

# VICODA® SUCCESS STORY

## BRIDGES

## Footbridge over the Aa

### PROJECT DETAILS

#### Short description

Reduction of pedestrian induced vibrations on a footbridge by installing tuned mass dampers

#### Bridge design

Steel Girder Bridge with trussed timber framework

#### Requirements

To implement the usability and comfort criteria according to HiVoSS

#### Product details Tuned Mass Damper

Moving mass: 1200 kg

Corrosion protection: According to EN 12944 class C4 high and design according to ZTV-Ing

Design service life: 50 years

### PROJECT DESCRIPTION

Near Münster a new 35 meter long pedestrian steel bridge spans the Aa in an elegant sweep. The new bridge is used by pedestrians and cyclists. This newly acquired urban space utilized the combination of a modern design and the characteristics of a steel bridge making it prone to pedestrian induced vibrations.

### SOLUTION

In order to ensure the usability the highest possible comfort class according to HiVoSS (Human induced vibrations of steel structures) should be reached. To achieve this goal VICODA developed and manufactures a Tuned Mass Damper. The damper was tested in the VICODA test facility and the TMD frequency and the damping have been tuned to its target value. After installation of the TMD on the bridge the process of fine tuning was carried out. The relevant natural frequency of the bridge deck was determined by vibration measurements. The TMD properties were adjusted to match the bridge frequencies to remove the unwanted vibrations.

