

POLITECNICO
MILANO 1863

Laboratorio Prove Materiali - NB 1777 CPR



PRD N° 0317

Notified Body 1777 - CPR

CERTIFICATE OF CONSTANCY OF PERFORMANCE
1777 - CPR - 14.04

In compliance with Regulation (EU) No. 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to 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 under the name or trade mark of

mageba SA

Trafostrasse 1, 8180 Bülach, Switzerland

and produced in the manufacturing plant

Factory MaIT-PN

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 15129:2009

under System 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on August 1, 2014 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

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

The present Certificate cancels and replaces the previous revision no.1 dated July 27, 2015.

Milan, 14 November 2024

Revision no. 2

Laboratorio Prove Materiali
Politecnico di Milano
Piazza Leonardo da Vinci, 32
20133 Milano
Tel. 02 2399 4210
Fax 02 2399 4211
info-lpm-sc-aricid@polimi.it
www.lpm-sc.polimi.it

Firmato digitalmente
da: CARLO POGGI
Organizzazione:
POLITECNICO DI
MILANO/80057930150

Prof. Ing. Carlo Poggi
Head of Certification Body



POLITECNICO
MILANO 1863

Laboratorio Prove Materiali - NB 1777 CPR



PRD N° 0317

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.

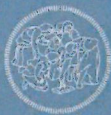
The intended use is in buildings and civil engineering works.

* 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.



POLITECNICO
MILANO 1863

Laboratorio Prove Materiali - NB 1777 CPR



PRD N° 0317

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



POLITECNICO
MILANO 1863

Laboratorio Prove Materiali - NB 1777 CPR



PRD N° 0317

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, November 14, 2024

Firmato digitalmente
da: CARLO POGGI
Organizzazione:
POLITECNICO DI
MILANO/80057930150

Prof. Ing. Carlo Poggi
Head of Certification Body

The present Annex is only valid together with the
Certificate of Constancy of Performance no. 1777 – CPR – 14.04
rev.2 dated 14 November 2024

The present Annex cancels and replaces the previous Annex
rev. 1 dated 27 July 2015

Laboratorio Prove Materiali
Politecnico di Milano
Piazza Leonardo da Vinci, 32
20133 Milano
Tel. 02 2399 4210
Fax 02 2399 4211
info-lpmc-aricid@polimi.it
www.lpmc.polimi.it

Certificate of Constancy of Performance no. 1777 – CPR – 14.04

Annex Rev.2 of 14 November 2024

Page 3 of 3