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# Regupol®

# **Vibration Isolation Technical Details**

**Regupol**<sup>®</sup> in: Palaisquartier Frankfurt, Imtech Arena Hamburg, Mainova Headof-fice Frankfurt



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## vibration 200

#### Standard forms of delivery, ex warehouse

Rolls Thickness: Length: Width:

17 mm, dimpled 10,000 mm, special lengths available 1,250 mm

### Stripping/Plates

On request Die-cutting, water-jet cutting, self-adhesive versions possible

#### Continuous static load

 $0.02\ \text{N/mm}^2$  Continuous and variable loads/operating load range  $0.05\ \text{N/mm}^2$ 

Protect the material permanently against moisture.



Static modulus of elasticity	Based on EN 826	0.02 - 0.08	N/mm <sup>2</sup>	Tangential modulus, see figure "Modulus of elasticity"
Dynamic modulus of elasticity	Based on DIN 53513	0.05 - 0.38	N/mm <sup>2</sup>	Depending on frequency, load and thickness, see figure "dynamic stiffness"
Mechanical loss factor	DIN 53513	0.22		Load-, amplitude- and frequency-dependent
Compression set	Based on DIN EN ISO 1856	3.1	%	Measured 30 minutes after decompression with 50% deformation / 23 °C after 72 hrs
Tensile strength	Based on DIN EN ISO 1798	0.12	N/mm <sup>2</sup>	
Elongation at break	Based on DIN EN ISO 1798	40	%	
Tear resistance	Based on DIN ISO 34-1	1.0	N/mm	
Fire behaviour	DIN 4102 DIN EN 13501	B2 E	[-] [-]	Normal flammability
Sliding friction	BSW-laboratory BSW-laboratory	0.7 0.8	[-] [-]	Steel (dry) Concrete (dry)
Compression hardness	Based on DIN EN ISO 3386-2	14	kPa	Compressive stress at 25 % deformation
Rebound elasticity	Based on DIN EN ISO 8307	14	%	dependent on thickness, test specimen $h = 25 \text{ mm}$
Force reduction	DIN EN 14904	73	%	dependent on thickness, test specimen $h = 25 \text{ mm}$



N/mm<sup>2</sup>

1000

800

550

480

450

400

300

200

## Load Ranges



## Load Deflection



Examination of deflection in accordance to DIN EN 826 between two stiff panels. Illustration based on the third loading. Velocitiy of loading and unloading 20 seconds. Tested at room temperature. Dimensions of test specimens 300 mm x 300 mm.

0

N/mm<sup>2</sup>

### vibration 200

## **Vibration Isolation**



## **Natural Frequency**



3.1

N/mm<sup>2</sup> 1.50

- 0.80

- 0.30

-0.15

-0.12

-0.10

0.05

0.02

0

000

800

550

480

50

400

300

200

## Regupol®

## vibration 200

## Influence of Amplitude

Regupol<sup>®</sup> vibration 200 30 20 s [%] 10 0 dy l 4o .10 5 .20 .30 0 50 100 150 200 250 Amplitude [µm]





of 0.011 N/mm<sup>2</sup>, dimensions of the specimens 300 mm x 300 mm x 51 mm.





### vibration 200

Modulus of Elasticity



of  $\pm$  0.25 mm. Dimensions of specimens 300 mm x 300 mm x 34 mm; static modulus of elasticity as a the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

## **Dynamic Stiffness**



Illustration of the dynamic stiffness for sinusoidal excitation at a constant mean load and an amplitude of  $\pm$  0.25 mm. Dimensions of specimens 300 mm x 300 mm x 34 mm; static stiffness as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.



## upol<sup>®</sup>

## Long-Term Creep Test



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## vibration 200

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## vibration 300

#### Standard forms of delivery, ex warehouse

Rolls Thickness:

Length: Width:

#### Stripping/Plates

On request Die-cutting, water-jet cutting, self-adhesive versions possible

17 mm, dimpled

1,250 mm

10,000 mm, special lengths available

#### Continuous static load

 $0.05\ \text{N/mm}^2$  Continuous and variable loads/operating load range  $0.08\ \text{N/mm}^2$ 



Static modulus of elasticity	Based on EN 826	0.1 - 0.2	N/mm <sup>2</sup>	Tangential modulus, see figure "Modulus of elasticity"	N/mr -1.50	n²
Dynamic modulus of elasticity	Based on DIN 53513	0.2 - 1.4	N/mm <sup>2</sup>	Depending on frequency, load and thickness, see figure "dynamic stiffness"		1000
Mechanical loss factor	DIN 53513	0.18		Load-, amplitude- and frequency-dependent	-0.80 -	
Compression set	Based on DIN EN ISO 1856	1.6	%	Measured 30 minutes after decompression with 50% deformation / 23 °C after 72 hrs	-0.30 -	80(
Tensile strength	Based on DIN EN ISO 1798	0.30	N/mm <sup>2</sup>		-0.15-	550
Elongation at break	Based on DIN EN ISO 1798	55	%			80
Tear resistance	Based on DIN ISO 34-1		N/mm		-0.12-	4
Fire behaviour	DIN 4102 DIN EN 13501	B2 E	[-] [-]	Normal flammability		450
Sliding friction	BSW-laboratory BSW-laboratory	0.7 0.8		Steel (dry) Concrete (dry)	-0.10-	
Compression hardness	Based on DIN EN ISO 3386-2	50	kPa	Compressive stress at 25 % deformation	-0.05-	400
Rebound elasticity	Based on DIN EN ISO 8307	10	%	dependent on thickness, test specimen $h = 51 \text{ mm}$		300
Force reduction	DIN EN 14904	73	%	dependent on thickness, test specimen $h = 51 \text{ mm}$	-0.02-	Γ
Ozone resistance	DIN EN ISO 17025	Cracking stage 0	[-]			200

Regupol 300, Version 1, Release 01 2014, sheet 1 of 2

## Load Ranges



## Load Deflection



Examination of deflection in accordance to DIN EN 826 between two stiff panels. Illustration based on the third loading. Velocitiy of loading and unloading 20 seconds. Tested at room temperature. Dimensions of test specimens 300 mm x 300 mm.



N/mm<sup>2</sup>

3.2

### vibration 300

## **Vibration Isolation**



## **Natural Frequency**



N/mm<sup>2</sup> 1.50

- 0.80

- 0.30

-0.15

-0.12

-0.10

0.05

- 0.02

0

000

800

550

480

50

400

300

200

## Regupol®

## vibration 300

## Influence of Amplitude

**Regupol<sup>®</sup>** vibration 300 30 20 [%] 10 0 dyi of -10 5 -20 -30 0 50 100 150 200 250 Amplitude [µm]

Change of the dynamic stiffness due to changes in amplitudes. Average for 5 Hz, 10 Hz and 40 Hz excitation. Sinusoidal excitation at a constant mean load of 0.05 N/mm², dimensions of the specimens 300 mm x 300 mm x 51 mm. Natural frequency of a single-degree-of-freedom system (SDOF system) on a rigid base.



of 0.05 N/mm<sup>2</sup>, dimensions of the specimens 300 mm x 300 mm x 51 mm.





Modulus of Elasticity

2.0

1.5

1.0 of o

0.5

0.0

0.00

icity [N/I

Andul

Regupol<sup>®</sup> vibration 300

0.01

### vibration 300

40 Hz

Static

0.05

0.04

### 3.2

## Regupol®

## Long-Term Creep Test



Dimensions of specimens 300 mm x 300 mm x 51 mm

Illustration of the dynamic modulus of elasticity for sinusoidal excitation at a constant mean load and an amplitude of  $\pm$  0.25 mm. Dimensions of specimens 300 mm x 300 mm x 34 mm; static modulus of elasticity as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

Pressure [N/mm<sup>2</sup>]

0.03

0.02

## **Dynamic Stiffness**



Dimensions of specimens 300 mm x 300 mm x 34 mm; static stiffness as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

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## vibration 300

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Regupol 300, Version 1, Release 01 2014, sheet 2 of 2

## vibration 400

#### Standard forms of delivery, ex warehouse

Rolls Thickness: Length:

Width:

15 mm, dimpled 10,000 mm, special lengths available 1,250 mm

#### Stripping/Plates

On request Die-cutting, water-jet cutting, self-adhesive versions possible

#### Continuous static load

 $0.10\ \text{N/mm}^2$  Continuous and variable loads/operating load range  $0.15\ \text{N/mm}^2$ 



Static modulus of elasticity	Based on EN 826	0.3 - 0.55	N/mm <sup>2</sup>	Tangential modulus, see figure "Modulus of elasticity"	N/mr -1.50 -	n²
Dynamic modulus of elasticity	Based on DIN 53513	0.9 - 2.4	N/mm <sup>2</sup>	Depending on frequency, load and thickness, see figure "dynamic stiffness"		1000
Mechanical loss factor	DIN 53513	0.17		Load-, amplitude- and frequency-dependent	-0.80-	
Compression set	Based on DIN EN ISO 1856	2.1	%	Measured 30 minutes after decompression with 50% deformation / 23 °C after 72 hrs	-0.30-	80(
Tensile strength	Based on DIN EN ISO 1798	0.34	N/mm <sup>2</sup>		-0.15-	550
Elongation at break	Based on DIN EN ISO 1798	55	%			80
Tear resistance	Based on DIN ISO 34-1	3.2	N/mm		-0.12-	4
Fire behaviour	DIN 4102 DIN EN 13501	B2 E	[-] [-]	Normal flammability		450
Sliding friction	BSW-laboratory BSW-laboratory	0.7 0.8	[-] [-]	Steel (dry) Concrete (dry)	-0.10-	
Compression hardness	Based on DIN EN ISO 3386-2	180	kPa	Compressive stress at 25 % deformation test specimen $h = 60 \text{ mm}$	-0.05-	400
Rebound elasticity	Based on DIN EN ISO 8307	22	%	dependent on thickness, test specimen $h = 60 \text{ mm}$		300
Force reduction	DIN EN 14904	73	%	dependent on thickness, test specimen $h = 60 \text{ mm}$	-0.02-	
Ozone resistance	DIN EN ISO 17025	Cracking stage 0	[-]			200

Regupol 400, Version 1, Release 01 2014, sheet 1 of 2

## Load Ranges



### Load Deflection



Examination of deflection in accordance to DIN EN 826 between two stiff panels. Illustration based on the third loading. Velocitiy of loading and unloading 20 seconds. Tested at room temperature. Dimensions of test specimens 300 mm x 300 mm.

### vibration 400

## **Vibration Isolation**



## Natural Frequency



3.3

## Regupol®

## vibration 400

## Influence of Amplitude



Change of the dynamic stiffness due to changes in amplitudes. Average for 5 Hz, 10 Hz and 40 Hz excitation. Sinusoidal excitation at a constant mean load of 0.10 N/mm², dimensions of the specimens 300 mm x 300 mm x 60 mm. Natural frequency of a single-degree-of-freedom system (SDOF system) on a rigid base.







Modulus of Elasticity

3.0

2.5

1.5

1.0

0.5

0.0

0.00

City [N/

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Regupol<sup>®</sup> vibration 400

0.02

### vibration 400

10 Hz

0.06

Statio

0.08

0.10

5 Hz

3.3

## Regupol<sup>®</sup> vi

## Long-Term Creep Test



Dimensions of specimens 300 mm x 300 mm x 60 mm

Illustration of the dynamic modulus of elasticity for sinusoidal excitation at a constant mean load and an amplitude of  $\pm$  0.25 mm. Dimensions of specimens 300 mm x 300 mm x 45 mm; static modulus of elasticity as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

Pressure [N/mm<sup>2</sup>]

0.04

## **Dynamic Stiffness**



Illustration of the dynamic stiffness for sinusoidal excitation at a constant mean load and an amplitude of  $\pm$  0.25 mm. Dimensions of specimens 300 mm x 300 mm x 45 mm; static stiffness as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513. Contact: Steffen Blecher, Phone: +49 2751 803-126 • s.blecher@berleburger.de; Florian Sassmannshausen, Phone: +49 2751 803-230 • f.sassmannshausen@berleburger.de • Downloads at www.bsw-vibration-technology.com

### vibration 400



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Regupol 400, Version 1, Release 01 2014, sheet 2 of 2

## vibration 450

#### Standard forms of delivery, ex warehouse

Plates	
Thickness:	50 mm, special thickness available
Length:	1,000 mm
Width:	500 mm

#### Continuous static load

0.12 N/mm<sup>2</sup>

Continuous and variable loads/operating load range  $0.18 \ \text{N/mm}^2$ 



Static modulus of elasticity	Based on EN 826	0.2 - 0.4	N/mm <sup>2</sup>	Tangential modulus, see figure "Modulus of elasticity"	N/mm -1.50 -	1 <sup>2</sup>
Dynamic modulus of elasticity	Based on DIN 53513	0.45 - 2.7	N/mm <sup>2</sup>	Depending on frequency, load and thickness, see figure "dynamic stiffness"		1000
Mechanical loss factor	DIN 53513	0.2	[-]	Load-, amplitude- and frequency-dependent	-0.80	
Compression set	Based on DIN EN ISO 1856	4.1	%	Measured 30 minutes after decompression with 50% deformation / 23 °C after 72 hrs	-0.30	80(
Tensile strength	Based on DIN EN ISO 1798	0.15	N/mm <sup>2</sup>		-0.15-	550
Elongation at break	Based on DIN EN ISO 1798	40	%			80
Tear resistance	Based on DIN ISO 34-1	1.9	N/mm		-0.12-	4
Fire behaviour	DIN 4102 DIN EN 13501	B2 E	[-] [-]	Normal flammability		450
Sliding friction	BSW-laboratory BSW-laboratory	0.5 0.6		Steel (dry) Concrete (dry)	-0.10-	
Compression hardness	Based on DIN EN ISO 3386-2	83	kPa	Compressive stress at 25 % deformation test specimen $h = 50 \text{ mm}$	-0.05	40(
Rebound elasticity	Based on DIN EN ISO 8307	42.7	%	dependent on thickness, test specimen $h = 50 \text{ mm}$		300
Force reduction	DIN EN 14904	74	%	dependent on thickness, test specimen $h = 50 \text{ mm}$	-0.02—	
Ozone resistance	DIN EN ISO 17025	Cracking stage 0	[-]		0	200

3.4

Regupol 450, Version 1, Release 01 2014, sheet 1 of 2  $\,$ 

vibration 450

### 3.4

## Load Ranges



### Load Deflection



Examination of deflection in accordance to DIN EN 826 between two stiff panels. Illustration based on the third loading. Velocitiy of loading and unloading 20 seconds. Tested at room temperature. Dimensions of test specimens 300 mm x 300 mm.

N/mm<sup>2</sup>

1000

800

550

1.50

0.80

0.30

0.15

### vibration 450

## **Vibration Isolation**



## Natural Frequency



Regupol® vibration 450 on a rigid base. Dimensions of test specimens 300 mm x 300 mm.

N/mm<sup>2</sup> 1.50

- 0.80

- 0.30

-0.15

-0.12

-0.10

0.05

0.02

0

000

800

550

480

450

400

300

200

3.4

# Regupol®

## vibration 450

## Influence of Amplitude







### vibration 450

Modulus of Elasticity



of  $\pm$  0.25 mm. Dimensions of specimens 300 mm x 300 mm x 50 mm; static modulus of elasticity as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

## **Dynamic Stiffness**



Dimensions of specimens 300 mm x 300 mm x 50 mm; static stiffness as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

3.4

# Regupol®

## Long-Term Creep Test



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### vibration 450

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Regupol 450, Version 1, Release 01 2014, sheet 2 of 2

## vibration 480

#### Standard forms of delivery, ex warehouse

Rolls Thickness: Length:

Width:

15 mm 10,000 mm, special length available 1,250 mm

#### Stripping/Plates

On request Die-cutting, water-jet cutting, self-adhesive versions possible

#### Continuous static load

 $0.15\ \text{N/mm}^2$  Continuous and variable loads/operating load range  $0.25\ \text{N/mm}^2$ 



Static modulus of elasticity	Based on EN 826	0.25 - 0.8	N/mm <sup>2</sup>	Tangential modulus, see figure "Modulus of elasticity"	N/mn -1.50 -	n²
Dynamic modulus of elasticity	Based on DIN 53513	1.2 - 3.3	N/mm <sup>2</sup>	Depending on frequency, load and thickness, see figure "dynamic stiffness"		1000
Mechanical loss factor	DIN 53513	0.17		Load-, amplitude- and frequency-dependent	-0.80 -	
Compression set	Based on DIN EN ISO 1856	3.0	%	Measured 30 minutes after decompression with 50% deformation / 23 °C after 72 hrs	-0.30-	80(
Tensile strength	Based on DIN EN ISO 1798	0.36	N/mm <sup>2</sup>		-0.15-	550
Elongation at break	Based on DIN EN ISO 1798	55	%			80
Tear resistance	Based on DIN ISO 34-1	4.5	N/mm		-0.12-	4
Fire behaviour	DIN 4102 DIN EN 13501	B2 E	[-] [-]	Normal flammability		450
Sliding friction	BSW-laboratory BSW-laboratory	0.7 0.8		Steel (dry) Concrete (dry)	-0.10-	
Compression hardness	Based on DIN EN ISO 3386-2	220	kPa	Compressive stress at 25 % deformation test specimen $h = 60 \text{ mm}$	-0.05-	400
Rebound elasticity	Based on DIN EN ISO 8307	31	%	dependent on thickness, test specimen $h = 60 \text{ mm}$		300
Force reduction	DIN EN 14904	72	%	dependent on thickness, test specimen $h = 60 \text{ mm}$	-0.02-	
Ozone resistance	DIN EN ISO 17025	Cracking stage 0	[-]		0	200

Regupol 480, Version 1, Release 01 2014, sheet 1 of 2

vibration 480

## Load Ranges



### Load Deflection



Examination of deflection in accordance to DIN EN 826 between two stiff panels. Illustration based on the third loading. Velocitiy of loading and unloading 20 seconds. Tested at room temperature. Dimensions of test specimens 300 mm x 300 mm.



N/mm<sup>2</sup>

1000

1.50

0.12

0.10

0.05

- 0.02

0

450

400

300

200

### vibration 480

## **Vibration Isolation**



## **Natural Frequency**



3.5

N/mm<sup>2</sup> 1.50

- 0.80

- 0.30

-0.15

-0.12

-0.10

- 0.05

0.02

0

000

800

550

480

50

400

300

200

## Regupol®

## vibration 480

## Influence of Amplitude



Change of the dynamic stiffness due to changes in amplitudes. Average for 5 Hz, 10 Hz and 40 Hz excitation. Sinusoidal excitation at a constant mean load of 0.10 N/mm², dimensions of the specimens 300 mm x 300 mm x 60 mm. Natural frequency of a single-degree-of-freedom system (SDOF system) on a rigid base.



of 0.10 N/mm<sup>2</sup>, dimensions of the specimens 300 mm x 300 mm x 60 mm.



### vibration 480

3.5

## Regupol®

## Long-Term Creep Test



Dimensions of specimens 300 mm x 300 mm x 60 mm

Modulus of Elasticity Regupol<sup>®</sup> vibration 480 3.5 3.0



## **Dynamic Stiffness**



Illustration of the dynamic stiffness for sinusoidal excitation at a constant mean load and an amplitude of  $\pm$  0.25 mm. Dimensions of specimens 300 mm x 300 mm x 45 mm; static stiffness as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

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### vibration 480



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Regupol 480, Version 1, Release 01 2014, sheet 2 of 2

## vibration 550

#### Standard forms of delivery, ex warehouse

Rolls Thickness: Length:

Width:

15 mm 10,000 mm, special length available 1,250 mm

#### Stripping/Plates

On request Die-cutting, water-jet cutting, self-adhesive versions possible

#### Continuous static load

 $0.30\ \text{N/mm}^2$  Continuous and variable loads/operating load range  $0.40\ \text{N/mm}^2$ 



Static modulus of elasticity	Based on EN 826	0.5 - 1.7	N/mm <sup>2</sup>	Tangential modulus, see figure "Modulus of elasticity"	N/mm <sup>2</sup>	
Dynamic modulus of elasticity	Based on DIN 53513	2.5 - 7.0	N/mm <sup>2</sup>	Depending on frequency, load and thickness, see figure "dynamic stiffness"		1000
Mechanical loss factor	DIN 53513	0.16		Load-, amplitude- and frequency-dependent	-0.80-	
Compression set	Based on DIN EN ISO 1856	3.4	%	Measured 30 minutes after decompression with 50% deformation / 23 °C after 72 hrs	-0.30 -	80(
Tensile strength	Based on DIN EN ISO 1798	0.6	N/mm <sup>2</sup>		-0.15-	550
Elongation at break	Based on DIN EN ISO 1798	65	%			80
Tear resistance	Based on DIN ISO 34-1	5.0	N/mm		-0.12-	4
Fire behaviour	DIN 4102 DIN EN 13501	B2 E	[-] [-]	Normal flammability		450
Sliding friction	BSW-laboratory BSW-laboratory	0.7 0.8		Steel (dry) Concrete (dry)	-0.10-	
Compression hardness	Based on DIN EN ISO 3386-2	415	kPa	Compressive stress at 25 % deformation	-0.05-	400
Rebound elasticity	Based on DIN EN ISO 8307	36	%	dependent on thickness, test specimen $h = 60 \text{ mm}$		300
Force reduction	DIN EN 14904	65	%	dependent on thickness, test specimen $h = 60 \text{ mm}$	-0.02-	
Ozone resistance	DIN EN ISO 17025	Cracking stage 0	[-]			200

Regupol 550, Version 1, Release 01 2014, sheet 1 of 2

### 3.6

## Load Ranges



## Load Deflection

N/mm<sup>2</sup>

1000

800

550

480

450

400

300

200

1.50

0.80

0.30

0.15

0.12

0.10

0.05

- 0.02

0



Examination of deflection in accordance to DIN EN 826 between two stiff panels. Illustration based on the third loading. Velocitiy of loading and unloading 20 seconds. Tested at room temperature. Dimensions of test specimens 300 mm x 300 mm.

### vibration 550

## **Vibration Isolation**



## Natural Frequency



3.6

N/mm<sup>2</sup>

1.50

- 0.80

- 0.30

-0.15

-0.12

-0.10

0.05

0.02

0

000

800

550

480

50

400

300

200

# Regupol®

## vibration 550

## Influence of Amplitude



Change of the dynamic stiffness due to changes in amplitudes. Average for 5 Hz, 10 Hz and 40 Hz excitation. Sinusoidal excitation at a constant mean load of 0.25 N/mm², dimensions of the specimens 300 mm x 300 mm x 60 mm. Natural frequency of a single-degree-of-freedom system (SDOF system) on a rigid base.





Modulus of Elasticity

10

9

8

6

5

2

0 0.00

0.05

0.10

n<sup>2</sup>]

elasticity [N/m

f Ins Regupol<sup>®</sup> vibration 550

### vibration 550

3.6

## Regupol®

## Long-Term Creep Test



Dimensions of specimens 300 mm x 300 mm x 60 mm

Illustration of the dynamic modulus of elasticity for sinusoidal excitation at a constant mean load and an amplitude of  $\pm$  0.25 mm. Dimensions of specimens 300 mm x 300 mm x 45 mm; static modulus of elasticity as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

0.15

Pressure [N/mm<sup>2</sup>]

40 H

0.20

Static

0.25

0.30

## **Dynamic Stiffness**



Dimensions of specimens 300 mm x 300 mm x 45 mm; static stiffness as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

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## vibration 550

### Exclusion of Liability

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Regupol 550, Version 1, Release 01 2014, sheet 2 of 2

## vibration 800

#### Standard forms of delivery, ex warehouse

Rolls

Thickness: Length: Width: 10 mm 8,000 mm, special length available 1,250 mm

#### Stripping/Plates

On request Die-cutting, water-jet cutting, self-adhesive versions possible

#### Continuous static load

 $0.80\ \text{N/mm}^2$  Continuous and variable loads/operating load range  $1.00\ \text{N/mm}^2$ 



Static modulus of elasticity	Based on EN 826	1.2 - 2.9	N/mm <sup>2</sup>	Tangential modulus, see figure "Modulus of elasticity"	N/mm <sup>2</sup> -1.50 —	
Dynamic modulus of elasticity	Based on DIN 53513	3.6 - 18.2	N/mm²	Depending on frequency, load and thickness, see figure "dynamic stiffness"		1000
Mechanical loss factor	DIN 53513	0.18		Load-, amplitude- and frequency-dependent	-0.80	0
Compression set	Based on DIN EN ISO 1856	3.7	%	Measured 30 minutes after decompression with 50% deformation / 23 °C after 72 hrs	-0.30	80
Tensile strength	Based on DIN EN ISO 1798	0.9	N/mm <sup>2</sup>		-0.15-	550
Elongation at break	Based on DIN EN ISO 1798	70	%			80
Tear resistance	Based on DIN ISO 34-1	8.0	N/mm		-0.12-	4
Fire behaviour	DIN 4102 DIN EN 13501	B2 E	[-] [-]	Normal flammability		450
Sliding friction	BSW-laboratory BSW-laboratory	0.7 0.8		Steel (dry) Concrete (dry)	-0.10-	
Compression hardness	Based on DIN EN ISO 3386-2	545	kPa	Compressive stress at 25 % deformation test specimen $h = 60 \text{ mm}$	-0.05-	400
Rebound elasticity	Based on DIN EN ISO 8307	30	%	dependent on thickness, test specimen $h = 60 \text{ mm}$		300
Force reduction	DIN EN 14904	61	%	dependent on thickness, test specimen $h = 60 \text{ mm}$	-0.02-	
Ozone resistance	DIN EN ISO 17025	Cracking stage 0	[-]			200

Regupol 800, Version 1, Release 01 2014, sheet 1 of 2

### 3.7

## Load Ranges



### Load Deflection



Examination of deflection in accordance to DIN EN 826 between two stiff panels. Illustration based on the third loading. Velocitiy of loading and unloading 20 seconds. Tested at room temperature. Dimensions of test specimens 250 mm x 250 mm.



### vibration 800

## Vibration Isolation



## **Natural Frequency**



Regupol 800, Version 1, Release 01 2014, sheet 2 of 2



3.7

# Regupol®

## vibration 800

## Influence of Amplitude

**Regupol<sup>®</sup>** vibration 800 30 20 [%] 10 0 dyl of .10 S -20 .30 0 50 100 150 200 250 Amplitude [µm]

Change of the dynamic stiffness due to changes in amplitudes. Average for 5 Hz, 10 Hz and 40 Hz excitation. Sinusoidal excitation at a constant mean load of 0.80 N/mm², dimensions of the specimens 250 mm x 250 mm x 60 mm. Natural frequency of a single-degree-of-freedom system (SDOF system) on a rigid base.









### vibration 800

Modulus of Elasticity



of  $\pm$  0.25 mm. Dimensions of specimens 250 mm x 250 mm x 40 mm; static modulus of elasticity as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

## **Dynamic Stiffness**



Dimensions of specimens 250 mm x 250 mm x 40 mm; static stiffness as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

3.7

## Long-Term Creep Test



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## vibration 800

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Regupol 800, Version 1, Release 01 2014, sheet 2 of 2

## vibration 1000

#### Standard forms of delivery, ex warehouse

Rolls

Thickness: Length: Width: 10 mm 8,000 mm, special length available 1,250 mm

#### Stripping/Plates

On request Die-cutting, water-jet cutting, self-adhesive versions possible

#### Continuous static load

 $1.50\ \text{N/mm}^2$  Continuous and variable loads/operating load range  $1.75\ \text{N/mm}^2$ 



Static modulus of elasticity	Based on EN 826	4.0 - 11.0	N/mm <sup>2</sup>	Tangential modulus, see figure "Modulus of elasticity"	N/mm² -1.50 –	
Dynamic modulus of elasticity	Based on DIN 53513	15.0 - 45.0	N/mm²	Depending on frequency, load and thickness, see figure "dynamic stiffness"		1000
Mechanical loss factor	DIN 53513	0.16		Load-, amplitude- and frequency-dependent	-0.80	
Compression set	Based on DIN EN ISO 1856	4.9	%	Measured 30 minutes after decompression with 50% deformation / 23 °C after 72 hrs	-0.30	80
Tensile strength	Based on DIN EN ISO 1798	2.3	N/mm <sup>2</sup>		-0.15	550
Elongation at break	Based on DIN EN ISO 1798	110	%			80
Tear resistance	Based on DIN ISO 34-1	15.0	N/mm		-0.12	4
Fire behaviour	DIN 4102 DIN EN 13501	B2 E	[-] [-]	Normal flammability		450
Sliding friction	BSW-laboratory BSW-laboratory	0.6 0.7		Steel (dry) Concrete (dry)	-0.10	
Compression hardness	Based on DIN EN ISO 3386-2	1650	kPa	Compressive stress at 25 % deformation test specimen $h = 60 \text{ mm}$	-0.05	400
Rebound elasticity	Based on DIN EN ISO 8307	37	%	dependent on thickness, test specimen $h = 60 \text{ mm}$		300
Force reduction	DIN EN 14904	45	%	dependent on thickness, test specimen $h = 60 \text{ mm}$	-0.02	
Ozone resistance	DIN EN ISO 17025	Cracking stage 0	[-]			200

Regupol 1000, Version 1, Release 01 2014, sheet 1 of 2

N/mm<sup>2</sup>

1000

800

550

480

450

400

300

200

1.50

0.80

0.30

0.15

0.12

0.10

0.05

0.02

0

## Load Ranges



### Load Deflection



Regupol 1000, Version 1, Release 01 2014, sheet 1 of 2

### vibration 1000

## Vibration Isolation



## **Natural Frequency**



3.8

## Regupol®

## Influence of Amplitude



Change of the dynamic stiffness due to changes in amplitudes. Average for 5 Hz, 10 Hz and 40 Hz excitation. Sinusoidal excitation at a constant mean load of 1.50 N/mm², dimensions of the specimens 200 mm x 200 mm x 60 mm. Natural frequency of a single-degree-of-freedom system (SDOF system) on a rigid base.





### vibration 1000



### vibration 1000

Modulus of Elasticity



of  $\pm$  0.25 mm. Dimensions of specimens 200 mm x 200 mm x 40 mm; static modulus of elasticity as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

## **Dynamic Stiffness**



Dimensions of specimens 200 mm x 200 mm x 40 mm; static stiffness as a result of the tangent modulus of the spring characteristic. Tested in accordance with DIN 53513.

3.8

## Regupol®

Long-Term Creep Test



Dimensions of specimens 200 mm x 200 mm x 60 mm

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### vibration 1000

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