

The background of the entire page is a photograph of a large, red, cylindrical fire tank. The tank is constructed from metal plates held together by numerous rivets. A vertical red pipe runs down the side of the tank, with a horizontal section at the top. The tank is set against a clear, bright blue sky.

Fire Tanks



Rizzotto: a guarantee of quality and safety

Leader in the design, construction, and installation of above-ground modular tanks for fire prevention.

Control of the entire process

The design and construction of our fire prevention tanks are entirely carried out by engineers, draftsmen, builders, and experienced installers who are part of the Rizzotto group. Their goal is to construct tanks that best meet the customer's needs and comply with current regulations.

Documentation

We provide the client with all the necessary documentation to carry out the work in compliance with all current regulations. All documents and certifications for each structure are made available to the client through an innovative platform created specifically by us to offer the best possible efficiency in this field. Through our dedicated area, it is possible to consult drawings, calculation reports, safety documents, technical sheets, certificates, and warranties. In doing so, we simplify the management of the numerous necessary documents, ensuring the client rapid access to information and a prompt response to any requests from all parties involved in the construction.

Certified system

Operating with a quality system certified according to UNI EN ISO 9001:2015, we guarantee the control of all company processes, from the design of the structure to on-site installation. Welding processes are constantly monitored with a system certified according to UNI EN ISO 3834-2, which involves planning, management, and control of all welding-related production phases. In accordance with European Regulation No. 305/2011, which mandates issuing a Declaration of Performance (DoP) for manufactured structural elements, we have implemented a Factory Production Control (FPC) system in accordance with UNI EN 1090-1 EXC3. This entails managing the production process according to the provisions of EN 1090-1 up to class EXC3.

Additionally, we present a line of Factory Mutual certified tanks. Therefore, we are qualified to participate in projects where this requirement is necessary.



Construction characteristics

Every tank offered to the client includes a design service with specialized technicians within the company, capable of designing the structures in question in strict compliance with current regulations. The design and construction of a tank are governed by the strict adherence to a series of standards that we guarantee to comply with in every project. Our clients can verify and understand the regulations considered for their structure from the first approach with our company.

In particular, general safety criteria, guidelines for use in structural design, characteristics of materials to be used in construction, and structural checks are analyzed. Regulatory scrutiny and engineering development aim to demonstrate that the tank structure withstands the simultaneous action of seismic activity, snow load, wind stresses, or external agents that could compromise the stability and functionality of the structure.

Seismic-static dimensioning

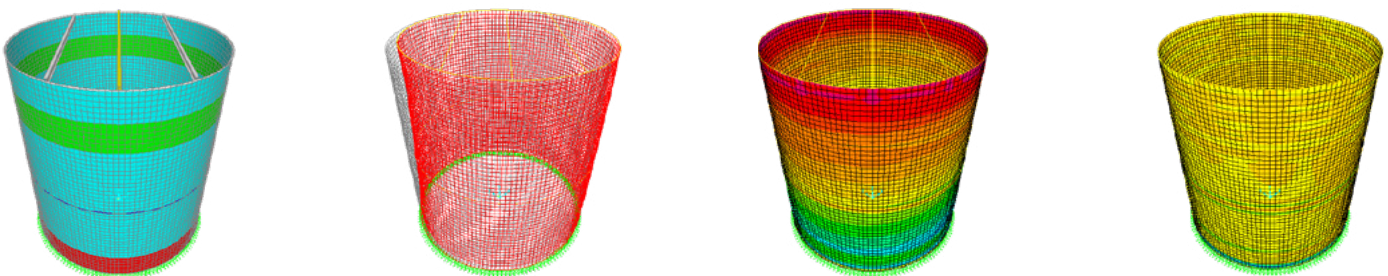
During the construction phase, a design that takes into account possible seismic loads is necessary, as prescribed by specific regulations. Seismic regulations establish criteria for constructing a structure to prevent damage to people and property following a seismic event and to ensure that the water reserve remains usable even after an earthquake, for extinguishing potential fires. For each construction, we assess the context in which it will be built, analyzing the geological characteristics of the subsoil and the value of seismic action.

Each individual case is examined by our structural engineers specialized in finite element analysis (FEM), who analyze the possible interactions of these events, along with the action of hydrostatic pressure due to the mass of water contained in the reservoir. For each tank, we provide adequate and comprehensive documentation, consisting of calculation reports and certifications required by current legislation.

Fire protection regulations

Along with the structural aspect, our technicians apply the following regulations for the accurate sizing of tanks in terms of water flow rates and autonomies, in accordance with project requirements:

- National fire safety regulations
- NFPA 22: Standard for Water Tanks
- Factory Mutual: FM 4020
- ANSI/AWWA D103
- LPCB: LPS 1276



3D views of the deformation state and stress distribution for the seismic combination of a tank.

Innovative management

Our customers have access to a computer system that allows for efficient and practical consultation of all documents related to tanks, including:

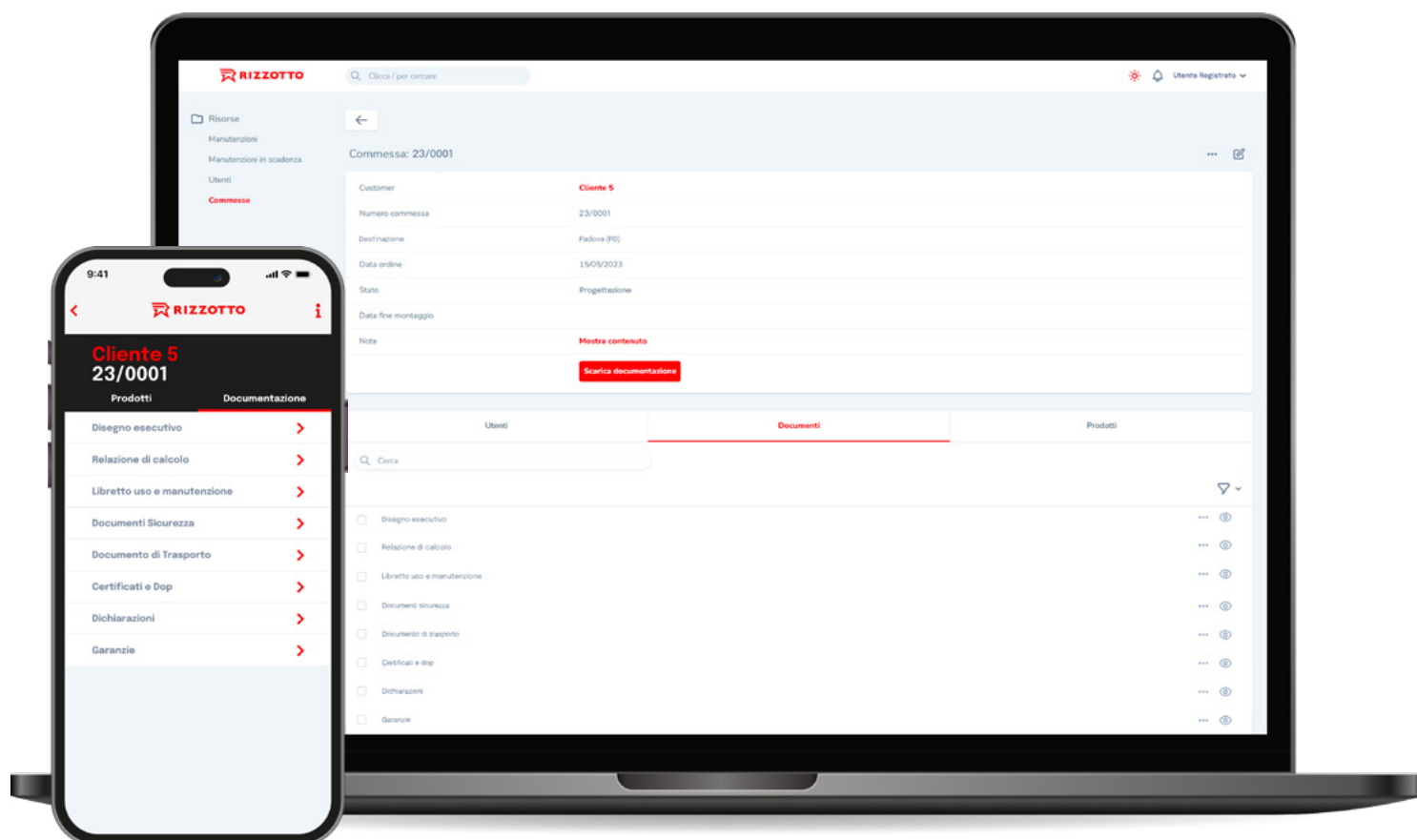
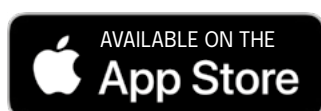
- Drawings
- Calculation reports
- Safety documents
- Technical sheets
- Material certificates
- Warranties

Thanks to our new portal, it is easy to access all necessary documents, ensuring quick access to information and a prompt response to any requests from all professional figures involved in construction.

Additionally, with a dedicated maintenance section, it assists users in performing scheduled checks that ensure compliance and safety for the structure.

Every authorized user can access it at any time and from any location using their confidential credentials, even via smartphone through the dedicated app available for iPhone and Android.

An intuitive and essential interface

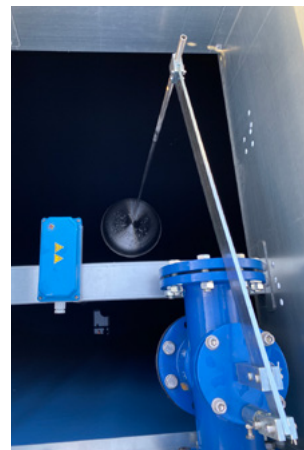


Material quality

Constantly, we select high-quality materials for use in the construction of our products. This is to ensure that, in addition to meeting all regulatory requirements, we provide the customer with a product designed to last over time, even in installations located in the most aggressive environments.

Bolting

The tank strapping plates and accessories are fastened using bolted joints made of high-strength carbon steel, treated in a hot-dip zinc bath.



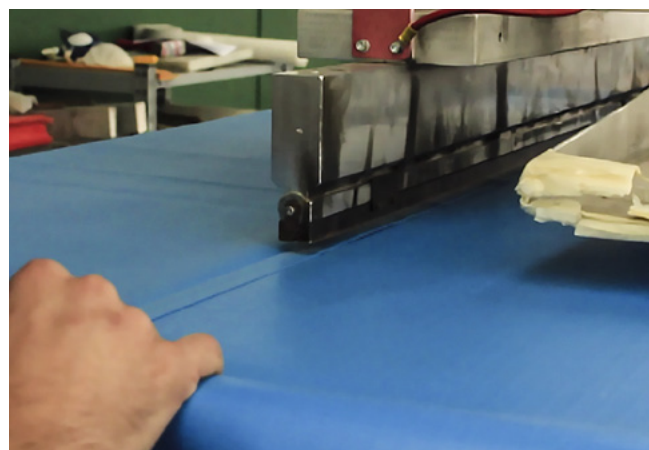
Accessories

All tank flanges and accessories are constructed from carbon steel and are protected from corrosion with a hot-dip galvanizing treatment.



Containment membrane

For the internal part of the tank, a custom-made tear-resistant reinforced PVC membrane is created to achieve hydraulic sealing of the assembly and further preserve the structure from natural corrosion.



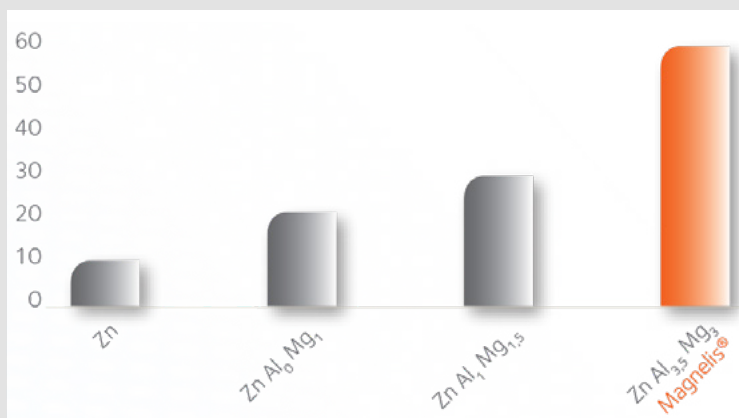
Corrosion resistance

The most critical structural components of our tanks are always made of high-strength carbon steel with Magnelis® treatment, which is a metallic coating developed and produced by ArcelorMittal. It provides optimal surface protection against long-term corrosion. It is produced on a traditional industrial hot-dip galvanizing line, but the substrate is immersed in a bath of molten metal characterized by a specific metallic chemical composition: zinc with 3.5% aluminum and 3% magnesium. This 3% magnesium is crucial as it forms a stable and resistant layer

along the entire metal surface, contributing to making the defense against corrosion more effective than a coating with a lower magnesium content. When compared to the properties of alternative products available in the European market, the performance of this technology is at a significantly higher level.

Corrosion resistance in a cyclic test for various compositions of Zn, Al, Mg

Number of cycles until the appearance of red rust



10 µm coating subjected to an alternate cycle of 8 hours: fog cycle (5% NaCl)/dry cycle/wet cycle

Source: ArcelorMittal R&D

Magnelis® compared to galvanized (salt spray tests).



Galvanized 20 µm after 6 weeks



Magnelis® 20 µm after 34 weeks

Magnelis® compared to galvanized (salt spray tests).



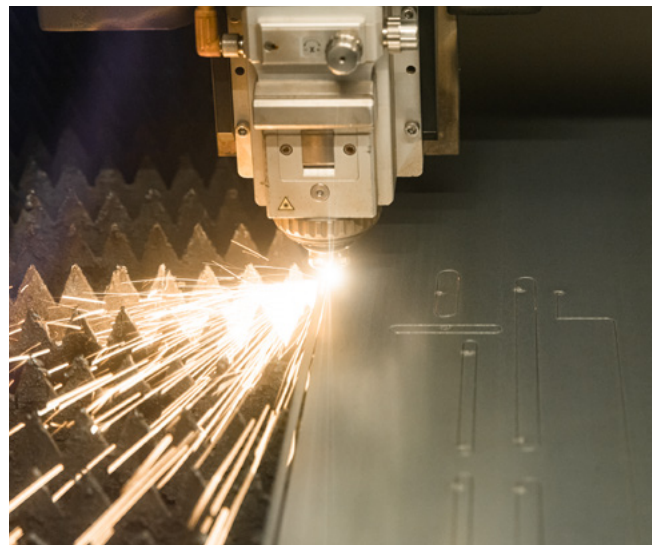
Post-galvanized 85 µm after 12 weeks



Magnelis® 20 µm after 12 weeks

Production

The production is entirely carried out within the Rizzotto company, utilizing tools and qualified personnel. The production chain is rigorously controlled and is the result of close interaction between structural engineers, production technicians, and operators. The guarantee assigned to Rizzotto tanks is the result of the ability to manage and verify the entire production process, from the choice of materials to assembly specifications, with a recognized outcome of quality and reliability.



Laser cutting



Production inspections



Welding of structural elements



Bending press



Welding of accessories

Installation

In Rizzotto, we ensure that all phases of the implementation of water reserves are meticulously attended to in terms of quality, site management, and operational efficiency. We offer installation services and on-site management carried out by company employees, without the use of external equipment or personnel. Every single operation performed on-site is carried out strictly in compliance with safety regulations, ensuring the utmost protection for the client and our workers.



Site Coordination



Logistics managed by Rizzotto's own vehicles and personnel



Attachment of accessories



Installation of roof beams



Tank installation with jacks

Cylindrical tanks

The most requested Rizzotto product is the above-ground cylindrical tank. It consists of galvanized steel sheet panels fastened with bolted joints and an internal membrane in tear-resistant reinforced PVC. Standard versions are indicated in the table on page 13. Solutions of different shapes can be studied based on customer specifications.



Combined cylindrical tanks

In cases where there is limited space availability, such as the need to contain the diameter of the structure or the height of the tank, it is always possible to create twin tanks hydraulically connected with each other through a bypass pipeline. These implementations are more costly, but they allow solving problems that initially may seem impossible to address.



Painted tanks

For specific aesthetic or environmental needs of the customer, it is possible to create tanks that, while keeping the standard surface treatment of the sheets and all components that are part of the structure to resist corrosion unchanged, are treated with additional external painting. The additional color treatment can be chosen by the customer using any color from the standardized RAL color scale.



Cylindrical tank dimensions

Availability of Non-Standard Customizations

NET CAPACITY [m³] DIAMETER	HEIGHT	1,26m	1,83m	2,46m	3,03m	3,66m	4,23m	4,86m	5,43m	6,06m	6,63m	7,26m	7,83m	8,46m	9,03m	9,66m	10,23m	10,86m	11,43m	12,06m
		3	5	8	10	13	15	18	20	23	25	28	30	33	35	37	40	42	-	-
2,29m		3	5	8	10	13	15	18	20	23	25	28	30	33	35	37	40	42	-	-
3,06m		5	9	14	18	23	27	32	36	41	45	49	54	58	62	67	71	76	-	-
3,82m		8	14	22	28	36	42	49	56	63	70	77	83	91	97	104	110	117	-	-
4,59m		12	21	32	41	51	61	71	81	91	100	110	120	130	139	150	159	170	-	-
5,35m		16	29	44	56	70	83	97	109	123	136	150	163	177	190	204	217	231	-	-
6,11m		22	39	58	74	92	107	125	142	160	177	196	212	231	248	266	283	300	-	-
6,88m		29	50	74	94	115	136	159	180	204	225	248	269	293	312	336	357	380	396	-
7,64m		36	63	92	115	143	168	197	223	251	277	304	330	359	385	412	438	467	493	-
8,41m		43	75	110	140	173	204	239	270	302	333	368	400	432	464	499	530	565	597	632
9,17m		50	88	130	167	207	243	284	318	359	397	435	472	514	552	593	631	672	710	752
9,94m		58	103	152	196	244	287	331	374	419	463	511	555	604	648	697	741	790	834	883
10,70m		67	118	175	226	283	328	384	430	485	536	593	644	700	751	808	859	916	967	1024
11,46m		74	133	198	256	316	375	435	494	557	616	680	739	803	862	927	985	1050	1109	1174
12,23m		80	147	222	289	357	418	492	559	633	700	774	841	915	982	1055	1122	1196	1263	1334
12,99m		87	162	246	315	398	467	551	626	710	785	869	944	1028	1104	1187	1263	1346	1422	1505
13,76m		93	178	272	349	435	523	614	698	792	877	971	1055	1149	1234	1327	1412	1503	1588	1681
14,52m		97	191	296	382	478	572	677	771	875	970	1074	1169	1273	1367	1472	1566	1665	1760	1864
15,29m		91	196	312	407	523	628	743	848	964	1068	1184	1289	1404	1509	1625	1731	1847	1951	2067
16,05m		98	214	342	447	576	691	819	934	1062	1177	1305	1420	1547	1663	1790	1907	2035	2150	2278
16,82m		113	228	368	484	624	751	891	1017	1157	1284	1424	1550	1690	1817	1957	2084	2224	2350	2479
17,58m		112	237	378	517	669	808	961	1099	1252	1390	1543	1682	1835	1973	2126	2264	2417	2556	2708
18,34m		121	272	413	562	729	879	1046	1196	1363	1513	1680	1830	1997	2147	2314	2464	2631	2781	2948
19,11m		131	295	447	610	791	955	1135	1299	1480	1643	1824	1987	2168	2331	2512	2676	2856	3020	3200
19,87m		142	303	483	660	855	1032	1228	1404	1600	1776	1972	2148	2344	2521	2716	2893	3088	3265	3460
20,64m		153	327	522	712	923	1114	1325	1515	1726	1917	2128	2319	2529	2720	2931	3121	3332	3523	3734
21,40m		165	352	561	766	992	1197	1424	1629	1856	2061	2287	2492	2719	2924	3150	3355	3582	3787	4014

The effective capacity varies based on the pumping group, seismic zone, and soil type.
Availability of non-standard customizations.
Larger diameters and heights upon request.

FM certified tanks

We manufacture a wide range of tanks for water and firewater reserves with FM certification (Factory Mutual). FM is a technical-insurance organization that covers industrial risks for many multinational companies based in different countries.

To obtain FM certification, it is necessary to pass a thorough examination that includes the entire production process, from organizational structure to design and structural calculations, from material selection to the construction and assembly phase of the tanks. Acquiring such certification for a wide range of products is therefore international recognition of the construction, design, and functional quality of the water storage tanks produced by the company. An additional guarantee for customers who can rely on a constant quality control regime of products and company processes.



FM Classification::

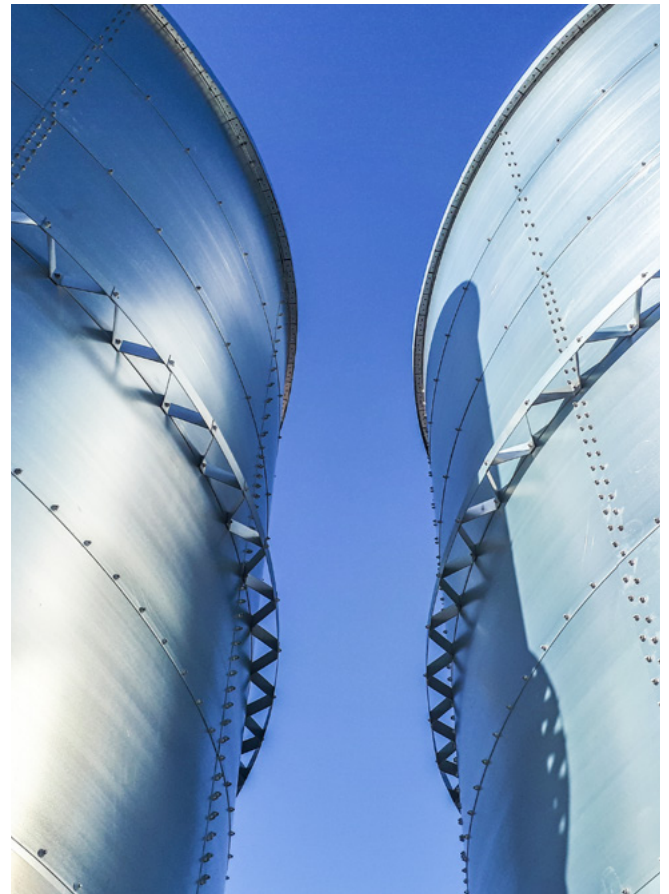
- > 500 years
- 250/500 years
- 100 years
- 50 years





FM certified tanks

The FM certification involves specific engineering and construction solutions, different from the standards usually adopted, both in terms of accessories and structural aspects. As highlighted by the images, special accessories are used that comply with the AWWA D103 standard, ground anchoring devices of particular shape, and specific stiffeners at various height levels to achieve the robustness values required by the reference FM classification.



Wind Stiffeners FM



Ground Anchoring FM



FM Drain Valve with Hydrometer

Dimensions of FM Certified Tanks

FM 50

NET CAPACITY [m³] DIAMETER	HEIGHT	1,26m	2,46m	3,66m	4,86m	6,06m	7,26m	8,46m	9,66m	10,86m	12,06m
6,11m	-	25	60	95	130	165	201	-	-	-	-
7,64m	-	31	86	141	196	251	306	-	-	-	-
9,17m	-	35	114	194	273	352	431	-	-	-	-
10,70m	-	37	145	253	361	468	576	-	-	-	-
12,23m	-	34	175	316	457	598	739	-	-	-	-
13,76m	-	33	211	390	568	747	925	-	-	-	-
15,29m	-	68	288	509	729	949	-	-	-	-	-

FM 100

NET CAPACITY [m³] DIAMETER	HEIGHT	1,26m	2,46m	3,66m	4,86m	6,06m	7,26m	8,46m	9,66m	10,86m	12,06m
6,11m	8	43	78	113	148	184	219	-	-	-	-
7,64m	7	62	117	172	227	282	337	392	-	-	-
9,17m	1	81	160	239	318	398	477	-	-	-	-
10,70m	1	109	217	325	433	540	648	-	-	-	-
12,23m	-	135	276	417	558	699	840	907	1048	-	-
13,76m	-	161	339	517	696	874	1053	1231	-	-	-
15,29m	-	202	422	643	863	1083	1304	1432	1653	-	-

FM 250/500

NET CAPACITY [m³] DIAMETER	HEIGHT	1,26m	2,46m	3,66m	4,86m	6,06m	7,26m	8,46m	9,66m	10,86m	12,06m
6,11m	16	52	87	122	157	192	228	263	-	-	-
7,64m	23	78	133	188	243	298	353	408	466	-	-
9,17m	1	81	160	239	318	398	477	588	668	747	-
10,70m	42	150	258	366	474	582	690	798	905	-	-
12,23m	51	191	332	473	614	755	896	1037	-	-	-
13,76m	59	238	416	595	773	952	1130	1309	-	-	-
15,29m	73	294	514	734	955	1175	1395	-	-	-	-

FM > 500

NET CAPACITY [m³] DIAMETER	HEIGHT	1,26m	2,46m	3,66m	4,86m	6,06m	7,26m	8,46m	9,66m	10,86m	12,06m
6,11m	23	58	94	129	164	199	234	272	-	-	-
7,64m	34	88	143	197	252	306	361	420	-	-	-
9,17m	47	126	206	286	366	445	525	605	684	-	-
10,70m	63	171	279	387	495	602	710	824	926	1039	-
12,23m	76	216	357	497	637	777	918	1070	1198	1350	-
13,76m	90	269	449	628	808	987	1167	1347	1526	-	-
15,29m	110	331	552	772	993	1213	1434	1664	-	-	-

Trusted by

3M COMPANY
AESICA PHARMACEUTICALS
AMAZON
ARISTON
ARMANI
AWS
BUNGE
BURBERRY
CAMPARI
CEVA LOGISTICS
COCA COLA
CONTINENTAL AG
DECATHLON
DHL
DIESEL
DODO COSMETICS
DUCATI
ELECTROLUX
EQUINIX
EUROPEA MICROFUSIONI AEROSPAZIALI
FERRARI
FINDUS
FRESENIUS KABI
GALBANI
HALO INDUSTRY
IKEA
ILLY CAFFÈ
IRON MOUNTAIN
JOHNSON CONTROLS
LAMBORGHINI
LINDT ITALIA
MAKITA
METRO
MICROSOFT
NESTLE
PASTA ZARA
PATA
PELLINI CAFFÈ
PEPSICO
PIRELLI
PROLOGIS
RALPH LAUREN
SAINT GOBAIN
SAN PELLEGRINO
SIEMENS
STELLANTIS
TERANA TEQUILA
TYCO
U.S. NAVY
ZALANDO
And many more



RIZZOTTO S.R.L.

Headquarter • San Giorgio in Bosco (PD) - ITALY
Representative Office • 48 Burj Gate - Dubai - UAE
Tel: +39 049 945 0733
info@rizzotto.it

