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# **UNITALAY** CATALOGUE

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UNITALAY

UNITALAY stands ready to be your trusted partner in LPG storage and handling solutions.

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## **About US**

UNITALAY is a forward-thinking company specializing in the **design**, **fabrication**, **coating**, **and installation** of high-quality **pressurized vessels for LPG tanks**. Our mission is to deliver safe, reliable, and efficient pressure vessel solutions tailored to the growing demands of the energy and industrial sectors.

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## 2. Who We Are?



**UNITALAY** is the result of a strategic joint venture between two industry leaders:

**Unigaz**, a trusted **LPG solutions provider** with over **60 years of experience** across the Middle East and Africa. TALAYTECH, a specialized EPC contractor with 19 years of proven expertise in me chanical installations, process systems, and tank farms.

## The Power Behind UNITALAY

This partnership combines **Unigaz's legacy of operational excellence** in LPG system design and implementation—including its strong track record in **Iraq and the Kurdis-tan Region**—with **TALAYTECH's deep engineering capabilities** and strong execution background in complex infrastructure and energy projects.

Together, as **UNITALAY**, we deliver integrated, end-to-end solutions in **LPG pressure vessel design, fabrication, coating, and installation,** backed by the **regional insight, technical strength, and commitment to quality** that both companies are known for.





## 3. Our Purpose

### Advancing a Cleaner Energy Future with LPG

The joint venture between **Unigaz** and **TALAYTECH**, forming **UNITALAY**, was established with a shared vision:

To accelerate the transition toward cleaner, safer, and more sustainable energy across Iraq and the region by advancing the adoption of Liquefied Petroleum Gas (LPG).

Advancing a Cleaner Energy Future with LPG

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To accelerate the transition toward cleaner, safer, and more sustainable energy across Iraq and the region by advancing the adoption of **Liquefied Petroleum Gas (LPG)**.

### 3.1 Why LPG?

LPG is a **clean-burning**, **efficient**, **and versatile fuel** that significantly reduces environmental impact compared to traditional fossil fuels like diesel and heavy fuel oil.

- Provide locally manufactured, high-quality LPG infrastructure, reducing dependence on imports.
- Enable a greener, more energy-resilient Iraq and Kurdistan Region.
- Support the regional shift toward environmentally responsible energy solutions.

Through this partnership, we aim to:

Promote LPG as a reliable energy alternative for residential, commercial, and industrial sectors.

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- Provide locally manufactured, high-quality LPG infrastructure, reducing dependence on imports.
- Enable a greener, more energy-resilient Iraq and Kurdistan Region.
- Support the regional shift toward environmentally responsible energy solutions.

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## 3.2 Our Mission

• To design, fabricate, and install high-quality pressurized vessels for LPG applications with a focus on **safety**, **durability**, **and engineering precision**, while delivering exceptional value and reliability to our clients.

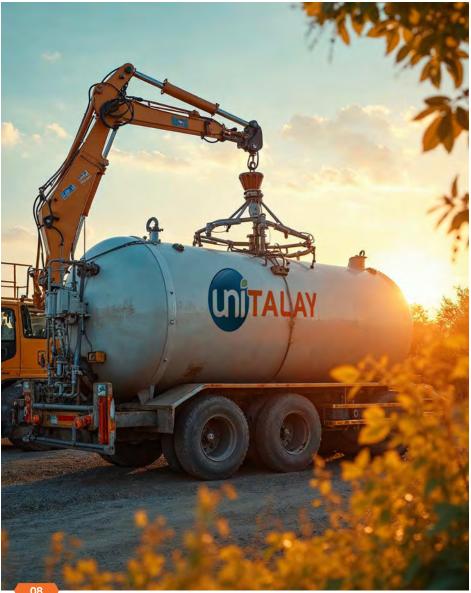
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## 3.3 Our Vision

To support the safe and sustainable growth of the energy sector by delivering reliable, high-quality LPG pressure vessel solutions, while fostering innovation, environmental responsibility, and long-term partnerships with our clients.

### **Custom Design of LPG Pressure Vessels**

Engineered to meet client-specific requirements and international safety standards.



## **4. OUR SERVICE**

At UNITALAY, we provide a complete range of services dedicated to the safe and efficient storage of LPG. Our offerings include:

#### **Custom Design of LPG Pressure Vessels**

Engineered to meet client-specific requirements and international safety standards.

#### **Fabrication & Assembly**

Precision manufacturing using high-quality materials for durability and long-term performance

#### **Protective Coating**

Application of primer and final coat to ensure corrosion resistance and extended lifespan.

#### **On-Site Installation**

Professional installation services to guarantee safety, compliance, and operational readiness.

#### **Technical Support & Consultation**

Expert guidance throughout every stage of the project, from design to commissioning.

## 5. Economic Value – What UNITALAY Brings to the Industry

At **UNITALAY**, we don't just build LPG infrastructure, we bring **long-term economic value** to our clients, partners, and the broader energy sector. Our joint venture merges **local execution power** with **decades of regional expertise**, enabling us to deliver cost-effective, scalable solutions that make clean energy adoption both **affordable and practical**.



### 5.1 How We Add Economic Value:

- Localized Production in Erbil By fabricating tanks and systems locally in Erbil, Kurdistan, we significantly reduce lead times, import costs, and logistics expenses, creating a competitive advantage for local projects.
- Turnkey Solutions
   From engineering design to installation and commissioning, we deliver complete LPG systems under one roof—eliminating the need for multiple contractors and cutting coordination costs.
- Efficient Fuel, Lower Operating Costs

LPG offers high combustion efficiency and **low maintenance needs**, translating to reduced operational expenses for end users.

- Job Creation & Industrial Growth UNITALAY contributes to the local economy by creating skilled jobs, developing technical talent, and supporting the region's industrial supply chain.
- Flexible Supply Chain

With deep industry relationships, we help clients **secure LPG supply**—locally or through imports—at competitive market prices.



## 6. PRESSURE STORAGE TANKS FOR LIQUEFIED PETROLEUM GASES (LPG)

**Liquefied Petroleum Gas (LPG)** is a mixture of propane and butane gases, commonly used as fuel in various industrial and domestic applications.

**UNITALAY** manufactures high-quality **LPG storage tanks** in various configurations to meet different installation requirements:

These tanks are designed and fabricated in compliance with international standards, including:

#### ASME U, ASME Section VIII Div.1, ASME S Stamped, EN 13445, AD 2000 Merkblatt, PD 5500, and European Directive 2014/68/CE (CE marked).

On request, we can manufacture tanks according to local standards or custom project specifications.



### 6.1 TYPES OF STORAGE TANKS:

Spherical Tanks
Horizontal Aboveground Tanks
Horizontal Underground Tanks
Vertical Aboveground Tanks

### 6.2 EXTERNAL FINISHES & PROTECTION

**Standard Finish:** 

- Surface sandblasted to SA 2.5 quality using an automatic machine.
- Protective coating: **Epoxy-polyamide primer** and topcoat, tailored for either aboveground or underground installation.

**Special Finishes:** 

• Thick-coat finish for underground tanks offering enhanced impact resist& ance.

**Custom Finishes:** 

• Available upon request, tailored to customer specifications or project-specific needs.

# **6.3 CATHODIC PROTECTION SYSTEM** (for Underground Tanks):

- Sacrificial anodes (with optional activating mix bags)
- Electrical wiring
- Connection terminals

All cathodic protection systems are custom designed for each under ground tank model to ensure long-term corrosion resistance.





## 7. Design Standards

# 7.1 APPLICABLE CODES AND STANDARDS:

At **UNITALAY**, our LPG pressure vessels are designed in full compliance with internationally recognized codes, including **ASME Section VIII Division 1** for global and American markets, and **EN 13445 under PED 2014/68/EU** for European applications. These standards ensure the highest levels of safety, reliability, and regulatory compliance in every product we manufacture.

# 7.2 Key Standards Followed by UNITALAY:

- EN 13445 / PED 2014/68/EU: European standard for the design and fabrication of unfired pressure vessels under the Pressure Equipment Directive.
- ASME Section VIII, Div. 1 (U or U2 Stamp): American standard for the design and construction of pressure vessels.
- *BS 5500 / PD 5500:* Former British standard for the design and construction of unfired fusion-welded pressure vessels (still used in some regions).
- AD 2000 Merkblatt: German pressure vessel standard outlining design and material specifications.
- EN 12493: European standard for the design and manufacture of welded steel pressure vessels used in LPG road tankers.



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# 7.2 Key Standards Followed by UNITALAY:

- EN 12252: Specifies equipment and accessories used in LPG road tankers.
- EN 12542: Covers the design and manufacture of statically mounted, series-produced cylindrical LPG storage tanks with capacities up to 13 m<sup>3</sup>.
- **EN 13458:** Sets requirements for the design and construction of static vacuum-insulated cryogenic tanks.
- EN 13530: Specifies the design, manufacturing, inspection, and testing requirements for large portable vacuum-insulated cryogenic containers over 1000 L, for both fixed and removable road transport.
- **EN 14398:** Defines operational requirements for large portable vacuum-insulated containers.





- **EN 14025:** European standard for metallic pressure vessels used in the transport of dangerous goods.
- **TSE EN 12285-1:** Turkish/European standard for underground horizontal cylindrical tanks (single or double skin) storing flammable or non-flammable liquids.
- **TSE EN 12285-2:** Applies to aboveground horizontal cylindrical tanks (single or double skin) for the same use.
- **EN 13094:** Covers metallic tank design and construction with a working pressure not exceeding 0.5 bar.

## 8. ENGINEERING DESIGN

At UNITALAY, the engineering design of LPG pressure vessels is carried out in-house by our skilled team of experts. We use the latest CAD software and advanced engineering tools to create customized, efficient, and safe designs that meet both client specifications and the highest industry standards.

## 9. FABRICATION PROCESS

The fabrication of our LPG pressure vessels is conducted at our **state-of-the-art facility located in Erbil, Kurdistan, Iraq.** Our factory is equipped with modern machinery and is handled by a team of qualified technicians and welders who adhere strictly to internat tional fabrication standards.



# 9.1 Key features of our fabrication process

- Precision Manufacturing: All components are fabricated with tight quality control to ensure dimensional accuracy and structural integrity.
- Certified Welding Procedures: All welding is performed by certified professionals using procedures that comply with ASME and EN standards.
- Non-Destructive Testing (NDT): We perform rigorous inspections, including radiographic and ultrasonic testing, to ensure weld quality and pressure integrity.
   Surface Preparation & Coating:
- Tanks undergo surface preparat tion followed by the application of primer and final protective coatings to prevent corrosion and enhance durability

## **10. Quality Control**

At **UNITALAY**, **quality control** is integrated into every stage of the design, fabrication, and installation process. Our commitment to quality ensures that each LPG pressure vessel meets strict industry standards and client expectations.



# 10.1 Key Quality Control Practices Include:

#### **Material Inspection**

All raw materials are verified for compliance with mechanical and chemical specifications.

#### **In-Process Monitoring**

Continuous checks during cutting, forming, welding, and assembly to ensure dimensional accuracy and workmanship.

#### **Welding Inspection**

Welds are inspected visually and through non-destructive testing (NDT) methods such as ultrasonic, radiographic, and dye penetrant testing, based on code requirements.

#### **Pressure & Hydrostatic Testing**

Each vessel undergoes rigorous pressure testing to verify its strength and leak-free operation.





## **11. SAFETY**

At **UNITALAY**, safety isn't just a policy — it's a core value and a way of thinking. We integrate safety and quality at every stage of our operations, ensuring both are delivered hand in hand. Our organizational culture is built on the principle that safety must be embedded into every aspect of our work.

We are committed to delivering LPG systems that meet the highest standards of safety and reliability. From design to fabrication, every product is engineered with safety at its core, ensuring consistent performance in even the most demanding environments.

For each project, we develop tailored safety plans and provide comprehensive training to our team on procedures, equipment, risks, and protocols. This proactive approach leads to a safer work environment and consistently high-quality production.



Surface preparation and paint thickness are inspected to confirm protection against corrosion.

#### **Final Inspection & Documentation**

A complete review is conducted before delivery, including inspection reports, material certificates, and compliance documentation.





## **12. JOINT CAPABILITIES**

As a joint venture between **Unigaz and Talaytech**, **UNITALAY** brings together excellence in engineering, deep market knowledge, and decades of experience to deliver a comprehensive range of LPG solutions. Our combined capabilities allow us to serve a broad range of clients—from residential developments to large industrial facilities—across Iraq and the wider region.

### **12.1 OUR KEY AREAS OF EXPERTISE:**

#### 1- Central LPG Systems (Residential & Commercial).

**UNITALAY** designs and installs centralized LPG systems for **residential compounds** and commercial facilities such as hotels, malls, hospitals, and restaurants. Each system is **customized** based on usage needs, safety standards, and building layout.

### **FEATURES INCLUDE:**

- · Central Storage with metered supply to individual units.
- **Integrated Safety:** Leak detection, automatic shut-off, and fire protection interfaces.
- Smart Monitoring: Optional telemetry for remote level tracking and billing.

#### **2- LPG Road Tanker Fleet**

Design, fabrication, and delivery of LPG transport tankers built to international safety standards.•



## **13. LPG ROAD TANKER** FLEET

**UNITALAY** offers reliable and compliant LPG transport solutions with a **modern fleet** of tankers equipped for **safe, efficient bulk distribution**.

### 13.1 Semi-trailer tankers or truck-mounted tanks with the option of complete transfer equipment for LPG transport and supply

UNITALAY LPG tanks with volume capacities starting at 15m3 for the rigid truck-mounted type and at 56m3 for semi-trailer tankers, adapt to the specific demands of individual projects and their requirements in terms of tank and/or vehicle characteristics.

## 13.1.1 General/Standard Characteristics

- Tank for transport of ADR class 2 liquefied gas under pressure.
- Design and construction according to ADR
- Product to be contained: LPG(UN1965), commercial propane and butane
- With parasol aluminum plate covering 120 C of cylinder
- AOR design pressure:19.2 bar
- Test pressure:25 bar
- Design temperature: 20 +SOC

## **KEY FEATURES:**

- Advanced Equipment: GPS tracking, bottom-loading systems, and pressure relief valves
- Wide Distribution: Serving depots, commercial sites, and remote locations
- Trained Operators: Drivers certified in safe handling and unloading procedures
- Fully Compliant: Vehicles meet local and international standards (ADR, NFPA)

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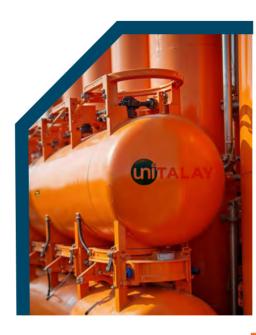
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### **13.1.2 CONTROL AND TESTS**

- Tank for transport of ADR class 2 liquefied gas under pressure.
- Design and construction according to ADR
- Product to be contained: LPG(UN1965), commercial propane and butane
- With parasol aluminum plate covering 120 C of cylinder
- AOR design pressure:19.2 bar
- Test pressure:25 bar
- Design temperature: 20 +SOC

## **13.1.3 BASIC EQUIPMENT**

- Internal head valves with flow limiter and opening via automatic return lever, for connections to liquid phase and gas phase, with "fire-safe" type ball valve, sealable with blind cap.
- Valve with pressure gauge and high point indicator.
- Background drain valve.
- Rotating level.
- Thermowell temperature indicator.
- Safety valve (Optional).
- ONSOO Manhole located on rear head
- Electrical and pneumatic installation, according to ADR.





### I3.1.4 EXTERNAL FINISH

- Inspections as per design code.
- 100% weld x-raying.
- Hydraulic test at 25 bar
- Testing of tightness of unit with transfer equipment.
- Tests according to ADR.

## 13.1.5 OPTIONAL

- Design pressure and temperature.
- Thicknesses, paint and color of external finish.
- Signs on tank body.

## 14. LPG TANK FARMS (ABOVEGROUND & UNDERGROUND)

UNITALAY provides turnkey solutions for both aboveground and underground LPG tank farms, tailored to site needs and safety requirements. Engineering and construction of large-scale storage systems with full safety and automation integration.

#### Aboveground Systems:

Easy to install and maintain, ideal for commercial and industrial zones.

#### **Underground Systems**

Space-efficient, visually discreet, and suitable for residential and urban areas





#### **Flexible Capacities**

From small cylinder banks to large horizontal or vertical tanks.

#### **Complete Delivery**

Includes engineering, civil works, piping, vaporizers, control systems, and cathodic protection (for underground).

#### Safety & Standards

Built to API 2510, NFPA 58, and local Iraqi regulations with overpressure protection, grounding, and fire-rated fencing.

- Skid Units: Pre-assembled systems with storage tanks, pumps, valves, and safety equipment, perfect for quick deployment in commercial and industrial environments.
- Autogas Dispensers: Designed for public or fleet fueling stations with electronic metering, hose retraction, and safety cut-off features.
- Plug-and-Play: Fast installation with minimal civil work required.
- Mobility & Scalability: Easily relocated and expanded to meet operational needs.
- Compliance: Built to meet NFPA 58, EN 14678, and local regulatory standards

## 15. SKID-MOUNTED UNITS AND AUTOGAS STATIONS

Compact, factory-assembled LPG stations for rapid deployment and minimal on-site work.

We offer compact, modular skid-mounted LPG units and fully integrated Autogas refueling systems:

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At UNITALAY, we combine cutting-edge engineering with precision manufacturing to ensure that every vessel meets the highest standards of safety and durability. From concept to commissioning, our services include:

**Customized Design** 

- Advanced Fabrication
- Protective Coating (Primer & Final)
- On-site Installation
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## **16. AUTO GAS SKIDS**

- Horizontal Aboveground SKID
- Vertical Aboveground SKID
- Underground SKID

Stand-alone LPG storage units with pumping equipment and dispenser incorporated in a frame.

- Includes transfer equipment to allow the supply of gas in liquid phase to vehicles, with the maximum guarantee of safety.
- Simplified installation: only requires connection of power supply to the unit and anchoring to the ground (with earth connection).

### **16.1 DIRECTIVES:**

- Pressure equipment: 2014/68 / UE
- Machinery: 2006/42 / CE
- ATEX 2014/34 / A
- Low Voltage: 2014/35 / EU
- Electromagnetic Compatibility: 2014/30 / UE

### **16.2 NORMS**

- EN 14678
- UNE60630

### **16.3 COMPOSITION**

- LPG STORAGETANK: Standard tank with a design pressure of 18,5 bar and special connections for transfer unit.
- FRAME: A support structure that houses the complete installed unit.

### **16.4 SUPPLY UNIT:**

- Hose specific for LPG, compliant with EN 14678-1 and EN 1762.
- Break away included in hose.

### **16.5 LPG TRANSFER LINES:**

- Liquid phase outlet line: Includes limiter shutoff valve and filter for liquid LPG place before the pump
- Return line tank (protects the pump from overpressure) with a by-pass valve.
- Pump-to-dispenser transfer line: Includes safety valve and pressure.

#### 1- Vaporization and Pressure Regulating Units

Advanced systems to ensure safe and reliable LPG delivery across all applications.

#### 2- Firefighting and Safety Systems

Integrated fire protection and emergency response solutions for all project scales.

#### 3- Retrofit and Conversion Projects (HFO to LPG)

Converting heavy fuel oil systems to clean LPG energy for industrial efficiency and environmental compliance

## **17. ACCESSORIES OF LPG STORAGE TANKS**

## **17.1 ACCESSORIES**

- Valve Equipment
- Cathodic Protection Equipment
- Covers / Inspection Chambers

## 17.2 Valve Equipment:

Availability of valve equipment adapted to all our range og LPG storage tanks. The supply of valves is included in our standard range of tank sup to 59m3 capacity. As an option, the valve equipment can be supplied ready mounted on the tanks, with air-tightness test and tank inerted with nitrogen. Specific valves and equipment for special tanks can be supplied upon request





## 17.3 Covers / Inspection Chambers

Lockable, hinged protective valve covers for aboveground, Stainless steel or PVC valve inspection chambers for underground tanks.

Special inspection chambers adapted to the characteristics of the tank and/or installation

### 17.4 VALVE EQUIPMENT/ HORIZON-TAL TANKS CAPACITY UP TO 13,0 m<sup>3</sup>

- Filling Valve; Connection to tank 1-1/4" NPT and connection to hose or pipe 1-3/4" ACME.
- Check-lok 3/4 " NPT to fit at drain

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• Check-lok 1-I/4" NPT for the liquid phase. Multi-valve 3/4 " NPT at gas phase outlet, with pressure gauge, high point and flow rate limiter.

• External safety valves with valve manifold.

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- ROCHESTER. Magnetic level.
- Plug at connection of lower generatrix.

## 17.5 CAPCITY GREATER THAN 50.1 m3

- Filling, liquid phase, gas phase; Flanges ASA 300# 2" NPT.
- High point valve and manometer.
- Chek-lok 1-1/4" NPT for drain (Except diameter >2.450: Flange ASA 300# 2" NPT).
- ROCHESTER MAGNETEL type 8" magnetic level.
- Safety valves mounted on manifold.
- Immersion bulb thermometer, 1/2 " (tanks of more than 60 m3).

## 17.6 CAPACITY FROM 13.120.0 m3

- Gas Phase outlet: flow rate limiter and shut off valve
- High point valve and pressure gauge, in separate connection from gas phase outlet

### 17.7 CAPCITY FROM 20.1 to 50 m3

(diameters 1.500 and 1.750 mm)Same equipment as before, except for:Safety valves mounted on manifold.

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## 17.8 Cathodic protection Equipment

Cathodic protection equipment for underground tanks, comprising magnesium anodes with connecting wires and terminals, suitable for the tank size and surface area.

Bag of activating mix can be supplied as an option.

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