in case the TANK FUEL is more than half full.

Not more than 1 or 2 minutes must pass from the switching on of the motor pump to the start of the refuelling, or from the end of the refuelling to the shutdown of the pump. This could result in overheating of the electric motor and, ultimately, in its breakup.

Always keep in mind the limitations imposed on the fuel dleivery by the applicable regulatory framework, according to the sector of activity, by avoiding the unauthorized refuellings.

13. FILL OF TANK FUEL

It is better to schedule the periodic supplies of Diesel fuel by checking the level gauge (standard or optional) in order to avoid to fill the TANK FUEL when the minimum level has been reached and the pump blocking device has been activated. In any case, the subsequent fills of TANK FUEL has to be performed according to the instructions already mentioned in §11.7 (“FIRST FILL”).

14. MAINTENANCE

14.1. REGISTER OF INTERVENTIONS

It is advisable to keep a maintenance register, on which record in chronological order the periodic interventions carried out, reporting next to each one:

- date of execution
- n° of liters delivered
- any comments
- signature of the person who carried out the intervention

From the analysis of the recorded activities it will be easier to identify the causes of malfunctions that may require repairs or replacement

of parts to be carried out by authorized personnel. Among the operations to be recorded, it is useful also record the fills of the TANK FUEL. The register is also useful for the registration of any observations of the operator when problems or anomalies occur. The first part of the register can be found in §. 19, with spaces reserved for the single interventions in chronological order; the user can complete the register with additional pages by photocopying the facsimile.

14.2. PERIODIC CONTROLS AND INSPECTIONS

The maintenance intervals depend on many factors, including:

- Quality of the Diesel fuel used
- Environmental conditions
- Weather conditions
- Frequency of refuelling operations

However we recommend the following indicative minimum maintenance schedule:

Every	Type of intervention
50.000 litres	Cleaning of the in-built filter of the pump and of any optional in-line filter
100.000 litres	Drainage of the TANK FUEL, with evacuation and collection of waste deposit. The operation must be carried out when the fuel level is minimum which corresponds to the volume indicated in the table in § 9.2. Prepare appropriate collection containers. Before carrying out the operation, disconnect the power supply plug (31) and remove the nut ring from the loading port (4). To carry out the drainage unscrew and remove the tank drainage plug (12) or open the eventual optional tap supplied to replace the plug itself. The waste must be disposed according to the instructions indicated in §§ 16.1 – 16.2
7 days	Control possible leakages from ball valves, pipes and fittings.
30 days	Control the state of electric power cables and earthing cables. Clean the body of the pump (see § 14.3.1)

14.3. ORDINARY INTERVENTIONS

Ordinary interventions are those interventions that can be directly carried out by the operator during the normal use of the TANK FUEL and do not require a particular level of expertise, but simply the diligent observance of instructions contained in this manual. This category includes:

14.3.1. CLEANING

The TANK FUEL and its delivery devices must be kept clean both from external agents (dirt, dust, etc), either from accidental spillages of diesel fuel during fills, refuellings, leaks. In particular, the containment basin must be kept clean avoiding stagnation of any diesel fuel spillages which may generate flammable vapours and any foreign objects (cloths, papers etc.) must be removed. To clean use products non-corrosive to metal parts, cables and plastic in general. If possible use neutral or slightly alkaline degreasing products. Steam jet products can be used (Pulivapor) as long as the jet is not directed towards parts of the electrical system or labels and/or stickers.

14.3.2. REPLACEMENT OF THE FUSES

If it is necessary to replace one or more fuse as a result of an expected event described at ch.17 ("PROBLEMS/CAUSES/CORRECTIVE ACTIONS"), first of all disconnect the electrical panel from power supply, make sure that the switch (27) is in position "O" and then disconnect the power plug (31). Access the electric panel by unscrewing the n.4 plastic screw bolts placed in the 4 corners of the cover by using a flat head screwdriver with a width at least of 8 mm; following the wiring diagram on the paper contained inside the box, identify the fuses, extract them, verify their integrity and reinsert them if intact or replace them if broken.

Once you have inserted the fuses, close the cover using the n° 4 screws removed earlier.

Restore the electrical connection of the plug (31) and only after checking that the nozzle is closed, power up to the electric panel by putting the switch (27) in position "I".

The switch should light up and, in the case of a three-phase pump, the pump itself should start in by-pass mode.

In the case of a single-phase pump, start it up by putting the switch (22) in by-pass mode for a few moments.

If the pump does not start or the power supply is interrupted again contact specialised personnel.

14.3.3. EARTHING CONTROL

The earthing of the TANK FUEL (excluding the TANK FUEL 490 and VDP) is made by n° 3 cables (33) (34) (35), each one equipped with a bolt and a nut at the end. Due to localized deterioration of the paint of the TANK FUEL caused, for example, by incorrect washing procedures, the corrosion process may be triggered such as to make inefficient the general earthing.

In this case, proceed to remove the nuts from the earthing cables terminals, clean thoroughly with a metal brush both the contact wall and the end of the cable, then retighten the nuts and apply a slight layer of waterproof grease over them.

This operation must be carried out whenever the monthly visual inspection will show signs of localized corrosion (rust) or if, during instrumental tests carried out by specialized personnel in occasion of specific interventions, the earthing should not be sufficiently conductive.

14.3.4. REPLACEMENT OF THE LABELS

Before replacing deteriorated adhesive labels you need to:

- Completely remove the residual adhesive on the metal wall considered
- Clean accurately the surface with a cloth and detergent
- Apply the new label only when the application surface is completely dry
- Apply the sticker a bit at a time without leaving air bubbles.

14.4. EXTRAORDINARY INTERVENTIONS

Extraordinary interventions are those requiring the intervention of specialised personnel and, in any case, all those interventions not expressly provided for in § 14.3. Some examples:

- Replacement of parts or devices (electric and non-electric)

– Structural repairs
– Repainting of parts

IT IS ABSOLUTELY FORBIDDEN to carry out welding of any kind on **TANK FUEL** without having first emptied it and **COMPLETELY DEGASSED IT.** Simple cleaning is absolutely not sufficient. Otherwise it is possible that, in special and unpredictable situations, may exist an **EXPLOSION HAZARD WITH LETHAL CONSEQUENCES**

Any extraordinary intervention must be carried out by specialised personnel in full respect of what is foreseen in this manual. For interventions not expressly provided in this manual, it is mandatory to request the prior authorization to EMILIANA SERBATOI Srl, which reserves the right to assess their technical eligibility, and if necessary subordinate the interventions to specific instructions of technical and regulatory nature.
***The use of unauthorized modifications will void the contractual warranty**.*

15. PERSONAL PROTECTIVE EQUIPMENT MEASURES

During refuelling and carrying out of inspection and/or maintenance operations of the TANK FUEL, it is advisable to wear work gloves and non-slip boots.
Near the TANK FUEL, there should to be suitable means to collect and absorb any Diesel fuel spillage, e.g.:
– sand or other non-flammable aggregate material (not cloths!)
– spark-proof shovel
– container with waterproof bottom and sides with removable top.
Any cloths used for cleaning should always be disposed after each use.
Regarding the fire extinguishers, the type and the amount of extinguishing substance are reported in the table § 11.8.

16. REMOVAL FROM SERVICE – DISPOSAL

16.1. REMOVAL FROM SERVICE

When the TANK FUEL reaches its end-of-life, it becomes hazardous waste and, therefore, its disposal must provide:
– Preventive emptying of the contents and placing it in different suitable containers depending on whether it is Diesel fuel or reusable waste.
– For the selection of the most appropriate containers for disposal for waste water, contact the Company in charge of the disposal.
– Conferral of TANK FUEL and containers with waste water, to appropriate Company, regularly registered at National Register of Environmental Managers, and in possession of the required authorization for the disposal of hazardous waste. Permissions related to the vehicles actually used in the collection and disposal **must be** exhibited.
– Handling and loading of TANK FUEL on the vehicle should be performed according to the instructions in chap. 10.
The following parts of I TANK FUEL may be recovered and recycled:
– Metal material
– Electric material
– Any combustible waste material
The competency relating to the separation of the parties and to any disposal or differentiated recovery, is of the Company in charge of the disposal.

IT IS ABSOLUTELY FORBIDDEN to carry out oxy-fuel systems for the reduction of the TANK FUEL into parts of smaller size in order to facilitate its disposal or recovery, without having first carried out an **ACCURATE AND COMPLETE DRAINAGE AND DEGASING** that guarantees the total absence of flammable vapours inside the tank. Simple cleaning is absolutely not sufficient. Otherwise it is possible that, in special and unpredictable situations, may exist an **EXPLOSION HAZARD WITH LETHAL CONSEQUENCES**.

16.2. DISPOSAL

Also the waste produced during the daily use of the TANK FUEL, mainly waste water, sludges, absorbents soaked with diesel etc. must be conferred to the Company regularly registered at National Register of Environmental Managers and in possession of the required authorization for the disposal of hazardous waste. This requirement applies also to the individual components and devices decommissioned, being replaced by specialized firms. In particular, all electrical and electronic equipment must be disposed of by companies specialised in the disposal of electrical and electronic material, in compliance with the provisions of Directive 2002/96/EC which forbids the disposal of all appliances marked with the symbol shown on the product or packaging together with non-separated urban waste. The symbol on the right indicates that the product cannot be disposed of together with normal household waste but only through specific collection centres appointed by local government.

17. PROBLEMS – CAUSES – CORRECTIVE ACTIONS

Please find below a list of **some** main problems which may occur.
Always contact specialised personnel for all problems which are not mentioned or when the corrective action does not solve the problem.
The corrective actions suggested are in order of growing complexity.

Problem	Possible cause	Suggested corrective action
The motor dos not turn	No power supply, electric panel is blocked (warning light is on)	Check that the emergency push-button is not pressed and reset power using the main switch
		Check the level of Diesel fuel (could be at minimum) and if the level is sufficient check if the level sensor is working
	Lack of power supply, electric panel is not blocked and the main switch is turned on in the position "I"	Check the power cables of the pump
		If the device EMILTOUCH is present, check that it provides the consent, and if necessary repeat the procedure
	Lack of power supply, electric panel is not blocked and the main switch is turned off in the position "I"	Check the power cables of the electric panel and the power plug connection.
		Check that the differential switch upstream from the system is not in off position
		Open the electric panel and check the integrity of the fuses
	Blocked rotor	Check if anything obstructs the rotating parts after having switched off the power of the electric panel
The motor turns slowly	Low supply voltage	Check the voltage at the electrical panel
The motor turns, but Diesel fuel dos not flow to the nozzle	Pump or tank filter is clogged	Clean the filter (or filters)
	Foot valve is blocked	Clean and/or replace the valve
	Chamber of the flowmeter is clogged	Clean the chamber of the flowmeter
	By-pass valve is blocked	Remove the valve, clean and/or replace it
	Entry of air in the pump or in the suction pipe (1)	Check the tightness of the connections
Very noisy pump	Irregular operation of the by-pass	Deliver fuel until the air in the circuit is expelled
	Air present in the Diesel fuel	Check suction connections
Leakages from the pump casing	Seal is damaged	Check the mechanical seal and if necessary replace it
During refuelling the nozzle is released continuously	Dirt deposit on the nozzle sensor	Blow compressed air inside the nozzle pipe
Insufficient precision of flowmeter	Incorrect calibration	Repeat calibration following the instructions in the flowmeter manual
	Air present in the suction pipe	Check the tightness of the connections
	Dirty measuring chamber	Clean the measuring chamber of the flowmeter
Float level indicator does not function	Dirt on float guides	Remove float, clean and reassemble it
	Deterioration of guides	Replace the entire device
Electronic level indicator does not function	Flat batteries	Replace the batteries

(1) This problem can be caused by an air bubble in the rubber hose or next to the nozzle only if this occurs during the first fuel delivery after the putting into service of the TANK FUEL, and can be eliminated by disassembling the nozzle and reassembling it.

18. ELECTRICAL PANELS

Inside the electric panels there is a leaflet containing specific information.
Both types of electrical panels require user's compliance with the prescriptions below:

1. When opening the casing for inspection or maintenance take care not to damage or touch the various components or electronic cards contained inside.
2. Before closing the casing after any intervention eliminate any type of metal or plastic impurity that may have fallen inside.
3. Before any operation within the electrical panel, switch off the main power supply.
4. If necessary replace any faulty components using only other components with the same characteristics and capacity.

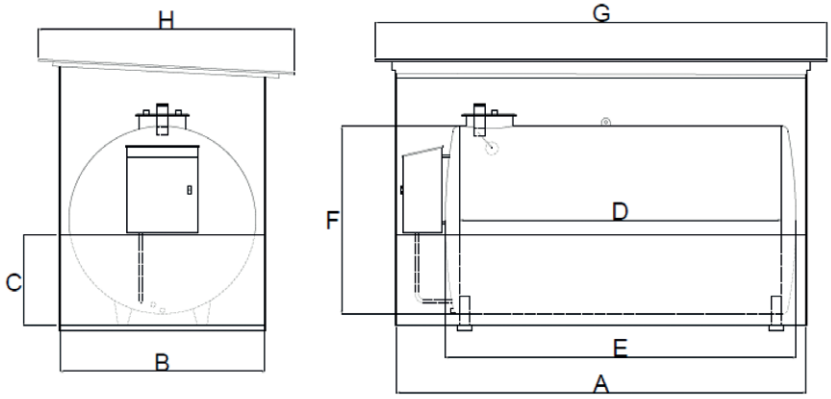
19. MAINTENANCE REGISTER

20. MINISTERIAL APPROVALS

9.3. DIMENSIONI / DIMENSIONS / DIMENSIONS / TAMAÑA / FASSUNGSVERMÖGEN DES TANKS

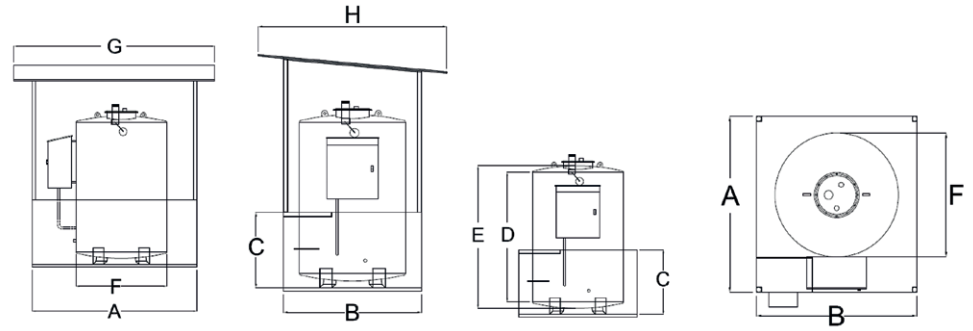
9.3.1. TANK FUEL ORIZZONTALI / HORIZONTAL TANK FUEL /

	A	B	C	D	E	F	G	H
TF490	1010	1010	540	625	820	900	1500	1500
TF1L	1900	1050	550	1250	1520	950	2100	2000
TF1	2250	1400	480	1250	1480	1100	2600	2000
TF2	2400	1750	650	1800	2040	1270	2600	2000
TF3	2450	1900	750	1800	2000	1430	2700	2000
TF5	3200	1850	1000	2500	2780	1600	3500	2500
TF5D	3200	1750	1000	2250	2530	1600	3500	2500
TF6	3500	1900	1000	2750	3030	1600	3800	2500
TF7	3850	2100	1000	3000	3300	1700	4100	2500
TF9	4000	2250	1100	3000	3300	1900	4300	2500



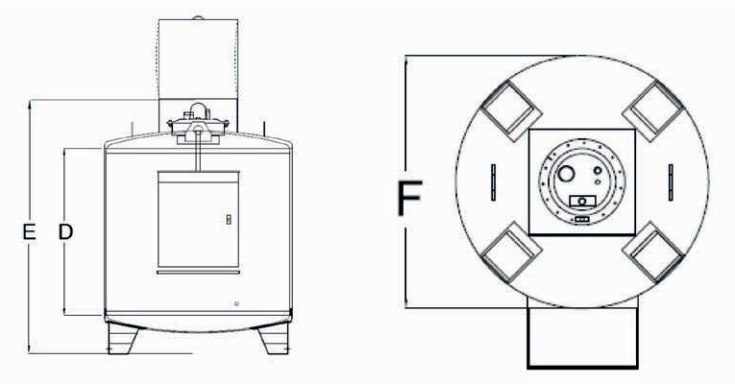
9.3.2. TANK FUEL VERTICALI MONOPARETE / TANK FUEL VMP

	A	B	C	D	E	F
TF1L VMP	1400	1250	620	1250	1430	950
TF1 VMP	1635	1500	600	1250	1440	1100
TF2 VMP	1800	1650	900	1800	1980	1270
TF3 VMP	2000	1700	970	1750	1950	1430
TF5 VMP	2400	1850	1250	2000	2254	1700
TF6 VMP	2600	2250	1215	2000	2396	1900
TF9 VMP	3650	2450	1110	2250	2720	2100
TF9B VMP	3600	2450	1100	1800	2292	2300

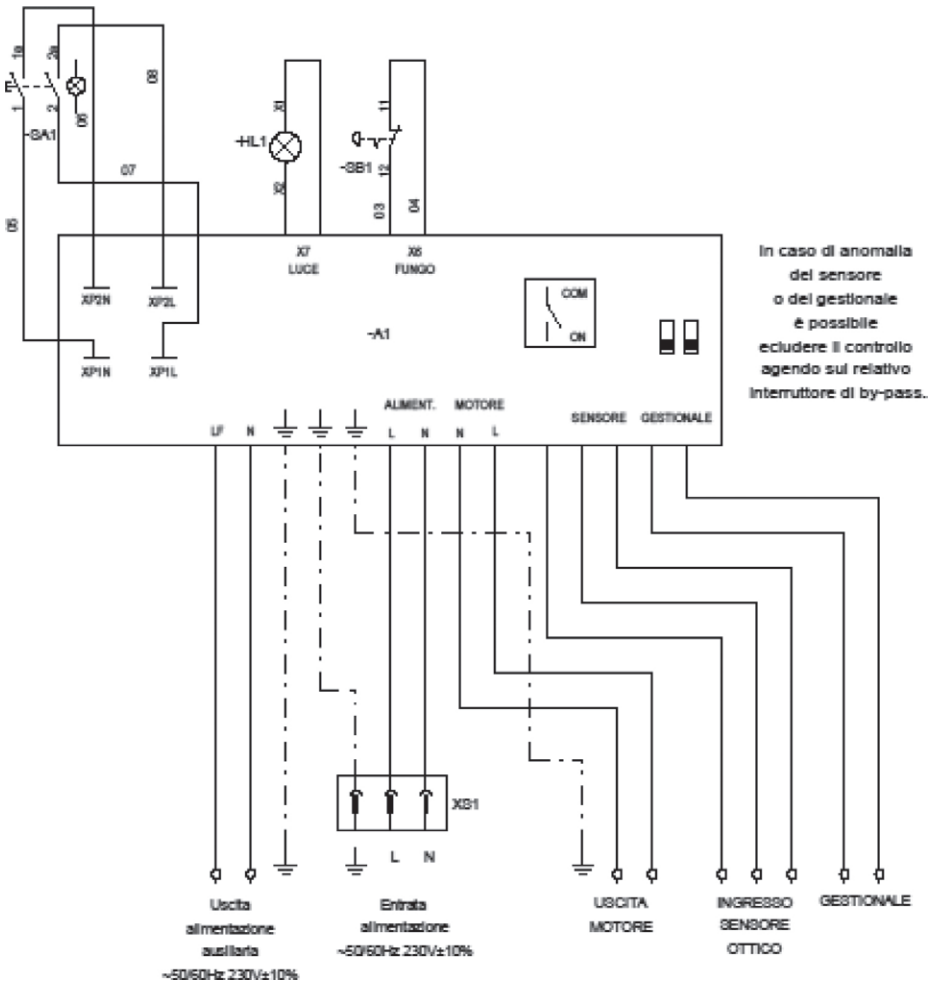


9.3.3. TANK FUEL VERTICALI DOPPIAPARETE / TANK FUEL VDP

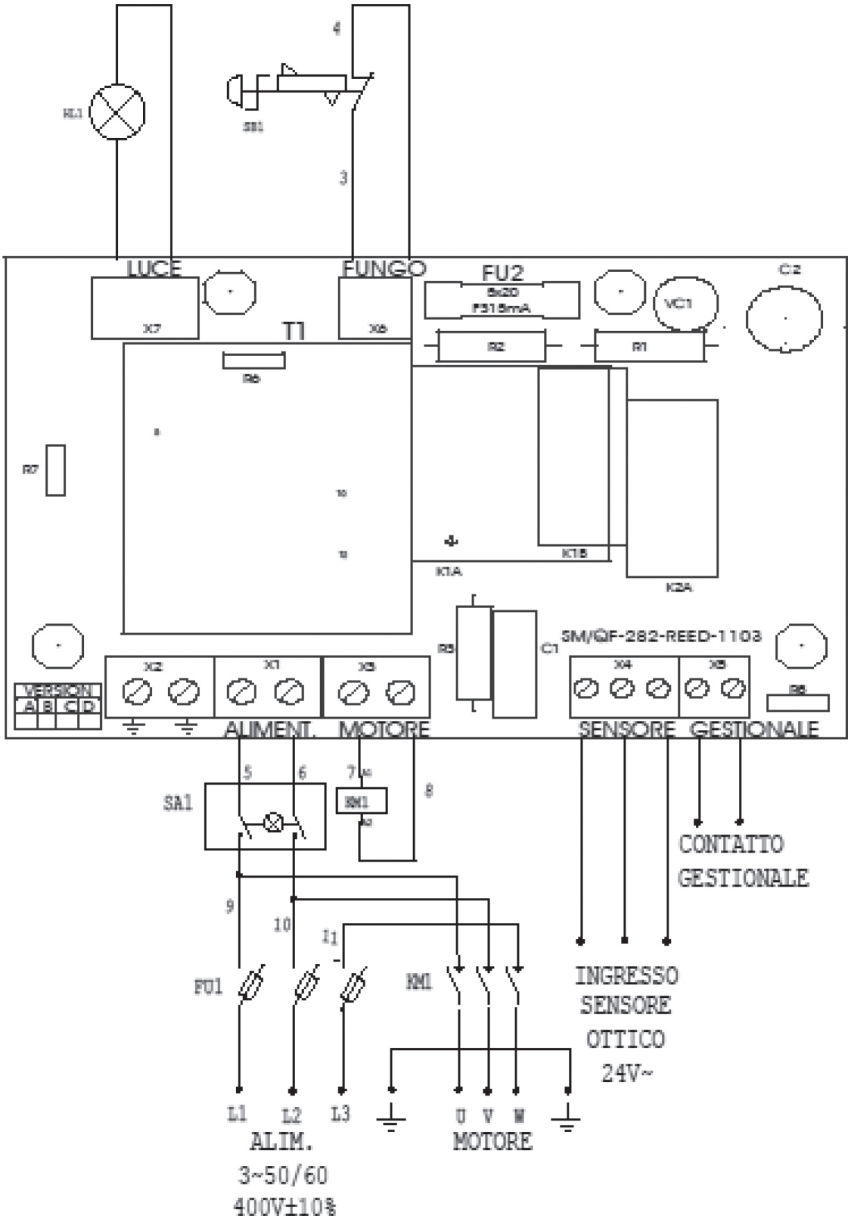
	A	B	C	D	E	F	G	H
TF1 VDP	==	==	==	1277	1970	1150	==	==
TF2 VDP	==	==	==	1270	1943	1430	==	==
TF3 VDP	==	==	==	1815	2491	1430	==	==
TF5 VDP	==	==	==	2020	2729	1730	==	==
TF9 VDP	==	==	==	1820	2638	2300	==	==



18.1. QUADRO ELETTRICO 230 V MONOFASE / SINGLE-PHASE ELECTRICAL PANEL 230 V / TABLEAU 220 V C.A. MONOPHASE / CUADRO ELÉCTRICO 230 V MONOFÁSICO / ELEKTRISCHE SCHALTTAFEL 230 V EINPHASIG



18.2. QUADRO ELETTRICO 400 V TRIFASE / THREE-PHASE ELECTRICAL PANEL 400 V / TABLEAU 400 V C.A. TRIPHASE / CUADRO ELÉCTRICO 400 V TRIFÁSICO / ELEKTRISCHE SCHALTTAFEL 400 V DREIPHASIG



19. REGISTRO USO E MANUTENZIONE / MAINTENANCE REGISTER / MAINTENANCE REGISTER TANK FUEL / REGISTRO USO Y MANTENIMIENTO / REGISTER ANWENDUNG UND WARTUNGEN

Data/ Date	Litri immessi/ liters placed	Litri Erogati/ liters delivered	Intervento/ IOperation	Note-Osservazioni/ Note-Observation	Firma utente/ user signature	Timbro-Firma responsabile intervento/ Stamp-Signature responsible for the intervention
		0	Riempimento			
		0	MESSA IN SERVIZIO (1)	REGOLARE		
Riporto						
Riporto						

20. APPROVAZIONI MINISTERIALI / MINISTERIAL APPROVALS / APPROBATION MINISTÈRIELLE / APROBACIONES MINISTERIALES / MINISTERIELLE GENEHMIGUNGEN

Ministero dell'Interno
DIREZIONE GENERALE DELLA PROTEZIONE CIVILE E DEI SERVIZI ANTINCENDI
SERVIZIO TECNICO CENTRALE
Ispettorato [illegible]
di prevenzione incendi

Divisione ... Sez. ...
Prot. N. 1508 e ... Allegati ...
NS 6508
4111 sott. 150

Roma, 17 NOV. 1996

Alla Soc. EMILIANA SERBATOI S.r.l.
Via Sant'Anna n° 608
41100 MODENA

Risposta al Foglio del ...
Div. ... Sez. ... N. ...

OGGETTO: Società EMILIANA SERBATOI S.r.l. - Approvazione di tipo per estensione dei contenitori-distributori rimovibili per carburanti liquidi di cat. "C" modelli: "TANK FUEL 1", "TANK FUEL 5", "TANK FUEL 7" e "TANK FUEL 9" ai contenitori-distributori rimovibili per carburanti di cat. "C" nei modelli:
- TANK FUEL 1 (capacità geometrica massima litri 1200);
- TANK FUEL 2 (capacità geometrica massima litri 2400).

e,p.c.: All'Ufficio Centrale Metrico del Ministero dell'Industria del Commercio e dell'Artigianato
Via Antonio Bosio, 15
00161 R O M A

Alla Direzione del Centro Studi ed Esperienze
Piazza Scilla n°2
00178 Capannelle - R O M A

Questo Ministero ha esaminato l'istanza presentata da codesta Società intesa ad ottenere l'approvazione di tipo per estensione ai sensi del Titolo I, punto [illegible] del D.M. 31 luglio 1934 e successive modificazioni e del D.M. [illegible] per i contenitori-distributori rimovibili indicati in oggetto.

Al riguardo, vista la documentazione prodotta, tenuto conto di quanto è stato riferito con i certificati di prova n. [illegible] in data [illegible] e certificato n° [illegible] in data [illegible] dal Centro Studi ed Esperienze a seguito dell'esame della richiesta di cui all'oggetto, questo Ministero estende, ai fini della sicurezza, l'approvazione di tipo relativa ai contenitori-distributori rimovibili per carburanti liquidi di cat. "C" nei modelli "TANK FUEL 1", "TANK FUEL 5", "TANK FUEL 7" e "TANK FUEL 9" ai modelli di diversa capacità geometrica denominati "TANK FUEL 1" e "TANK FUEL 2".

./.

- 2 -

L'installazione temporanea delle predette apparecchiature dovrà effettuarsi con l'osservanza di tutte le norme di sicurezza vigenti in materia di prevenzione incendi e nel rispetto delle condizioni indicate nella suddetta documentazione di prova che deve ritenersi parte integrante del presente atto.

La validità della presente approvazione per estensione scade il [illegible] sotto l'espressa condizione di conformità dell'apparecchio in questione al prototipo sottoposto a prova.

Di quanto sopra si informa anche, per gli adempimenti di competenza, l'Ufficio Centrale Metrico del Ministero dell'Industria, del Commercio e dell'Artigianato.

L'ISPETTORE GENERALE CAPO
(Dott. Ing. Paolo [illegible])

N.B.: LA PRESENTE APPROVAZIONE DI TIPO E' RIPRODUCIBILE UNICAMENTE NELLA SUA INTEGRALE STESURA

IT EN FR ES DE

EMILIANA SERBATOI®

ADVANCED FUEL SOLUTIONS

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info@emilianaserbatoi.it

ISTRUZIONI DI INSTALLAZIONE, USO, MANUTENZIONE e SICUREZZA

VALVOLA LIMITATRICE DI CARICO

RIDART 440 B EN

OMOLOGAZIONE : CEC 09 ATEX 070 09/2039– AET 543

CARATTERISTICHE

Valvola limitatrice di carico, accessorio di sicurezza per serbatoi interrati contenenti carburati liquidi e prodotti chimici (scheda tecnica disponibile sul nostro sito web).

POSIZIONAMENTO ed INSTALLAZIONE

Viene utilizzato su tubazioni ove richiesto, sotto il passo d'uomo, in posizione verticale in modo che la cisterna si riempia al massimo al 90% della sua capacità, fare riferimento alle specifiche omologazioni del Ministero degli Interni e agli schemi di impianto disponibili sul nostro sito web.

MANUTENZIONE

La frequenza dipende dall'utilizzo del prodotto e dalla presenza di corpi estranei nelle tubazioni. Consigliata la rimozione ove possibile e la pulizia almeno una volta ogni 12 mesi, intensificare la manutenzione in condizioni di uso gravoso, eliminare con accuratezza tutti i corpi esterni e depositi di ogni genere presenti all'interno e all'esterno del dispositivo di sicurezza, verificare il corretto funzionamento delle parti mobili e sostituire se necessario ove presenti guarnizioni e molle appena perdono di efficacia e/o di efficienza.

Per qualsiasi informazione contattare il costruttore:

RIDART S.R.L.
21045 Gazzada Schianno (VA) Italy
Tel. (+39) 0332 463301
Email: commerciale@ridart.it
Web: www.ridart.it e www.ridart.it/support

X - Pericolo di esplosione!
La mancata osservanza delle istruzioni contenute in questo capitolo può portare a severi danni alle persone e all'ambiente! Tali istruzioni non prescindono da un utilizzo appropriato dell'attrezzatura e dalle istruzioni riportate nel manuale di istruzioni generico.

2	8/07/16	Traduzione testi in Inglese, Francese e Tedesco	Favarin D.	Meneghini D.
1	18/05/16	Modifiche richieste Organo Controllo	Favarin D.	Meneghini D.
0	1/07/09	Prima emissione	Meneghini D.	Meneghini D.
Revisione	**Data**	**Descrizione**	**Verificato**	**Approvato**

GENERALITA'

Le attrezzature **RIDART S.R.L.** non presentano sorgenti di accensione in condizioni di funzionamento normale e di disfunzione prevista purché siano adottate le seguenti misure:

- Corretta installazione.
- Utilizzo nel range di funzionamento definito sulla scheda tecnica del prodotto.
- Adozione delle presenti istruzioni aggiuntive.
- Utilizzo di ricambi autorizzati.
- Non apportare nessuna modifica ai sistemi.

CONDUTTIVITA' ELETTRICA

Tutta l'attrezzatura è costruita in modo da garantire la conducibilità. L'utilizzatore deve preoccuparsi di garantire la continuità con l'impianto e che esso sia messo a terra conformemente ai requisiti cogenti applicabili incluse le indicazioni della TR 50404.

CLASSE di TEMPERATURA

La temperatura superficiale dell'attrezzatura dipende dalla temperatura del fluido convogliato. Assicurarsi che la temperatura massima del fluido non sia superiore a quella massima di superficie ammessa dalla zona di impiego.

ATTENZIONE Per l'utilizzo in aree con presenza di gas la temperatura massima di superficie è definita sui documenti di adempimento alla Direttiva 99/92/CE e rispetta la seguente convenzione.
L'irraggiamento solare o da altre fonti di calore può causare un innalzamento della temperatura superficiale.

CLASSE DI TEMPERATURA	MASSIMA TEMPERATURA DI SUPERFICIE (°C)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

PULIZIA e MANUTENZIONE

L'attrezzatura deve essere adeguatamente immagazzinata, movimentata e mantenuta onde prevenire l'ingresso di materiale ed il deposito di polvere tra le parti mobili. Le attività di manutenzione devono essere svolte esclusivamente da personale specializzato e secondo quanto definito nel manuale di istruzioni generico e con utensili conformi a quanto definito nell'Appendice A della norma UNI EN 1127-1 ed assicurandosi che non vi sia presenza di atmosfera esplosiva.

GARANZIA

- I prodotti sono garantiti per un anno (dalla data di fatturazione) contro tutti i difetti di fabbricazione da noi riconosciuti.
- Eventuali modifiche o manomissioni del prodotto avranno come conseguenza la perdita della garanzia e la possibile perdita di efficacia e efficienza del prodotto stesso.
- Se non verranno da noi installate, non potrà essere preteso alcun indennizzo supplementare al costo stesso della attrezzatura e per qualsiasi causa.

Sede operativa RIDART S.R.L.
Via Adua 17 – 21040 Gazzada Schianno (VA)
Tel. +39 0332 463301
Fax +39 0332 873065
commerciale@ridart.it

Sede legale RIDART S.R.L.
Via A. da Brescia, 2
21013 Gallarate (VA)
C.C.I.A.A. Varese 183072
C.F e P.IVA 01454770122

DECLARATION OF CONFORMITY EU
DICHIARAZIONE DI CONFORMITA' UE

CE 0477

Manufacturer's name
Nome del costruttore

RIDART S.R.L.

Manufacturer's address
Indirizzo del costruttore

Via Adua 17 - Gazzada Schianno (VA)

Herewith declares conformity of the Products
Dichiara con la presente la conformità del prodotto

Product description
Descrizione del prodotto

OVERFILL PREVENTION valve - Valvola limitatrice 440 B EN (s.n. 2017)

Marking
Marcatura

II 1 G c IIB

Certificate Number edit by Consorzio Europeo Certificazione, Notified Body Number 1131
Numero di certificato emesso da Consorzio Europeo Certificazione, Organismo Notificato Numero 1131

CEC 09 ATEX 070

Production Quality Assurance Notification edit by Eurofins Product Testing Italy S.r.l. Notified Body Number 0477
Notifica Garanzia Qualità Produzione emesso da Eurofins Product Testing Italy S.r.l. Organismo Notificato N. 0477

EPT 16 ATEX 2393 Q

In accordance with applicable regulations below:
Soddisfa la seguente Direttiva:

EU Directive / Direttiva UE: **2014/34/UE - ATEX**

As in accordance to the European Harmonized Standards applied when the certificate was issued:
In quanto conforme alle Norme Europee Armonizzate applicabili alla data di emissione del certificato sopra indicato:

EN 13463-1:2009;
EN 13463-5:2011;
EN 1127-1:2011;
EN 13616:2004;

Gazzada Schianno lì 13 marzo 2017

firma
Davide Meneghini (CEO)

INSTALLATION, USE, MAINTENANCE and SAFETY INSTRUCTIONS

OVERFILL PREVENTION VALVE

RIDART 440 B EN

HOMOLOGATION: CEC 09 ATEX 070 09/2039– AET 543

FEATURES

Mechanical safety device to be installed on fuel plants or chemical products (technical data sheet available on our website).

INSTALLATION and POSITIONING

Used on pipes where required, under the manhole, in a vertical position so that the tank is filled to a maximum 90% of its total capacity, refer to the specific approval of the Italian “Ministry of Internal” and the schemes on facility available at our website, the floater must be under the seal.

MAINTENANCE

Frequency depends on product’s using and foreign bodies in the pipe. If it’s possible removing and cleaning at least once every 12 months, intensify the maintenance in heavy using, carefully remove all external bodies and deposits, inside and outside of the safety device, check the proper functioning of moving parts and replace if necessary any seals and springs when their effectiveness and efficiency decrease.

For any questions call the manufacturer:

RIDART S.R.L.

21045 Gazzada Schianno (VA) Italy
Tel. (+39) 0332 463301
Email: commerciale@ridart.it
Web: www.ridart.it e www.ridart.it/support

X Danger Explosion**!**

Failure to follow the instructions contained in this section may lead to severe damage to people and environment! These instructions do not disregard the proper use of the equipment and the instruction manual of generic instructions.

GENERAL

All RIDART's equipment are not sources of ignition in normal operation or in malfunction conditions, you have to respect these following instructions:

- Correct installation.
- Use only into the operating range defined in the Product Data Sheet
- Use all additional instructions.
- Use only RIDART and authorized spare parts.
- Make no changes to the systems.

ELECTRICAL CONTINUITY

All RIDART's equipment are made to ensure the electrical conductivity.
The user and the installer must take care to ensure continuity with the system and the grounding in accordance with legal requirements including in TR 50404.

TEMPERATURE CLASS

The equipment surface temperature depends on the temperature of the fluid conveyed. The maximum temperature of the fluid must be less than allowed maximum surface area of use.

ATTENTION! For use in areas with gas the maximum surface temperature is defined on the documents for the implementation of the Directive 99/92/EC and complies with the following convention. The sunlight or close to other heat sources may cause an increase in the surface temperature.

Temperature Class	Max Surface Temp. (C°)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

CLEANING and MAINTENACE

The equipment must be properly stored, handled and maintained in order to prevent the external material in and the dust deposition between the moving parts. The maintenance activities must be carried out by specialist personnel, done as defined in the manual of general instructions with right tools like in Appendix A of the UNI EN 1127-1 and without explosive atmosphere.

WARRANTY

- Products are warranted for one year (from invoice's data) against all manufacturing defects that we recognized.
- Any product 's modifications or tampering will lose your warranty and equipment's effectiveness and efficiency, please don't do it.
- Any extra compensation cannot be demand, if we don't install equipment or for any other reason.

INSTRUCTIONS D'INSTALLATION, UTILISATION, ENTRETIEN et SECURITE

LIMITEUR DE REMPLISSAGE
RIDART 440 B EN

HOMOLOGATION: CEC 09 ATEX 070 09/2039– AET 543

CARACTÉRISTIQUES
Limiteur de remplissage (fiche technique/**s**chéma disponible sur notre site).

INSTALLATION
Montage direct sur tube, sous le trou d'homme dans une position verticale, de sorte que le réservoir est rempli jusqu'à un maximum de 90% de sa capacité totale. Reportez-vous à l'approbation spécifique du ministère de l'Intérieur (Italienne) et les schémas de système disponibles sur notre site Web, le cas échéant, vérifier que le flotteur est en dessous du joint.

MAINTENANCE
Entretien dépend de l'utilisation du produit et à la présence de corrosion dans la tuyauterie, chaque année, une inspection/nettoyage sera réalisée par de personnel habilité La première intervention devra avoir lieu au plus tard 12 mois après la mise en service , intensifier l'entretien dans des conditions d'utilisation intensive, éliminer avec précision tout genre des corps qu'ils ce dépôt à l'intérieur et à l'extérieur du dispositif de sécurité. vérifier le bon fonctionnement des pièces mobiles et remplacer si nécessaire tout joints et ressort de limiteur de remplissage permettant le bon fonctionnement.

Pour toute information s'il vous plaît contacter le fabricant:

RIDART S.R.L.
21045 Gazzada Schianno (VA) Italy
Tel. (+39) 0332 463301
Email: commerciale@ridart.it
Web: www.ridart.it e www.ridart.it/support

X - Risque d'explosion

Le non-respect des instructions contenues dans la présente section peut conduire à de graves dommages aux personnes et l'environnement! Ces instructions ne tiennent pas compte de l'utilisation appropriée de l'équipement et le manuel d'instruction génériques.

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GENERALITES'

Tous les équipements RIDART ne sont pas des sources d'ignition en fonctionnement normal ou dans des conditions de dysfonctionnement, vous devez respecter ces instructions suivantes:

- Installation correcte.
- Il ne faut pas dépasser le fonctionnement définie dans la fiche technique du produit.
- Utilisez toutes les instructions supplémentaires.
- Utilisez uniquement les pièces de rechange autorisées.
- Ne modifiez pas les systèmes.

CONDUCTIVITE ' ELECTRIC

Tous les équipements RIDART sont fabriqué pour assurer la conductivité électrique. L'utilisateur et l'installateur doit prendre soin d'assurer la continuité avec le système et mise à la terre conformément aux exigences légales, y compris dans TR 50404.

CLASSE de TEMPÉRATURE

La température de la surface de l'équipement dépend de la température du fluide convoyé. Assurez-vous que la température maximale du fluide soit inférieure à celle maximum de surface d'utilisation autorisée.

ATTENTION! Pour une utilisation dans des zones où il y a la présence de gaz, la température de surface maximale est définie sur les documents pour la mise en œuvre de la directive 99/92/CE est conforme à la convention suivante. La lumière du soleil ou à proximité d'autres sources de chaleur peuvent provoquer une augmentation de la température de surface.

Temperature Class	Max Surface Temp. (C°)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

NETTOYAGE et MAINTENANCE

L'équipement doit être correctement stocké, manipuler et maintenu afin d'éviter la filtration de matière et le dépôt de poussière entre les parties mobiles. Les activités de maintenance doivent être effectués par de personnel spécialisé ayant une connaissance des risques et des moyens à mettre en oeuvre pour les prévenir, selon la définition rapporté dans le manuel d'instructions générales avec des outils conforme comme dans l'annexe A de la norme **UNI EN 1127-1** s'assurer qu'il n'y pas présence des risques associés à l'atmosphères: intoxication, inflammation, explosion.

GARANTIE

- Les produits sont garantis pendant 12 mois à partir de la date de facturation (sauf conditions particulières).
- Toute modification ou reparation réalisée sur les produits donnera lieu à la perte de la garantie et il peut provoquer le dysfonctionnement de produit.
- Toute les installations doivent être réalisée par le constructeur , dans les cas contraire Il ne peut pas être réclamé des indemnités supplémentaires pour aucun raison.

INSTALLATION, NUTZUNG, WARTUNG und Sicherheitshinweise

LOAD VENTIL

RIDART 440 B EN

HOMOLOGATION: CEC 09 ATEX 070 09/2039– AET 543

EIGENSCHAFTEN
Mechanische Sicherheitsvorrichtung installiert werden auf Entlüftungen Brennstoffanlagen oder chemischen Erzeugnissen (technisches Datenblatt auf unserer Website).

INSTALLATION und AUFSTELLUNG
Auf Rohren, wo erforderlich, unter den Schacht, in einer vertikalen Position, so dass der Tank bis zu einem Maximum 90% seiner Gesamtkapazität gefüllt ist, beziehen sich auf die ausdrückliche Zustimmung des italienischen "Innen Ministerium" und die Regelungen über die Anlage zur Verfügung zu unserer Website muss der Schwimmer unter dem Siegel sein.

INSTANDHALTUNG
Frequency depends on product's using and foreign bodies in the pipe. If it's possible removing and cleaning at least once every 12 months, intensify the maintenance in heavy using, carefully remove all external bodies and deposits, inside and outside of the safety device, check the proper functioning of moving parts and replace if necessary any seals and springs when their effectiveness and efficiency decrease.

Bei Fragen rufen Sie den Hersteller:

RIDART S.R.L.
21045 Gazzada Schianno (VA) Italy
Tel. (+39) 0332 463301
Email: commerciale@ridart.it
Web: www.ridart.it e www.ridart.it/support

X - Gefahr Explosion!
Wenn die Anweisungen in diesem Abschnitt enthaltenen folgen kann zu schweren Schäden für Menschen und Umwelt führen! Diese Anweisungen ignorieren nicht die ordnungsgemäße Verwendung der Ausrüstung und der Bedienungsanleitung allgemeine Anweisungen.

GENERAL

Alle RIDART der Geräte keine Zündquellen im Normalbetrieb oder bei Störung Bedingungen sind, müssen Sie diese folgenden Hinweise zu beachten:

• Die korrekte Installation.
• Verwenden Sie nur in den Arbeitsbereich im Produktdatenblatt definiert
• Verwenden Sie alle weiteren Anweisungen.
• Verwenden Sie nur RIDART und autorisierte Ersatzteile .
• Nehmen Sie keine Änderungen an den Systemen.

ELEKTROGANG

Die gesamte Ausrüstung des RIDART gemacht werden, die elektrische Leitfähigkeit zu gewährleisten.
Der Benutzer und der Installateur muss darauf achten, die Kontinuität mit dem System und der Erdung in Übereinstimmung zu gewährleisten, mit den gesetzlichen Vorschriften, einschließlich in TR 50404.

TEMPERATURKLASSE

Die Ausrüstung Oberflächentemperatur hängt von der Temperatur des Fluids gefördert wird. Die maximale Temperatur des Fluids muss kleiner sein als maximal zulässige Oberfläche der Nutzung.

ACHTUNG! Für den Einsatz in Bereichen mit Gas wird die maximale Oberflächentemperatur auf den für die Durchführung der Richtlinie 99/92 / EG festgelegt und entspricht der folgenden Konvention. Das Sonnenlicht oder in der Nähe anderer Wärmequellen kann eine Erhöhung der Oberflächentemperatur führen.

Temperature Class	Max Surface Temp. (C°)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

Reinigung und Instandhaltung

Das Gerät muss ordnungsgemäß gelagert werden, behandelt und gepflegt, um das äußere Material in und die Staubablagerung zwischen den beweglichen Teilen zu verhindern. Die Wartungsarbeiten müssen von Fachpersonal durchgeführt werden, erfolgen, wie im Handbuch der allgemeinen Anweisungen mit richtigen Werkzeugen definiert, wie in Anhang A des UNI EN 1127-1 und ohne explosionsfähige Atmosphäre.

GARANTIE

• Die Produkte werden für ein Jahr (von Rechnungen Daten) gegen alle Fabrikationsfehler garantiert, dass wir anerkannt.
• Jedes Produkt, 's Änderungen und Manipulationen wird die Garantie und Ausrüstung Effektivität und Effizienz verlieren, fügen Sie es nicht tun.
• Jede zusätzliche Kompensation kann nicht gefragt sein, wenn wir aus einem anderen Grund nicht Ausrüstung installieren oder.

ISTRUZIONI DI INSTALLAZIONE, USO, MANUTENZIONE e SICUREZZA

SATURATORE FILETTATO CON ROMPI-FIAMMA

RIDART 150 EN e 150 EN-P

OMOLOGAZIONE : CEC 12 ATEX 072 – Rev.2 - 12/2029 – AET 997

CARATTERISTICHE

Saturatore filettato con rompi-fiamma in linea (scheda tecnica disponibile sul nostro sito web).

POSIZIONAMENTO ed INSTALLAZIONE

Viene utilizzato su tubazioni in linea ove richiesto, solo in posizione verticale.

MANUTENZIONE

La frequenza dipende dall'utilizzo del prodotto e dalla presenza di corpi estranei nelle tubazioni. Consigliata la rimozione ove possibile e la pulizia del rompifiamma almeno una volta ogni 12 mesi, intensificare la manutenzione in condizioni di uso gravoso, eliminare con accuratezza tutti i corpi esterni e depositi di ogni genere presenti all'interno e all'esterno del dispositivo di sicurezza, verificare il corretto funzionamento delle parti mobili e sostituire se necessario ove presenti guarnizioni e molle appena perdono di efficacia e/o di efficienza.

Per qualsiasi informazione contattare il costruttore:
RIDART S.R.L.
21045 Gazzada Schianno (VA) Italy
Tel. (+39) 0332 463301
Email: commerciale@ridart.it
Web: www.ridart.it e www.ridart.it/support

Attenzione!

Pericolo di esplosione!
La mancata osservanza delle istruzioni contenute in questo capitolo può portare a severi danni alle persone e all'ambiente! Tali istruzioni non prescindono da un utilizzo appropriato dell'attrezzatura e dalle istruzioni riportate nel manuale di istruzioni generico.

Revisione	Data	Descrizione	Verificato	Approvato
3	23/05/16	Aggiunta traduzione in francese ed inglese	Favarin D.	Meneghini D.
2	29/02/16	Aggiornamento Organo Controllo Produzione	Favarin D.	Meneghini D.
1	23/02/16	Modifiche richieste Organo Controllo	Favarin D.	Meneghini D.
0	8/10/13	Prima emissione	Meneghini D.	Meneghini D.

GENERALITA'

Le attrezzature **RIDART S.R.L.** non presentano sorgenti di accensione in condizioni di funzionamento normale e di disfunzione prevista purché siano adottate le seguenti misure:

- Corretta installazione.
- Utilizzo nel range di funzionamento definito sulla scheda tecnica del prodotto.
- Adozione delle presenti istruzioni aggiuntive.
- Utilizzo di ricambi autorizzati.
- Non apportare nessuna modifica ai sistemi.

CONDUTTIVITA' ELETTRICA

Tutta l'attrezzatura è costruita in modo da garantire la conducibilità. L'utilizzatore deve preoccuparsi di garantire la continuità con l'impianto e che esso sia messo a terra conformemente ai requisiti cogenti applicabili incluse le indicazioni della TR 50404.

CLASSE di TEMPERATURA

La temperatura superficiale dell'attrezzatura dipende dalla temperatura del fluido convogliato. Assicurarsi che la temperatura massima del fluido non sia superiore a quella massima di superficie ammessa dalla zona di impiego.

ATTENZIONE Per l'utilizzo in aree con presenza di gas la temperatura massima di superficie è definita sui documenti di adempimento alla Direttiva 99/92/CE e rispetta la seguente convenzione.
L'irraggiamento solare o da altre fonti di calore può causare un innalzamento della temperatura superficiale.

CLASSE DI TEMPERATURA	MASSIMA TEMPERATURA DI SUPERFICIE (°C)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

PULIZIA e MANUTENZIONE

L'attrezzatura deve essere adeguatamente immagazzinata, movimentata e mantenuta onde prevenire l'ingresso di materiale ed il deposito di polvere tra le parti mobili. Le attività di manutenzione devono essere svolte esclusivamente da personale specializzato e secondo quanto definito nel manuale di istruzioni generico e con utensili conformi a quanto definito nell'Appendice A della norma UNI EN 1127-1 ed assicurandosi che non vi sia presenza di atmosfera esplosiva.

GARANZIA

- I prodotti sono garantiti per un anno (dalla data di fatturazione) contro tutti i difetti di fabbricazione da noi riconosciuti.
- Eventuali modifiche o manomissioni del prodotto avranno come conseguenza la perdita della garanzia e la possibile perdita di efficacia e efficienza del prodotto stesso.
- Se non verranno da noi installate, non potrà essere preteso alcun indennizzo supplementare al costo stesso della attrezzatura e per qualsiasi causa.

Sede operativa RIDART S.R.L.
Via Adua 17 – 21040 Gazzada Schianno (VA)
Tel. +39 0332 463301
Fax +39 0332 873065
commerciale@ridart.it

Sede legale RIDART S.R.L.
Via A. da Brescia, 2
21013 Gallarate (VA)
C.C.I.A.A. Varese 183072
C.F e P.IVA 01454770122

DECLARATION OF CONFORMITY EU
DICHIARAZIONE DI CONFORMITA' UE

CE 0477

Manufacturer's name
Nome del costruttore — **RIDART S.R.L.**

Manufacturer's address
Indirizzo del costruttore — **Via Adua 17 - Gazzada Schianno (VA)**

Herewith declares conformity of the Products
Dichiara con la presente la conformità del prodotto

Product description:
Descrizione del prodotto — **Flame arrestor - Rompifiamma**
150 EN (s.n. 2017) ; 150 EN-P (s.n. 2017)

Marking
Marcatura — **II G IIA**

Certificate Number edit by Consorzio Europeo Certificazione, Notified Body Number 1131
Numero di certificato emesso da Consorzio Europeo Certificazione, Organismo Notificato Numero 1131
CEC 12 ATEX 072 – Rev.2

Production Quality Assurance Notification edit by Eurofins Product Testing Italy S.r.l. Notified Body Number 0477
Notifica Garanzia Qualità Produzione emesso da Eurofins Product Testing Italy S.r.l. Organismo Notificato N. 0477
EPT 16 ATEX 2393 Q

In accordance with applicable regulations below:
Soddisfa la seguente Direttiva:

EU Directive / Direttiva UE: **2014/34/UE - ATEX**

As in accordance to the European Harmonized Standards applied when the certificate was issued:
In quanto conforme alle Norme Europee Armonizzate applicabili alla data di emissione del certificato sopra indicato:

EN ISO 16852:2010

Gazzada Schianno lì 13 marzo 2017

firma
Davide Meneghini (CEO)

RIDART

STAGE 1 AIR SEPARATOR

L'aria in entrata in cisterna attraversa prima il contenuto della vaschetta in modo da saturarsi di vapori di carburante

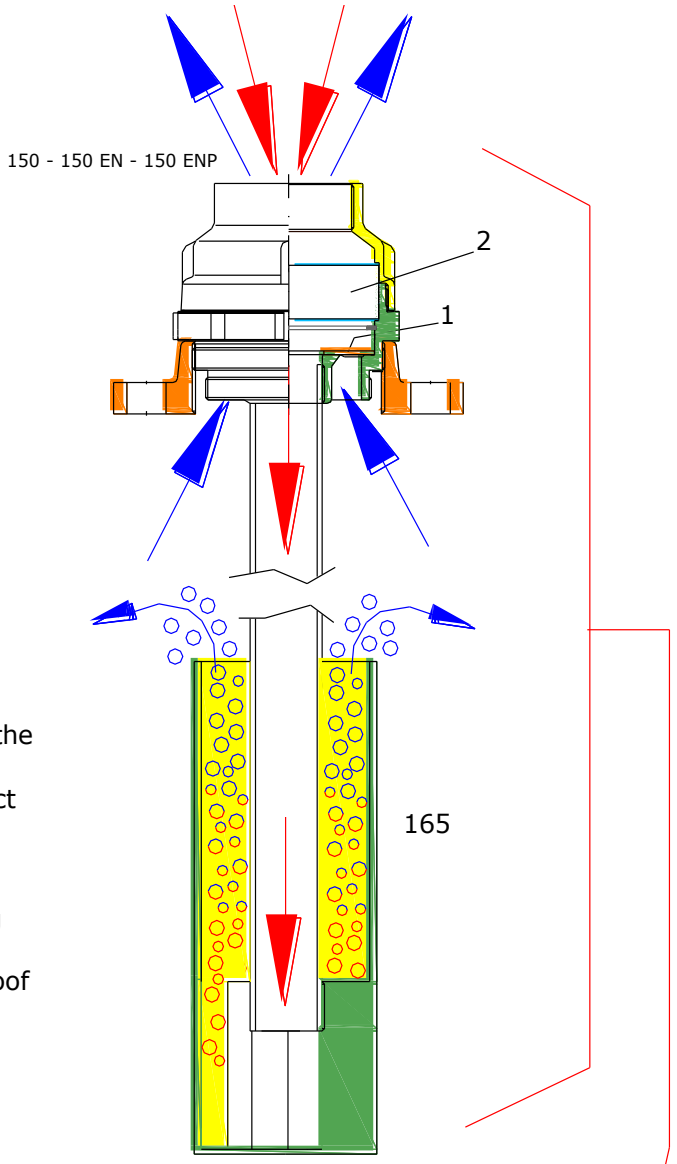
Air which comes inside the tank, passes through the container 165. In this way air changes into fuel vapour.

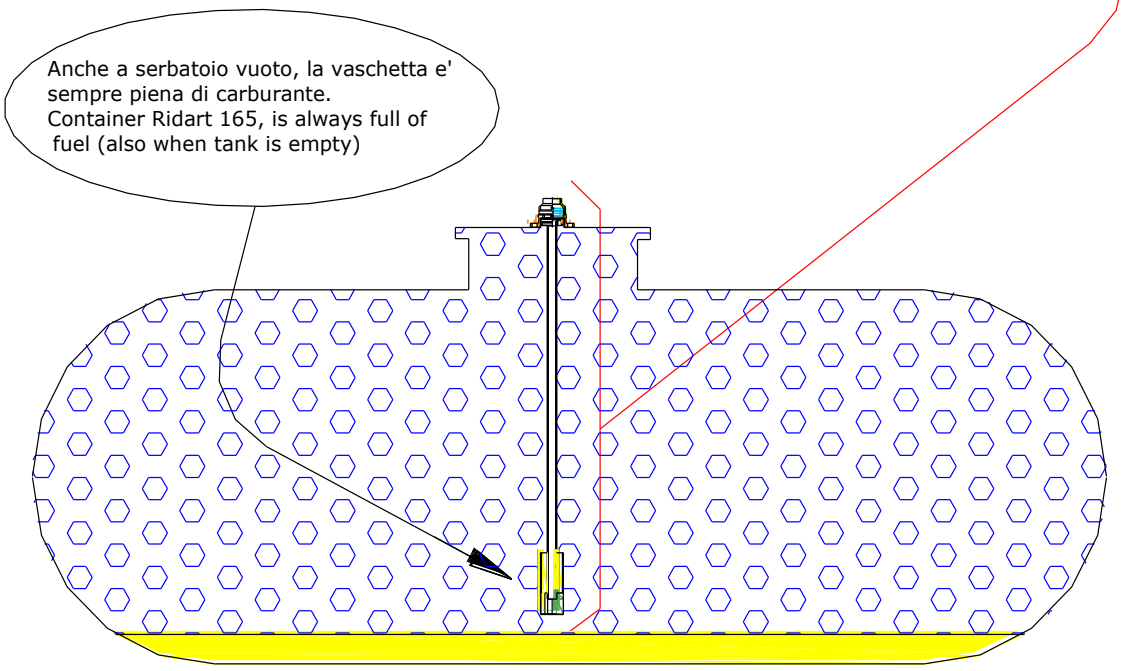
Il vapore in uscita solleva l'anello separatore 1 (10 mbar) e si incanala nel condotto superiore

Fuel vapour which gets out, lifts the saparating ring 1 (10 mbar max) flowing up through the vapour duct on the top.

1 Anello separatore - separating ring

2 Elemento rompifiamma - flame proof





INSTALLATION, USE, MAINTENANCE and SAFETY INSTRUCTIONS

GAS RECOVERY VALVE STAGE 1 WITH FLAME PROOF

RIDART 150 EN e 150 EN-P

HOMOLOGATION: CEC 12 ATEX 072 – Rev.2 - 12/2029 – AET 997

FEATURES
Mechanical safety device to be installed on vents fuel plants or chemical products (technical data sheet available on our website).

INSTALLATION and POSITIONING
Use device where is required, only in vertical position, diagrams available on our web site.

MAINTENANCE
Frequency depends on product's using and foreign bodies in the pipe. If is possible removing and cleaning flame arrestor at least once every 12 months, intensify the maintenance in heavy using, carefully remove all external bodies and deposits, inside and outside of the safety device, check the proper functioning of moving parts and replace if necessary any seals and springs when their effectiveness and efficiency decrease.

For any questions call the manufacturer:

RIDART S.R.L.
21045 Gazzada Schianno (VA) Italy
Tel. (+39) 0332 463301
Email: commerciale@ridart.it
Web: www.ridart.it e www.ridart.it/support

X - Danger Explosion!
Failure to follow the instructions contained in this section may lead to severe damage to people and environment! These instructions do not disregard the proper use of the equipment and the instruction manual of generic instructions.

GENERAL

All RIDART's equipment are not sources of ignition in normal operation or in malfunction conditions, you have to respect these following instructions:

- Correct installation.
- Use only into the operating range defined in the Product Data Sheet
- Use all additional instructions.
- Use only RIDART and authorized spare parts.
- Make no changes to the systems.

ELECTRICAL CONTINUITY

All RIDART's equipment are made to ensure the electrical conductivity.
The user and the installer must take care to ensure continuity with the system and the grounding in accordance with legal requirements including in TR 50404.

TEMPERATURE CLASS

The equipment surface temperature depends on the temperature of the fluid conveyed. The maximum temperature of the fluid must be less than allowed maximum surface area of use.

ATTENTION! For use in areas with gas the maximum surface temperature is defined on the documents for the implementation of the Directive 99/92/EC and complies with the following convention. The sunlight or close to other heat sources may cause an increase in the surface temperature.

Temperature Class	Max Surface Temp. (C°)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

CLEANING and MAINTENACE

The equipment must be properly stored, handled and maintained in order to prevent the external material in and the dust deposition between the moving parts. The maintenance activities must be carried out by specialist personnel, done as defined in the manual of general instructions with right tools like in Appendix A of the UNI EN 1127-1 and without explosive atmosphere.

WARRANTY

- Products are warranted for one year (from invoice's data) against all manufacturing defects that we recognized.
- Any product 's modifications or tampering will lose your warranty and equipment's effectiveness and efficiency, please don't do it.
- Any extra compensation cannot be demand, if we don't install equipment or for any other reason.

INSTRUCTIONS D'INSTALLATION, UTILISATION, ENTRETIEN et SECURITE

SATURATEUR TARAUDE AVEC ARRÊT-FLAMMES

RIDART 150 EN e 150 EN-P

HOMOLOGATION: CEC 12 ATEX 072 – Rev.2 - 12/2029 – AET 997

CARACTÉRISTIQUES

Saturateur taraudé avec arrêt-flammes en ligne (fiche technique/**s**chéma disponible sur notre site).

INSTALLATION

A utiliser où est nécessaire, installer sur tube en ligne uniquement en position verticale.

MAINTENANCE

Entretien dépend de l'utilisation du produit et à la présence de corrosion dans la tuyauterie, chaque année, une inspection/nettoyage sera réalisée par de personnel habilité La première intervention devra avoir lieu au plus tard 12 mois après la mise en service , intensifier l'entretien dans des conditions d'utilisation intensive, éliminer avec précision tout genre des corps qu'ils ce dépôt à l'intérieur et à l'extérieur du dispositif de sécurité. vérifier le bon fonctionnement des pièces mobiles et remplacer si nécessaire tout joints et ressort de saturateur taraude permettant le bon fonctionnement.

Pour toute information s'il vous plaît contacter le fabricant:

RIDART S.R.L.
21045 Gazzada Schianno (VA) Italy
Tel. (+39) 0332 463301
Email: commerciale@ridart.it
Web: www.ridart.it e www.ridart.it/support

X - Risque d'explosion

Le non-respect des instructions contenues dans la présente section peut conduire à de graves dommages aux personnes et l'environnement! Ces instructions ne tiennent pas compte de l'utilisation appropriée de l'équipement et le manuel d'instruction génériques.

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GENERALITES'

Tous les équipements RIDART ne sont pas des sources d'ignition en fonctionnement normal ou dans des conditions de dysfonctionnement, vous devez respecter ces instructions suivantes:

- Installation correcte.
- Il ne faut pas dépasser le fonctionnement définie dans la fiche technique du produit.
- Utilisez toutes les instructions supplémentaires.
- Utilisez uniquement les pièces de rechange autorisées.
- Ne modifiez pas les systèmes.

CONDUCTIVITE ' ELECTRIC

Tous les équipements RIDART sont fabriqué pour assurer la conductivité électrique. L'utilisateur et l'installateur doit prendre soin d'assurer la continuité avec le système et mise à la terre conformément aux exigences légales, y compris dans TR 50404.

CLASSE de TEMPÉRATURE

La température de la surface de l'équipement dépend de la température du fluide convoyé. Assurez-vous que la température maximale du fluide soit inférieure à celle maximum de surface d'utilisation autorisée.

ATTENTION! Pour une utilisation dans des zones où il y a la présence de gaz, la température de surface maximale est définie sur les documents pour la mise en œuvre de la directive 99/92/CE est conforme à la convention suivante. La lumière du soleil ou à proximité d'autres sources de chaleur peuvent provoquer une augmentation de la température de surface.

Temperature Class	Max Surface Temp. (C°)
T1	450
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NETTOYAGE et MAINTENANCE

L'équipement doit être correctement stocké, manipuler et maintenu afin d'éviter la filtration de matière et le dépôt de poussière entre les parties mobiles. Les activités de maintenance doivent être effectués par de personnel spécialisé ayant une connaissance des risques et des moyens à mettre en oeuvre pour les prévenir, selon la définition rapporté dans le manuel d'instructions générales avec des outils conforme comme dans l'annexe A de la norme **UNI EN 1127-1** s'assurer qu'il n'y pas présence des risques associés à l'atmosphères: intoxication, inflammation, explosion.

GARANTIE

- Les produits sont garantis pendant 12 mois à partir de la date de facturation (sauf conditions particulières).
- Toute modification ou reparation réalisée sur les produits donnera lieu à la perte de la garantie et il peut provoquer le dysfonctionnement de produit.
- Toute les installations doivent être réalisée par le constructeur , dans les cas contraire Il ne peut pas être réclamé des indemnités supplémentaires pour aucun raison.

Industry & Facilities Division

INSPECTION CERTIFICATE N° M53727/18 rev.1

BV Job Nr: 18.IT.3104656.139

PROJECT: *//*	***Ref.:*** *//*
BV Client: *EMILIANA SERBATOI SRL*	***Ref.:***
Supplier: *//*	***Ref.:***
Manufacturer: *//*	***Ref:***
Inspection requested by: *EMILIANA SERBATOI SRL*	

SUPPLY / SUBJECT OF INSPECTION	TAG	Q.TY
TANK FUEL 1000	/	/
TANK FUEL 1300	/	/
TANK FUEL 2400	/	/
TANK FUEL 3000	/	/
TANK FUEL 5000	/	/
TANK FUEL 6000	/	/
TANK FUEL 7000	/	/
TANK FUEL 9000	/	/
TANK FUEL 12000	/	/
TANK FUEL 15000	/	/
TANK FUEL 20000	/	/
TANK FUEL 30000	/	/

As per EMILIANA SERBATOI SRL request our scope of works was to verify that the equipments in subject are in compliance with the requirements of EN 12285-2:2005. In order to verify that, the following documents have been examined:

1. Technical data sheet nr. Stec_tank fuel rev.6

Emilina Serbatoi Dwgs no.: ES_0323_17; ES_0313_17; ES_0236_17; ES_0324_17;ES_0314_17; ES_0237_17; ES_0325_17; ES_0315_17; ES_0238_17;ES_0326_17; ES_0316_17; ES_0239_17; ES_0327_17; ES_0317_17; ES_0240_17; ES_0328_17; ES_0318_17; ES_0241_17; ES_0329_17; ES_0319_17; ES_0242_17; ES_0330_17; ES_0320_17; ES_0243_17; ES_0331_17; ES_0321_17; ES_0244_17; ES_0332_17; ES_0322_17; ES_0245_17; ES_0001_16; ES_0364_17; ES_0365_17; ES_0366_17; ES_0367_17; ES_0368_17; ES_0369_17; ES_0370_17; ES_0371_17; ES_0372_17; ES_0373_17; ES_0064_18 Rev.1; ES_0065_18; ES_0070_18 Rev.1; ES_0071_18; ES_0067_18 Rev.1; ES_0066_18 Rev.1; ES_0068_18;ES_0069_18;

After the examination of the above documents we declare that the above equipments have been designed in compliance with the standard EN 12285-2:2005 and are suitable for the loading and storage of Diesel and Gasoline.
An additional examination report of technical documentation nr. P5308/17/CC/cc Rev.1 & P5047/18/CC/cc Rev.1 have been issued to certify the above sentence.

The undersigned, inspector to Bureau Veritas, certifies that the here above mentioned supply was inspected in conformity with the applicable requirements of the purchase order and the contractual requirements governing the mission entrusted to Bureau Veritas without any remarks.

Inspected by:
Name: Paolo SANNIA
Signature:
Date of issue: March 23th ,2018

Checked by:
Name: Matteo NICOLETTI
Signature:

Inspection centre: BV Milan – Italy

Distribution: ☒ BV CLIENT

NORMA EUROPEA

Serbatoi di acciaio prefabbricati
Parte 2: Serbatoi orizzontali cilindrici a singola e a doppia parete per depositi fuori-terra di liquidi infiammabili e non infiammabili che possono inquinare l'acqua

UNI EN 12285-2

GIUGNO 2005

Workshop fabricated steel tanks
Part 2: Horizontal cylindrical single skin and double skin tanks for the aboveground storage offlammable and non-flammable water polluting liquids

La norma specifica i requisiti per i serbatoi prefabbricati in acciaio, a singola e a doppia parete per depositi fuori-terra di liquidi inquinanti per l'acqua (sia infiammabili che non infiammabili).

TESTO INGLESE

La presente norma è la versione ufficiale in lingua inglese della norma europea EN 12285-2 (edizione febbraio 2005).

ICS 23.020.10

UNI
Ente Nazionale Italiano di Unificazione
Via Battistotti Sassi, 11B
20133 Milano, Italia

www.uni.com

PREMESSA NAZIONALE

La presente norma costituisce il recepimento, in lingua inglese, della norma europea EN 12285-2 (edizione febbraio 2005), che assume così lo status di norma nazionale italiana.

La presente norma è stata elaborata sotto la competenza dell'ente federato all'UNI

CTI - Comitato Termotecnico Italiano

La presente norma è stata ratificata dal Presidente dell'UNI, con delibera del 19 aprile 2005.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12285-2

February 2005

ICS 23.020.10

English version

Workshop fabricated steel tanks - Part 2: Horizontal cylindrical single skin and double skin tanks for the aboveground storage of flammable and non-flammable water polluting liquids

Réservoirs en aciers fabriqués en atelier - Partie 2: Réservoirs horizontaux à simple et double paroi pour le stockage aérien des liquides inflammables et non inflammables polluant l'eau

Werksgefertigte Tanks aus Stahl - Teil 2: Liegende zylindrische ein- und doppelwandige Tanks zur oberirdischen Lagerung von brennbaren und nichtbrennbaren wassergefährdenden Flüssigkeiten

This European Standard was approved by CEN on 17 December 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 12285-2:2005: E

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Foreword

This document (EN 12285-2:2005) has been prepared by Technical Committee CEN/TC 221 "Shop fabricated metallic tanks and equipment for storage tanks and for service stations", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2005, and conflicting national standards shall be withdrawn at the latest by November 2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of Construction Products Directive (CPD)[1)].

For the relationship with this Directive, see informative Annex ZA, which is an integral Part of this document.

By application of this document presumption is given, that the Essential Safety Requirements of the CPD are met.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1) Directive 89/106/EEC of the European Parliament and the Council of 21 December 1988 on the approximation of the laws of the Member States concerning Construction products (OJEC L 40).

Introduction

This document is part of a family of standards involving shop fabricated tanks and equipment for storage tanks and for service stations (compare listing below and bibliography). Normal ambient temperatures considered in this document are -20 °C to +50 °C. Where temperatures are outside this range it could become necessary to consider further requirements. These could include temperature control measures or material control (see 4.2.2).

CEN/TC 221

Shop fabricated metallic tanks
and
equipment for storage tanks and for service stations

SC 1
Tanks

Underground tanks
(EN 12285-1)

Aboveground tanks
(EN 12285-2)

SC 2
Equipment

Leak detection systems
(EN 13160-1 to -7)

Overfill prevention devices
(EN 13616)

Tank contents gauges
(EN 13352)

Petrol filling stations
(EN 13617-1 to -4,
EN 13012, EN 14125)

1 Scope

This document specifies the requirements for metallic shop fabricated cylindrical, horizontal steel tanks, single and double skin for the aboveground storage of water polluting liquids (both flammable and non-flammable) within the following limits:

— from 800 mm up to 3 000 mm nominal diameter and,

— up to a maximum overall length of 6 times the nominal diameter and,

— for liquids with a maximum density of up to 1,9 kg/l and,

— with an operating pressure (P_o) of maximum 1,5 bar (abs.) and,

— where double skin tanks with a vacuum leak detection system are used the cinematic viscosity of the stored media shall not exceed 5×10^{-3} m^2/s.

This document is applicable for normal ambient temperature conditions (- 20 °C to + 50 °C). Where temperatures are outside this range, additional requirements need to be taken into account.

This document is not applicable for the storage of liquids having dangerous good classes listed in Table 1 because of the special dangers involved.

Table 1 — List of dangerous goods the storage of which are not covered by this document

UN-classification	Storage media
Class 1	Explosives
Class 4.2	Substances liable to spontaneous combustion
Class 4.3	Substances which in contact with water emit flammable gases
Class 5.2	Organic peroxides
Class 6.2	Infectious substances
Class 7	Radioactive material, hydrocyanic or hydrocyanic solvent liquids, metalcarbonyls, hydrofluoracid, bromide liquids

NOTE The classifications referred to are those adopted by the United Nations Committee of Experts on the Transport of Dangerous Goods (not to be interpreted as tank classes described in 3.1.4).

This document does not cover the installation of tanks which might be subject to local regulations involving pollution control.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 287-1, *Qualification test of welders — Fusion welding — Part 1: Steels*

EN 288–2, *Specification and approval of welding procedures for metallic materials — Part 2: Welding procedures specification for arc welding*

EN 10025-2, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10051:1991 + A1:1997, *Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels — Tolerances on dimensions and shape (includes amendment A1:1997)*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 12285-1:2003, *Workshop fabricated steel tanks — Part 1: Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and non-flammable water polluting liquids*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

EN ISO 898-1, *Mechanical properties of fasteners of carbon steel and alloy steel — Part 1: Bolts, screws and studs (ISO 898-1:1999)*

EN ISO 15607, *Specification and qualification of welding procedures for metallic materials — Part 1: General rules (ISO 15607:2003)*

EN ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1:2004)*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
tank
workshop fabricated cylindrical containment for the storage of liquids. It is made of steel, equipped with dished ends and consists of one or more compartments

3.1.2
aboveground tank
tank which is not buried in the ground; (a tank installed in a basement is an aboveground tank)

3.1.3
compartment
single storage fluid space within a tank

3.1.4
tank classes
as defined in Table 2

Table 2 — Tank classes

Tank class	Description
Class A	for liquids with density up to 1,1 kg/l
Class B	for liquids with density up to 1,9 kg/l
Class C	for liquids with density up to 1,9 kg/l and explosion pressure shockproof under atmospheric conditions (see also 3.1.5)

3.1.5
explosion pressure shockproof tank
tank which is designed to withstand an internal explosion without leakage; permanent deformations are permissible. Where the atmospheric pressure is 1 bar the maximum explosion pressure is measured at 10 bar (abs.)

3.1.6
tank type
for the purpose of this document two tank types are distinguished:

Type S: Single skin

Type D: Double skin

3.1.7
operating pressure (P_o)
pressure inside the tank above the liquid during operating conditions

3.1.8
test pressure (P_{t1})
pressure to which the tank or compartment is subjected for testing

3.1.9
interstitial test pressure (P_{t2})
pressure to which the interstitial space between the skins is subjected for testing. It is only applicable for double skin tanks

3.1.10
nominal volume
storage capacity for which the tank is sold

3.1.11
actual volume
total internal capacity of the tank which is equal to or greater than the nominal volume

NOTE The safe working capacity of the tank should normally not exceed 95 % of the nominal volume for mineral oil products. For other liquids the safe working capacity conforms to Equation (1).

$$f = \frac{100}{1 + 35\delta} \qquad (1)$$

where

f is the percentage of nominal volume (%);
δ is the thermal expansion coefficient of the liquid (K).

3.2 Symbols and abbreviations

For the purpose of this document, the following symbols apply.

Dimensions in mm

a Weld thickness

b_1 Width of the saddle

b_2 Width of compensation plate

d_1 External nominal diameter of the tank

d_2 Inside diameter of the manhole

d_3 Diameter of the manhole cover

e_1 Distance between centre of the saddle and the end of the cylindrical part of the tank

h_1 Length of the straight flange of the dished end

k_1 Length of the saddle base

k_p Pitch circle diameter of manway bolts

l_c Length of the compartment of a tank without dished ends

l_o Overall length of the tank

l_z Length of the tank without dished ends

n_1 Distance of the saddle foot to the bottom of the tank

r_1 Crown radius of dished ends

r_2 Knuckle radius of dished ends

r_3 Knuckle radius of the outer dished end

s_1 Nominal thickness of inner skin and inner dished ends

s_2 Interstitial space

s_3 Nominal thickness of outer skin

s_4 Nominal thickness of outer dished ends

s_5 Nominal thickness of compartment dished ends

s_6 Nominal thickness of manhole flange and cover

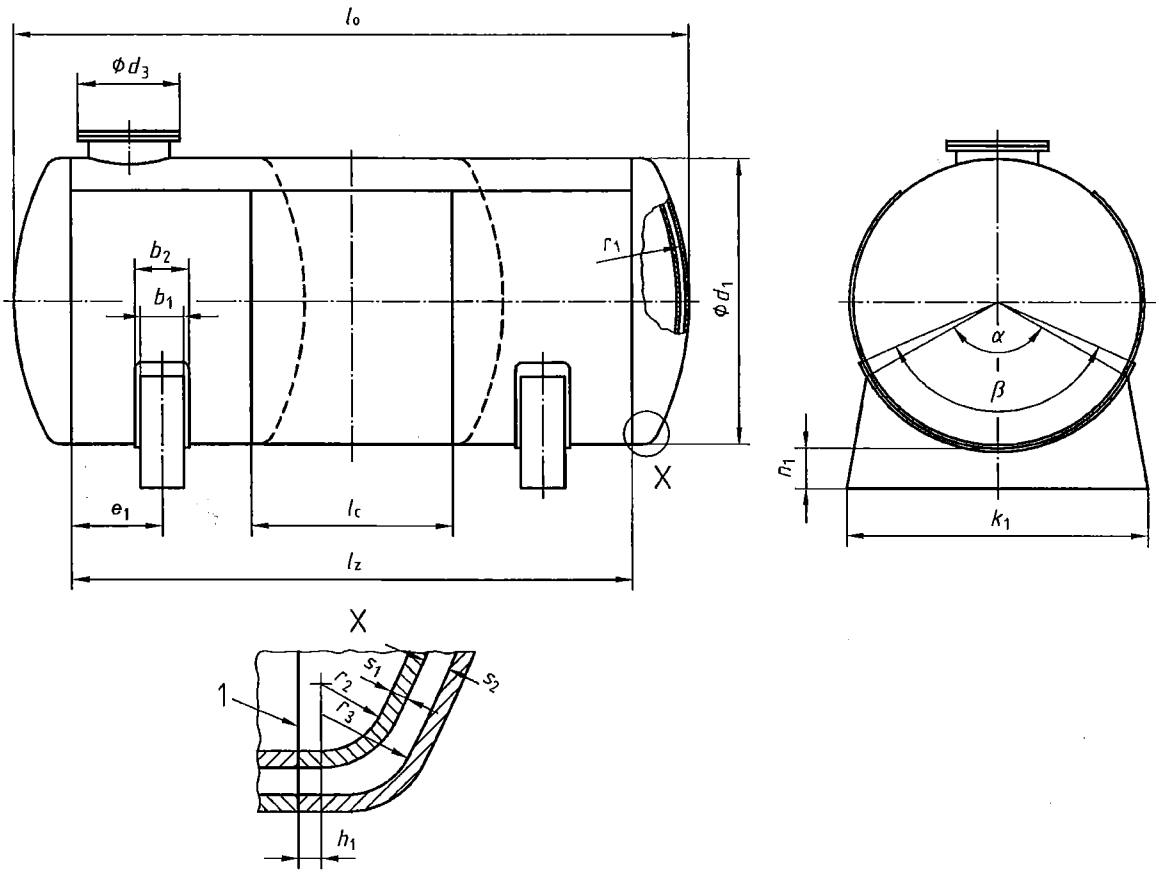
s_7 Plate thickness of manhole body

α Angle of the saddle

β Angle of the compensation plate

γ Incline angle for T-joint welding

δ Thermal expansion coefficient of the liquid



Key

1 Weld

Figure 1 — Example of double skin aboveground tank, symbols

4 Requirements

4.1 Designation and purchaser's specification

Example for designation: A tank according to this document with a nominal volume of 50 m^3 and a nominal diameter d_1 = 2 500 mm, tank class B and type D

Tank EN 12285-2/50/2500/B/D

In addition to the above details the manufacturer shall obtain from the purchaser the following requirements:

a) number of compartments and their volumes;

b) material specification or liquid to be stored;

c) kind of internal and/or external coating, if relevant.

4.2 Materials

4.2.1 General

The manufacturer shall select the tank material in accordance with the purchaser's specific requirements or provide information with the tank concerning the suitability of the tank material for the storage media (e.g. by reference to EN 12285-1:2003, Annex B).

4.2.2 Materials for shell, dished ends and manholes

Steel according to EN 10025-2, EN 10028-2, EN 10028-7 or EN 10088-1 may be used if the mechanical properties are at least equal to those of S 235 JR according to EN 10025-2.

In cases where low temperatures have to be considered (below - 20 °C) at least steel grade S 235 J2G3 according to EN 10025-2 or equal shall be used and in this case wall-thicknesses shall be 6 mm minimum.

4.2.3 Materials for tank fittings

Materials used for the fabrication of tank fittings if welded to the tank shall be compatible with the tank material.

4.2.4 Consumables

All welding rods/wires and other consumables shall be compatible with the basic material.

4.2.5 Material inspection documentation

Material inspection documents for shell plates and dished ends made of carbon steel according to EN 10025-2 shall be in accordance with 3.2 of EN 10204:2004 (Test report "type 2.2"), for all other steel qualities they shall be in accordance with 4.1 of EN 10204:2004 (Inspection certificate 3.1 "type 3.1").

4.3 Design

4.3.1 Forms of construction

Tanks shall be manufactured by using shell plates and dished ends.

4.3.2 Single skin tanks

Single skin tanks shall form an impermeable containment; they also constitute the inner skin of a double skin tank.

4.3.3 Double skin tanks

For double skin tanks, an outer skin is welded around the inner tank, which forms an impermeable self contained tank. The outer skin shall cover at least 95 % of the nominal volume of the inner tank.

There shall be at least two sockets for the leak detection system and these shall be located at the highest point of the interstitial space.

The interstitial space shall be connected to a leak detection system in order to permanently monitor the integrity of the tank. For leak detection systems see EN 13160-1 to -7.

Double wall tanks designed for use with a pressure leak detection system shall have stiffening rings in accordance with 7.12 of EN 12285-1:2003 or alternative designs which shall have no lesser performance.

4.3.4 Dished ends

Dished ends shall be used for external ends of tanks and to separate compartments.

The following dimensions shall apply: $r_1 \leq d_1$

$r_2 \geq d_1 / 30$

4.3.5 Compartments

The nominal wall thickness of dished ends separating the compartments (compartment dished ends) are given in Table 3. For classes A an B a different form of dished ends separating the compartments is possible, where $r_1 = d_1$, but without knuckle radius r_2 and without straight flange.

A compartment dished end with a knuckle radius and a straight flange is equivalent to a reinforcement ring at the same position.

4.3.6 Dimensions

4.3.6.1 Material thickness

The nominal wall thickness of inner tank shell, outer tank shell and dished ends shall be declared by the manufacturer in rounded millimetres, and shall be at least as given in Table 3.

Table 3 — Nominal wall thickness for inner and outer skin tanks, dished ends and compartment dished end

Dimensions in millimetres

Tank classes	Class A		Class B		Class C	
Nominal diameter of the tank d_1	Nominal shell thickness [a]					
	s_1 inner skin	s_3 outer skin	s_1 inner skin	s_3 outer skin	s_1 inner skin	s_3 outer skin
800 up to 1 600	5	3	5	3	5	3
1 601 up to 2 000	6	3	6	3	6	3
2 001 up to 2 500	6	4	7	4	7	4
2 501 up to 3 000	7	4	9	4	9	4
Nominal diameter of the tank d_1	Nominal wall thickness of dished ends					
	s_1 inner skin	s_3 outer skin	s_1 inner skin	s_3 outer skin	s_1 inner skin	s_3 outer skin
800 up to 1 600	5	3	5	3	5	3
1 601 up to 2 000	6	3	6	3	6	3
2 001 up to 2 500	6	5	7	5	7	5
2 501 up to 3 000	7	5	9	5	9	5
Nominal diameter of the tank d_1	Nominal wall thickness of compartment dished ends					
	s_5		s_5		s_5	
800 up to 1 600	5		5		10	
1 601 up to 2 000	6		6		14	
2 001 up to 2 500	6		7		16	
2 501 up to 3 000	7		9		18	

[a] If loose saddles are used see also Table 7.

4.3.6.2 Outer skin

4.3.6.2.1 Circumferential angle

The outer skin shall enclose at least 300° of the circumference of the tank, leaving not more than 60° on the top uncovered.

In cases where the manhole diameter exceeds $d_1/2$, the manhole shall be provided with an outer skin.

4.3.6.2.2 Interstitial space

The interstitial space gap should be as small as practically possible but suitable for the leak detection system to function.

Più Piccolo Possibile ma compatibile con il Sistema di Rilevamento Perdite

4.4 Tolerances

4.4.1 The overall length of the inner tank

The tolerance on the overall length of the tank shall be ± 1 % of the real length stated by the manufacturer.

4.4.2 Wall thickness

The minimum thickness of dished ends after forming shall be at least 92 % of the nominal wall thickness as given in Table 3. Shell plate thickness shall conform to EN 10051:1991+A1:1997, Table 2.

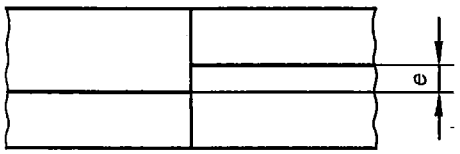
4.4.3 Circumference of dished ends

For the dished ends, the tolerances shall be $^{+6}_{0}$ mm for $d_1 \leq 2\,000$ mm, and $^{+10}_{0}$ mm for $d_1 > 2\,000$ mm based on the calculated circumference of d_1.

4.5 Shell plate arrangement

Cross seams shall not be allowed. Longitudinal welds shall not be allowed in the bottom half of the tank.

Shell plate joints shall be offset, having a minimum distance e of five times the wall thickness but not less than 25 mm.



Key
e Minimum distance

Figure 2 — Shell plate arrangement for inner and outer skin

4.6 Manholes and inspection covers

Unless otherwise specified by the purchaser, the tanks shall be equipped with at least one inspection cover per compartment. In cases where inspection covers are not allowed, the tanks shall have one manhole of at least d_2 = 600 mm and no part of a compartment shall be more than 10 m from a manhole. Single skin tanks shall always have a manhole.

The manufacturer shall decide whether manholes (inspection covers, nozzles) shall be of set-through or set-on-type. Nozzles and flanges shall either be welded inside and outside, or by full penetration.

For the dimensions of the manholes and its components see Table 4.

Gaskets shall be provided and suitable for their purpose.

Table 4 — Dimensions of manhole components

Inside diameter d_2 mm	Plate thickness of manhole body s_7 mm	Diameter of cover d_3 mm	Pitch circle diameter k_p mm	Bolt hole diameter mm	Flange thickness and cover thickness s_6 mm		Bolts	
					Class A	Class B and C	Thread size	Number
600 [a]	6	720	680	18	12	16	M 16	32
800	7	920	880		12	20		44
1 000 [b]	7	1 120	1 080		--	20		48

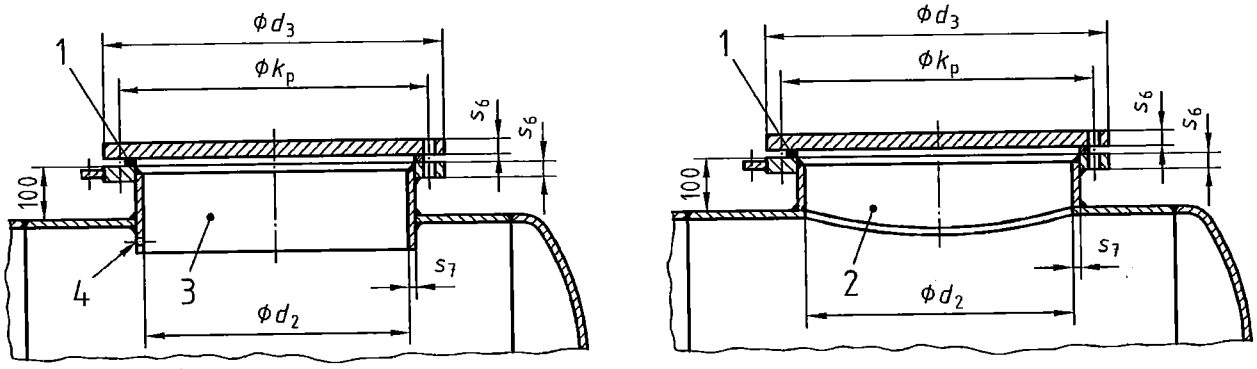
[a] If a manhole is required and no specification is given by the purchaser this diameter shall be used.

[b] For tanks of Class C inside diameters of the manhole (d_2) exceeding 800 mm are not permitted.

Instead of the manhole covers shown in the Figure 3 and dimensioned in Table 4, ribbed or embossed covers may be used in Class A-tanks with a plate thickness at least equal to the thickness of the inner tank s_1. A ribbed or embossed cover shall withstand the test pressure P_{t1} (see Table 9).

Inspection openings shall only be used for tanks of Class A with $d_1 \leq 1\,250$ mm and tanks of Classes B and C with $d_1 \leq 1\,000$ mm. The diameter of the inspection cover shall not be larger than 300 mm and not smaller than 120 mm, and the thickness of the inspection cover shall be equal to the minimum thickness of the inner tank.

Dimensions in millimetres



Key

1 Gasket
2 Set-on nozzle
3 Set-through nozzle
4 Vent or other pressure relief device

Figure 3 — Examples for manholes

4.7 Structural bolts

Bolts used shall be in accordance with EN ISO 898-1, with a property Class being at least 4.6. The material chosen shall be compatible with the tank material.

4.8 Tank fittings, pipes and nozzles

Tank fittings, pipes and nozzles, for double wall tanks shall be situated on the manhole cover or in the single skin top of the tank. For tanks of Class C only the set-through nozzles shall be used. For set-through-nozzles a vent of 10 mm diameter or equivalent opening shall be provided in the manhole neck at the highest practical point.

A penetration of the double skin shall not be allowed (exception: nozzles for leak detection system). Fittings and all other openings shall have a minimum distance of 50 mm from welded seams.

4.9 Saddles, supports

4.9.1 General

When supplied by the manufacturer, saddles shall either be welded to the tank (in accordance with 4.9.2) or as an option may also be supplied as loose saddles (in accordance with 4.9.3), in which case the compensation plates need always to be welded at the tank.

Figure 4 shows an example for a saddle support arrangement.

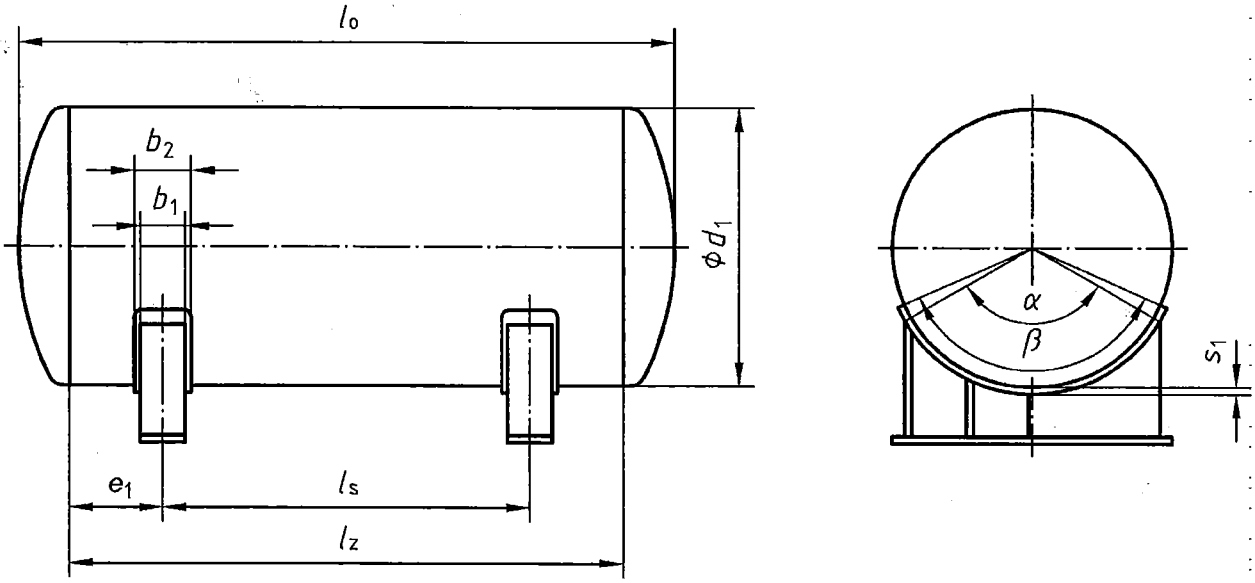


Figure 4 — Example for a saddle support arrangement

4.9.2 Welded saddles

The dimensions of welded saddles and their components shall be as given in Tables 5 and 6.

Narrow saddles are suitable for all surfaces with a minimum ground carrying capacity of 1,9 N/mm². For surfaces having a minimum ground carrying capacity of 0,15 N/mm² broad saddles shall be used where appropriate.

Table 5 — Dimensions of welded saddles

Diameter of the inner shell of the tank in mm	Narrow saddles		Broad saddles	
	Saddle width b_1 in mm	Angle α in degrees	Saddle width b_1 in mm	Angle α in degrees
800 to 1 600	150	120	350	120
1 601 to 2 000	200	125	600	120
2 001 to 2 500	250	150	950	120
2 501 to 3 000	300	150	1 350	120

Table 6 — Dimensions of saddle components

	Narrow saddles	Broad saddles
Angle of compensation plate [a] (β)	α+12°	132°
Width of compensation plate [a] (b_2)	$b_1 + (10 \times s_1)$	b_1 + 50 mm
Thickness of compensation plate	s_1	s_1
Minimum length of saddle base plate (k_1)	$0{,}75 \times d_1$	$0{,}75 \times d_1$
Location of the saddle centreline from the circumferential weld shell/dished end (e_1)	$(0{,}25 \times d_1)\ ^{0}_{-25}$ mm	$b_1/2$ + 100 mm
Minimum height of saddles (n_1)	100 mm	100 mm
Minimum thickness of base plate, body plate, supporting plates and side plates of the saddle	s_1	s_1

[a] Compensation plate corners to be rounded off with a minimum radius of 25 mm.

4.9.3 Loose saddles

The dimensions of loose saddles shall be as given in Table 7, those for their components are the same as those for narrow saddles in Table 6.

Table 7 — Loose saddles

Diameter of the inner shell of the tank in mm	Tank Class A			Tank Classes B and C		
	Saddle width (b_1) in mm	Angle (α) in degrees	Nominal plate thickness of shell above the saddle in mm	Saddle width (b_1) in mm	Angle (α) in degrees	Nominal plate thickness of shell above the saddle in mm
800 to 1 600	200	120	5	350	120	5
1 601 to 2 000	350	120	6	500	120	7[a]
2 001 to 2 500	625	120	7[a]	625	120	10[a]
2 501 to 3 000	750	120	9[a]	750	120	12[a]

[a] For tanks of these diameters the nominal shell thickness above the saddle shall be increased from the values given for s_1 in Table 3 to those given here.

Loose saddles are suitable for all surfaces with a minimum ground carrying capacity of 1,9 N/mm².

4.10 Lifting lugs (GANCI di Sollevamento)

Each tank shall be provided with lifting lugs. The number of lifting lugs shall be at least 1 for a tank up to 20 m^3 nominal volume and not less than 2 above 20 m^3. The lug(s) shall be positioned to enable the tank to be lifted in horizontal position.

Lifting lugs fully welded to the tanks shall be provided in sufficient size and quantity to enable the empty tank to be lifted without permanent deformation of the tank.

The lifting lugs shall be provided with a lifting hole of at least 60 mm diameter.

In order to prevent deformation and for maintaining integrity of the coating, a compensation plate shall be provided.

4.11 Fabrication

4.11.1 Plate preparation

The plate edges shall be visually examined for laminations by the manufacturer. Where such faults are found the plate shall be deemed unsuitable for fabrication of the tank.

4.11.2 Shell plate forming

All plates shall be formed to the required curvature over the full width or length of the plate as might be applicable. The manufacturer shall ensure that there is continuity of curvature at the longitudinal butt welds.

4.11.3 Types of joints

The types of welded joints shall be in accordance with Table 8. All internal attachments shall be continuously welded.

4.11.4 Welding procedures, welders qualification

Welding procedures shall be in accordance with EN ISO 15607, EN 288-2, EN ISO 15614-1 and welders qualifications shall be in accordance with EN 287-1.

4.11.5 Stainless steel tanks

All carbon contamination shall be removed from stainless tanks. This can be carried out for example by pickling and passivating.

Table 8 — Types of welded joints

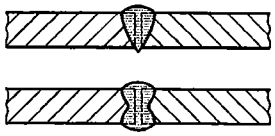
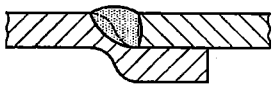
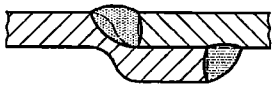
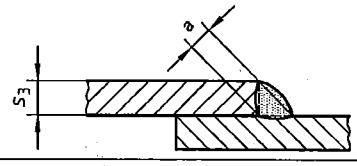
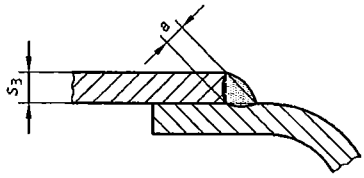
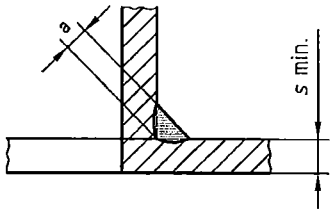
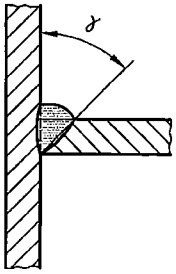
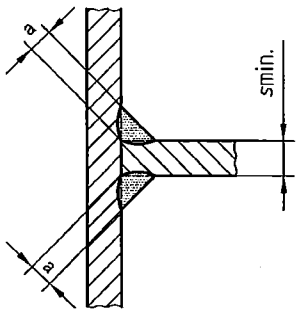
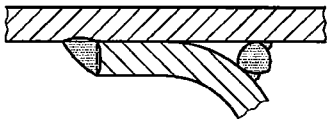
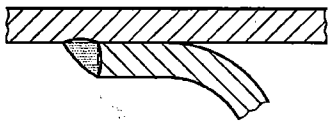
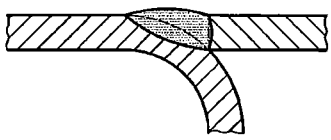
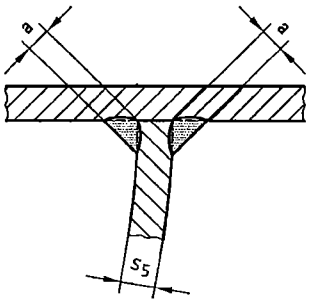
No.	Types of welded joints	Class of tanks and liquid (liquid-touched wall)
1	Square butt joint 	For Class A, B and C and all liquids For inner skin Plate misalignment shall not exceed 0,3 s_1 respectively 0,3 s_3 or 2 mm
2a	Joggled butt joint 	For Class A and hydrocarbon liquids For double and single skin tanks Not permissible with inner coating
2b	Joggled butt joint 	For Class A, B and C
3a	Overlap joint 	For Class A, B and C For outer skin $a = 0,7\ s_3$
3b	Overlap joint 	For Class A, B and C For outer skin $a = 0,7\ s_3$
4	Fillet weld in T-joint 	For Class A, B and C For nozzles in the outer skin $a = 0,7\ s_{min}$ s_{min}: thickness of the thinner plate
5	Fillet weld (full penetration) in T-joint 	For Class A, B and C For manholes, nozzles and inspection covers $\gamma = 45°$

Table 8 (*concluded*)

6	Double fillet weld in T-joint 	For Class A, B and C For manholes, nozzles and stiffening rings $a = 0{,}7\ s_{min}$ s_{min}: thickness of the thinner plate
7a	Fillet weld in overlap joint 	For Class A, B and C For compartment dished ends with knuckle radius
7b	Fillet weld in overlap joint 	For Class A, B and C For compartment dished ends with knuckle radius Not permissible with inner coating
8	Butt joint 	For Class A and B For compartment dished ends with knuckle radius Not permissible with inner coating
9	Double fillet weld in T-joint 	For Class A and B For compartment dished ends without knuckle radius $a = 0{,}7\ s_5$

4.11.6 Internal and external coating

All coatings when applied by the tank manufacturer shall be in accordance with the coating manufacturer's instructions. Where the temperature of a carbon steel tank can fall below normal operating temperatures and the tank is used for products without corrosion inhibitors, the tank shall be provided with internal protection.

4.12 Dangerous substances

Materials used in the production of steel tanks shall not release any dangerous substances in excess of the maximum permitted levels specified in a relevant European Standard for the material or permitted in the national regulations of the country of destination.

Steel tanks would not normally be expected to release any dangerous substances but the manufacturer may use a protective coating that contains a substance that shall be declared to comply with this clause.

4.13 Reaction to fire

Uncoated steel tanks are classified in Class A1 without further testing according to Commission Decision 94/611/EC as amended. Steel tanks coated with a substance containing in excess of 1 % organic content shall be subject to material test according to EN 13501-1.

4.14 Durability

Steel tanks shall be deemed to be durable for a reasonable economic working life if they comply with requirements of this document.

5 Testing assessment and sampling methods

Pressure testing

Single skin and inner tanks of double skin tanks shall be tested using a hydrostatic test or an air pressure test in accordance with health and safety conditions. The interstitial space shall be tested to the prescribed test pressure using the leak detection medium. The test pressures are given in Table 9.

Table 9 — Test pressure P_{t1} and P_{t2}

Pressure in bar

Test	Test medium	Tank class		
		A	B	C
		Test pressure P_{t1} and P_{t2}	Test pressure P_{t1} and P_{t2}	Test pressure P_{t1} and P_{t2}
Prototype test	air	0,75	2,0	---
	liquid	0,75	2,0	13,5
Leak tightness test of tank	air	0,3	0,3	---
	liquid	0,75	2,0	2,0
Leak tightness test of interstitial space	air or liquid	0,4	0,6	0,6

6 Evaluation of conformity

6.1 General

The compliance of a metallic shop fabricated cylindrical horizontal steel tank with the requirements of this document and with the stated values (including classes) shall be demonstrated by:

— initial type testing;

— factory production control by the manufacturer, including product assessment.

For the purposes of testing, tanks may be grouped into classes (see 3.1.4 and 4.3.6.1), where it is considered that the characteristics are the same for each class.

6.2 Type testing

6.2.1 Initial type testing

Initial type testing shall be performed to show conformity with this document. Tests previously performed in accordance with the provisions of this document (same product, same characteristic(s), test method, sampling procedure, system of attestation of conformity, etc.) may be taken into account. In addition, initial type testing shall be performed at the beginning of the production of a new tank type (unless a member of the same class) or at the beginning of a new method of production (where this may affect the stated properties).

Where components are used whose characteristics have already been determined, by the component manufacturer, on the basis of conformity with other product standards, these characteristics need not be reassessed (but see 6.3.3).

NOTE Tank components CE marked in accordance with appropriate harmonised European specifications may be presumed to have the performances stated with the CE marking, although this does not replace the responsibility on the tank designer to ensure that the tank as a whole is correctly designed and its component products (e. g. saddles) have the necessary performance values to meet the design.

All characteristics in Clauses 4 and 5 shall be subject to initial type testing with the exception of 4.12 which may be assessed indirectly by controlling the content of the substance concerned and 4.13 where CWFT rules apply.

6.2.2 Further type testing

Whenever a change occurs in the tank design or the production process which would change significantly one or more of the characteristics, the type tests shall be repeated for the appropriate characteristic(s).

6.2.3 Sampling, testing and compliance criteria

The number of tanks to be tested (or assessed) shall be in accordance with Table 10.

Table 10 — Number of units and compliance criteria for initial and further testing

Characteristic	Requirement clause	Assessment method	Number of units	Compliance criteria
Internal pressure	4.3.6	5	1 for each class	no leakage
Mechanical resistance and stability Load bearing capacity	4.3.6.1	4.2.5	each tank and saddle	conformity with – the material standards – 4.2.1 – 4.4, 4.5, 4.9
Mechanical resistance and stability Load bearing capacity	4.11.3	4.11.4	1 for each class	EN 287-1
Reaction to fire	4.13	4.2.5	each tank	conformity with the material standard

The results of all type tests shall be recorded and held by the manufacturer for at least 5 years.

6.3 Factory production control (FPC)

6.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market conform to the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

An FPC system conforming to the requirements of EN ISO 9001, and made specific to the requirements of this document, is considered to satisfy the above requirements.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded and retained for the period specified in the manufacturer's FPC procedures.

6.3.2 Equipment

Testing - All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.

Manufacturing - All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use, wear or failure does not cause inconsistency in the manufacturing process. Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer's written procedures and the records retained for the period defined in the manufacturer's FPC procedures.

6.3.3 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their conformity.

6.3.4 Product testing and evaluation

The manufacturer shall establish procedures to ensure that the stated values of all of the characteristics are maintained.

Table 11 — Minimum frequency of testing for product testing and evaluation as part of FPC

Property	Clause, indicating the relevant test method (if any)	Threshold value (if any) and tolerances	Minimum number of samples / tests	Minimum frequency of tests
Mechanical stability – dimensions – material control	 4.3.1 4.2	4.4	–	each tank
Internal pressure (testing)	5	–	–	each tank/ compartment
Permeability (welding)	visible check	–	–	each tank

6.3.5 Non-conforming products

The manufacturer shall have written procedures which specify how non-conforming products shall be dealt with. Any such events shall be recorded as they occur and these records shall be kept for the period defined in the manufacturer's written procedures.

7 Handling and installation

7.1 Handling

The tank manufacturer shall provide information as to the safe handling of the tank.

7.2 Installation

The tank manufacturer shall provide installation advice.

8 Marking and labelling of the tank

8.1 Marking of the tank

Each tank shall be marked using a durable label which shall be corrosion resistant and resistant to the stored product. The label shall be fixed to the tank on or close to the manhole, if fitted, of the tank. The design of the label shall be such that it shall not be confused with a regulatory marking.

The label shall contain the following information as a minimum:

— name and address of manufacturer;

— year of manufacture;

— serial number of tank;

— EN 12285-2;

— nominal volume;

— diameter;

— class;

— tank type;

— tank material;

— type of coatings (optional);

— weight of empty tank;

— type of leak detection system or liquid (when supplied).

An example for marking is given in Figure 5.

In addition each compartment shall be provided with a label indicating the nominal volume in m³ of that compartment.

Tank-Manufacture Ltd. , 12 A-street, 12345 B-town, C-country – 2004 – serial number xyz 1234-5							
Tank	Nominal volume in m³	Diameter in mm	Class	Tank type	Range of temperature	Number of compartments	Weight of empty tank
EN 12285-2	50	2 500	B	D	-20 °C to 50 °C	1	9 900 kg

Figure 5 — Example for marking

8.2 Tank certificate

A tank certificate stating at least the information included in 8.1 shall be provided by the manufacturer.

8.3 Documentation

The manufacturer shall provide documentation showing all important dimensions, compartments and connections.

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of the EU Construction Products Directive

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/131 "Pipes, tanks and ancillaries not in contact with water intended for human consumption" given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard shown in this annex meet the requirements of the mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the steel tanks covered by this annex for their intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

WARNING: Other requirements and other EU Directives, not affecting the fitness for intended use, may be applicable to the construction products falling within the scope of this standard.

NOTE 1 In addition to any specific clauses relating to dangerous substances contained in this standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

NOTE 2 An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (accessed through http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm).

This annex has the same scope as Clause 1 of this standard with regard to the steel tanks covered. It establishes the conditions for the CE marking of steel tanks intended for the use indicated below and shows the relevant clauses applicable (see Table ZA.1).

Construction Product: steel tanks

Intended uses: above ground storage of storage of fuel intended for the supply of building heating/cooling systems and of water not intended for human consumption.

The requirement on a certain characteristic is not applicable in those Member States where there are no regulatory requirements on that characteristic for the intended end use of the product. In this case, manufacturers placing their products on the market of these Member States are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option "No performance determined" (NPD) in the information accompanying the CE marking (see ZA.3) may be used. The NPD option may not be used, however, where the characteristic is subject to a threshold level.

Table ZA.1 — Relevant clauses

Essential characteristics	Requirement clauses in this (or another) European Standard	Levels and/or classes	Notes
Reaction to fire	4.13	Class A.1	CWFT (uncoated steel)
Mechanical resistance and stability – wall thickness – welding	 4.3.6.1 4.11.4		 class pass/fail
Internal pressure	5		class
Permeability	4.11.4, 5		pass/fail
Release of dangerous substances	4.1.2		less than ... ppm (normally NPD unless protective coating used)
Durability (against corrosion)	4.14		pass/fail

ZA.2 Procedure(s) for the attestation of conformity of steel tanks

ZA.2.1 Systems of attestation of conformity

The systems of attestation of conformity of steel tanks indicated in Table ZA.1, in accordance with the Decision of the Commission 99/472/EC dated 1999-07-17, as given in Annex III of the mandate, are shown in Table ZA.2 for the intended uses and relevant level(s) and classes.

Table ZA.2 — Attestation of conformity systems

Product	Intended use	Level(s) or class(es)	Attestation of conformity systems
Steel tanks	In installations for the transport/disposal/storage of water not intended for human consumption	none	4
	In installations for the transport/distribution/storage of fuel intended for the supply of building heating/cooling systems	none	3
	In installations in areas subject to resistance to fire regulations used for the transport/distribution/storage of fuel intended for the supply of building heating/cooling systems	Class A.1 CWFT (uncoated steel)	1
System 1: See Directive 89/106/EEC (CPD) Annex III.2.(i), without audit testing of samples System 3: See Directive 89/106/EEC (CPD) Annex III.2.(ii), second possibility System 4: See Directive 89/106/EEC (CPD) Annex III.2.(ii), third possibility			

The attestation of conformity of the steel tanks in Table ZA.1 shall be according to the evaluation of conformity procedures indicated in Table ZA.3 resulting from the application of the clauses of this European Standard indicated therein.

Table ZA.3a — Assignment of evaluation of conformity tasks (for system 3)

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all characteristics of Table ZA.1	6.3
	Initial type testing by the manufacturer	Parameters related to all characteristics of Table ZA.1	6.2.1
	Initial type testing by a notified test laboratory	Parameters related to all characteristics of Table ZA.1	6.2.1
NOTE Although some tanks may be attestation system 1, for installation in areas subject to resistance to fire regulations, uncoated steel tanks are Class A.1 and as such there would be no activity for a certification body to carry out. Such tanks would therefore become system 3 with the manufacturer responsible for the Class A.1 declaration.			

Table ZA.3b — Assignment of evaluation of conformity tasks (for system 4)

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all characteristics of Table ZA.1	6.3
	Initial type testing by the manufacturer	Parameters related to all characteristics of Table ZA.1	6.2.1

ZA.2.2 EC Certificate and Declaration of conformity

(In case of products with system 1): When compliance with the conditions of this annex is achieved, the certification body shall draw up a certificate of conformity (EC Certificate of conformity), which entitles the manufacturer to affix the CE marking. The certificate shall include:

- name, address and identification number of the certification body;
- name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;
- description of the product (type, identification, use, ...);
- provisions to which the product conforms (i.e. Annex ZA of this European Standard)
- particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);
- the number of the certificate;
- conditions and period of validity of the certificate, where applicable;
- name of, and position held by, the person empowered to sign the certificate.

In addition, the manufacturer shall draw up a declaration of conformity (EC Declaration of conformity) including the following:

- name and address of the manufacturer, or his authorised representative established in the EEA;
- name and address of the certification body;

— description of the product (type, identification, use, ...), and a copy of the information accompanying the CE marking;

— provisions to which the product conforms (i.e. Annex ZA of this European Standard);

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);

— number of the accompanying EC Certificate of conformity;

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

(In case of products under system 3): When compliance with the conditions of this annex is achieved, the manufacturer or his agent established in the EEA shall prepare and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

— description of the product (type, identification, use,...), and a copy of the information accompanying the CE marking;

— provisions to which the product conforms (i.e. Annex ZA of this European Standard)

— particular conditions applicable to the use of the product, (e.g. provisions for use under certain conditions);

— name and address of the notified laboratory(ies);

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

(In case of products under system 4): When compliance with this annex is achieved, the manufacturer or his agent established in the EEA shall prepare and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

— description of the product (type, identification, use,...), and a copy of the information accompanying the CE marking;

— provisions to which the product conforms (i.e. Annex ZA of this European Standard)

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

The above mentioned declaration and certificate shall be presented in the official language or languages of the Member State in which the product is to be used.

ZA.3 CE marking and labelling

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EC and shall be shown on the steel tank. The following information shall accompany the CE marking symbol:

— identification number of the certification body (only for products under systems 1);

- name or identifying mark and registered address of the producer;
- the last two digits of the year in which the marking is affixed;
- number of the EC Certificate of conformity or factory production control certificate (if relevant);
- reference to EN 12285-2;
- description of the product: - Steel tank for the above ground storage of domestic heating oils and diesel fuels and water not intended for human consumption;
- information on those relevant essential characteristics listed in Table ZA.1 which are to be declared:
  - Reaction to fire: Class;
  - Wall thickness: Class;
  - Welding: Pass/fail;
  - Internal pressure test: Pass/fail;
  - Release of dangerous substances: ppm (normally NPD unless protective coating used);
  - Durability: Pass/fail;
- declared values and, where relevant, level or class (including "pass" for pass/fail requirements, where necessary) to declare for each essential characteristic as indicated in "Notes" in Table ZA.1;
- "No performance determined" for characteristics where this is relevant.

The "No performance determined" (NPD) option may not be used where the characteristic is subject to a threshold level. Otherwise, the NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements in the Member State of destination.

Figure ZA.1 gives an example of the information to be given on the product, label, packaging and/or commercial documents.

CE 01234	*CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC.* *Identification number of the certification body (where relevant)*
AnyCo Ltd, PO Box 21, B-1050 **05** 01234-CPD-00234	*Name or identifying mark and registered address of the producer* *Last two digits of the year in which the marking was affixed* *Certificate number (where relevant)*
EN 12285-2 steel tank: above ground storage of fuel intended for the supply of building heating/cooling systems. **Wall thickness: Class A** **Dangerous substance NPD**	*No. of European Standard* *Description of product and information on regulated characteristics*

In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE European legislation without national derogations need not be mentioned.

Figure ZA.1 — Example CE marking information for a system 3 product

Bibliography

[1] EN 10028-2, *Flat products made of steels for pressure purposes — Part 2: Non-alloy and alloy steels with specified elevated temperature properties*

[2] EN 10028-7, *Flat products made of steels for pressure purposes — Part 7: Stainless steels*

[3] EN 10088-1, *Stainless steels — Part 1: List of stainless steels*

[4] EN 13012, *Petrol filling stations — Construction and performance of automatic nozzles for use on fuel dispensers*

[5] EN 13160–1, *Leak detection systems — Part 1: General principles*

[6] EN 13160–2, *Leak detection systems — Part 2: Pressure and vacuum systems*

[7] EN 13160–3, *Leak detection systems — Part 3: Liquid systems for tanks*

[8] EN 13160–4, *Leak detection systems — Part 4: Liquid and/or vapour sensor systems for use in leakage containments or interstitial spaces*

[9] prEN 13160–5, *Leak detection systems — Part 5: Tank gauge leak detection systems*

[10] EN 13160–6, *Leak detection systems — Part 6: Sensors in monitoring wells*

[11] EN 13160–7, *Leak detection systems — Part 7: General requirements and test methods for interstitial spaces, leak protecting linings and leak protecting jackets*

[12] EN 13352, *Specification for the performance of automatic tank contents gauges*

[13] EN 13616, *Overfill prevention devices for static tanks for liquid petroleum fuels*

[14] EN 13617-1, *Petrol filling stations — Part 1: Safety requirements for construction and performance of metering pumps, dispensers and remote pumping units*

[15] EN 13617-2, *Petrol filling stations — Part 2: Safety requirements for construction and performance of safe breaks for use on metering pumps and dispensers*

[16] EN 13617-3, *Petrol filling stations — Part 3: Construction and performance of shear valves*

[17] EN 13617-4, *Petrol filling stations — Part 4: Safety requirements for construction and performance of swivels for use on metering pumps and dispensers*

[18] prEN 14125, *Thermoplastic and flexible metal pipework for underground installation at petrol stations*

[19] EN ISO 9001, *Quality management systems — Requirements (ISO 9001:2000)*

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AM-TANK 800

Aspirazione 10 cm	Tabella centimetrica serbatoio orizzontale			Matricola
	Capacità effettiva: 838 GAL	+/- tolleranze di legge		
	Diametro serbatoio	1430	mm	
	Fasciame	1800	mm	
VTP (90%) 120 cm	spessore fondi	30/10	mm	UFFICIO TECNICO EMILIANA SERBATOI
	spessore fasciame	30/10	mm	

Lettura asta	Volume liquido	Lettura asta	Volume liquido	Lettura asta	Volume liquido	Lettura asta	Volume liquido
cm	gal	cm	gal	cm	gal	cm	gal
0	0	41	198	82	501	123	771
1	1	42	205	83	509	124	777
2	2	43	212	84	516	125	781
3	4	44	218	85	523	126	786
4	7	45	225	86	531	127	791
5	9	46	232	87	538	128	795
6	12	47	240	88	546	129	800
7	15	48	247	89	553	130	804
8	18	49	254	90	560	131	808
9	22	50	261	91	568	132	812
10*	25	51	268	92	575	133	815
11	29	52	276	93	582	134	819
12	33	53	283	94	589	135	822
13	37	54	290	95	596	136	825
14	42	55	298	96	603	137	828
15	46	56	305	97	610	138	831
16	51	57	312	98	617	139	833
17	55	58	320	99	624	140	835
18	60	59	327	100	631	141	837
19	65	60	335	101	638	142	838
20	70	61	342	102	645	143	838
21	75	62	350	103	652		
22	81	63	357	104	658		
23	86	64	365	105	665		
24	92	65	372	106	672		
25	97	66	380	107	678		
26	103	67	388	108	685		
27	109	68	395	109	691		
28	115	69	403	110	697		
29	121	70	410	111	703		
30	127	71	418	112	710		
31	133	72	425	113	716		
32	139	73	433	114	722		
33	145	74	441	115	728		
34	152	75	448	116	733		
35	158	76	456	117	739		
36	164	77	463	118	745		
37	171	78	471	119	750		
38	178	79	478	120*	756		
39	184	80	486	121	761		
40	191	81	494	122	766		