

ORFILIGHT® 1.6 mm (1/16")

		13 (micro)	
hermoforming conditions			
Optimum activation temperature (in water bath)	°C (°F)	65 (149)	
Activation time (in water bath)	minutes	3 - 4	
Transparent when activated		no	
Working time	minutes	1 - 1 ½	
Hardening time	minutes	1 3/4 - 2 1/4	
Time to completion	minutes	10 - 11	
Resistance to stretch		moderate	
Drape		high	
Memory (after 200 % elongation)		high	
Maximum elongation when activated	%	1800	
Memory (after maximum elongation)		high	
Sticks to itself when activated and wet		yes	
Sticks to itself when activated, after drying		reliable under	
		high stress	
Adhesion (velcro strip) using heat gun		yes	
Aechanical properties at 21°C			
Flexural modulus	MPa	260	
Elastic modulus	MPa	170	
Tensile strength	MPa	8.0	
Strain at break	%	45	
eneral properties			
Density	g cm ⁻³	0.85	
Hardness (shore D)	-	47	
Surface feeling		smooth	
Color		skin	
Odor		none	
Fatigue	cycles	> 10000	
Biocompatible	-,	yes	



ORFILIGHT[®] 2.5 mm (3/32")

(°F) 65 (149) nutes 3 - 4 no nutes 1 - 1½ nutes 2 ¾ - 3 ¼ nutes 11 - 12 moderate high high high high yes reliable under high stress yes
no nutes 1 - 1 ½ nutes 2 ¾ - 3 ¼ nutes 11 - 12 moderate high high high high yes reliable under high stress
no nutes 1 - 1 ½ nutes 2 ¾ - 3 ¼ nutes 11 - 12 moderate high high high high yes reliable under high stress
nutes 1 - 1 ½ nutes 2 ¾ - 3 ¼ nutes 11 - 12 moderate high high high % 2500 high yes reliable under high stress
mutes 2 % - 3 % nutes 11 - 12 moderate high high 2500 high yes reliable under high stress
moderate high high % 2500 high yes reliable under high stress
moderate high high % 2500 high yes reliable under high stress
high high 2500 high yes reliable under high stress
high 2500 high yes reliable under high stress
% 2500 high yes reliable under high stress
high yes reliable under high stress
yes reliable under high stress
reliable under high stress
high stress
yes
IPa 190
1Pa 165
1Pa 8.0
% 60
cm ⁻³ 0.80
47
smooth
skin
none
cles > 10000
yes



ORFILIGHT® 3.2 mm (1/8")

Thickness Perforation	mm (inches) % (type)	3.2 (1/8) 0 (non perfo)	3.2 (1/8) 3.5 (mini)
hermoforming conditions			
Optimum activation temperature (in water bath)	°C (°F)	65 (149)	65 (149)
Activation time (in water bath)	minutes	3 - 4	3 - 4
Transparent when activated		no	no
Working time	minutes	2 - 2 ½	1 3/4 - 2 1/4
Hardening time	minutes	4 ¾ - 5 ¼	3 ¾ - 4 ¼
Time to completion	minutes	20 - 21	15 - 16
Resistance to stretch		moderate	moderate
Drape		high	high
Memory (after 200 % elongation)		high	high
Maximum elongation when activated	%	2300	2200
Memory (after maximum elongation)		high	high
Sticks to itself when activated and wet		yes	yes
Sticks to itself when activated, after drying		reliable under	reliable under
		high stress	high stress
Adhesion (velcro strip) using heat gun		yes	yes
Nechanical properties at 21°C			
Flexural modulus	MPa	285	285
Elastic modulus	MPa	145	125
Tensile strength	MPa	10.0	8.0
Strain at break	%	140	20
General properties			
Density	g cm ⁻³	0.80	0.80
Hardness (shore D)		47	47
Surface feeling		smooth	smooth
Color		skin	skin
Odor		none	none
Fatigue	cycles	> 10000	> 10000
Biocompatible		yes	yes



ORFILIGHT® BLACK NS 1.6 mm (1/16")

Thickness Perforation	mm (inches) % (type)	1.6 (1/16) 13 (micro)	
Thermoforming conditions			
Optimum activation temperature (in water bath)	°C (°F)	65 (149)	
Activation time (in water bath)	minutes	3 - 4	
Transparent when activated		no	
Working time	minutes	1 - 1 1/2	
Hardening time	minutes	1 3/4 - 2 1/4	
Time to completion	minutes	10 - 11	
Resistance to stretch		moderate	
Drape		high	
Memory (after 200 % elongation)		high	
Maximum elongation when activated	%	1800	
Memory (after maximum elongation)		high	
Sticks to itself when activated and wet		yes	
Sticks to itself when activated, after drying		reliable under	
		low stress	
Adhesion (velcro strip) using heat gun		yes	
Mechanical properties at 21°C			
Flexural modulus	MPa	260	
Elastic modulus	MPa	170	
Tensile strength	MPa	8.0	
Strain at break	%	45	
General properties			
Density	g cm ⁻³	0.85	
Hardness (shore D)	U - ··	47	
Surface feeling		smooth	
Color		black	
Odor		none	
Fatigue	cycles	> 10000	
Biocompatible		yes	



ORFILIGHT® BLACK NS 2.5 mm (3/32")

Thickness Perforation	mm (inches) % (type)	2.5 (3/32) 13 (micro)	
Thermoforming conditions			
Optimum activation temperature (in water bath)	°C (°F)	65 (149)	
Activation time (in water bath)	minutes	3 - 4	
Transparent when activated		no	
Working time	minutes	1 - 1 1/2	
Hardening time	minutes	2 ¾ - 3 ¼	
Time to completion	minutes	11 - 12	
Resistance to stretch		moderate	
Drape		high	
Memory (after 200 % elongation)		high	
Maximum elongation when activated	%	2500	
Memory (after maximum elongation)		high	
Sticks to itself when activated and wet		yes	
Sticks to itself when activated, after drying		reliable under	
		low stress	
Adhesion (velcro strip) using heat gun		yes	
Mechanical properties at 21°C			
Flexural modulus	MPa	190	
Elastic modulus	MPa	165	
Tensile strength	MPa	8.0	
Strain at break	%	60	
General properties			
Density	g cm ⁻³	0.80	
Hardness (shore D)	-	47	
Surface feeling		smooth	
Color		black	
Odor		none	
Fatigue	cycles	> 10000	
Biocompatible	-	yes	
•		•	



ORFILIGHT® BLACK NS 3.2 mm (1/8")

Optimum activation temperature (in water bath)	Thickness Perforation	mm (inches) % (type)	3.2 (1/8) 0 (non perfo)	3.2 (1/8) 3.5 (mini)
Activation time (in water bath) minutes 3 - 4 3 - 4 7 Transparent when activated no no no No Norking time minutes 2 - 2 ½ 1 ½ - 2 ½ 1 ¼ - 2 ½ 1 1 ½ - 2 ½ 1 1 ½ - 2 ½ 1 1 ½ - 2 ½ 1 1 ½ - 2 ½ 1 ½ 1 ½ - 2 ½ 1 ½ 1 ½ - 2 ½ 1 ½ 1 ½ - 2 ½ 1 ½ 1 ½ - 2 ½ 1 ½ 1 ½ - 2 ½ 1 ½ 1 ½ - 2 ½ 1 ½ 1 ½ 1 ½ 1 ½ 1 ½ 1 ½ 1 ½ 1 ½ 1 ½	Thermoforming conditions			
Transparent when activated minutes 2 · 2 · ½ 1 % · 2 ½ 1	Optimum activation temperature (in water bath)	°C (°F)	65 (149)	65 (149)
Working time minutes 2 - 2 ½ 1 ½ - 2 ½ Hardening time minutes 4 ½ - 5 ½ 3 ½ - 4 ½ Time to completion minutes 20 - 21 15 - 16 Resistance to stretch moderate moderate Drape high high high Memory (after 200 % elongation) high high high Maximum elongation when activated % 2300 2200 Memory (after maximum elongation) high high Sticks to itself when activated and wet yes yes Sticks to itself when activated, after drying reliable under reliable under low stress low stress Adhesion (velcro strip) using heat gun yes yes Mechanical properties at 21°C yes yes Flexural modulus MPa 285 285 Elastic modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g cm³ 0.80 0.80 Hardness (shore D) 47 47 Surface feeling smooth smooth Color black black	Activation time (in water bath)	minutes	3 - 4	3 - 4
Hardening time minutes 4 % - 5 % 3 % - 4 % Time to completion minutes 20 - 21 15 - 16 Resistance to stretch moderate moderate high high high high high high high hig	Transparent when activated		no	no
Time to completion minutes 20 - 21 15 - 16 Resistance to stretch Drape	Working time	minutes	2 - 2 ½	1 ¾ - 2 ¼
Resistance to stretch Drape Memory (after 200 % elongation) Maximum elongation when activated % 2300 2200 Memory (after maximum elongation) Sticks to itself when activated and wet Sticks to itself when activated, after drying reliable under reliable under reliable under low stress Adhesion (velcro strip) using heat gun MPa 285 285 Elastic modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g g cm³ 0.80 0.80 Hardness (shore D) Surface feeling smooth smooth Color Odor none Fatigue cycles > 10000 > 10000	Hardening time	minutes	4 ¾ - 5 ¼	3 ¾ - 4 ¼
Drape high high high Memory (after 200 % elongation) high high high high Maximum elongation when activated % 2300 2200 Memory (after maximum elongation) high high high high high high high hig	Time to completion	minutes	20 - 21	15 - 16
Memony (after 200 % elongation) high high Maximum elongation when activated % 2300 2200 Memory (after maximum elongation) high high Sticks to itself when activated and wet yes yes Sticks to itself when activated, after drying reliable under reliable under reliable under low stress Adhesion (velcro strip) using heat gun yes yes Mechanical properties at 21°C Flexural modulus MPa 285 285 Elastic modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g cm³ 0.80 0.80 Hardness (shore D) 47 47 Surface feeling smooth smooth Color black black Odor none none Fatigue cycles > 10000 > 10000	Resistance to stretch		moderate	moderate
Maximum elongation when activated Memory (after maximum elongation)%2300 high2200 highSticks to itself when activated and wet Sticks to itself when activated, after dryingyes reliable under reliable under low stressyesAdhesion (velcro strip) using heat gunyesyesWechanical properties at 21°CFlexural modulusMPa 145285 125Elastic modulusMPa 140145 125Tensile strengthMPa 814020Strain at break%14020General propertiesDensityg cm³0.80 	Drape		high	high
Memory (after maximum elongation) high high Sticks to itself when activated and wet yes yes Sticks to itself when activated, after drying reliable under reliable under low stress Adhesion (velcro strip) using heat gun yes yes Mechanical properties at 21°C Flexural modulus MPa 285 285 Elastic modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g cm³ 0.80 0.80 Hardness (shore D) 47 47 Surface feeling smooth smooth Color black black Odor none none Fatigue cycles > 10000 > 10000	Memory (after 200 % elongation)		high	high
Sticks to itself when activated and wet Sticks to itself when activated, after drying Sticks to itself when activated, after drying Reliable under stress Adhesion (velcro strip) using heat gun Wes Wes Mechanical properties at 21°C Flexural modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break Wes Wes And And And And And And And And And An	Maximum elongation when activated	%	2300	2200
Sticks to itself when activated, after drying reliable under low stress Adhesion (velcro strip) using heat gun yes yes Mechanical properties at 21°C Flexural modulus MPa 285 285 Elastic modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g cm³ 0.80 0.80 Hardness (shore D) 47 47 Surface feeling smooth Surface feeling Smooth Surface feeling Color black black Odor none none Fatigue cycles > 10000 > 10000	Memory (after maximum elongation)		high	high
Adhesion (velcro strip) using heat gun Yes yes Wechanical properties at 21°C Flexural modulus Flexural modulus MPa 145 125 Tensile strength MPa 10.0 Strain at break MPa 140 20 General properties Density Bensity Bensit	Sticks to itself when activated and wet		yes	yes
Adhesion (velcro strip) using heat gun yes yes Mechanical properties at 21°C Ves Yes Flexural modulus MPa 285 285 Elastic modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g cm³ 0.80 0.80 Hardness (shore D) 47 47 Surface feeling smooth smooth Color black black Odor none none Fatigue cycles > 10000 > 10000	Sticks to itself when activated, after drying		reliable under	reliable under
Mechanical properties at 21°C Flexural modulus MPa 285 285 Elastic modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g cm³ 0.80 0.80 Hardness (shore D) 47 47 47 Surface feeling smooth smooth smooth Color black black black Odor none none none Fatigue cycles > 10000 > 10000			low stress	low stress
Flexural modulus MPa 285 285 Elastic modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g cm³ 0.80 0.80 Hardness (shore D) 47 47 Surface feeling smooth smooth Color black black Odor none none Fatigue cycles > 10000 > 10000	Adhesion (velcro strip) using heat gun		yes	yes
Elastic modulus MPa 145 125 Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g cm³ 0.80 0.80 Hardness (shore D) 47 47 Surface feeling smooth Smooth Color black Odor none Fatigue cycles > 10000 > 10000	Mechanical properties at 21°C			
Tensile strength MPa 10.0 8.0 Strain at break % 140 20 General properties Density g cm-3 0.80 0.80 Hardness (shore D) 47 47 47 Surface feeling smooth Smooth Color black Odor none none Fatigue cycles > 10000 > 10000	Flexural modulus	MPa	285	285
Strain at break	Elastic modulus	MPa	145	125
General properties Density g cm³ 0.80 0.80 Hardness (shore D) 47 47 Surface feeling smooth smooth Color black black Odor none none Fatigue cycles > 10000 > 10000	Tensile strength	MPa	10.0	8.0
Density g cm-3 0.80 0.80 Hardness (shore D) 47 47 Surface feeling smooth smooth Color black black Odor none none Fatigue cycles > 10000 > 10000	Strain at break	%	140	20
Hardness (shore D) Surface feeling Color Odor Fatigue 47 47 Smooth smooth black black none none rone 10000	General properties			
Surface feelingsmoothsmoothColorblackblackOdornonenoneFatiguecycles> 10000> 10000	Density	g cm ⁻³	0.80	0.80
ColorblackblackOdornonenoneFatiguecycles> 10000> 10000	Hardness (shore D)		47	47
OdornonenoneFatiguecycles> 10000> 10000	Surface feeling		smooth	smooth
Fatigue cycles > 10000 > 10000	Color		black	black
	Odor		none	none
Biocompatible yes yes	Fatigue	cycles	> 10000	> 10000
	Biocompatible		yes	yes



ORFILIGHT® ATOMIC BLUE NS 1.6 mm (1/16")

Thickness Perforation	mm (inches) % (type)	1.6 (1/16) 13 (micro)	
Thermoforming conditions			
Optimum activation temperature (in water bath)	°C (°F)	65 (149)	
Activation time (in water bath)	minutes	3 - 4	
Transparent when activated		no	
Working time	minutes	1 - 1 ½	
Hardening time	minutes	1 ¾ - 2 ¼	
Time to completion	minutes	10 - 11	
Resistance to stretch		moderate	
Drape		high	
Memory (after 200 % elongation)		high	
Maximum elongation when activated	%	1800	
Memory (after maximum elongation)		high	
Sticks to itself when activated and wet		yes	
Sticks to itself when activated, after drying		reliable under	
		low stress	
Adhesion (velcro strip) using heat gun		yes	
Mechanical properties at 21°C			
Flexural modulus	MPa	260	
Elastic modulus	MPa	170	
Tensile strength	MPa	8.0	
Strain at break	%	45	
General properties			
Density	g cm ⁻³	0.85	
Hardness (shore D)	-	47	
Surface feeling		smooth	
Color		black	
Odor		none	
Fatigue	cycles	> 10000	
Biocompatible		yes	



Biocompatible

ORFILIGHT® ATOMIC BLUE NS 2.5 mm (3/32")

Thickness	mm (inches)	2.5 (3/32)
Perforation	% (type)	13 (micro)

Perforation	% (type)	13 (micro)	
Thermoforming conditions			
Optimum activation temperature (in water bath)	°C (°F)	65 (149)	
Activation time (in water bath)	minutes	3 - 4	
Transparent when activated		no	
Working time	minutes	1 - 1 ½	
Hardening time	minutes	2 3/4 - 3 1/4	
Time to completion	minutes	11 - 12	
Resistance to stretch		moderate	
Drape		high	
Memory (after 200 % elongation)		high	
Maximum elongation when activated	%	2500	
Memory (after maximum elongation)		high	
Sticks to itself when activated and wet		yes	
Sticks to itself when activated, after drying		reliable under	
		low stress	
Adhesion (velcro strip) using heat gun		yes	
Mechanical properties at 21°C			
Flexural modulus	MPa	190	
Elastic modulus	MPa	165	
Tensile strength	MPa	8.0	
Strain at break	%	60	
General properties			
Density	g cm ⁻³	0.80	
Hardness (shore D)	-	47	
Surface feeling		smooth	
Color		atomic blue	
Odor		none	
Fatigue	cycles	> 10000	

yes



ORFILIGHT® ATOMIC BLUE NS 3.2 mm (1/8")

Thickness Perforation	mm (inches) % (type)	3.2 (1/8) 0 (non perfo)	3.2 (1/8) 3.5 (mini)
Thermoforming conditions			
Optimum activation temperature (in water bath)	°C (°F)	65 (149)	65 (149)
Activation time (in water bath)	minutes	3 - 4	3 - 4
Transparent when activated		no	no
Working time	minutes	2 - 2 ½	1 3/4 - 2 1/4
Hardening time	minutes	4 ¾ - 5 ¼	3 ¾ - 4 ¼
Time to completion	minutes	20 - 21	15 - 16
Resistance to stretch		moderate	moderate
Drape		high	high
Memory (after 200 % elongation)		high	high
Maximum elongation when activated	%	2300	2200
Memory (after maximum elongation)		high	high
Sticks to itself when activated and wet		yes	yes
Sticks to itself when activated, after drying		reliable under	reliable under
		low stress	low stress
Adhesion (velcro strip) using heat gun		yes	yes
Mechanical properties at 21°C			
Flexural modulus	MPa	285	285
Elastic modulus	MPa	145	125
Tensile strength	MPa	10.0	8.0
Strain at break	%	140	20
General properties			
Density	g cm ⁻³	0.80	0.80
Hardness (shore D)		47	47
Surface feeling		smooth	smooth
Color		atomic blue	atomic blue
Odor		none	none
Fatigue	cycles	> 10000	> 10000
Biocompatible		yes	yes



INFORMATION

The hardening time indicates the time period during which the material remains flexible, but no longer mouldable.

The time to completion indicates the length of time until the orthosis is finished and can be worn by the patient.

The memory indicates the ability of the material to regain its original shape after reheating.

The flexural modulus indicates the resistance of the material to a force causing it to bend.

The elastic modulus defines the ratio of the applied tensile stress to the change in shape of the material.

The tensile strength is the pulling force required to break the material.

The strain at break is the length increase of the material when stretched until failure.

The hardness indicates the resistance of the material to compression.

Fatigue indicates the minimum number of stress cycles the material sustains when bending over 90 degrees without failure.

The biocompatibility is studied according the guidelines of the International Organization for Standardization 10993 – Biological Evaluation of Medical Devices:

- Primary skin irritation study.
- o Delayed dermal contact sensitization study.
- Cytotoxicity study.

Note:

Although the information in this publication is believed to be accurate and reliable, the data shown are for guidance only. Orfit Industries gives no guarantees about the results and assumes no liability in connection with them. The properties reported here are intended primarily to facilitate comparison among Orfit products. Standard testing methods often allow alternative measuring methods. Therefore, data from other sheet manufacturers may not be directly comparable. For additional information, please contact Orfit Industries.





© ORFIT INDUSTRIES N.V.

Ref.: 80004 – ORFILIGHT.docx VERSION 3

Belgium T +32 (0)3 326 20 26 America T 516-935-8500 LAST UPDATE: 08/09/2016