DISPLACEMENT DEPENDENT DEVICES
AIOS – RED

AIOS devices combine structural bearings with displacement dependent devices (DDDs), supporting vertical and horizontal loads while dissipating energy through “C” shaped elements. RED devices are unidirectional dissipative restraints for bridges and viaducts, dissipating energy via the yielding of “half-moon” element.

DISPLACEMENT DEPENDENT DEVICES COMBINED WITH STRUCTURAL BEARINGS – AIOS TYPE

AIOS bearings are an innovative combination of structural bearings (pot or spherical) and Displacement Dependent Devices (DDDs). “C” Shaped Elements are the core of the DDDs. Under normal service loads, they remain elastic. However, under higher loads, such as during seismic events, they yield and dissipate energy.

AIOS are designed to provide both support and energy dissipation capabilities, making them suitable for various load conditions and applications. The performance characteristics of AIOS bearings can be fully customized to meet specific project requirements. This includes adjusting the load capacities, energy dissipation rates, and movement allowances.

For specialized applications, shock transmitters can be added to the AIOS devices. These components differentiate between service and seismic behavior, ensuring that the bearings perform optimally under both regular and extreme conditions.

KEY TO LABEL

AIOS 3500-900/300-150/200

Bidirectional AIOS with 3500 kN of vertical load, 900 kN of ultimate load at ±150 mm of maximum displacement in longitudinal direction and 150 kN of ultimate load at ±190 mm of maximum displacement in transversal direction.

AIOS 3500-900/300-150

Unidirectional AIOS with 3500 kN of vertical load, 900 kN of ultimate load at ±150 mm of maximum displacement in longitudinal direction and 150 kN of transversal load without displacement.

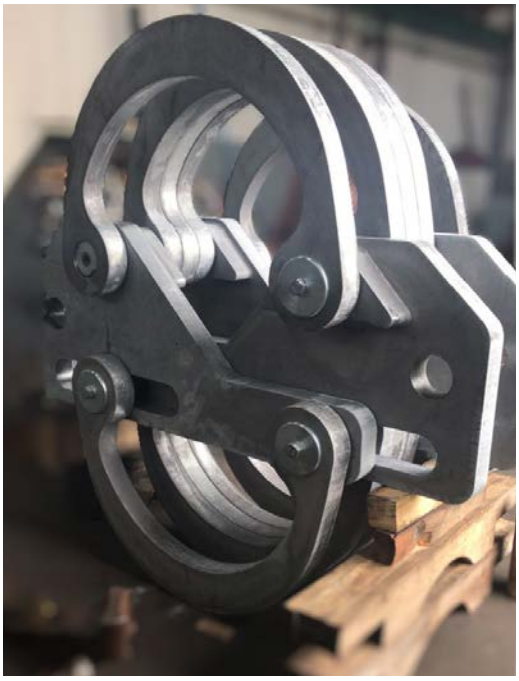
AIOS 3500-900/300/300

Unidirectional AIOS with 3500 kN of vertical load, 900 kN of ultimate load at ±150 mm of maximum displacement in longitudinal direction and ±150 mm of free transversal displacement.

SOMMA CE

DISPOSITIVE TYPE	YEAR	JOB
DISPOSITIVE CODE	**ORDER**	**SERIAL NUMBER**

N_{max} [kN]	F_{xel} [kN]	s_{xel} [mm]	F_{yel} [kN]	s_{yel} [mm]
RANK	**F_{xu} [kN]**	**s_{xu} [mm]**	**F_{yu} [kN]**	**s_{yu} [mm]**



DISPLACEMENT DEPENDENT DEVICES AS RESTRAINTS – RED TYPE

RED devices are specialized unidirectional dissipative restraints used in bridges and viaducts. Their primary function is to dissipate energy through the yielding of a uniquely designed “half-moon” element, allowing them to accommodate significant displacements. The “half-moon” elements are used in parallel.

KEY TO LABEL

RED 2000/400

RED restraints with 2000 kN of ultimate load at ±200 mm of maximum displacement.

SOMMA	CE	DISPOSITIVE TYPE	YEAR	JOB
		DISPOSITIVE CODE	ORDER	SERIAL NUMBER

max	$F_{x\,el}$ [kN]	$s_{x\,el}$ [mm]
RANK	$F_{x\,u}$ [kN]	$s_{x\,u}$ [mm]

ANTI-CORROSIVE PROTECTION

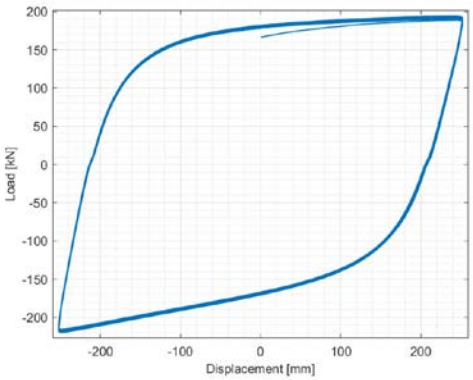
The components exposed to atmospheric agents are protected with C5 anticorrosive treatment compliant with ISO 12944-5, made with Sa 2.5 white metal sandblasting, a bicomponent epoxy primer and polyurethane finish.

On request, depending on the atmospheric agents acting on the device, it is possible to apply different protective treatments.

CE AIOS and RED devices are CE marked according to EN 15129

TEST ACCORDING TO EN 15129

Before the devices are delivered and installed, Factory Production Control Tests (FPCTs) must be performed according to the quantities and methods specified by the European Standard EN15129. These tests ensure that the manufactured devices accurately reflect the design performance specifications.



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