

Bregenz Lake Stage

Lindapter Type AAF clamps provided a safe and adjustable solution for connecting the stage framework under water.

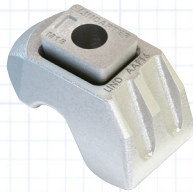
Project Background

Location: Bregenz, Austria

Product: Type AAF Girder Clamps

Client: Bregenzer Festspiele GmbH

Engineer & Contractor: Biedenkapp Stahlbau GmbH



The Bregenzer Festspiele (Bregenz Festival) is world-renowned for its open-air opera productions set directly on Lake Constance. Every two years, the iconic floating lake stage undergoes extensive structural modifications and reconfigurations to accommodate new, visually complex set designs for upcoming theatrical seasons.

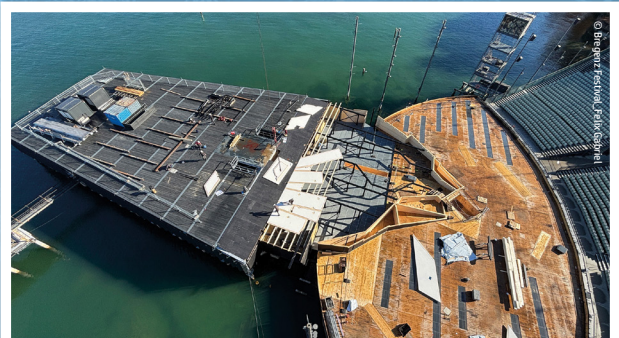
Client Requirement

For the structural reconfiguration of the stage's substructure, the contractor, Biedenkapp Stahlbau GmbH, required a highly durable and adjustable clamping solution to connect the supporting steel framework.

Crucially, parts of the installation had to be carried out underwater, where beam-to-beam sections joined the submerged framework and anchored into timber support piles below the water's surface. Traditional site welding or drilling was unsuitable due to environmental restrictions, limited visibility, and the logistical challenges of working underwater.



Hot dip galvanised Type AAFs deliver the required corrosion resistance for marine environments



The floating stage framework was safely supported throughout the festival's demanding schedule

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Design Solution

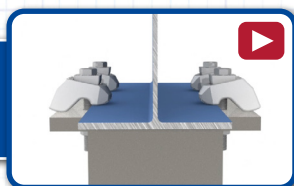
Lindapter worked alongside Biedenkapp Stahlbau GmbH, providing technical support and connection drawings to engineer a high performance clamping detail using Type AAF adjustable girder clamps. To construct the substructure, girder clamps in an 8-bolt configuration were used for 90-degree cross-over beam connections, while 4-bolt girder clamp configurations secured steel saddles directly to the underwater timber support piles. All supplied Type AAF clamps were hot dip galvanised to deliver the required corrosion resistance in the lake's marine environment.



Installation

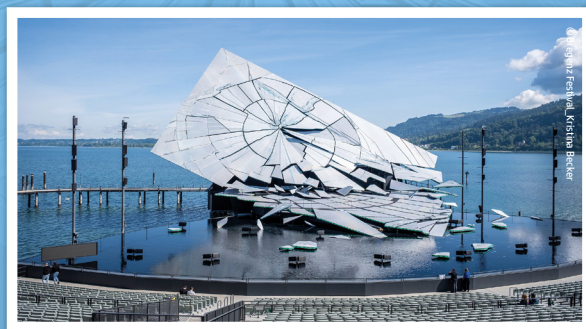
Specialist diving contractors wearing wetsuits installed the clamps directly underwater using simple hand tools. The adjustability of the Type AAF allowed divers to easily manipulate and align the heavy structural members underwater before applying the specified torque, enabling fast and straightforward assembly without requiring on-site drilling or specialised submerged welding equipment.

Click here to watch the installation video >>>



Result

By eliminating the need for drilling or welding, the installation avoided damage to anti-corrosion coatings and eliminated environmental risk to Lake Constance. The robust, hot dip galvanised connections provided the necessary load capacity and long term durability to safely support the floating stage framework throughout the festival's demanding performance schedule.



Key Benefits

- ✓ **High Adjustability:** Lateral alignment flexibility allowed divers to easily position beams and overcome site conditions underwater.
- ✓ **No On-Site Welding or Drilling:** Avoided hot work and drilling in sensitive underwater environments, preserving structural integrity.
- ✓ **Corrosion Resistance:** Hot dip galvanised finish ensured robust protection against long term exposure to water and weather elements.
- ✓ **Fast & Safe Installation:** Simplified underwater assembly for specialist divers using standard hand tools to achieve required clamping force.
- ✓ **Full Technical Support:** Lindapter provided detailed connection drawings and engineering advice to ensure precise, code compliant structural joints.

