

DUOL

METAL STRUCTURES



ISO 9001

BUREAU VERITAS
Certification



DUOL membrane technology JOINED steel structures

With over 20 years experiences in fabric structures DUOL has the knowledge to offer highest quality steel structures covered with DUOL 's premium membrane technology. Hot dip galvanized structure offers complete protection from corrosion and DUOL proven membrane technology provides long life which require virtually no maintenance.

DUOL custom-designed portable metal structures provide a fast, low-cost solution. We provide quick delivery and installation that can be completed in a few days. Because of our special modular design, you can easily expand or relocate your portable structure when desired.

Benefits of DUOL prefabricated metal structure

Fabric buildings are an excellent alternative to conventional buildings for many reasons:

	DUOL Fabric structures	Conventional constructions
Clear-span design	✓	✗
Naturally bright interior	✓	✗
Relocatable	✓	✗
Quick installation	✓	✗
Low project cost	✓	✗
Maintenance free	✓	✗
Foundation options	✓	✗



Quality assurance

DUOL fabric structures are ISO 9001:2008 quality-certified, underlying the company's commitment to excellence in all areas of its business.



Quality in details

The DUOL difference is part of everything we design, engineer, and build.

It's small details, and huge details. It's quality over cost cutting. It's the right amount of steel. It's engineering to meet demanding applications and environments. It's both structural integrity and professional processes.

It's the only way we know how to build.

Why choose DUOL steel structure?

✔ Quick to Install

DUOL steel buildings typically require less lead and construction time than conventional construction, getting you up and running faster.

✔ Easily Relocated

Our fabric building is designed to be permanent, but can be quickly disassembled and relocated with minimal impact on the environment when compared to conventional constructions.

✔ Lower Project Cost

Total project costs, including construction, can be significantly less than conventional construction.

✔ Clear-Span Design

The absence of internal pillars or posts allows for maximum use of space. The high ceilings allow you clearance for moving or storing large equipment.



Ideal for Many Venues

DUOL steel buildings can provide weather protection for virtually any type of location anywhere in the world. They are used at:

- Sports & Recreation
- Industrial, logistics and retail
- Agriculture
- Riding
- Airplane Hangars
- Waste & Decontamination
- ...

✔ Foundation Options

The flexible nature of a fabric structure accommodates foundation movement. In addition, there are more types of foundations available which can be quicker to install, resulting in less overall expense.

✔ Naturally Bright

DUOL translucent fabric increases the natural light within the building. This reduce or eliminate the need for artificial lighting during daylight hours.

✔ Low Maintenance

Our PVDF treated fabric features exceptional UV stability and long durability. Galvanized structural steel withstands corrosive environments. No additional painting or chemicals are required.

✔ Environment Friendly

Small carbon footprint is created during manufacturing, transportation and installation. Our structures are Eco-friendly, with recycled steel and fabrics.



SPORTS & RECREATION

Quickly installed structures are ideal for football, tennis, swimming pools, skating rinks, multisport and others. DUOL translucent membrane gives the impression of playing and training outside. Our innovative double membrane insulation system provides full weather protection and best thermal insulation.

- **Enjoy your activities year-round**

Planning activities takes a lot of time and energy. Why risk having to cancel them due to inclement weather? With a DUOL sports hall, community members can enjoy year-round access, in spite of mother nature.

- **Side walls opening**

As an option, DUOL steel buildings are equipped with lateral sliding openings, providing pleasant indoor environment with fresh outside air.

- **Full turnkey solutions**

As company involved in sport area for more than 20 years, we have the knowledge to offer completely equipped sport arena. We are closely linked to trusted suppliers of sports equipment and sport floorings, offering highest quality products, designed using the latest technology and certified by international sports associations.



INDUSTRIAL, LOGISTICS OR COMMERCIAL

Whether they are used for storage, or as a secure area for manufacturing, DUOL portable steel buildings are a quick and cost-effective solution for industrial operations. The structure has no central support, so trucks and lifts can easily operate in any direction and high side wall clearance allows maximum utility.

- **DUOL fabric structures are bright and extremely durable**

Every DUOL building creates a bright, spacious, safe and comfortable work environment for your employees. With little or no artificial daytime lighting required, these pre-fabricated buildings are designed and engineered to adapt to heavy industrial use, with many available options such as exhaust vents for fumes, or extra hot dipped galvanization for corrosive environments.

- **Custom design**

DUOL structures have unparalleled engineering and design capability to provide customized solutions to complex project needs including high wall buildings and liftable buildings. They are ideal for use as a base during construction, for warehousing of vehicles, machinery and equipment, for bulk storage, on-site workshops...

- **Flexibility**

Seizing unforeseen business opportunities is the key to any successful organization. A DUOL pre-fabricated building can easily be extended or dismantled and reinstalled in a new location.

- **Cost effective alternative for short term storage needs**

Conventional industrial buildings are expensive to build and maintain. DUOL structures are a great alternative and can be built for a fraction of the cost, and time of conventional buildings. In addition, owners often pay lower property taxes.



Fire Safety

The self-extinguishing properties of DUOL membrane cause the membrane to “self-vent” in the case of a fire, thus allowing smoke and heat to escape from the building. This effect has been proven in full scale independent fire tests, as well as real fire events.

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

AGRICULTURAL

Whether temporary or permanent, the clear span width of a DUOL metal structures provide cost-effective, column free space that can be erected on any surface. Our product is made of high quality hot dipped galvanized steel highly resistant to any corrosive environment. Duol has developed special AgroMembrane™ system for use in agro halls.



Food processing agro halls

- Steel construction covered with special AgroMembrane™
- Double membrane insulation systems with StatAir™ function
- Perfect climate control even in extreme conditions
- Highest efficiency storage technology
- Quick assembly and disassembly, assembly time 1 week
- Possibility of a relocation of the complete system

RIDING ARENAS

Ride and train year round, regardless of weather conditions, in a clear span indoor riding arena. There are many benefits to choosing our structure over a traditional structures, including the light-permeable fabric cover and a unique design that allows maximum space for riding activities. DUOL also offers many customizable options for your indoor arena, including ventilation systems, doors, lighting, fencing and more.



AIRPLANE HANGARS

Speed of erection and low cost are attractive benefits of DUOL hangars, and with some airlines, the ability to relocate the hangar, terminal or air cargo facility anywhere in the world is of great importance.

DUOL aircraft hangars, air cargo and terminal aviation buildings provide a highly functional space for helicopters, military and commercial aircraft, air cargo storage and temporary or permanent air terminal expansion. With the benefits of a very bright interior in both day and night working conditions, DUOL Aviation Buildings provide a convenient working space suitable for many airline, airport or military aircraft applications.

DUOL hangars can be equipped with all possible options of aircraft doors, emergency doors to lighting, ventilation, heating and also air conditioning.

Efficient Space Utilization

DUOL's truss frame system allows for cost effective clear span space and high vertical walls to suit customer needs. DUOL can supply a variety of span profile shapes and door system options to best accommodate specific aircraft and logistics requirements.



WASTE & DECONTAMINATION

We use the highest quality steel tubing, so these buildings are made to last and will hold up strong in corrosive environments.

There are no internal support columns to interfere with forklifts, balers, skid loaders, conveyers and other heavy machinery. With so many customizable options, DUOL has the perfect solution for your waste management or decontamination building.



Installation of temporary air-tight steel structure used as a shelter during controlled removal of asbestos from ruined building.



Custom made structures

DUOL can design and construct wide range of custom made structures. We focus on the needs of the customer at all times. Special requirements vary from extra high side walls, large doors to extra ventilation openings.

DUOL services

DUOL is committed to providing seamless, high quality service through all project phases.

ENGINEERING

DUOL utilizes the most up to date engineering and computer-aided design platforms to turn your needs into reality. We can provide stamped drawings and calculations that will be created according to the local building code.

TURNKEY INSTALLATION

A turnkey installation is the complete project management, scheduling, delivery, installation. DUOL believes that a turnkey installation ensures our clients a hassle free way to install their structure. Our consultants are experts in erecting fabric structures and can quickly train customer work crews, maximizing their production.

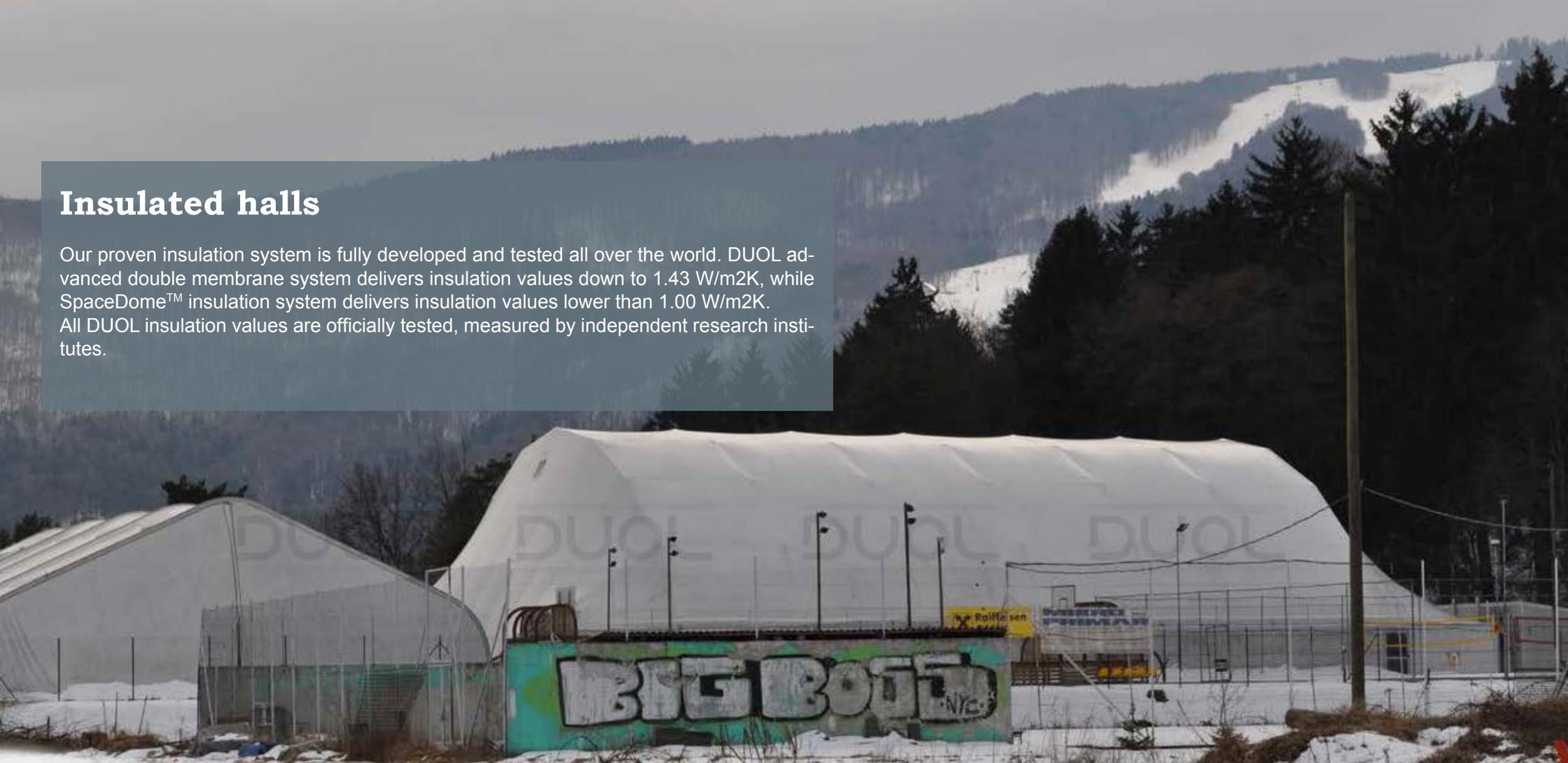


Extended durability

In DUOL fabric structures, the replacement of the membrane is not required and the life expectancy is extended to 40+ years, based on tests, experiences and existing projects.

Insulated halls

Our proven insulation system is fully developed and tested all over the world. DUOL advanced double membrane system delivers insulation values down to 1.43 W/m²K, while SpaceDome™ insulation system delivers insulation values lower than 1.00 W/m²K. All DUOL insulation values are officially tested, measured by independent research institutes.



Optional elements

DUOL offers a complete line of accessories to create a fully functional structure.

Personnel doors

Personnel doors can be added in almost any location on the structure. Either glass or steel, single or double, an attractive entrance or emergency exit. Doors can be equipped with panic hardware that meets or exceeds fire safety standards.



Lightning

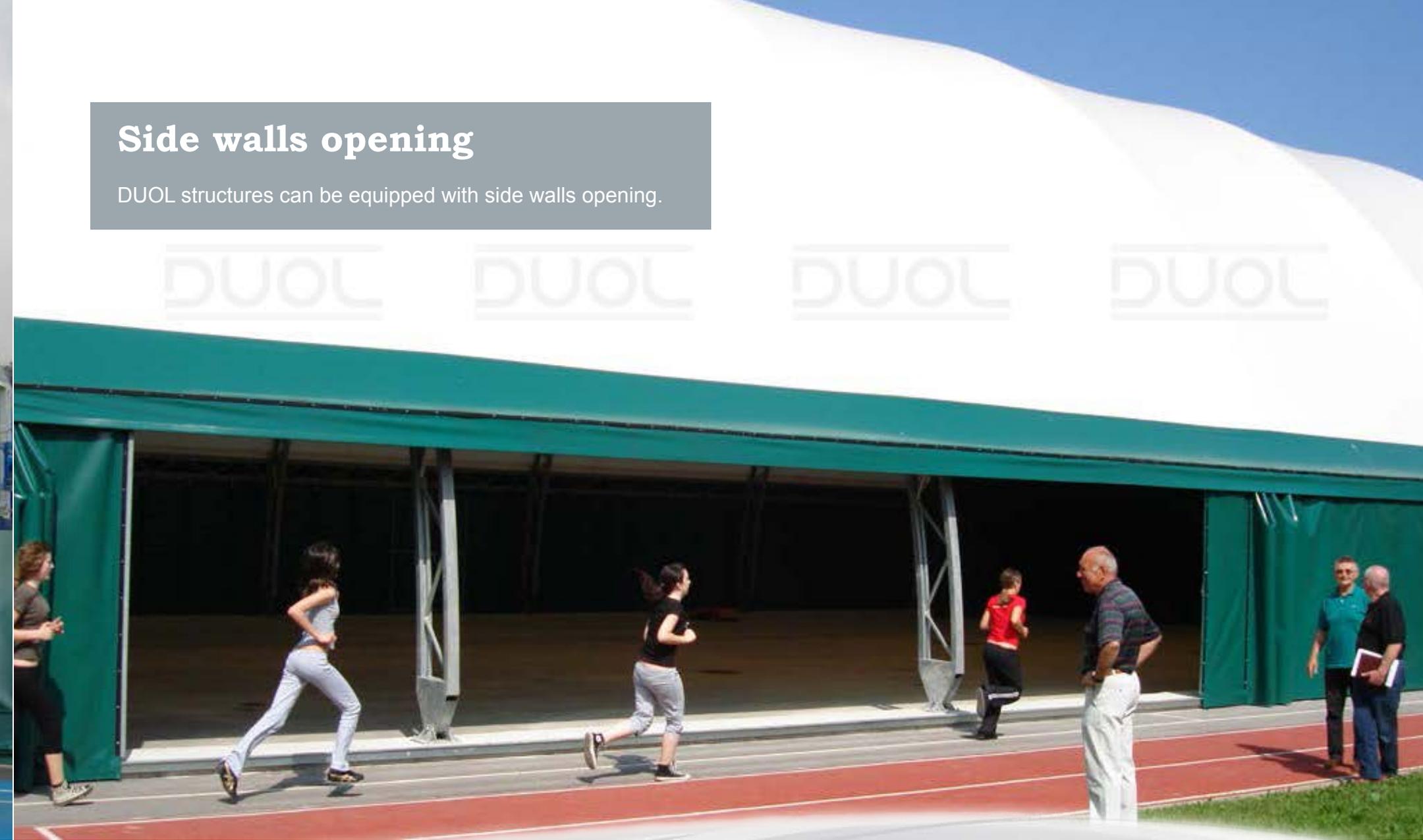
The white translucent roof provides a good level of natural light during day-light housing. However, we can design and install complete lighting and electrical requirements to suit the active within the building.





Side walls opening

DUOL structures can be equipped with side walls opening.



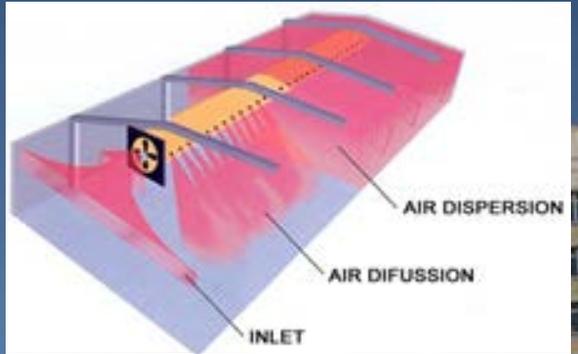


Condensation

Thanks to excellent insulation, achieved by DUOL insulation system, there is no condensation inside the air dome. Condensation is on inner side of the membrane and in between all layers.

De-stratification system

Air blow tube works in a function of air de-stratificator, providing heat distribution inside the structure.



Heating / Cooling system

Heating and cooling system provides ideal climate conditions inside the structure. It can be equipped only with one system or with both heating and cooling system. Standard Cooling units have 100 kW, 150 kW, 250 kW of cooling capacity.

DMS™ Insulation system

DMS™ (Double Membrane System) is Duol innovative solution with specially designed air pockets which greatly reduce energy consumption.

DMS™ comes with three 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.

DMS™ membrane is designed for extreme climate conditions, for temperature range from -40 to +70 Degrees. Facts are confirmed in a practice, too. DUOL has installed insulated structures of own production from articircle to the desert.

DMS™ membrane is coated with special lacquering finish like Polyvinylidene fluoride (PVDF) or Titanium dioxide (TiO²) which increase materials quality, lifespan and self-cleaning.

SpaceDome™ Insulation system

SpaceDome™ insulation system, developed by Duol, is designed to efficiently reduced al three types of heat transfer: conduction, convection, radiation. It is made from high-tech materials developed in space technology with lowest thermal conductivity of any solid material. SpaceDome™ has better thermal performance than double membrane system and with SpaceDome™ system heating and cooling costs are reduced to the level of a conventional building.



During the installation of SpaceDome™ insulation system: Insulation material is installed between double membrane.

Highest quality fabrics

PVDF-II COATING

Unmatched UV, Chemical and weather resistant. Self-cleaning. Maintenance free. Longest life.

WHITE EXTERIOR PVC LAYER

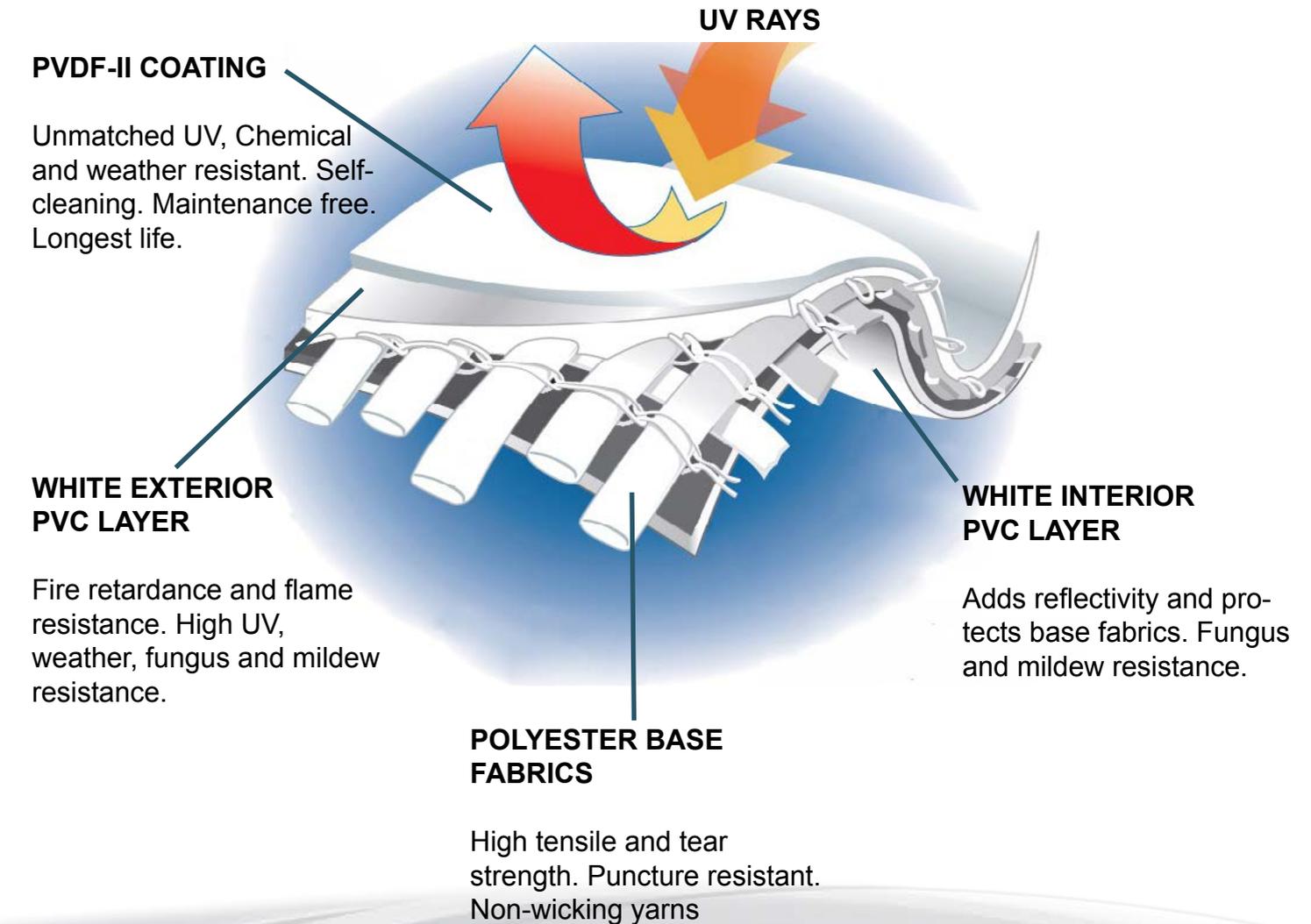
Fire retardance and flame resistance. High UV, weather, fungus and mildew resistance.

POLYESTER BASE FABRICS

High tensile and tear strength. Puncture resistant. Non-wicking yarns

WHITE INTERIOR PVC LAYER

Adds reflectivity and protects base fabrics. Fungus and mildew resistance.





In building construction there are basically two types of structural steel: hot-rolled steel shapes and cold-formed steel shapes. The hot rolled steel shapes are formed at elevated temperatures while the cold-formed steel shapes are formed at room temperature.

Hot dip galvanization

In corrosive environments, we highly recommend a hot dip galvanization process, which is applied after welding, to offer complete protection.

Cold-Formed Steel

Cold-formed steel (CFS) is the common term for products made by rolling or pressing thin gauges of sheet steel into goods. Cold formed steel is changing the construction industry. Homes, office buildings, sports facilities, commercial complexes, military facilities, schools ... are being constructed with cold formed steel offering superior strength and maximum durability.



Benefits of Cold formed structure

- Fast and easy erection and installation
- Lightness in weight
- Economy in transportation and handling
- Greater spans with minimal bracing
- Waste free throughout the process
- Recyclable material

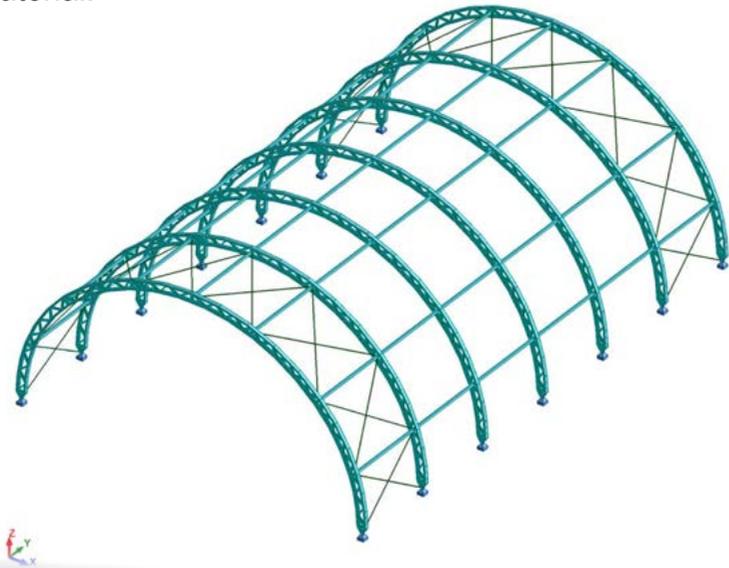
DUOL STANDARD PROFILES

DUOL DS SERIES

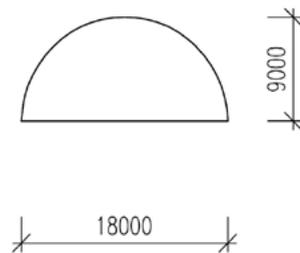
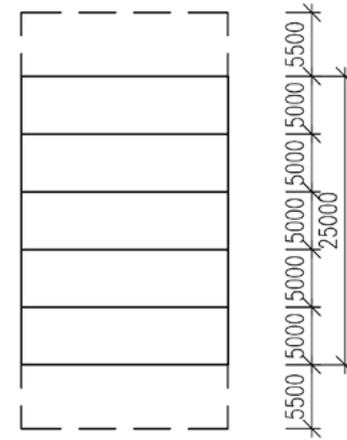
The DS series are pre-engineered arch-shape fabric structures with a steel truss frame and standard clear span widths up to 50m wide.

The truss system is designed with shipping in mind and ease of installation. Truss sections fit onto standard flat bed trucks or into shipping containers with ease and the entire sections bolt together to form the structural framing system.

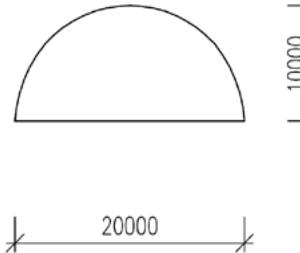
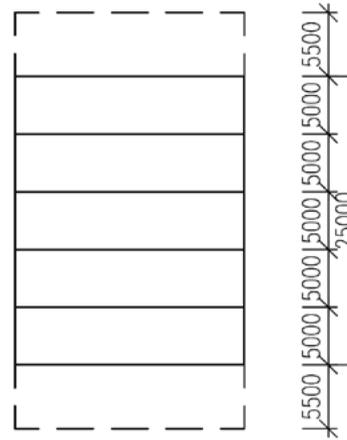
The combination of the framing and proprietary fabric panel tensioning system creates speed of installation advantages while the design of the DS series as a permanent or semi-permanent application has the potential to be completely relocatable to another location, saving 99% of your purchased material.



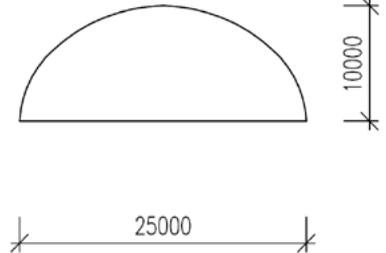
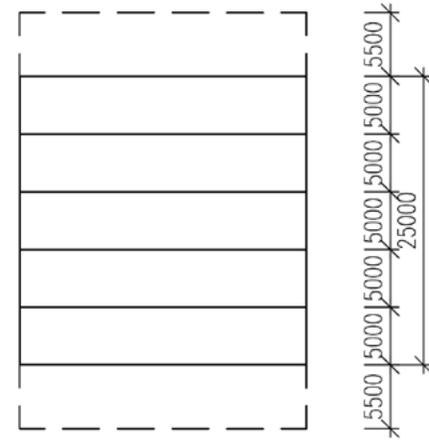
DS 18



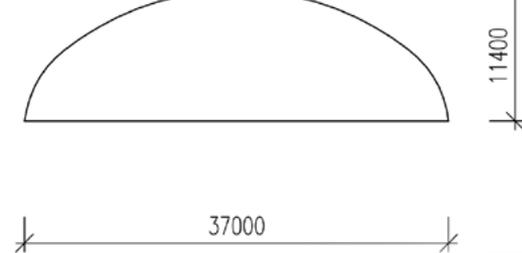
DS 20



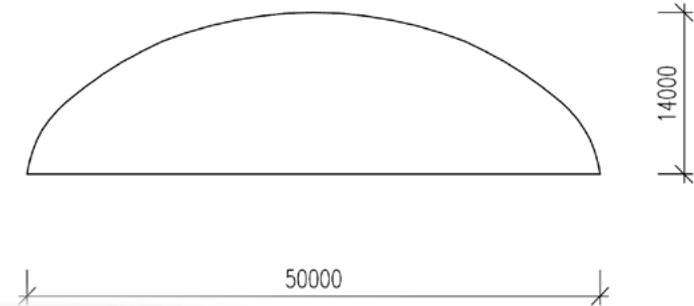
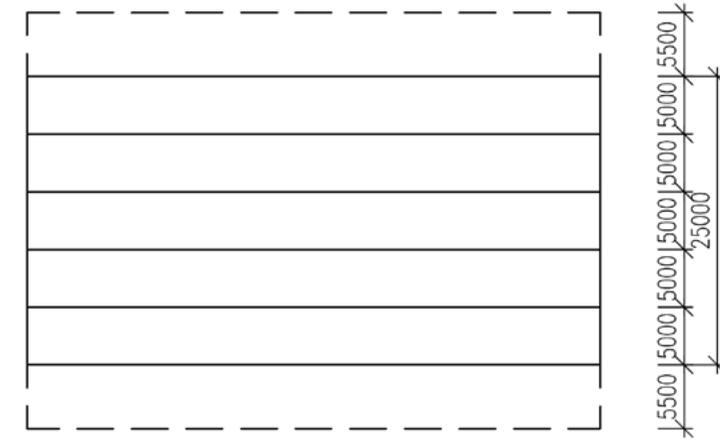
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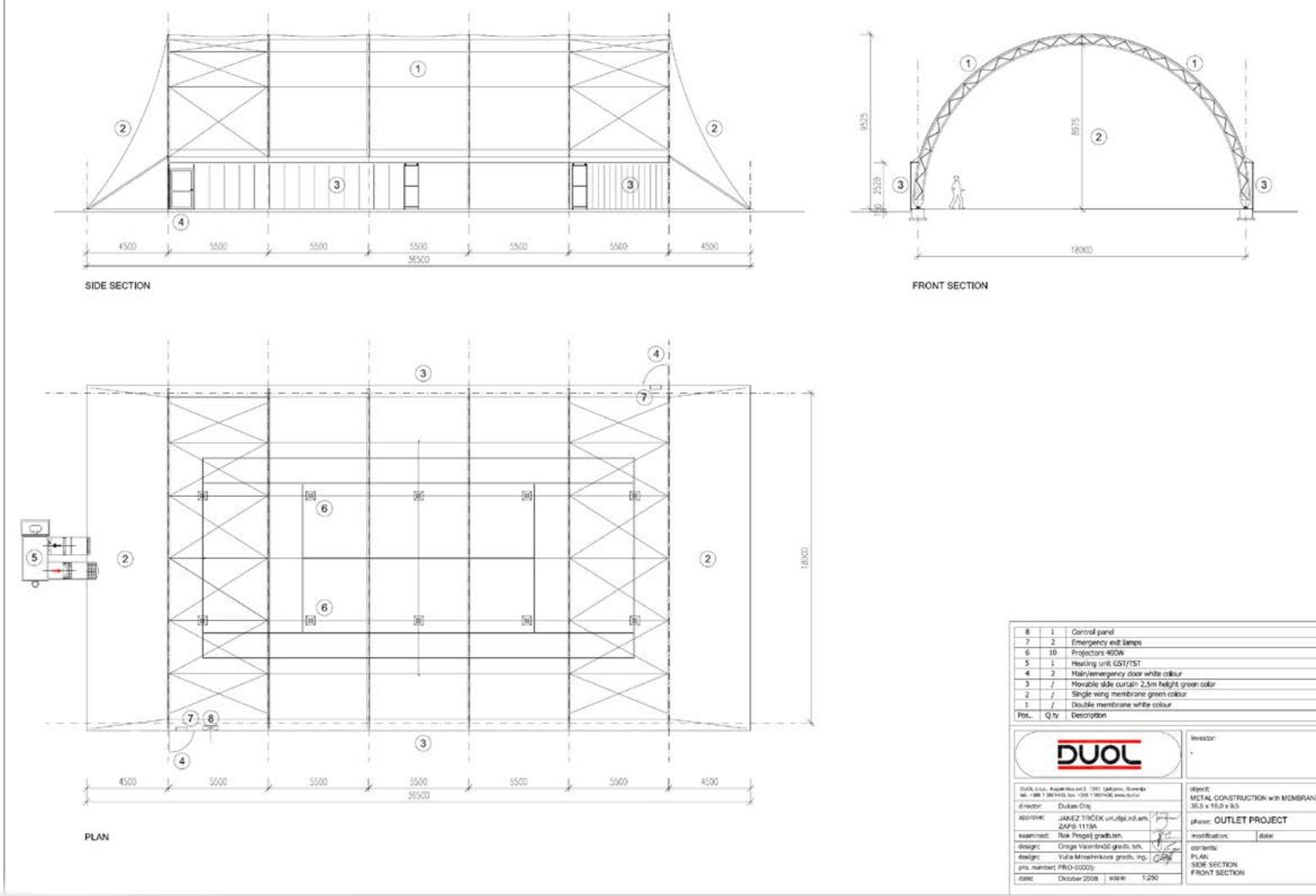
DS 37



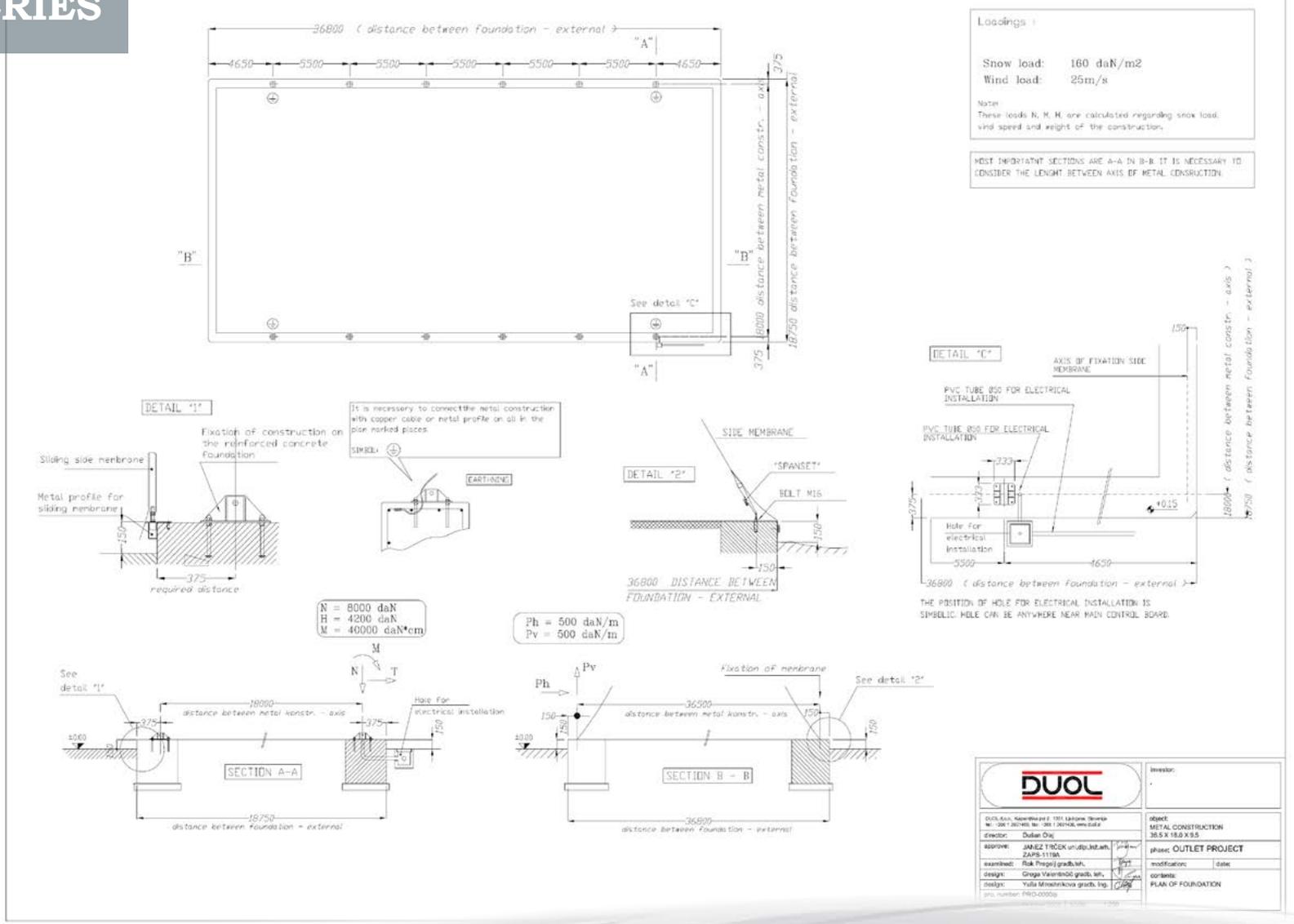
DS 50



DS SERIES



DS SERIES



DS SERIES



DS SERIES



DS SERIES



DS SERIES



DUOL STANDARD PROFILES

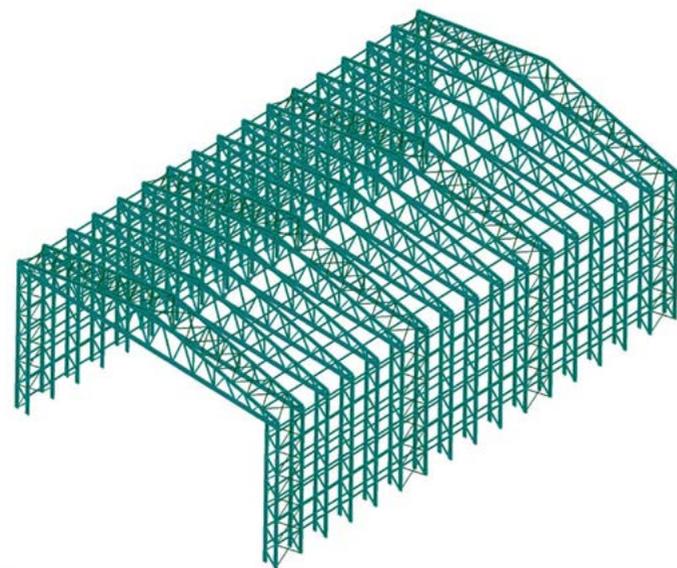
DUOL GS SERIES

Its classical shape, free interior space and combinations possibilities, makes this type very versatile.

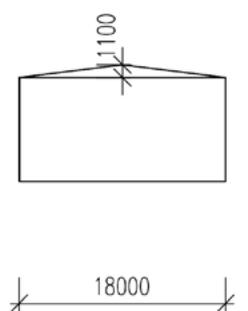
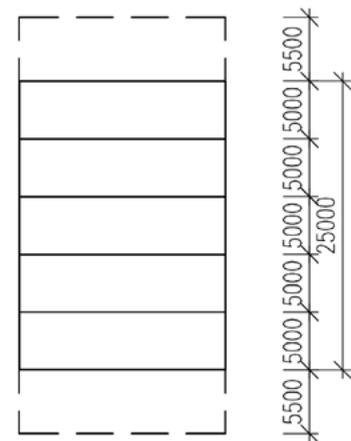
A hall suited for various activities from company and private use, to trade shows and exhibitions, sport, cultural events, over industrial purposes like storage space, workshops, ... to sport applications like covering for tennis courts, swimming pools, ... in short ideal solution.

It is structured from primary bearings, linked one to another by horizontal secondary bearings. To provide wind brace metal diagonals are mounted among construction sections.

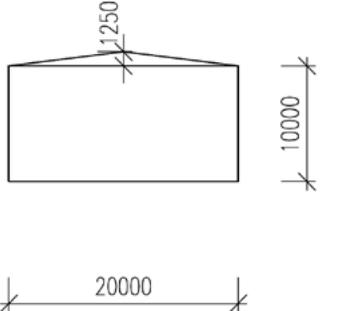
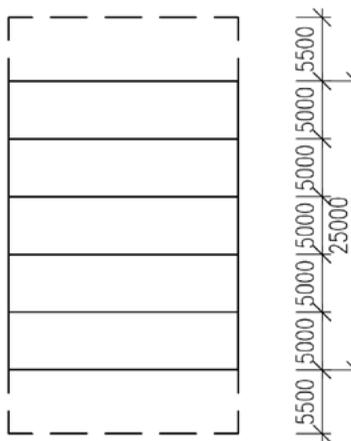
The construction is fixed to reinforced concrete belt. End-side elements fix a membrane to the construction. Sliding rail is mounted at the bottom of construction.



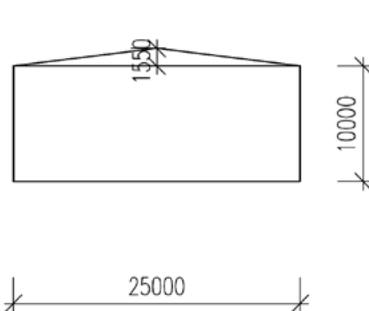
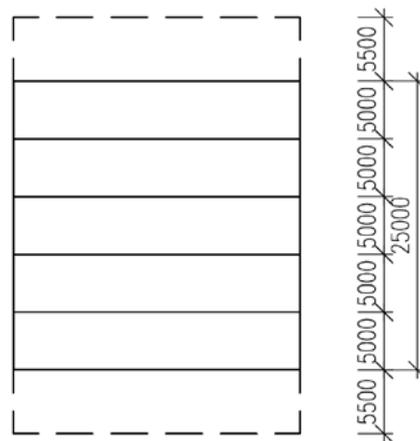
GS 18



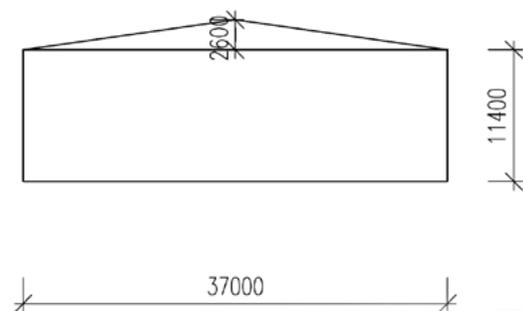
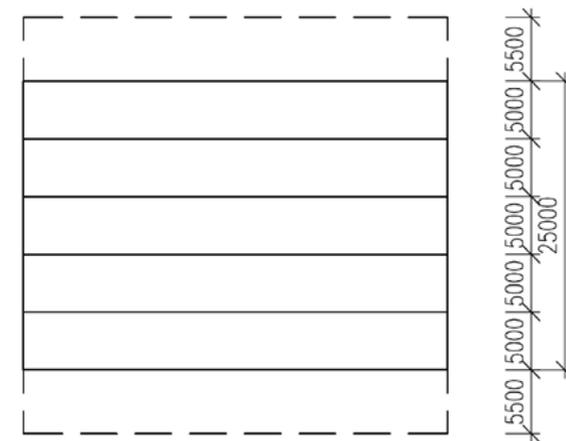
GS 20



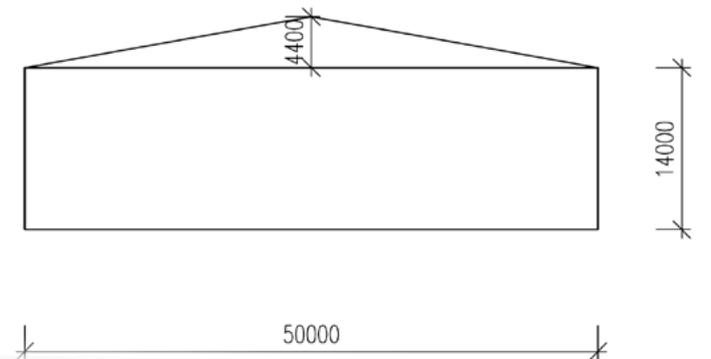
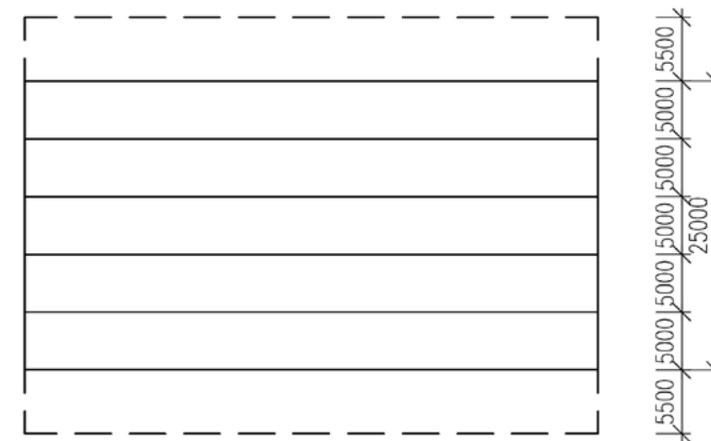
GS 25



GS 37



GS 50



GS SERIES



GS SERIES





METAL STRUCTURES

DUOL

Kapalniska pot 2, 1351, Brezovica, Slovenia

Tel: +386 (0) 1 3601 400

Fax: +386 (0) 1 3601 438

duol@duol.si

www.duol.eu