MOBILE CUSTOM MADE SHELTER

Quality.
Safety.
Functionality.

Individuality.

ZMS

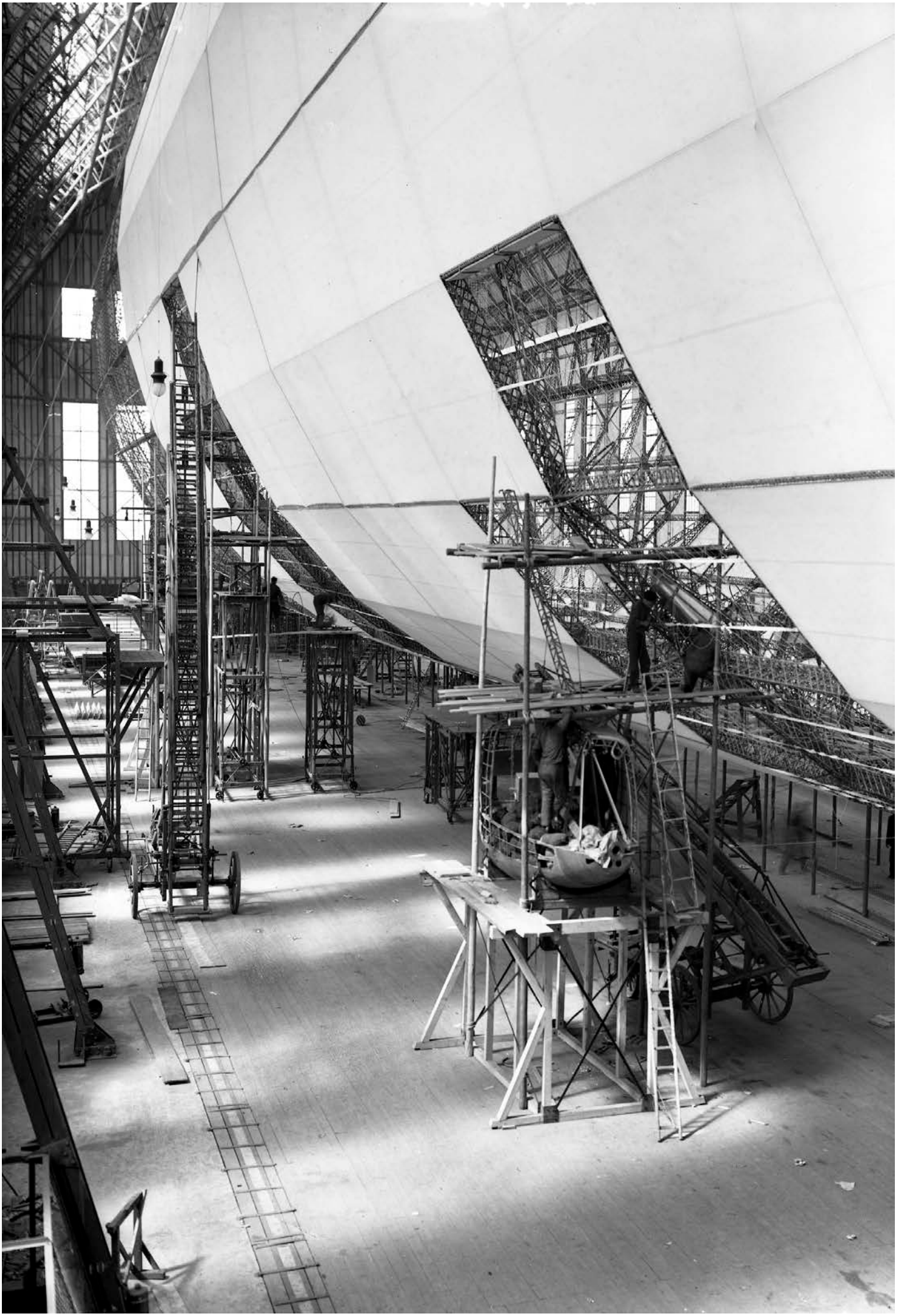
ZEPPELIN
MOBILE SYSTEME

ZEPPELIN MOBILE SYSTEME GmbH

MOBILE CUSTOM MADE SHELTER

Quality. Safety. Functionality. Individuality.

Customised special shelter



The company:

Over 100 years of experience in mobility

Our company's roots go back to one of the great pioneers of aviation in the early 20th century: Count Ferdinand von Zeppelin.

The steerable airships he built heralded a new era of mobility. They transported people and loads across continents with unprecedented ease.

One of the milestones in Zeppelin's history was the 21-day circumnavigation of the world in August 1929, which also marked the first non-stop flight over the Pacific Ocean.

Count Zeppelin and his designers, including people such as Dornier and Maybach, made the Lake Constance region into a powerhouse of technological progress.

Companies such as MTU and ZF have originated therefrom and also the know-how in the processing of aluminum was used from the construction of the airships.

The production of light metal cabins and containers for transportation, as well as protection of goods and people, was the spark that inspired today's shelter systems.

In 1999, the Shelter Division became independent under the company name ZEPPELIN MOBILE SYSTEME GmbH.

With its Independence and its new location - only 10 km from the old company headquarters, the connection to the Lake Constance region, with more than 100 years of Zeppelin history, is evident - and the pioneering spirit of Count von Zeppelin lives on.

PIONEERED + **MADE IN GERMANY**

The mission:

We build mobile system units that enable first class help, protection and care services

The constantly growing demands on mobile auxiliary, protection and supply systems – usually using high-quality technologies – are one of the classic challenges facing manufacturers and system providers.

This is precisely where we perform pioneering work. With the ZEPPELIN-Shelter® and the individually manufactured special shelters, we create the prerequisites for complete solutions in the area of mobile work, protection and system units.

High quality, functional and individual.

People all over the world rely on our products on a daily basis – that's why we use our experience and innovative strength to deliver solutions with superior performance day in, day out.

The high quality of our products secures us a leading position in a special supplier market.

The ZEPPELIN-Shelter® represents system units that are able to create environmental conditions that would otherwise only be possible in fixed buildings.

ZEPPELIN Shelters® offer a safe working environment for a wide range of applications and uses.

The diversity:

ZEPPELIN-Shelter® – Perfection and precision

Both the ZEPPELlN-Shelter® and the special vehicle bodies offer individual and functional equipment for a wide range of applications as a customer-specific unit or in ZMS standard.

More than 10,000 delivered units speak clearly for the quality and usability.

The high quality of the ZEPPELIN-Shelter® based on ISO 20', or in customer-specific dimensions, is based on the special construction of the shelter cell, constructed using frame profiles and individually manufactured sandwich panels made of aluminium cover plates, with a polyurethane rigid foam core precisely milled to drawing.

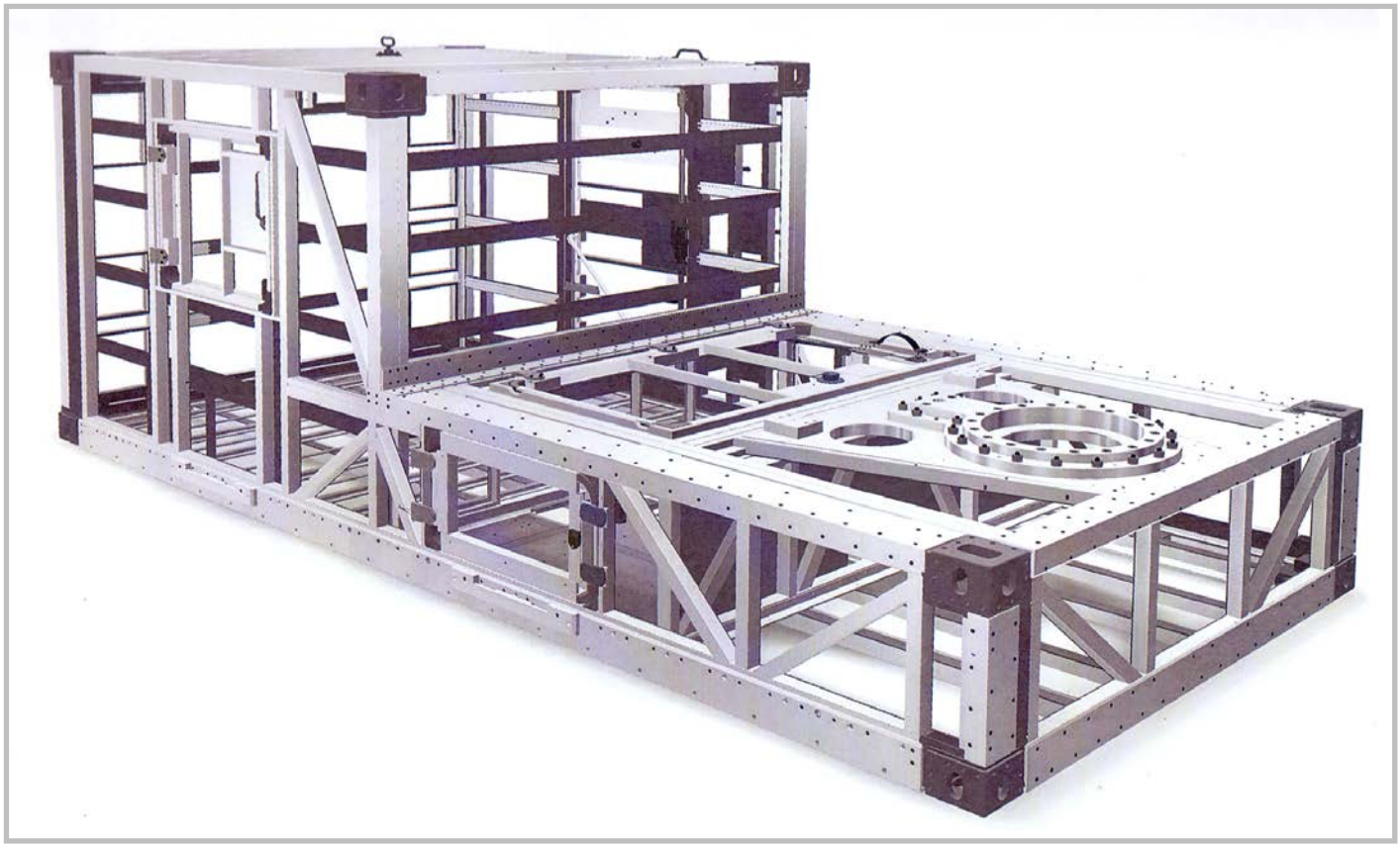
Reinforcements in the roof, floor and walls are integrated into the shelter cell to enable the mounting of interior fixtures.

An additional insulating layer is installed to avoid cold or hot thermal bridges.

The cover plates, the core material and the profile frame are glued together in a heating press and form a homogeneous sandwich panel with a very high load-bearing capacity and a long service life.

The ZEPPELlN-Shelter® constructions, which can be extended on one or both sides depending on the type of construction, have a steel frame to accommodate the top load. By means of high-strength rivets, the sandwich panels are joined with the steel frame to form the core cell.

The outer cover plates are connected in a watertight manner to the steel frame on all sides.



In the ZEPPELIN Aluminium-Shelter design, the sandwich panels in the profile area are joined together to form the shelter cell by means of rivets and welded-in cast aluminium corner half shells. The joints of the outer cover plates are welded all around to be watertight and airtight.

During the design and manufacture of shelters, all measures for preventive corrosion protection, which are necessary for the maintenance, functionality and service ability over the entire service life, are taken.

The shelters are equipped with application-specific openings and fittings. Mounting rail systems can optionally be mounted inside and outside.

Depending on their design and type, ZEPPELlN-Shelter® are fitted with container corner fittings made of steel or cast aluminium, the dimensions of which comply with DIN ISO 1161.


ZMS
ZEPPELIN

The products:

Aluminium-Shelter

The Aluminium-Shelter is universally designed in such a way that it can be used for a variety of applications, e.g. in the communication and telecommunications sector. More than 10,000 Aluminium-Shelter have been delivered in recent years and are ideally suited for mobile and stationary use.

The Aluminium-Shelter is available in two variants as basic versions in several sizes:

- Type A: Unschielded Version

- Type B: With integrated HF shielding.

Type A is designed to allow simple retrofitting of the HF shielding of type B.

These shelters can optionally be provided with integrated or adaptive ballistic protection. Additionally, the Shelters can be equipped with an NBC ventilation-protection system.

With proper handling and when observing the maintenance and service intervals, the shelters, their construction and quality craftsmanship, are designed for a service life in excess of 20 years.

In the ZMS standard or when designed to customer requirements, the Cabin-Shelter are flexibly usable as:

- Telecommunication stations
- Control stations
- Radio stations
- Relay stations
- Weather stations
- Server stations

The ZMS basic equipment includes:

- Shelter cell with integrated reinforcements in roof, floor and walls for interior fastening points and the installation of rigid skids
- Complete equipping of fittings
- Fastening rails in roof, floor and walls
- Entrance door in the rear wall
- Emergency escape hatch in entrance door or roof

Apart from the individual system integration (EDP, rack installation, communication technology, etc.), the customer-specific equipment includes the integrated power supply, lighting and air conditioning.

On request, the Aluminum-Shelter can be equipped with C-rails on the walls and in the floor for fastening the built-in parts.

Aluminium-Shelter are available in a variety of standard dimensions. Customer-specific dimensions and versions are possible.

Technical data

Standard dimensions (overall dimensions incl. corner fittings)

Type	Length	Width	Height
ACE I (FM 1)	2,990 mm	2,050 mm	1,825 mm
ACE II (FM 2)	4,250 mm	2,200 mm	2,075 mm
ACE III	5,000 mm	2,200 mm	2,075 mm
NATO I + II	3,810 mm	2,080 mm	2,110 mm
10'	2,991 mm	2,438 mm	2,438 mm
15'	4,541 mm	2,438 mm	2,438 mm
20'	6,058 mm	2,438 mm	2,438 mm
Dead weight (depending on version)		approx. 1,000 kg - 2,500 kg	
Permissible total weight (depending on version)		10,000 kg	

Individual configuration options of the Aluminium-Shelter for vehicle-based use guarantee a high degree of flexibility.

The Aluminium-Shelter can be operated on a vehicle as well as on the ground.

The products:

ZEPPELIN-Shelter®

ZMS ZMS offers three series of ZEPPELlN-Shelter® based on the 20' ISO container standard:

ZEPPELIN-Shelter® 1:1
Measuring approx. 12 m^2 in surface area, the shelter offers spatial quality on the highest level.

ZEPPELIN-Shelter® 2:1
Measuring approx. 18 m^2, the shelter, which can be extended on one side, offers a considerably larger usable area and application flexibility, both for medical and technical applications.

ZEPPELIN-Shelter® 3:1
With a room size of 27 m^2, the shelter, which can be extended on both sides, offers the largest possible working area in this ZEPPELIN design.

The floor areas of the expandable shelters are on one level when pushed out.

The ZEPPELlN-Shelter® are designed to allow wall mounting of the technical equipment in the extendable part as well as fixed mounting in the floor and ceiling area of the main shelter.

Depending on the version, the ZEPPELlN-Shelter® have a separate technical room at the front, for e.g. power supply and air conditioning.

On request, the ZEPPELlN-Shelter® can be equipped with C-rails on the walls and in the floor for fastening the built-in parts.

The ZEPPELlN-Shelter® can be equipped with RF shielding (minimum shielding of 45 dB in the frequency range between 100 kHz and 1 GHz) especially for technical applications.

Optionally, the shelters can be equipped with an ABC protective ventilation system.

Customer-specific equipment includes individual system integration (EDP, rack installation, communication technology, etc.) as well as lighting and furniture.

Already during the construction of the shelter cell, customer-specific required reinforcements of the profile frames to accommodate heavy attachments, fastening points, lighting, cabling or supply openings and openings can be taken into account.

ZMS realises constructive adaptations of the shelters to enable special equipment, installations or attachments according to customer requirements – e.g. antenna supports that can be extended via the roof segment or attached to the outer wall, special openings and flaps for control panels, external supply or ventilation as well as access ladders.

The shelters can be individually connected to each other through sluices – special connecting shelters or pole or inflatable tents – and thus combined to form a complex, closed unit.

The operation of the ZEPPELlN-Shelter® is possible on a vehicle as well as on the ground.

Hydraulic lifting supports are used for raising, lowering and levelling.

ZEPPELIN-Shelter® 1:1

Technical data

Basic dimensions according to DIN ISO 20‘

Exterior dimensions (incl. corner fittings)	Length	6,058 mm
	Width	2,438 mm
ISO 668 Size 1C / 1CC	Height	2,438 mm / 2,591 mm
Room size		approx. 12 m^2
Dead weight (depending on version)		approx. 2,800 kg
Permissible total weight (depending on version)		8,000 – 10,000 kg

ZEPPELIN-Shelter® 2:1

Technical data

Basic dimensions according to DIN ISO 20‘

Exterior dimensions		Shelter closed	Shelter extended
	Length	6,058 mm	6,058 mm
	Width	2,438 mm	4,275 mm
ISO 668 Size 1C / 1CC	Height	2,438 mm / 2,591 mm	2,438 mm / 2,591 mm

Room size	approx. 18 m^2
Dead weight (depending on version)	approx. 3,800 kg
Permissible total weight (depending on version)	10,000 kg

ZEPPELIN-Shelter® 3:1

Technical data

Basic dimensions according to DIN ISO 20‘

Exterior dimensions		Shelter closed	Shelter extended
	Length	6,058 mm	6,058 mm
	Breite	2,438 mm	6,112 mm
ISO 668 Size 1C / 1CC	Height	2,438 mm / 2,591 mm	2,438 mm / 2,591 mm
Room size		approx. 27 m^2	
Dead weight		approx. 4,200 kg	
Permissible total weight		10,000 kg	


TP 40

The products:

Vehicle bodies

ZEPPELIN box bodies can be fastened to a variety of carrier vehicles, such as the Mercedes G-Model, Unimog or Zetros as well as to the Hummer, Nimr, Uro Vamtac, Land Rover and others. They offer functional reliability for a wide range of communication or medical transport tasks – especially in the off-road sector.

The variety of designs includes implementation as standard shelters or in customer-specific dimensions.

The various fixed vehicle bodies make use of the production technologies of the ZEPPELIN-Shelter® assemblies, depending on the type and design.

The proven ZEPPELIN sandwich construction with integrated skeleton and frame construction guarantees high torsional rigidity and safe operation for demanding applications on a vehicle.

The products:

Special shelter

ZEPPELIN MOBILE SYSTEME GmbH develops and makes customised and individual special shelters and ZEPPELIN Container for the most diverse applications in the field of:

- Radio technology
- Communication
- Controlling / Monitoring
- Provision
- Protection

Based on the decades of experience in the field of shelter technology, intelligent and globally operational mobile functional units are developed - produced according to the client's exact specification or a separate, customerspecific development.

The quality:

ZEPPELIN-Shelter® – Quality as a matter of course

Quality fulfillment goes without saying for the ZEPPELIN MOBILE SYSTEME GMBH and is subject to regular monitoring and certification according to DIN EN ISO 9001:2015 und DIN EN ISO 14001:2015.

The company has Germanischer Lloyd approval for the welding of aluminum and steel containers (GL Welding Approval, Rules for Classification and Construction, II Materials and Welding Technology, Part 3 - Welding) as well as the "Defense Technical Welding Certification" according to DIN 2303, class Q2/BK2.

ZMS also holds the welding certificate for welding-technical quality requirements according to DIN EN ISO 3834-2 with proof of suitability according to DIN EN ISO 9606, DIN EN 287.1, DIN EN ISO 15609, DIN EN ISO 15610 for metal-active-gas welding and TIG welding of structural aluminum and steel components.

Furthermore, ZMS has the licenses for the special aluminum DC welding procedure and the manufacturer qualification for welding and brazing of defence technical products according to DIN 2303.

ZMS holds appropriate certifications and test certificates for designing, manufacturing, equipping and customer-specific system integration, and produces according to national and international standards and regulations, such as:

DIN 55350	Manufacturer Certificate
DIN EN 10204	Test Certificate
DIN EN ISO 2409	Cross-cutting testing
DIN EN ISO 13920 DIN EN ISO 2768	Drawing tolerances
DIN 8552-1	Weld Preparation - Groove Forms for Aluminum and Aluminum Alloys – Gas Welding and Gas-shielded Arc Welding
DIN 8563	Quality assurance of welding operations
DIN EN 25817/ DIN EN 30042 DIN 3059 DIN EN ISO 5817 DIN EN ISO 3452	Arc-welded joints in steel as well as aluminum –guidance on quality levels for imperfections
DIN EN 288-1/2	Requirement and approval of weld procedures for metal materials
DIN EN 729-1/3	Fusion welding of metallic materials
DIN EN ISO 3834	quality requirements weld fusion
DIN EN 25817	Arc-welded joints in steel
DIN EN 29692	Metal-arc welding with covered electrode
TLA-0003	Surface treatment through coating systems, painting and camouflage coating
TL A-0033	Paint coatings
RAL 840 HR	Color register, RAL camouflage paint
DIN 4102, part 1	Reaction to fire tests, ignitability of building products
MIL-STD-1472	Human Engineering

VDE 100 General guidelines for safe designing of technical products

Additionally taken into consideration:
- Regulation (EC) No. 1907/2006 REACH
- EU EU Directive 2011/65/EU ROHS,
- Technical Conditions of Delivery TL A-0032
- CFC/Halon Prohibition Ordinance
- German Ordinance on Hazardous Substances
- German Equipment Safety Law
- Acknowledgement of cargo in bond acc. to TIR Z
- Resistance to chemicals acc. to DIN 51958
- Export and import of dangerous chemicals acc. to EC 689/2008

The water-tightness of ZEPPELIN-Shelter® is documented acc. to DIN EN ISO 1496 and MIL-STD-810.

The electrical safety of ZEPPELIN-Shelters® is interpreted acc. to DGUV-V3, DIN VDE 0100-600, IEC 60364-7-717/VDE 0100-717, DIN 51953, VDE 0800, VDE 0800-2. Earthing arrangements acc. to VG 96953-10 as well as MIL-STD-461 (Requirements for the control of electromagnetic interference of subsystems and equipment).

The shielding effectiveness measurement is performed acc. to VG 95370, MIL-STD- 285 or IEEE Std 299-2006.

ZEPPELIN-Shelter® comply with climatic requirements defined acc. to STANAG 2895 (extreme climatic conditions) and AECTP-200, Category 230. ZEPPELIN-Shelter® sandwich technology can comply with the following climate zones: A1 - Extreme Hot Dry, A2 - Hot Dry, A3 - Intermediate, B1 - Wet Warm, B2 - Wet Hot, B3 - Humid Hot Coastal Desert, C0 - Mild Cold, C1 - Intermediate Cold, C2 - Cold.

In addition to this and depending on customer requirements, ZEPPELIN-Shelter® can be employed for temperature ranges above A1 to +55°C.

ZEPPELIN-Shelter® meet the quality inspections acc. to STANAG No. 4107 and optionally comply with the definitions for ballistic protection acc. to STANAG 4569 AEP-55. ZEPPELIN-Shelter® are manufactured acc. to NATO SPEC 6516/SHCPE/86 and meet the environmental guidelines for defence material acc. to AECTP 100 as well as the higher-level STANAG 4370. ZEPPELIN-Shelter® are designed acc. to the BWB testing program K 35-1.5, which was used as reference for the NATO Specification 6516/SHCPR/88“.

Depending on customer requirements, ZEPPELIN-Shelter® have railway approval to UIC leaflet 592-2. According to DIN EN 1789, ZEPPELIN-Shelter® meet the requirements of dynamic 10g tests.

ZEPPELIN-Shelter® take into account the superordinate ASTM E1925-10/10.7-8 guide-lines concerning the specifications for technology and design of rigid walls and sliding structures.

The CSC certification of ZEPPELIN-Shelter® is based on:

- DIN ISO 668: Series 1 ISO containers; classification dimensions
- DIN ISO 1161: Series 1 ISO containers; corner castings
- DIN ISO 1496: Part 1-3, ISO containers; specification and inspection
- DIN ISO 3874: Series 1 ISO containers; handling and fastening
- DIN ISO 6346: Coding, identification and Labelling of ISO Containers

The mobility:

ZEPPELIN-Shelter®
Safe transport from A to B

ZEPPELIN-Shelter® are equipped according to regulations and transport specifications, as per requirements, including ISO corners, loading points for chains and ropes or forklift pockets, for safe loading and transport.

They can be safely transported on all conventional transport routes via land, water or air:

- on truck chassis, trailers, semi-trailers with and without container frames,
- by rail on standard flat wagons with or without ISO corners,
- via inland water motor vessels, on ocean-going or coastal motor vessels, as deck freight, in the hold or in accordance with the "Performance Limits" on container carriers (optionally on flat racks) or RoRo vessels (RoRo trailers),
- via air freight, in wide-bodied cargo aircraft,
- via transport helicopters as an external load.

Accessories:

Optional or integrable mobility accessories support and facilitate handling on site:

- manual or automatic lifting support,
- levelling jacks,
- wheel-sets with and without draw-bars,
- hook unwinding and setting-down systems.

The expansion stages :

System configurations

Systems configured from several shelters for technical or medical applications of various kinds can be realised both vehicle-based and on the ground. The shelters can be placed on the floor using optional lifting supports without additional aids.

The ZEPPELIN-Shelter® of the 1:1, 2:1 and 3:1 series are used for this purpose. Depending on the area of application, they can be connected to form a closed unit by corridors, connection shelters or tent systems.

The ZEPPELIN-Shelter® can be mounted and commissioned on any truck or trailer with a 20' container frame, including off-road.

The details of the system configurations are customer-specific, including different system integration.

Its own power supply and air conditioning enable the entire unit to operate independently.

ZEPPELIN MOBILE SYSTEME GmbH

MOBILE CUSTOM MADE SHELTER

Quality. Safety. Functionality. Individuality.

ZEPPELIN
MOBILE SYSTEME

ZEPPELIN MOBILE SYSTEME GMBH
Zeppelinplatz 1 ▪ D-88074 Meckenbeuren / Germany
Phone +49 7542 - 5509 - 0 ▪ Fax +49 7542 - 5509 - 149
info@zeppelin-mobile.de ▪ www.zeppelin-mobile.de