Company DUOL designs, manufactures and installs some of the most unique and versatile fabric structures in the world. We are experts in Air structures, Prefabricated frame (wooden/metal) structures and Tent Structures.

Air Supported Structures (Air domes) are most recognized products from DUOL. We are global leader in air supported structures and since company founding 23 years ago, DUOL installed more than 1200 structures all over the world: Europe, Asia, Middle East, Africa and South America.

DUOL team is dedicated to maintain the highest level of quality in our products and professionalism in our service. Our team is comprised of the most knowledgeable, highly trained and motivated people in the industry.
WHY TO CHOOSE DUOL DOMES

PRODUCTION PROCESS FROM THE START TO THE END

QUALITY AND LIABILITY
QUALITY:  
THE FOUNDATION OF OUR WORK!

- DUOL is always striving for excellence. DUOL has lead the industry to higher and higher standards by continuously optimizing air domes, implementing new, cutting edge technologies and developing innovative, cost-efficient solutions for specific client's demands. Every component in a DUOL air dome benefits from our extensive experience and high investment in R&D.

- DUOL air domes elements are manufactured in EU, designed according EN 13782 standards and all elements are CE certified, meeting following criteria:
  - **Safety**: (energetic autonomy, weather resistance, seismic safety, approved and valid calculations, safety design and planning, simple control);
  - **Technical**: (systemic solutions, high technology in design and materials, easy installation, fast assembling, quick dismantling, easy relocation);
  - **Aesthetic**: designing in 3-D CAD/CAM programs, 3-D visualizations, computer-integrated manufacturing.

- As a certified company with the ISO 9001:2008 quality standards, we apply this standard to every operation within DUOL organization. DUOL follows strict ISO 9001:2008 standards in every process to ensure client safe, on time delivery and quality products.
DUOL's engineers directly provides you with:

- foundation design,
- manuals,
- technical characteristics,
- sketches,
- certificates,
- structural drawings,
- calculations,
- 3D visualizations,
- and other custom client's requirements.
We provide you with all structural static verifications according to local weather conditions and local building permissions.

We understand the power of visualization and in early stages provides you with project 3D visualization.
We manufacture, install and maintain the products we sell. We are not simply “brokers”, selling components manufactured by others and relying on a disconnected group of suppliers to perform the follow up and warranty services.

DUOL does not sew or “heat seal” together its fabric. We use Electronic high frequency (HF) welders to attach fabric panels in a way that replicates the original strength of the fabric.

Each DUOL air structure is equipped with a mechanical system that is custom designed to fit exact specifications. DUOL air generators are started-up and warranted by DUOL’s factory-trained and authorized technicians.
Whatever combination of activities you desire for your facility, we can provide you with a turn-key, custom designed, air-supported structure to cover it.

Utilizing our proven technology, we are able to cover an area of practically any reasonable size, be it a single tennis court or a large football pitch. Each dome is customized by the client’s needs:
EFFICIENT & FAST WORLDWIDE AFTER SALE SUPPORT

After you purchase a DUOL air dome you rely on the most experienced group of professionals in the world. DUOL offers to its clients efficient and fast worldwide support during and after warranty period.

Immediate technical support for clients can be organized in very short time with fly interventions of DUOL technicians. Spare parts support with the standard first aid kit are guaranteed, with crucial spare parts already on stock ready for sending.
WHY TO CHOOSE DUOL DOMES

REFERENCES ALL OVER THE WORLD

QUALITY AND EXPERIENCE
DUOL installed more than **1200 structures all over the world** and as a clear market leader, enjoys the confidence of customers all over Europe, Asia, Middle East, Africa and South America. Some of DUOL prestigious references over the world:
Trondheim, Norway

Kungsbacka, Sweden

Thessaloniki, Greece

Agon-Coutainville, France
Helsinki, Finland

Brussels, Belgium

Belgrade, Serbia

Food processing air domes, Russia
WHY TO CHOOSE DUOL DOMES

INNOVATIVE STRUCTURAL DESIGN

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QUALITY AND BENEFITS
The main advantages of DUOL air supported structures in comparison to traditional solutions are competitive prices, technical perfection and short delivery terms. This is possible due the fact that air supported structures do not require concrete, steel or wooden supporting construction; air is only supporting system. The combination of the latest materials and technologies used in DUOL air supported structures means low operating costs and a feeling of comfort, regardless of weather.

- Complete weather protection of the venue
- Easy installation
- Fast Assembling
- Quick dismantling
- Easy relocation
- Big clear span
- Price performance value of the dome
- Long life expectancy
- Meets all regulations: designed according to EN13782

Suitable for large events  
Natural day-light inside the dome
DUOL air supported structures are revolutionary structures offering unparalleled cost benefits over traditional solutions. The costs of design, manufacture, site preparation and installation are a mere fraction of cost compared to conventional construction.

Unlike traditional structures, DUOL structures also require less paper work.

**Clear Spans design**

Air domes are completely clear span with no internal supports or pillars, therefore the internal space can be used for all manner of activities.
After design approval we design, manufacture, and install turnkey structures in a matter of weeks. Installation is simple, quick and cost effective.

**QUICK INSTALLATION**

+1 hour

+8 hours

+4 days
Often it is more cost effective to have the air structure in place only for wintertime activities and remove the air dome during the summer months. Dismantling process is quick and easy. DUOL service team can take care for seasonal dismantling.
WIDE PURPOSE OF USE

- **SPORT**
  Sport domes, indoor stadiums

- **INDUSTRY**
  Production halls, warehouses, shops

- **AGRICULTURE**
  Food processing objects

- **TEMPORARY BUILDINGS**
  Exhibition centers, stocks

- **CIVIL PROTECTION**
  Mobile hospitals, evacuation centers

- **MILITARY**
WHY TO CHOOSE DUOL DOMES

DOMES IN ALL EXTREME WEATHER CONDITIONS

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QUALITY AND SAFETY
EXTREME WEATHER CONDITIONS

DUOL air domes are located around the world in a variety of climates - from cold Kamchatka to hot areas in Middle East. Temperature range of membrane resistance is from -40 °C to +70 °C. Air conditioning system is available as well and is custom-designed for each project’s specific requirements.
The air supported structure is an **autonomic object**, meaning in an emergency situation it is maintained by itself. The emergency heating unit provides stability to the dome in case of a blowing unit fault or in case of an electricity break-down.

Each dome is equipped with a certain number of emergency exits according to the dimensions and purpose of the dome. The fabric is fire-retardant and all air dome elements **meets local standards**.

The unique structural design of the air dome allows it to **withstand heavy winds and snow** and, unlike conventional buildings air dome is **earthquake resistant**.

DUOL’s final product is **certified with ISO management system 9001** as well in compliance with standard **EN 13782**, means we keep in all calculations reserve as requested with this standard.

- **WEATHER RESISTANT**
- **APPROVED AND VERIFIED CALCULATIONS**
- **ENERGY AUTONOMY**
- **SAFETY DESIGN AND PLANNING**
- **SEISMIC SAFETY**
WHY TO CHOOSE DUOL DOMES

ENERGY SAVINGS WITH OWN TECHNOLOGY INNOVATIONS

= QUALITY in ALL COMPONENTS
DUOL DMS™ is unique solution of double membrane system which guarantees resistance to harsh climatic conditions and ensure the highest temperature isolation.

DMS™ comes with more variants. Standard DMS™ provides thermal insulation of 3.05 W/m2K, while DMS Plus™ provides thermal insulation down to 1.74 W/m2K and E-DMS Plus™ down to 1.43 W/m2K (measured by independent test institute).

DMS™ thermo (Double membrane system without thermal bridges) is available for best thermal insulation.
SpaceDome™ INSULATION SYSTEM

SpaceDome™ insulation system is special insulation layer between membranes. Insulation is made from high-tech materials firstly developed in space technology with characteristics of lowest thermal conductivity of any solid material.

With SpaceDome™ insulation system heating and cooling costs of air dome can be reduced below the level of a traditional buildings which is remarkable achievement.
DUOL double membrane system is composed by two layers of the membrane, **HF welded**. The outer membrane is stronger, made by **high tenacity polyester fabric**, and protected with special lacquering, holding all the forces, while the inner membrane is insulating one and lighter.

Every ca. 2.5m there is HF welding, where four membranes are overlapping and are welded together, presenting the **strong reinforcement** in vertical and horizontal direction.

Standard membranes are UV resistant, but with use of special lacquering finish like **Polyvinylidene fluoride (PVDF) or Titanium dioxide (TiO₂)** this resistance is even better, what increases materials quality and lifetime. Standard fabric is **translucent** for daylight and it completely meets physical, technical and fire standards as well regulations. Standard color is white.
DURABILITY / LIFE EXPECTANCY
In DUOL double membrane systems, the replacement of the membrane is not required and the life expectancy is extended to 40+ years based on tests, experiences and existing projects.

NATURAL LIGHT
As both membranes are highly translucent, the use of a lighting system is not required during the daytime, which leads to big savings on electricity.

FIRE RESISTANCE
All membranes are fire retardant, certified by the following certificates: M2/NFP 92-507, TEST 2/NFPA 701, CSFM T19, B1/DIN 4102-1, BS 7837, B1/0N0RM B 3800-1, M2/UNE 23.727, VKF 5.3/SN 198898 and others.

CONDENSATION
Thanks to excellent insulation, achieved by the DUOL expanded double membrane system, there is no condensation inside the air dome.
SNOW
The shape of the air dome is designed to withstand local weather conditions. A totally flat surface and lacquered finish, ensures that the snow slides off the air dome.

RIGIDITY
With mechanical resistance and specific porosity design, our fabrics provide excellent dimensional stability, structural strength and wind protection. Thanks to the DUOL expanded double membrane system, the DUOL domes are very rigid and vandalism resistant. In case of any damage to the outer membrane, the inner membrane will remain air tight and retain its pressure and stability.

SELF-CLEANING
DUOL implements an advanced membrane coating, which is self-cleaned to preserve a perfect white colour membrane and consistent transparency for many years.

ENVIRONMENTAL COMMITMENT
Lightweight and durable, DUOL fabrics are also 100% recyclable.
Optional - TRANSPARENT MEMBRANE

Playing indoor while having a 360 degrees panorama view – with new transparent membrane from DUOL new architectural sport halls concepts are possible. Recently developed transparent membrane offers, best on the market, 64% lights transmittance.
DUOL heating-ventilation system is pre-engineered for stability, furthermore it provides the desired climate conditions inside the dome. System is completely automatically-controlled. When safe pressure is achieved, the system automatically turns off.

- Variable Pressure Control – frequency converter reducing overall energy costs
- Improved modulating system (saving up to 35%)
- High efficiency heat exchanger
- High efficiency condensing units (up to 105% efficiency)
- Automatic programmable control (wind, snow and pressure sensors)
- Casing made of stainless steel
- Insulated sandwich panels for extreme low temperatures
- Silent operation - radial fan of low noise
DUOL INTELLERGY

DUOL Intellergy is an innovative PLC solution for supervision and automation of air domes. The installed programmable logic controller (ComBox.M) interacts with different air dome systems and is used for supervision, automation and control solution. Once connected the users have easy access via web cloud base application GemaLogic and smartphones.

- Supervision, alarming and automation
- Remote data acquisition
- Data logging and history
- Modular design
- Wide range of air dome monitoring systems
- Cost effective and simple installation

Available for iOS and Android
De-stratification system is mounted on the top of the dome and improves temperature distribution inside the dome – pushing the warmer air from top to down. The result is lower energy bills and a more comfortable environment.
Reliability and safety are the most important features of DUOL structures. The emergency source of power is a critical item that must not be left to chance.

- **Auto** start function, and automatically shutdown when situation is stable
- **Manual** control panel
- **Wind sensor & Snow sensor**
- Operating and start-up temperature is from -55°C to +55°C
- 12-24 h autonomy, which can be extended up to 100h, and more.
- Alarms – visual and sirene
- **Sound insulated** waterproof case
- Equipped with **tested and reliable engines** of well-known manufacturers (Iveco, Cummins, perking, Volvo ...) and alternators (Mecc Alte ...), which have service network practically all over the world.
- UPS
Every structure needs a solid foundation to keep it anchored and secure. According to project specification, DUOL's engineers will choose the best anchoring system available:

- Anchor rings with pipes
- L-bars system
- Ground anchors
- Anchor bolts
- Drop-in anchors
- Mobile/hidden anchors

With the DUOL advanced anchorage system, air loss around the base perimeter is greatly reduced, providing **savings on inflation**.

- Perfect airtight
- Powerful fixation.
- For extreme weather conditions
- For permanent or seasonal use of the dome
- Durable hot galvanized steel. Maintenance free
LIGHTING SYSTEM

We understand the importance of lighting for sporting activities at all levels, from the part it plays in facilitating local community sports development, to the complex mix of needs associated with the professional sports.

DUOL utilize high performance optical reflectors to provide light of the desired intensity and maximum light uniformly across the playing surface.

Reflectors deliver excellent illuminance, luminance and uniformity, precise light control at minimal glare.

- High optical and energy efficiency
- Highly durable & impact resistant
- Long service life
- Natural spectrum light
Direct: Metal halide reflectors 400W.

Indirect: Metal halide lights 1000W or 2000W

Energy saving: Fluorescent lights

Energy saving: LED lights
DuoLed™ LED LIGHTS

DuoLed™ significantly reduces electricity consumption and also offer savings due to reduced maintenance and replacement costs thanks to Led’s durability and longer lifespan.

- High uniformity and energy saving (between 50 and 75%)
- Reduced glare
- Solid State Components (high resistance to accidental damages)
- Life cycle higher than 50,000 hours, against the average 8,000
- Lower maintenance cost
- Greater consistency in light delivery over the time
- No warm up time, instant light up
- No emission of UVA and UVB rays, free of hazardous substances
- IP65 certified

The higher investment costs of DuoLed™ (blue line) is repaid in two and a half years on average (exact time depends on local electricity price and on light usage per day).
Revolving doors

Revolving doors are specifically built to withstand the building pressure pushing in both directions on the panels without fatigue failure. Brush seals minimize air losses whilst maintaining a smooth operation. The doors include large glass panels in order to see other users and the housing is made from maintenance free galvanized steel.

Pedestrian doors

Pedestrian doors are used mainly for handicapped people access, but are also useful for hand-truck deliveries. Two doors are built in a frame with a short connecting tunnel creating an airlock system, thereby maintaining the building pressure and minimizing air loss. The frame and doors are built from galvanized steel for long life and include glass windows for safety.

AIR DOME ENTRANCE
AIR DOME ENTRANCE

Emergency doors

The purpose of this doors are to give providing emergency paths. The frame and the door leaf are made by galvanized metal construction. The doors have porthole, emergency exit signs and lights and meets fire and building codes.

Transport tunnel

Transport tunnel is an entrance for large vehicles and can be used also as a storage room for the equipment.
As company involved in sport segment for over 20 years DUOL is closely linked to trusted suppliers of air dome interior and DUOL can deliver completely equipped turn-key sport object, including: stands, offices, changing rooms, toilets, sports flooring, sports equipment...