Gewässer Umwelt Schutz GmbH

GUS

Product catalogue

SAW collection basins
AUW oil protector
CUW oil protector
GGW/AGW glycol protector
Accessories
GUSFoot installation systems
Flat roof ducts
Legal requirements

Water – our most precious resource

Since 2005, GUS Gewässer Umwelt Schutz has been a trusted partner of customers all throughout Germany for the provision of catchment systems that prevent toxic and harmful substances from contaminating water sources, thereby enabling these substances to be rendered harmless and recycled or disposed of safely.

Contents

The challange

Environmental damage is often caused by operational accidents, but even during normal operation, emissions of water-polluting substances cannot be entirely avoided.

The legal regulations for the handling of water-polluting substances are extremely rigorous.

They primarily concern the operator, who is responsible for ensuring that facilities are constructed and operated in accordance with the latest technological standards (§ 62 Water Resources Act).

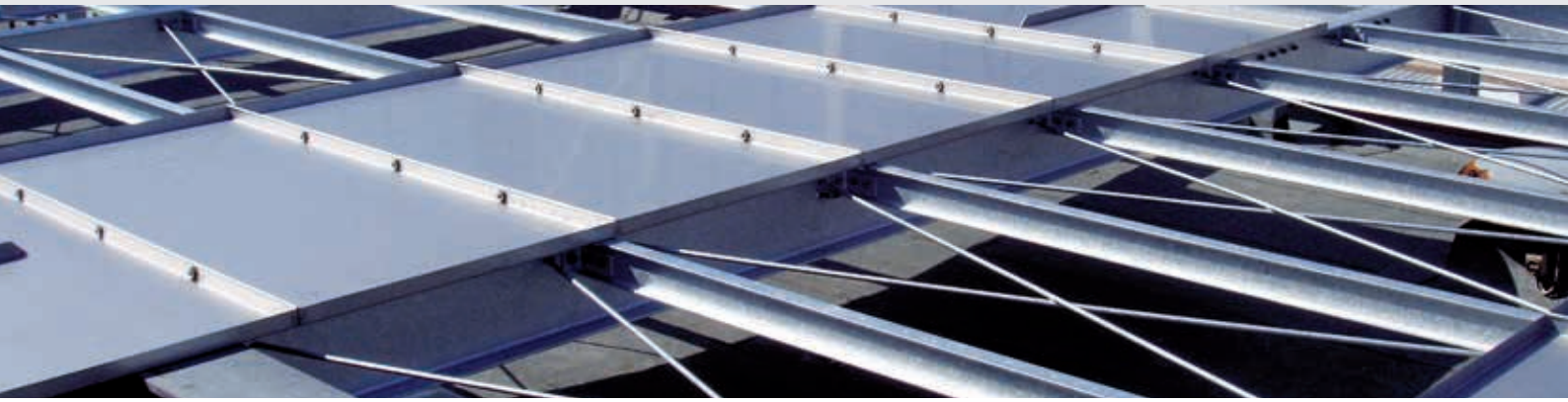
In addition, the basic requirements of the Water Resources and Waste Management Regulations (AwSV) also have to be met. These state:

„Leaking water-polluting substances must be recognized, retained and harmlessly recycled or disposed of quickly and reliably.“

Facilities must therefore be equipped with a robust and watertight collection chamber.

Planning and build teams have the obligation to provide information during facilities construction.

For the sake of the planet.



SAW collection basins

SAW collection basins are used for aggregates that are used indoors and which contain water-polluting substances.

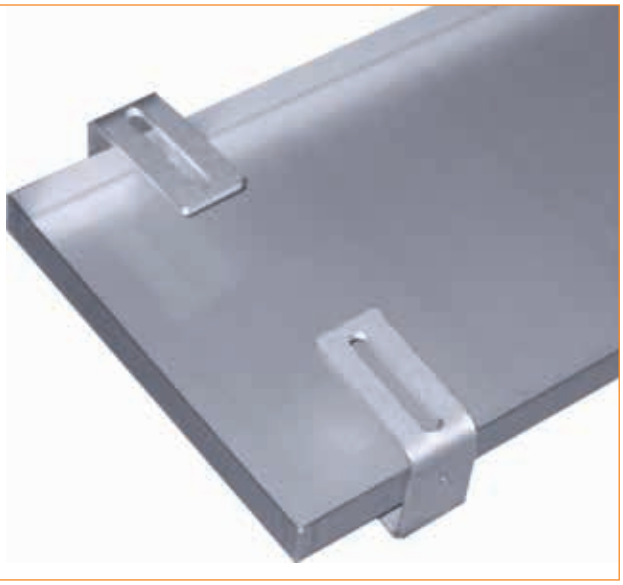
Chillers are often installed in areas that have a floor drain or are not water-tight.

In order to prevent water-polluting substances draining into the sewage system or into adjacent areas in the event of leakage, a collection basin can be placed under the chiller.

Material: stainless steel grade 1.4301 (V2A) or aluminium AlMg3.

The basin is compliant with § 62 Water Resources Act.
Each basin is individually adapted to the requirements of the location.

The manufacturing standards are designed to meet technical requirements.



AUW oil protector
with separator

AUW oil protector

The difference between the AUW and CUW oil protectors lies in the material. The AUW is made of aluminium, and the AlMg3 is made of stainless steel. This inexpensive material is corrosion-resistant but much lighter. This also creates a logistical advantage.

The separator works on the same principle as in the CUW oil protector. Due to the outlets on both sides, impurities can be detected immediately. The separator is also easier to clean.

The AUW oil protector is available in several sizes. With its extra-wide holders, it can be installed on beams, vibration dampers or wall units.

CUW oil protector
with separator

CUW oil protector

The CUW oil protector consists of a stainless steel collection basin with integrated oil separator.

Leaking chiller oil is collected by the oil protector.

In the event of rain, the chiller oil is retained by a patented oil separation system in accordance with legal requirements, leaving rainwater to drain off.

The CUW oil protector is available in ten sizes.

With its adjustable mounts, it can be installed on beams, vibration dampers or wall units.

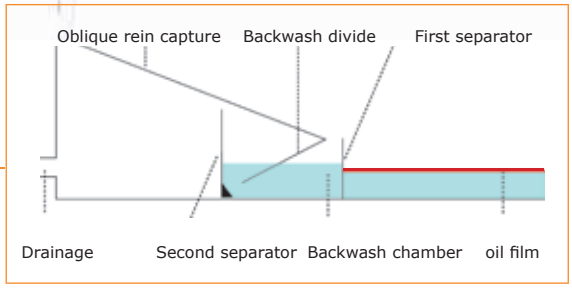
Special sizes for chillers and air conditioners can be made to order.

CUW oil protector

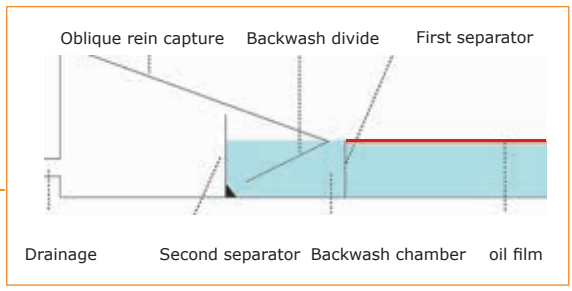
CUW oil protector

How it works

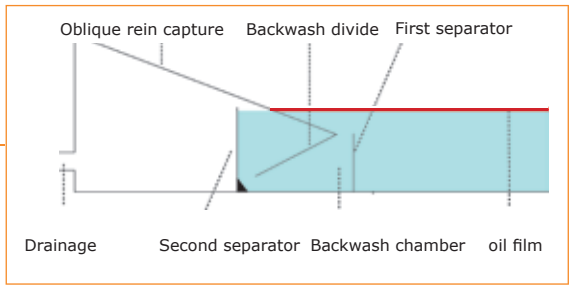
1 When it rains, released oil rises in the form of a film on the water in the collection basin. The backwash chamber is filled three times as fast by the rainfall as the collection tray.



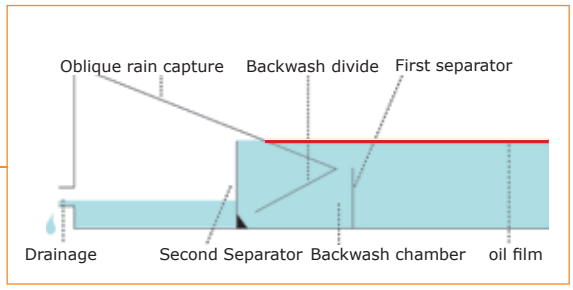
2 When the level of the first partition wall is reached, the incoming water is flushed from the backwash chamber into the collection basin



3 The water level continues to rise up to the level of the second separation wall.



4 If the level continues to rise, the water, now separated from the oil, will continue to the drain.



GGW/AGW Glycolprotector
Glycol detection by pressure sensor

pressure sensor

switch box (control modul) IP65 protected and UV resistant

base pedestal or other special solutions depending on requirements

weather protection cover for the safety valve

safty valve with servomotor

The GGW/AGW Glycolprotector is an extension of the Ölprotector. In addition to preventing the escape of light liquids such as oils, it also prevents the escape of water-glycol mixtures or other water-soluble substances in accordance with legal requirements.

The system uses a digital pressure sensor to monitor the water-glycol circuit. The information supplied is processed by the control module. System-related pressure fluctuations are distinguished from the serious case of leakage.

In the event of a leak, the installed safety valves are closed immediately.

Escaping water-polluting substances are retained in the Glycolprotector and the operator is alerted.

The legal requirements according to WHG and AnlV are demonstrably fulfilled

Function

The pressure sensor detects any leakage in the monitored unit in time, evaluated by the microprocessor, the drain valves are closed and an alarm contact (potential-free) is activated. This safely retains the leaking water-glycol mixture. The alarm output can be read out as cleartext in the display of the microprocessor.

A special switching technology prevents the valves from reopening without the operator having given the go-ahead.

Up to two fluid circuits can be monitored with one microprocessor.

To fulfill the requirements of safety systems, in case of power failure, microprocessor defect, cable break, defective valve control or sensor defect, the drain valves are automatically closed and the alarm contact is activated.

The drain valves are protected against external influences by a stainless steel housing and equipped with potential-free contacts for alarm and operating message.

For all-season operation of the valves no additional defrost heating required.

The largest possible quantities of precipitation in Germany are safely collected or discharged.

The GGW/AGW glycol protector conforms to the requirements of § 62 et seq. of the WHG (Water Resources Act) and the AwSV (German Water Protection Act) are fulfilled. The strict guidelines of the regulation for handling substances hazardous to water (WasgefStAnlV) are also fulfilled.

The intelligent pressure monitoring system can also be accessed digitally accessible at any time via the Internet.

GLF Glycolprotector by conductivity

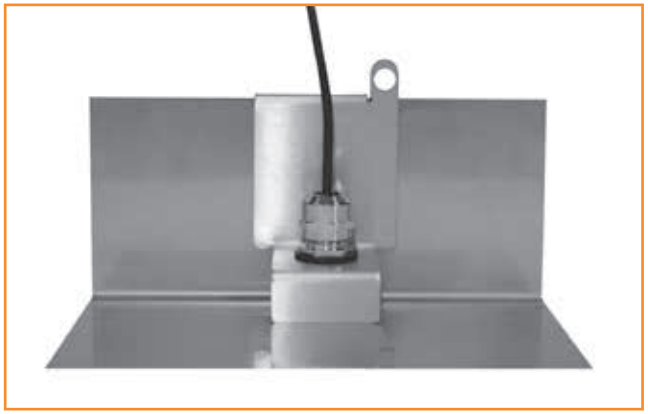
GLF Sensor
– depending on requirement –

The GLF Glycolprotector is the most advanced detection of glycol in the family of glycolprotectors. The sensor is installed in the protector by using a stainless steel bracket and monitors the medium in the tank. Even the smallest amounts of glycol are detected in a fraction of a second and the system reacts immediately. This is done by a combination of two sensors specially programmed to detect glycol in rainwater.

This means that even small quantities can be retained immediately.

Another advantage is the ease of maintenance and longevity of the sensor technology.

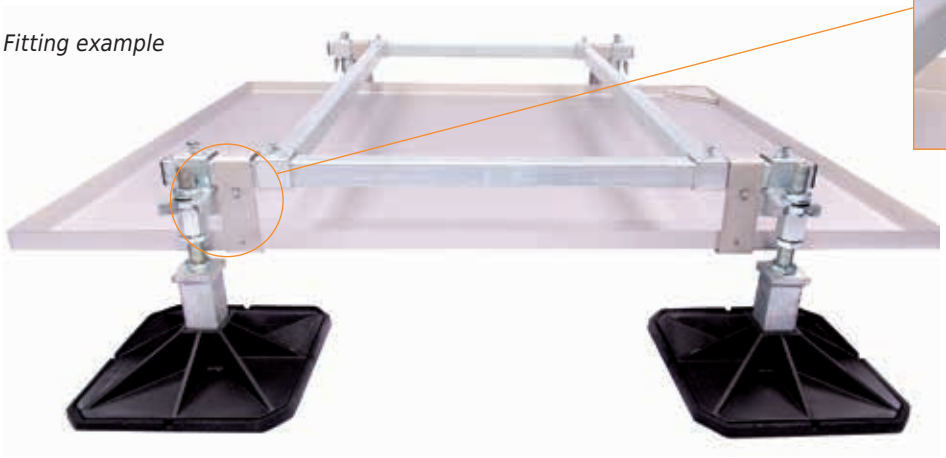
The stainless steel tips of the sensor can be cleaned without chemicals. Even algae formation or dirt loads in the water cannot damage the sensor.



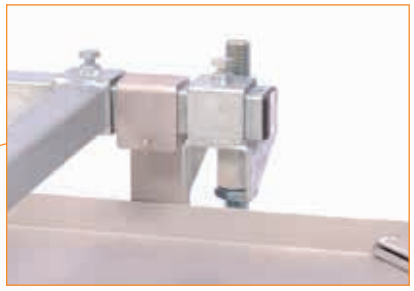
The GLF sensor is universally applicable and especially suitable for refrigeration, air conditioning and cooling systems.

- uncomplicated installation, simply plug it onto the tub border and connect to the control box
- robust, compact GLF sensor, also suitable for small pipe
- heat and cold resistant between -40 and +100 °C
- protection class IP68
- chemically resistant to aggressive media
- easy to clean
- connection cable length 500 cm

Accessories



Fitting example



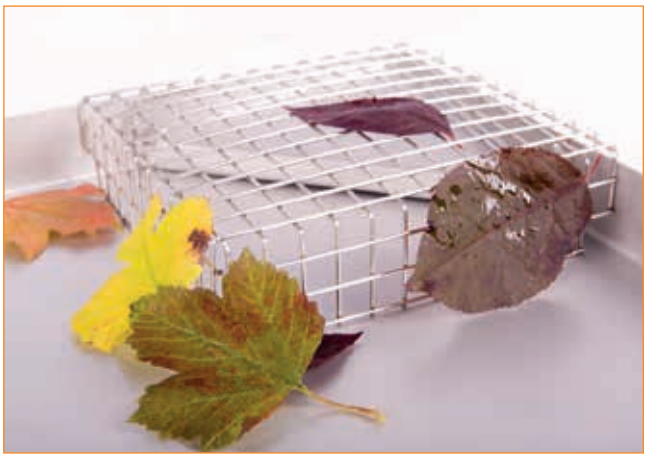
Fastening claw for mounting

Protector fastener

This protector fastener has been developed for the mounting of a protector underneath an installation system.

The fastening claws are put on the longitudinal struts and secured with screws. The brackets are available in two versions for 40 mm and 50 mm longitudinal struts. The matching protector is manufactured according to the requirements and inserted laterally below the installation level.

This system allows refrigeration and air conditioning systems to be screwed directly onto the installation system. The protector can be retrofitted at any time.



Leaf guard grill version

Leaf guard grill
example for AUW oil protector

Leaf guard grill

Certain usage areas require a modification of the protectors. If the installation site is located in an area overshadowed by trees, we recommend our leaf protection grid.

This keeps leaves away from the drain in autumn and maintains functionality. We are happy to advise you on individual projects and accessories.

HEITHER 3.0 – our heating kit for yearround operation

A protector can withstand temperatures below zero. The material can also withstand ice formation in the separator. If the water contained in the protector freezes during normal operation, it will not impair the functioning of the protector. Even without heating, the collection volume required, and thus the function of the protector, is guaranteed in freezing rainwater and snow.

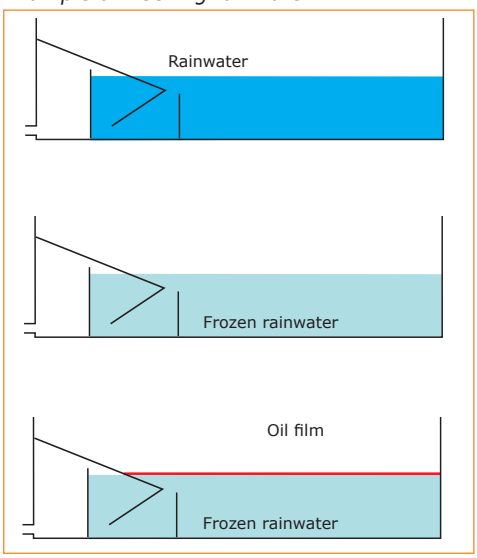
Freezing rainwater

The valve of the GGW / AGW glycol protector closes and the drain is blocked by ice so that oil and glycol are retained even in thaw. The functioning of the AUW and CUW oil protector and the GGW / AGW glycol protector is still guaranteed as the collection volume is still available.

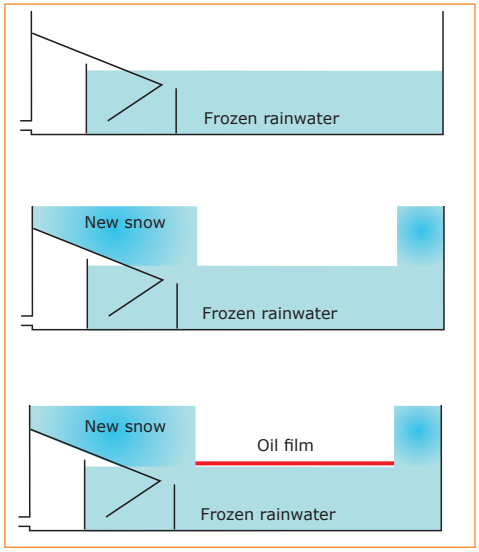
Snowfall

Snow falls only in the area of the overhang, not under the unit. The protector volume allows for a certain amount of precipitation without restricting the safety device. The functioning of the AUW/CUW oil protector and GGW / AGW glycol protector is still guaranteed, as the necessary collection volume is still available.

Example of freezing rainwater



Snowfall



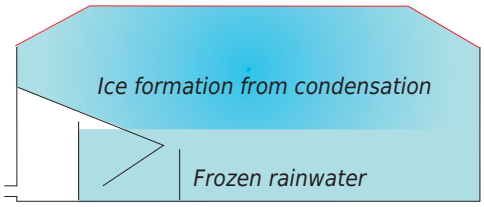
What happens with a heat pump?

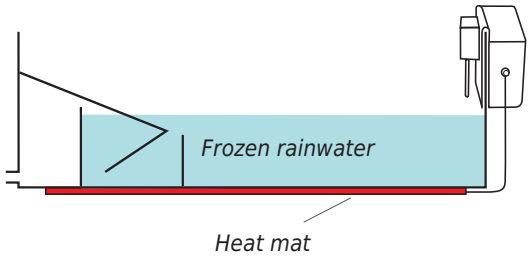
At temperatures just below freezing, humidity is high and water condenses and freezes on the lamellas of the air conditioning system.

During defrosting cycles this is flushed into the protector, where it freezes again.

Without heating, a layer of ice builds up which can massively restrict the collection volume of the protector.

This is where full-area heating helps. In order to meet these requirements, we provide a system that records the temperature and water level in the protector in order to start heating in a targeted and efficient manner.

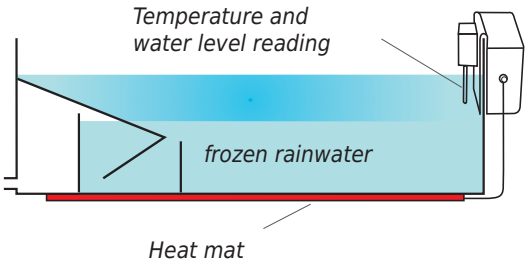


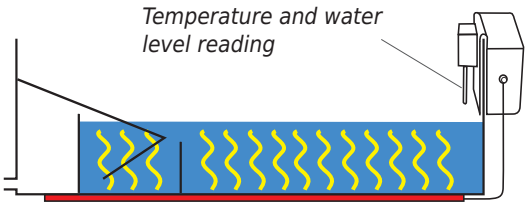


Modern defrost protectors

The heating is only activated when the ice layer has built up to such an extent through additional condensation that it could affect the functioning of the actuator. The ice thaws and the excess water flows off. Then the heating switches itself off. In addition, in the event of backwater from the water or the ice, the control provides a fault alarm to warn the operator in the event of malfunction. The heating mats are mounted on a smooth surface underneath the protectors. This ensures even heat distribution. Alternatively, placement on outer walls is also possible.

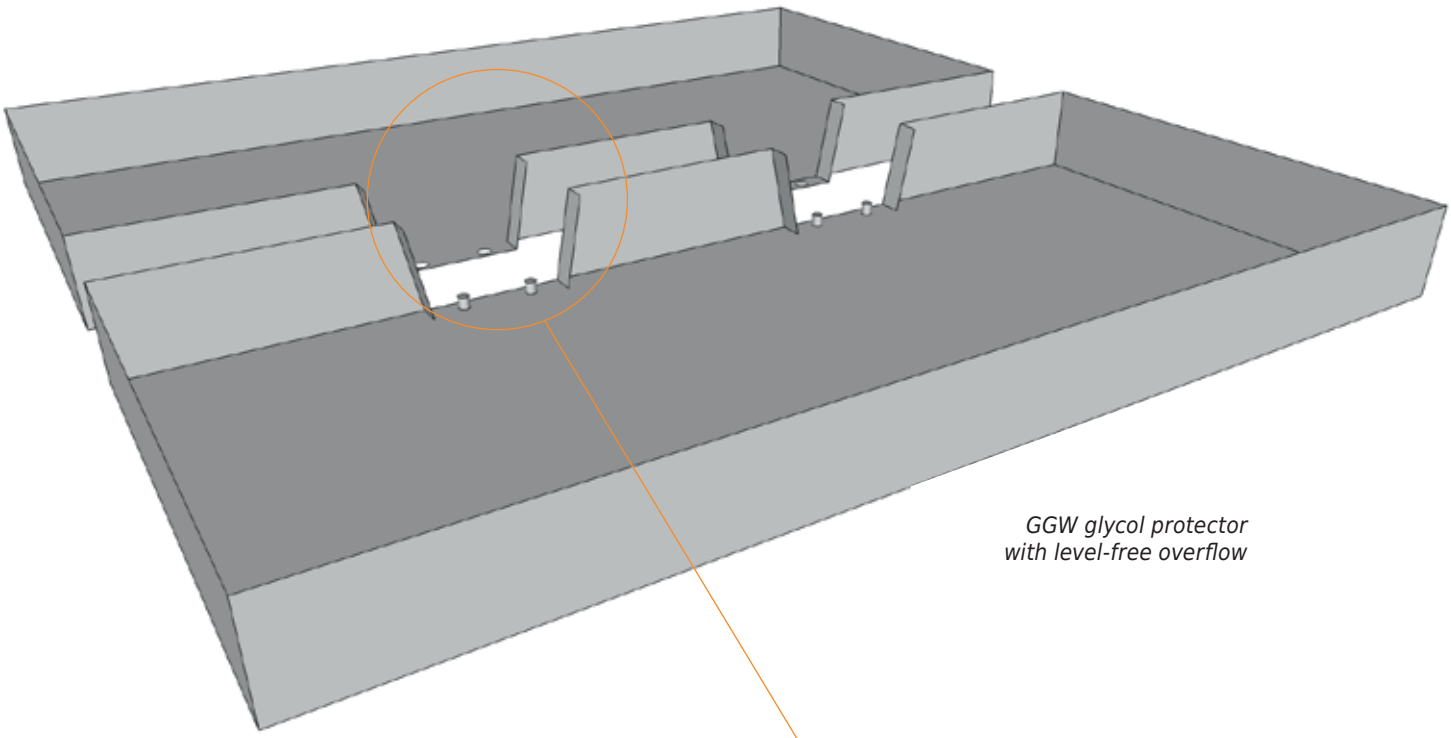
Particularly with heat pumps, efficiency is of paramount importance. Therefore the targeted and efficient use of electrical energy is extremely important.





Targeted use of whole-area heating

Heating mats – as required



GGW glycol protector with level-free overflow

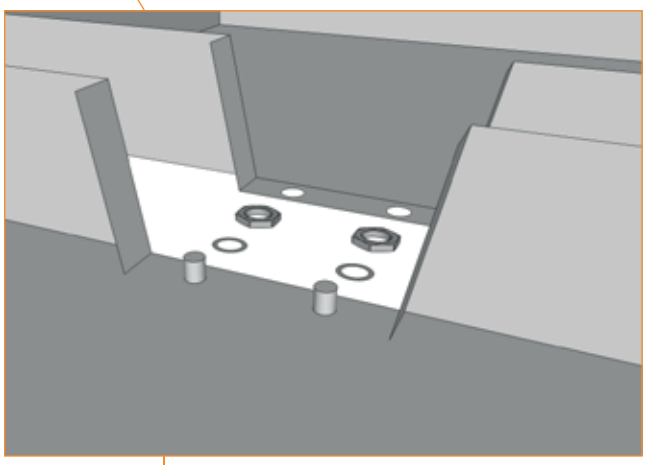
Level-free overflow

The level-free basin connection is best used without a light liquid separator in the protector and, due to an almost level overflow, prevents backwater at the overflows between two basin elements.

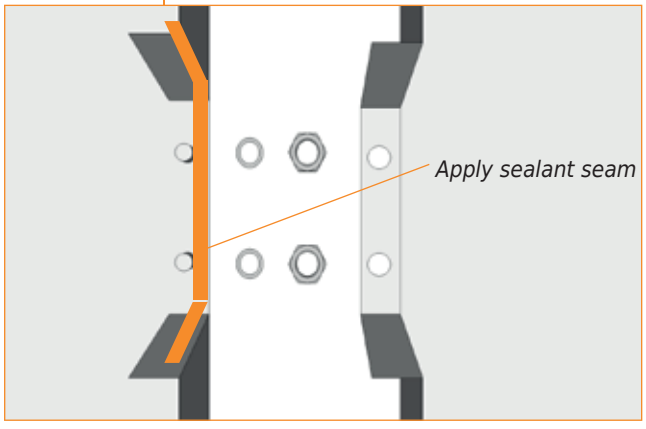
The layered material creates an ideal sealing surface with minimal gradation in material thickness.

The level-free overflow consists of two level-free overflows with a width of 150 mm per tank connection and is fixed with two welding bolts with washers and nuts.

The shape of the connection ensures even and flat contact pressure of the sealant and a positive and reliable connection, which is guaranteed even with high temperature fluctuation.



Side view



Plan view

GUS Foot installation systems

Our GUS Foot installation systems ensure fast, flexible and cost-effective solutions for the installation of building facilities. Functional and robustly constructed from completely hot-dip galvanized steel, they have been developed to simplify and speed up installation.

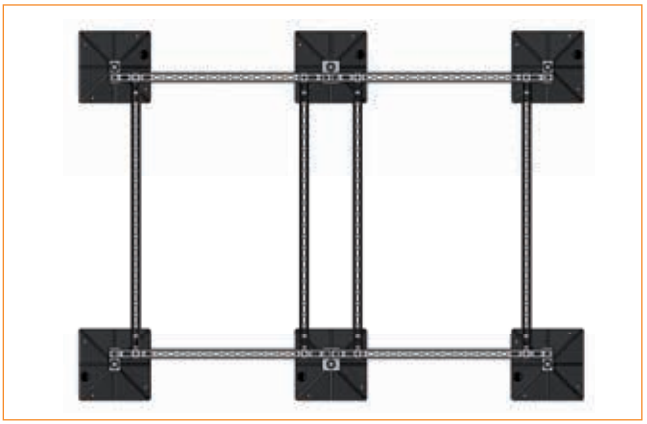
By using our GUS Foot installation systems, whether basic module, extension or custom-made, you can plan and implement projects effectively and flexibly without a roofing or steel construction specialist.

Versatile and adaptable, GUS Foot systems can be adapted to conditions on site. On flat roofs, they can be installed without damaging the roof (optional angle of 2.5° for pitched roofs) due to their feet being underlaid with PVC foam.

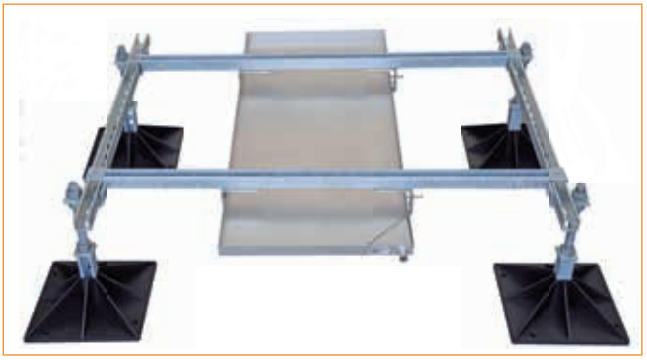
The GUS Foot Light installation system has been developed for cost-effective, easy but professional solutions for the installation of smaller building facilities.

The 5 kg aluminium installation system with galvanized screw connections are convincing due to the light weight and a load capacity of up to 200 kg.

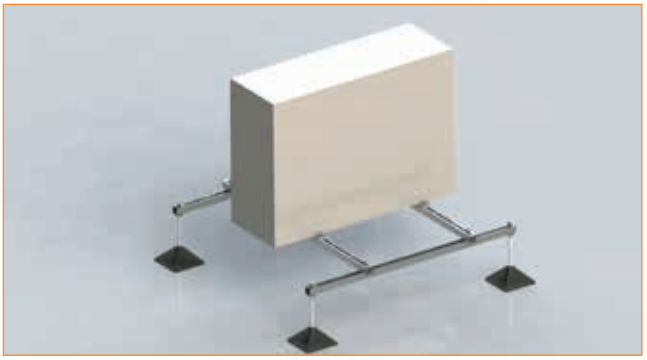
Exact centimeter scaling on all aluminum struts is only a special aid for your setup with the GUS Foot Light.



GUS Foot Base + Plus



GUS Foot installation system
Fitting example



GUS Foot Light

In addition to products for technical building equipment systems, we also offer you installation systems for cable trays, ventilation ducts, pipelines and high-quality vibration dampers made of SBR recycled rubber in various sizes.

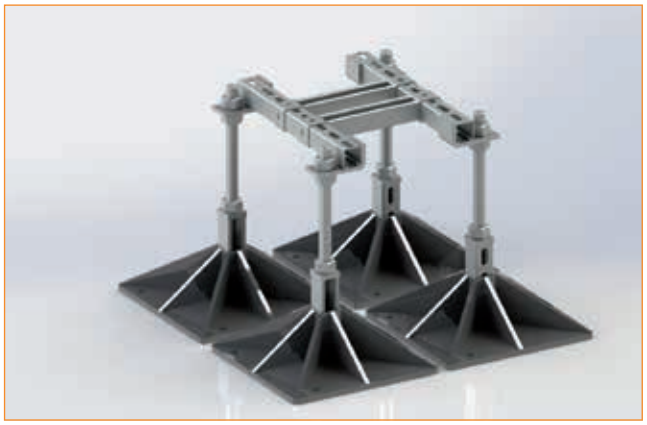
The GTT 320 support brackets are the optimal and economical solution for fastening pipes and cables. The installation is quick and easy.

The GAB set-up block is a system for the substructure of heavy equipment.

It has a load capacity of 800 kg and is flexibly adjustable. The feets are equipped with anti-vibration mats.

The GDS damping bases of the standard series are a practical and versatile installation solution for outdoor units, ductwork and ventilation ducts. They have a 40 x 21 mm aluminium profile strip on which units, ducts and conduits are optionally fixed with the help of the optional screw set.

GTT 320 Supports brackets with mounting example



Set-up block GAB 800

GDS damping bases

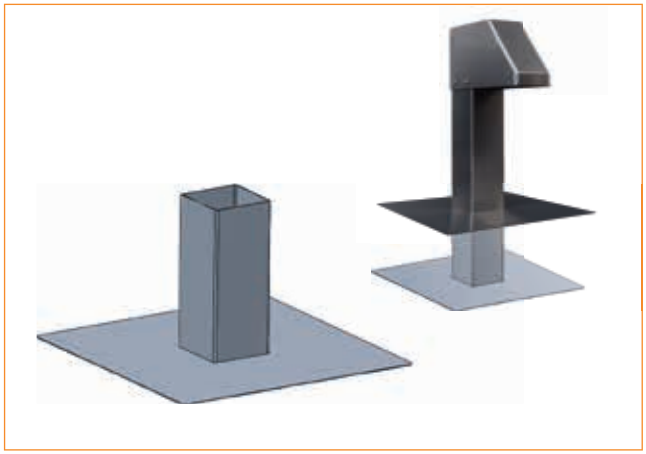
Flat roof installation

Changes to a flat roof will usually damage the roof cladding and risk penetrating moisture and cold bridges. It is therefore of great importance when planning a flat roof to allow for roof ducts, especially with regard to future installations of facilities such as solar or PV systems. We recommend that you always install sufficient roof ducts when building a flat roof.

The flat roof foot for diffusion-resistant use …

… is made of aluminium, completely welded, with simple integration and with a large base plate, a supplement to the flat roof duct and the service port. It consists of an additional roof base. The additional in-roof element protects the roof insulation against condensation.

The flat roof foot prevents the penetration of condensation water into the insulation level. This ensures that the roof skin is impermeable to vapour and diffusion.



FDF flaat roof

FDS service port

Today‘s industrial and commercial spaces are becoming ever larger. The associated service work often makes the supply of electricity and water difficult. Access points must be created and remain open during roof work, which brings with it risk: risk of stumbling, risk of water damage, potential damage to the access lines, etc.

Our solution is the service port. This is a roof duct with integrated electricity (230 and 380 V) and water connection. It guarantees a clean seal of the building envelope. In combination with the flat roof foot, the insulation is sealed against diffusion. The service port provides integrated connections and the foldable lid provides rain and UV protection.

FDS service port

The legal situation

Section 62, paragraph 1 of the Water Resources Act (WHG) states that „installations for the storage, drainage, production and treatment of water pollutants, as well as installations for the use of such pollutants in the commercial sector and in public facilities, must be designed, constructed, maintained, operated and decommissioned in such a way as to preclude adverse change in water bodies."

The new Water Polluting Substances Regulations (AwSV) have been in force since 1 August 2017. With regard to water protection in the refrigeration and air conditioning industry, the following must be observed:

„Where lower filling volumes are concerned, as in the example of commercially available split systems, including VRF systems, the principle of concern as provided for in WHG still applies. This stipulates that the highest level of safety must be guaranteed in order to prevent water pollution."

Special measures for compliance are not required under WHG, which means safety measures are left to the trade supervisory authorities or case law.

An essential innovation can be found in the basic requirements under §17. Where in the previous regulations only construction, condition and operation were subject to basic requirements, planning is now also affected. This means that the planner must take the basic requirements of AwSV into account when project planning and is therefore increasingly responsible for compliance.

„Facilities must be planned, erected, constructed and operated in such a way that

1. **Water pollutants cannot escape,**
2. **Leaks in all parts of the equipment that are in contact with water pollutants are quickly and reliably detectable,**
3. **Leaking pollutants are quickly and reliably detected and contained and properly disposed of. This also applies to splashing and dripping during operation; and**
4. **Any mixtures arising in the event of a malfunction in the normal operation of the plant and that may contain leaked pollutants are retained and properly disposed of as waste or waste water."**

The ester oils used in air-conditioning systems correspond in their original state to WGK 1 or WGK 2. However, according to the Administrative Regulations for Water Pollutants (VwVwS), the lubricants or waste oils used must be classified as WGK 3 and thus correspond to the highest hazard level.

As soon as a refrigeration or air conditioning system is put into operation, the water hazard class increases accordingly.

In cold water chillers or re-coolers, a water-glycol mixture is used for corrosion and frost protection. All glycols are classified at least as WGK 1 and must also be retained. This also applies to food-grade glycols.

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