

ORFIT® NS SOFT 1.6 mm (1/16")

Thickness	mm (inches)	1.6 (1/16)	1.6 (1/16)
Perforation	% (type)	0 (non perfo)	13 (micro)

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		yes	yes
Working time	minutes	1 ¼ - 1 ¾	1 - 1 ½
Hardening time	minutes	3 ¾ - 4 ¼	2 ½ - 3
Time to completion	minutes	16 - 17	13 - 14
Resistance to stretch		moderate	moderate
Drape		high	high
Memory (after 200 % elongation)		full	full
Maximum elongation when activated	%	1250	1050
Memory (after maximum elongation)		full	full
Sticks to itself when activated and wet		temporarily	temporarily
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	530	380
Elastic modulus	MPa	300	265
Tensile strength	MPa	20.0	15.0
Strain at break	%	no break	60

General properties

Density	g cm ⁻³	1.13	1.13
Hardness (shore D)		60	60
Surface feeling		smooth	smooth
Color		skin	skin
Odor		none	none
Fatigue	cycles	> 10000	> 10000
Biocompatible		yes	yes

ORFIT® NS SOFT 2.0 mm (1/12")

Thickness	mm (inches)	2.0 (1/12)	2.0 (1/12)	2.0 (1/12)	2.0 (1/12)	2.0 (1/12)
Perforation	% (type)	0 (non perfo)	3.5 (mini)	13 (micro)	25 (maxi)	28 (micro+)

Thermoforming conditions

Optimum activation temperature (in water bath)	°C (°F)	65 (149)	65 (149)	65 (149)	65 (149)	65 (149)
Activation time (in water bath)	minutes	3 - 4	3 - 4	3 - 4	3 - 4	3 - 4
Transparent when activated		yes	yes	yes	yes	yes
Working time	minutes	1 ¼ - 1 ¾	1 - 1 ½	1 - 1 ½	1 - 1 ½	1 - 1 ½
Hardening time	minutes	6 - 6 ½	4 ½ - 5	3 - 3 ½	2 ½ - 3	2 ¾ - 3 ¼
Time to completion	minutes	29 - 30	18 - 19	14 - 15	13 - 14	10 - 11
Resistance to stretch		moderate	moderate	moderate	moderate	moderate
Drape		high	high	high	high	high
Memory (after 200 % elongation)		full	full	full	full	full
Maximum elongation when activated	%	1350	1250	1150	1125	1050
Memory (after maximum elongation)		full	full	full	full	full
Sticks to itself when activated and wet		temporarily	temporarily	temporarily	temporarily	temporarily
Sticks to itself when activated, after drying		temporarily	temporarily	temporarily	temporarily	temporarily
Adhesion (velcro strip) using heat gun		no	no	no	no	no

Mechanical properties at 21°C

Flexural modulus	MPa	530	530	370	300	325
Elastic modulus	MPa	300	230	265	170	240
Tensile strength	MPa	21.0	15.0	15.5	10.5	12.0
Strain at break	%	no break	90	50	no break	160

General properties

Density	g cm ⁻³	1.13	1.13	1.13	1.13	1.13
Hardness (shore D)		60	60	60	60	60
Surface feeling		smooth	smooth	smooth	smooth	smooth
Color		skin	skin	skin	skin	skin
Odor		none	none	none	none	none
Fatigue	cycles	> 10000	> 10000	> 10000	> 10000	> 10000
Biocompatible		yes	yes	yes	yes	yes

ORFIT® NS SOFT 2.5 mm (3/32")

Thickness	mm (inches)	2.5 (3/32)
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		yes
Working time	minutes	1 ½ - 2
Hardening time	minutes	4 ½ - 5
Time to completion	minutes	23 - 24
Resistance to stretch		moderate
Drape		high
Memory (after 200 % elongation)		full
Maximum elongation when activated	%	1275
Memory (after maximum elongation)		full
Sticks to itself when activated and wet		temporarily
Sticks to itself when activated, after drying		temporarily
Adhesion (velcro strip) using heat gun		no

Mechanical properties at 21°C

Flexural modulus	MPa	440
Elastic modulus	MPa	250
Tensile strength	MPa	16.5
Strain at break	%	37.0

General properties

Density	g cm ⁻³	1.13
Hardness (shore D)		60
Surface feeling		smooth
Color		skin
Odor		none
Fatigue	cycles	> 10000
Biocompatible		yes

ORFIT® NS SOFT 3.2 mm (1/8")

Thickness	mm (inches)	3.2 (1/8)	3.2 (1/8)	3.2 (1/8)
Perforation	% (type)	0 (non perfo)	3.5 (mini)	25 (maxi)

Thermoforming conditions

Optimum activation temperature (in water bath)	°C (°F)	65 (149)	65 (149)	65 (149)
Activation time (in water bath)	minutes	4 - 5	4 - 5	4 - 5
Transparent when activated		yes	yes	yes
Working time	minutes	2 - 2 ½	1 ¾ - 1 ¼	1 ¾ - 2 ¼
Hardening time	minutes	7 ½ - 8	6 ½ - 7	4 ¾ - 5 ¼
Time to completion	minutes	21 - 22	21 - 22	18 - 19
Resistance to stretch		moderate	moderate	moderate
Drape		high	high	high
Memory (after 200 % elongation)		full	full	full
Maximum elongation when activated	%	1400	1575	1200
Memory (after maximum elongation)		full	full	full
Sticks to itself when activated and wet		temporarily	temporarily	temporarily
Sticks to itself when activated, after drying		temporarily	temporarily	temporarily
Adhesion (velcro strip) using heat gun		no	no	no

Mechanical properties at 21°C

Flexural modulus	MPa	530	510	340
Elastic modulus	MPa	300	275	185
Tensile strength	MPa	22.5	16.5	11.5
Strain at break	%	290	105	270

General properties

Density	g cm ⁻³	1.13	1.13	1.13
Hardness (shore D)		60	60	60
Surface feeling		smooth	smooth	smooth
Color		skin	skin	skin
Odor		none	none	none
Fatigue	cycles	> 10000	> 10000	> 10000
Biocompatible		yes	yes	yes

ORFIT® NS SOFT 4.2 mm (3/16")

Thickness	mm (inches)	4.2 (3/16)	4.2 (3/16)
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	4 - 5	4 - 5
Transparent when activated		yes	yes
Working time	minutes	2 ½ - 3	2 ¼ - 2 ¾
Hardening time	minutes	9 - 9 ½	8 - 8 ½
Time to completion	minutes	28 - 29	24 - 25
Resistance to stretch		moderate	moderate
Drape		high	high
Memory (after 200 % elongation)		full	full
Maximum elongation when activated	%	1425	1200
Memory (after maximum elongation)		full	full
Sticks to itself when activated and wet		temporarily	temporarily
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	530	475
Elastic modulus	MPa	300	285
Tensile strength	MPa	21.5	17.0
Strain at break	%	no break	145

General properties

Density	g cm ⁻³	1.13	1.13
Hardness (shore D)		60	60
Surface feeling		smooth	smooth
Color		skin	skin
Odor		none	none
Fatigue	cycles	> 10000	> 10000
Biocompatible		yes	yes

ORFIT® NS STIFF 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	4 - 5	4 - 5
Transparent when activated		yes	yes
Working time	minutes	2 - 2 ½	1 ¾ - 2 ¼
Hardening time	minutes	7 ½ - 8	6 ½ - 7
Time to completion	minutes	21 - 22	24 - 25
Resistance to stretch		high	high
Drape		high	high
Memory (after 200 % elongation)		full	full
Maximum elongation when activated	%	1150	1020
Memory (after maximum elongation)		full	full
Sticks to itself when activated and wet		temporarily	temporarily
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	530	485
Elastic modulus	MPa	310	270
Tensile strength	MPa	20.0	16.5
Strain at break	%	no break	45

General properties

Density	g cm ⁻³	1.13	1.13
Hardness (shore D)		60	60
Surface feeling		smooth	smooth
Color		skin	skin
Odor		none	none
Fatigue	cycles	> 10000	> 10000
Biocompatible		yes	yes

ORFIT® NS STIFF 4.2 mm (3/16")

Thickness	mm (inches)	4.2 (3/16)	4.2 (3/16)
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	4 - 5	4 - 5
Transparent when activated		yes	yes
Working time	minutes	2 ½ - 3	2 ¼ - 2 ¾
Hardening time	minutes	9 ¼ - 9 ¾	8 - 8 ½
Time to completion	minutes	28 - 29	24 - 25
Resistance to stretch		high	high
Drape		high	high
Memory (after 200 % elongation)		full	full
Maximum elongation when activated	%	1050	1400
Memory (after maximum elongation)		full	full
Sticks to itself when activated and wet		temporarily	temporarily
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	530	505
Elastic modulus	MPa	310	275
Tensile strength	MPa	21.5	17.0
Strain at break	%	no break	15

General properties

Density	g cm ⁻³	1.13	1.13
Hardness (shore D)		60	60
Surface feeling		smooth	smooth
Color		skin	skin
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.
- 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.



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