ORFIT® ECO 2.4 mm (3/32”)

Thickness	mm (inches)	2.4 (3/32)	2.4 (3/32)
Perforation	% (type)	0 (non perfo)	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	1 ¾ - 2 ¼	1 ½ - 2
Hardening time	minutes	4 ¼ - 4 ¾	4 - 4 ½
Time to completion	minutes	17 - 18	16 - 17
Resistance to stretch		high	high
Drape		high	high
Memory (after 200 % elongation)		moderate	moderate
Maximum elongation when activated	%	450	170
Memory (after maximum elongation)		moderate	moderate
Sticks to itself when activated and wet		no	no
Sticks to itself when activated, after drying		reliable under low stress	reliable under low stress
Adhesion (velcro strip) using heat gun		no	no
Mechanical properties at 21°C			
Flexural modulus	MPa	575	470
Elastic modulus	MPa	420	365
Tensile strength	MPa	15.0	11.0
Strain at break	%	415	40
General properties			
Density	g cm^{-3}	1.25	1.25
Hardness (shore D)		58	58
Surface feeling		smooth	smooth
Color		off-white / beige	off-white / beige
Odor		none	none
Fatigue 90° bending	cycles	10000	10000
Fatigue 60° bending	cycles	15000	15000
Biocompatible		yes	yes

ORFIT® ECO 3.2 mm (1/8”)

Thickness	mm (inches)	3.2 (1/8)	3.2 (1/8)
Perforation	% (type)	0 (non perfo)	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 ½ - 3	2 - 2 ½
Hardening time	minutes	6 - 6 ½	5 ½ - 6
Time to completion	minutes	21 - 22	17 - 18
Resistance to stretch		high	high
Drape		high	high
Memory (after 200 % elongation)		moderate	moderate
Maximum elongation when activated	%	330	180
Memory (after maximum elongation)		moderate	moderate
Sticks to itself when activated and wet		no	no
Sticks to itself when activated, after drying		reliable under low stress	reliable under low stress
Adhesion (velcro strip) using heat gun		no	no
Mechanical properties at 21°C			
Flexural modulus	MPa	575	470
Elastic modulus	MPa	420	365
Tensile strength	MPa	15.0	11.0
Strain at break	%	140	65
General properties			
Density	g cm^{-3}	1.25	1.25
Hardness (shore D)		58	58
Surface feeling		smooth	smooth
Color		off-white / beige	off-white / beige
Odor		none	none
Fatigue 90° bending	cycles	10000	10000
Fatigue 60° bending	cycles	15000	15000
Biocompatible		yes	yes

ORFIT® ECO BLACK NS 2.4 mm (3/32”)

Thickness	mm (inches)	2.4 (3/32)	2.4 (3/32)
Perforation	% (type)	0 (non perfo)	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	1 ¾ - 2 ¼	1 ½ - 2
Hardening time	minutes	4 ¼ - 4 ¾	4 - 4 ½
Time to completion	minutes	17 - 18	16 - 17
Resistance to stretch		high	high
Drape		high	high
Memory (after 200 % elongation)		moderate	moderate
Maximum elongation when activated	%	450	170
Memory (after maximum elongation)		moderate	moderate
Sticks to itself when activated and wet		no	no
Sticks to itself when activated, after drying		temporarily	temporarily
Adhesion (velcro strip) using heat gun		no	no
Mechanical properties at 21°C			
Flexural modulus	MPa	575	470
Elastic modulus	MPa	420	365
Tensile strength	MPa	15.0	11.0
Strain at break	%	415	40
General properties			
Density	g cm^{-3}	1.25	1.25
Hardness (shore D)		58	58
Surface feeling		smooth	smooth
Color		black	black
Odor		none	none
Fatigue 90° bending	cycles	10000	10000
Fatigue 60° bending	cycles	15000	15000
Biocompatible		yes	yes

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TECHNICAL DATA SHEET

ORFIT® ECO BLACK NS 3.2 mm (1/8”)

Thickness	mm (inches)	3.2 (1/8)	3.2 (1/8)
Perforation	% (type)	0 (non perfo)	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 ½ - 3	2 - 2 ½
Hardening time	minutes	6 - 6 ½	5 ½ - 6
Time to completion	minutes	21 - 22	17 - 18
Resistance to stretch		high	high
Drape		high	high
Memory (after 200 % elongation)		moderate	moderate
Maximum elongation when activated	%	330	180
Memory (after maximum elongation)		moderate	moderate
Sticks to itself when activated and wet		no	no
Sticks to itself when activated, after drying		temporarily	temporarily
Adhesion (velcro strip) using heat gun		no	no
Mechanical properties at 21°C			
Flexural modulus	MPa	575	470
Elastic modulus	MPa	420	365
Tensile strength	MPa	15.0	11.0
Strain at break	%	140	65
General properties			
Density	g cm^{-3}	1.25	1.25
Hardness (shore D)		58	58
Surface feeling		smooth	smooth
Color		black	black
Odor		none	none
Fatigue 90° bending	cycles	10000	10000
Fatigue 60° bending	cycles	15000	15000
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.
- Delayed dermal contact sensitization study.
- Cytotoxicity study.

Note: