

POLITECNICO DI MILANO



Laboratorio Prove Materiali - NB 1777 CPR

Notified Body 1777 – CPR

**CERTIFICATE OF CONSTANCY OF PERFORMANCE
1777 - CPR – 14.04**

In compliance with the Regulation (UE) No. 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, it has been stated that the construction product

Fluid Viscous Damper

with trade name

Reston SA Shock Absorber

velocity dependent devices, to use in building and civil engineering works where requirements on individual devices are critical

placed on the market by

Mageba S.A.

Solistrasse 68 , 8180 Bülach , Switzerland

and produced in the factory of

Factory P

is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan. The notified body – Laboratorio Prove Materiali - Politecnico di Milano - has carried out an assessment of the performance of the construction product on the basis of testing (including sampling), calculation, tabulated values or descriptive documentation of the product and the initial inspection of the manufacturing plant and of the factory production control. The notified body – Laboratorio Prove Materiali - Politecnico di Milano performs the continuing surveillance, assessment and evaluation of factory production control.

This certificate attests that all provisions concerning the assessment of constancy of performance carried out in compliance with the Regulation (EU) No 305/2011 and subsequent amendments and additions, and the performances described in the Annex ZA of the standard

hEN 15129:2009

under AVCP System 1 were applied and that the product fulfills all the prescribed requirements.

This certificate was first issued on August 01, 2014 and remains valid as long as the conditions laid down in the harmonised technical specification in reference or the manufacturing conditions in the factory or the factory production control itself are not modified significantly.

The main characteristics of the product are reported in the Annex to this certificate.

Milan, July 27, 2015

Revision n. 1

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Prof. Ing. Carlo Poggi
Head of Certification Body



**Annex to Certificate of Constancy of Performance
no. 1777 – CPR – 14.04**

Mageba Reston SA product family

Description of the product

Mageba Reston SA is a device that provides an axial force in either tension or compression that depends on the imposed velocity only and complies with the constitutive law declared by the manufacturer over a velocity range extending at least two decades down from the maximum design level. The device is manufactured from ferrous materials and the active surface of the piston rod is hard chromium plated. The device is classified as Velocity Dependent in accordance with Table 1 of hEN 15129:2009.

The viscous fluid is Fluid A*

The temperature range is from -25°C to +50°C.

The intended use is in buildings and civil engineering works.

* appropriate certificates reporting the identification characteristics of the fluid are deposited at the notified body involved in the attestation of conformity procedure

Performance characteristics

Mageba Reston SA products meet the following requirements in accordance with hEN 15129:2009:

- pressure test, clause 7.4.2.2
- low velocity test, clause 7.4.2.3
- constitutive law test, clause 7.4.2.5
- damping efficiency test, clause 7.4.2.7
- wind load cyclic test, clause 7.4.2.8
- seal wear test, clause 7.4.2.9
- stroke verification test, clause 7.4.2.10.

Type, identification and use

Mageba Reston SA product type is evaluated on the basis of the results reported below

Reston SA 750/200			
<i>load capacity 750 kN</i>		<i>stroke 200 mm</i>	
<i>Parameter</i>	<i>Symbol</i>	<i>Design value</i>	<i>Unit</i>
Axial force	F_d	750	kN
Axial displacement	d_m	±100	mm
Seismic displacement	d_{bd}	±50	mm
Thermal displacement	d_{th}	±50	mm
Maximum velocity	V_d	62.8	mm/s
Constitutive law parameters	C	787	kN/(m/s) ^α
	α	0.04	-
Energy Dissipated per Cycle (*)	EDC	148000	J
Minimum service temperature	T_L	-25	°C
Maximum service temperature	T_U	+50	°C
Maximum temperature	T_{max}	+70	°C
Horizontal rotation capacity	-	±3	deg

(*) for a displacement of ±50 mm

According to Test Report no. 2014/1889

Reston SA 51/60			
<i>load capacity 51 kN</i>		<i>stroke 60 mm</i>	
<i>Parameter</i>	<i>Symbol</i>	<i>Design value</i>	<i>Unit</i>
Axial force	F_d	51	kN
Axial displacement	d_m	±30	mm
Seismic displacement	d_{bd}	±20	mm
Thermal displacement	d_{th}	±10	mm
Maximum velocity	V_d	56	mm/s
Constitutive law parameters	C	118	kN/(m/s) ^α
	α	0.30	-
Energy Dissipated per Cycle (*)	EDC	3740	J
Minimum service temperature	T_L	-25	°C
Maximum service temperature	T_U	+50	°C
Maximum temperature	T_{max}	+70	°C
Horizontal rotation capacity	-	±3	deg

(*) for a displacement of ±20 mm

According to Test Report no. 2014/1890



Reston SA 4740/200			
		<i>load capacity 4740 kN</i>	<i>stroke 200 mm</i>
<i>Parameter</i>	<i>Symbol</i>	<i>Design value</i>	<i>Unit</i>
Axial force	F_d	4740	kN
Axial displacement	d_m	±100	mm
Seismic displacement	d_{bd}	±50	mm
Thermal displacement	d_{th}	±10	mm
Maximum velocity	V_d	300	mm/s
Constitutive law parameters	C	4974	kN/(m/s) ^α
	α	0.04	-
Energy Dissipated per Cycle (*)	EDC	940000	J
Minimum service temperature	T_L	-25	°C
Maximum service temperature	T_U	+50	°C
Maximum temperature	T_{max}	+70	°C
Horizontal rotation capacity	-	±3	deg

(*) for a displacement of ±50 mm

According to Test Report no. 2015/1481

Mageba Reston SA products (types and sizes) covered by the present Certificate of Constancy of Performance are manufactured in accordance with this design and with the same parametric technical solutions.

The used materials are the same for all types and sizes.

Milan, July 27, 2015


Prof. Ing. Carlo Poggi
Head of Certification Body

**This Annex is only valid together with the
Certificate of Constancy of Performance no. 1777 – CPR – 14.04**