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X-LITE[®]

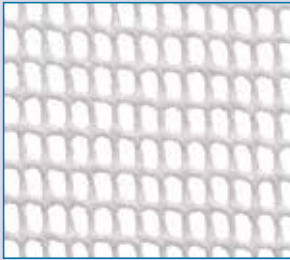
**Orthopaedic Casting and Splinting
Example Book**



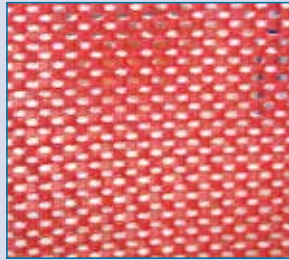
X-LITE® The Material



X-LITE® is an airy and lightweight material engineered to meet your splinting, bracing and casting demands. X-LITE® is a plastic material made of a 100% cotton fabric impregnated with a thermoplastic resin, which during the manufacturing process, becomes completely cured. This means it does not contain any residues in unreacted form, and therefore will not release such residues when applied or worn. A NON-Toxic and Environmentally friendly material. X-LITE® is a strong, stable, and very durable material. Thermoplastic polymers become soft and moldable when heated and solidify while cooling down. This process can be repeated any number of times without material breakdown or waste. The cotton fabric mesh forms a natural passageway for heat and moisture.



CLASSIC is the original X-LITE® material. The large mesh openings give great ventilation. As the strongest material in our range, you can use it for any cast or splint of your choice.



PLUS is the latest addition to the X-LITE® range of products. It comes in five colors and has a soft polyester fabric surface.



PREMIUM is made of the same cotton mesh but thinner and with smaller openings. This makes PREMIUM even more comfortable and stretchable and therefore suitable for upper extremities and children.

Environmental and health benefits

X-LITE® emits no harmful substances when heated, applied or in the drying process as the material solidifies. As there is no curing process when applied on the patient where other harmful products develop, the material can be applied without the use of gloves and special ventilation equipment in the casting room. Upon removal of the cast no dust is produced. It is safe for all users to work with X-Lite, including pregnant woman, asthmatic patients and people that suffer from allergic reactions.

X-LITE® meets the international standard of biodegradation and is sorted as non-hazardous waste. Combustion produces carbon dioxide and water. MSDS available upon request.

Scope of use

X-LITE® can be used for all orthopedic cast and splint applications.

Examples:

- Circular hand and arm casts
- Circular leg casts
- Elbow splints
- Radial-ulnar splints
- Finger splints
- Lower leg splints



Practical handling

Heat in water

X -LITE® is heated in a water bath set at 70°C. The sheets should be immersed in the water for approximately 1 minute and the rolls approximately 3 minutes. Submerge the desired material into the water. Make sure the water penetrates into the rolls.

Always ensure that the material is properly heated before you start working. Unused rolls and sheets can be reused. Remove them gently from the water bath and leave them to dry. Expect a slightly longer warm-up time for next use - especially for X-LITE® rolls with plastic separator. After 30 minutes X -LITE® is fully cured and ready for weight bearing.

Use tongs to remove X -LITE® from the water bath and allow excess water to drain from the material. Avoid direct contact with the skin due to the water temperature.

X-LITE® CLASSIC and PREMIUM rolls have a plastic separator so you can squeeze them into a towel to drain the water from the roll.

X-LITE® PLUS rolls have a fabric separator which is more permeable so you should handle them more carefully and shake the water out instead of squeezing.

Ensure the water bath has sufficient levels of water at all times.

The water bath should be emptied, cleaned, and wiped dry weekly for hygiene reasons and a longer service life. Consult the manual for the water bath you are using for their recommended cleaning schedule.



Temperature and Working Time - Guidelines

X-LITE® Casting & Splinting Material

IMPORTANT: Water temperature at approx. 70°C (160°F)

	Heating Time	Working Time	Load Bearing Time	Heat Source
X-LITE® Rolls	3 minutes	45-60 seconds	30 minutes	Water bath
X-LITE® Sheets	1 minute	30-45 seconds	N/A	Water bath
3D-LITE™	2 minutes	2-3 minutes	N/A	Heatgun/Oven (80°C)
Edging Tape	10-15 seconds	15-20 seconds	N/A	Heatgun/water bath
Thermoplastic Hook	15-20 seconds	20-30 seconds	N/A	Heatgun/water bath

All materials can be re-heated any number of times. Smaller pieces can be heated with a hairdryer.

Small re-designs of the cast directly on the patient is also possible with a hairdryer.

Cast can be removed with ordinary cast instruments.

Rigidity of splint or cast is determined by number of layers used.

Making a splint or a cast



Start with stockinette and undercover padding to protect the patient's skin before applying the X-LITE® material. X-LITE® has the greatest stretch in width and least stretch in length. When taking measurements and cutting the pattern for a splint remember to take this stretch into consideration as the splint may become a little shorter in length as it dries.

When using X-LITE® PLUS for casting apply the material with the colored textile surface on the outside.

Making a circular cast with CLASSIC and PREMIUM requires a slightly different technique than with PLUS, due to the plastic separator rolled within the material. This separator ensures that the layers do not stick together as the material is heated in the water bath.

The plastic separator is continuously removed during the circular cast process. Pulling the separator with one hand advances the roll. It is important that the roll is applied in the right direction (see image) before you start casting.

When working with all three X-LITE® products, it is important that the material is kept smooth during the casting process to ensure a uniform, well-fitted and correctly laminated cast. Apply the material with 50% overlap. If more rigidity is needed in certain areas simply add extra layers.

Pull the material slightly when you cast for the best result.

Working time is approximately 1 minute before X-LITE® starts to solidify.

When multiple layers of X-LITE® are required, you should ensure the material is slightly warm and tacky to achieve full adhesion.

While the material is still warm, roll or smooth all edges. Cut the stockinette and padding 5 cm longer at all openings and fold it around the cast or splint to form a clean, finished edge. X-LITE® can be re-heated and re-shaped any number of times for the same patient.

Make small changes by spot heating a completed cast or splint with a regular hairdryer. Always keep your own hand close to the area you heat to avoid burning the patient.

After 5 minutes the cast is cured and after 30 minutes weightbearing is possible.

Removing the cast

X-LITE® can be removed with ordinary cast instruments such as cast cutting saw or sharp cast cutting scissors. X-LITE® emits no harmful residue during the removal process. Extraction ventilation is not necessary in the cast room or at the cast cutter saw.



Scaphoid cast

Materials:

- Stockinette in appropriate length.
2-3 cm width for the thumb and
5-7 cm for the forearm.
Choose between 5 colors of X-LITE®PLUS.
- 1-2 rolls of 5 cm or 7.5 cm
- Undercast Foam padding 7.5cm.
- 1 thumb splint made of a double layer of
PLUS 10 cm - 12.5 cm



Apply the stockinette and foam padding on the patient. Fold back the stockinette and padding at both ends to create a smooth finish at the edge.



Cut a thumb splint out of a double layer of 10 cm X-LITE®PLUS.
To create a smooth edge at the distal end cut one piece a little bit longer.



Fold the longer edge over the shorter edge and leave it unfolded in one end, so the small area of X-LITE without fabric later on will stick and form a circular splint around the thumb.



Put the double layered piece in the water bath together with the roll.



Unroll 25 cm of material and place it on your work surface with colored side facing down. Make a 1 cm wide fold and cut a notch approx. 8 cm from beginning of the roll. (see picture) Smooth the folded material by hand before you place the roll back in the waterbath for an additional 1-1.5 minutes.



Place the optional second roll in the water bath.
Apply the thumb splint.



Starting below the stockinette and foam padding place the material around the thumb area and take your time to ensure a good fit at the distal end of the cast. Continue to work your way around with a 50% overlap.



Allow the roll to adhere to the extremity while you concentrate on creating a smooth fit around the hand. Ensure that the wrist is in a functional position and continue casting. Finish the cast and apply a smoothing pressure to the layers to ensure lamination takes place.



Fold the stockinette around the edge to protect the patient's skin and make sure there are no limitations in the range of movement at the elbow.



Short Leg Cast with an Optional Posterior Reinforcement Splint.

Materials:

- Stockinette in appropriate length and 7-10 cm width.
- Undercast Foam padding 7.5 - 10 cm.
- 2 - 3 rolls of PLUS 10 cm depending on patient size.
- Optional for reinforcement or heavier patients: One posterior splint made out of two layers of X-LITE CLASSIC.



Place the rolls in the water bath so they are fully submersed.

Apply the stockinette and foam padding at the patient. Fold the stockinette and padding on both ends to create a smooth finished edge.



Measure the patient from the toe base to mid-calf. Cut your X-LITE CLASSIC material to make a two layers splint.

Heat the splint in the water bath for 1 minute. Remove it and press the layers firmly together. Place the splint in the water bath. When you work with larger applications you may need to add a few centimeters, as X-LITE® shrinks slightly when heated.



Apply the posterior splint.

Start casting your patient at the distal end of the foot 1-2 cm below the padding. Fold the first 10 cm of the roll for a nice smooth edge at the start of the cast. The ankle joint should be positioned in 90° with no eversion or inversion of the foot. For extra strength, overlap with 66% around the foot and ankle.

Smooth the X-LITE material to ensure a good fit at the arch of the foot.



Continue casting and ensuring all layers are well laminated. Finish the cast below the bony prominence of the fibula head.



Complete the cast with a folded edge. If weight bearing is advised attach the sole while the material is still soft.



Dorsal Wrist Splint

Materials:

- Stockinette in appropriate length.
Width 5-7 cm.
- Undercast Foam padding 7,5 cm.
- X-LITE CLASSIC splint from dispenser
box 12,5 cm or 15 cm width.
- Elastic bandage



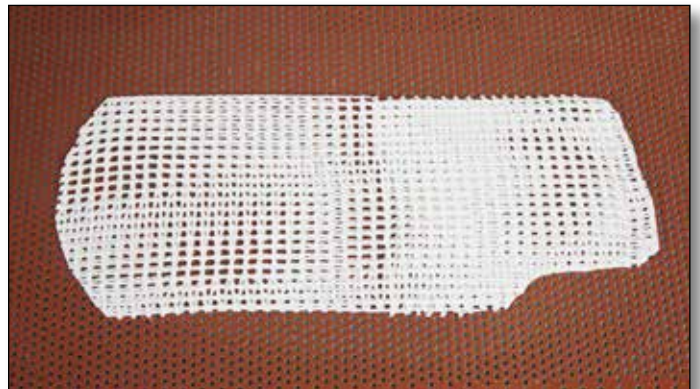
Measure the required length of the dorsal splint from the metacarpus to 5 cm below the elbow. When cutting the X-LITE material duplicate one and a half times still in one piece.



Fold the material so you have three layers in one end. This end should be positioned over the fracture side. Immerse the edges of the material in the water bath and squeeze them so they do not separate before leaving the splint in the water bath for 1 minute.



Remove the splint and smooth the layers thoroughly for a permanent lamination. Cut out the desired shape and put the splint back in the water bath.



Apply the stockinette and foam padding. Leave an extra 5 cm at each end to create a smooth edge around the splint.



Apply the splint. The wrist should be in a functional position and the splint should not extend over the MCP joints. Secure free movement at the thumb.

Fold the Stockinette and Foam padding over the splint for soft edges. Cover the splint with an elastic bandage.



Ulnar Gutter Splint

Materials:

- Stockinette in appropriate length. Width 5-7 cm.
- Undercast Foam padding 7,5 cm.
- X-LITE CLASSIC splint from dispenser box 12,5 cm or 15 cm width.
- Elastic bandage



Measure the required length of X-LITE material and duplicate one and a half time still in one piece.



Fold the material so you have three layers in one end. The three layers should be positioned over the fracture site. Immerse the edges of the material in the water bath and squeeze them so they do not separate before leaving the splint in the water bath for 1 minute. This end should be positioned over the fracture side.



Remove the splint and smooth the layers thoroughly for a permanent lamination. Cut out the desired shape and put the splint back in the water bath.



Apply the stockinette and foam padding. Leave an extra 5 cm at each end to create a smooth edge around the splint.

Apply the splint. Start by placing the splint on the dorsal side and pull the material towards the volar side with a tight fit at the edge of the hand.

Keep the hand in the correct position while the material cures. The MCP's should be positioned in 90 degrees with a functional position of the wrist. Ensure the fingers do not rotate.

Fold the Stockinette and Foam padding over the splint for soft edges.

Finish with an elastic bandage.



Elbow Splint

Materials:

- Stockinette in appropriate length. Width 7 cm.
- Undercast Foam padding 7,5 and 10 cm.
- X-LITE CLASSIC splint from dispenser box 15 cm width.
- Elastic bandage

Start by measuring the patient with the elbow at 90°. Measure the desired length of the distal part of the splint from the wrist and around the elbow. Measure the proximal part of the splint from the axilla and around the elbow. After cutting the X-LITE material double layer it. When working with larger applications you may need to add a few centimeters to both pieces, as X-LITE® shrinks slightly when heated.

Prepare the splints by immersing them in the water one by one. Leave them in the water bath for approximately one minute. Remove the pieces and smooth the layers firmly. Cut a rounded edge at both ends.

Leave both splints in the waterbath and apply the stockinette and undercover padding. Leave an extra 5 cm at each end to create a smooth edge around the splint.



Take the distal part of the splint from the water bath and remove excess water. Position the patient's arm with the elbow at 90° and the forearm in a neutral position. Apply the splint and pull the material so it fits around the elbow.



Take the proximal part of the splint and place it 5 centimeters below the axilla and pull it around the elbow so there are four layers where the splint will require increased strength.

Pinch the excess material underneath the elbow and cut immediately. Smooth the material and make sure the layers laminate properly.



Fold the extra undercover padding and stockinette around the edges of the splint.



Scaphoid Cast

Materials:

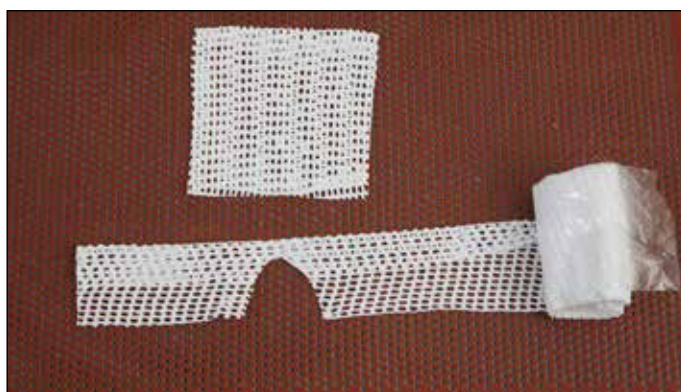
- Stockinette in appropriate length. 2-3 cm width for the thumb and 5-7 cm for the forearm.
- Undercast Foam padding 7,5 cm.
- 1-2 rolls of X-LITE PREMIUM 5 or 7,5 cm.
- One thumb splint made of double layer X-LITE PREMIUM 10 cm.



Place the X-LITE rolls in the water bath for approx. 3 minutes.

Cut a 15 cm long thumb splint in a double layer and laminate the layers well. Place it together with the rolls.

Remove one roll from the water bath. Unroll 25 cm of material and leave the plastic on the side. Make a 1 cm wide fold on one side. On the other side, approx. 8 cm from the beginning of the roll cut a notch and fold back the material. Make sure to smooth the folded material to keep it in place before immersing the roll back into the water bath for a short while to ensure the material is soft.



Apply stockinette and undercast foam padding. Leave some extra material at both ends to create a smooth edge.



Apply the thumb splint and make sure the patient has full movement in the IP joint. Fold the padding and stockinette around the edge for a smooth finish.



Take the roll from the water bath. Starting below the stockinette and foam padding place the material around the thumb area and ensure a good fit at the distal end of the cast. Do not exceed the MCP's or the crest inside the hand. Continue to work your way around with a 50% overlap. Remove the plastic separator continuously during the process.



Allow the roll to adhere to the extremity while you concentrate on creating a smooth fit around the hand. Check that the wrist is in a functional position and continue casting. Finish the cast and smooth the layers so they laminate well. Fold the stockinette around the edge to protect the patient's skin and make sure there are no limitations to the range of movement at the elbow.



The cast is fully cured after 30 min.



X-LITE® CLASSIC

Short Leg Cast with an Optional Posterior Reinforcement Splint.

Materials:

- Stockinette in appropriate width 7 cm – 10 cm.
- Undercast Foam padding 7,5 - 10 cm
- 2-4 rolls of X-LITE CLASSIC, width according to patients leg size.
- Optional for reinforcement or heavier patients: One posterior splint made from two layers of X-LITE CLASSIC.

Place all rolls in the water bath so they are fully submersed. Leave for approximately 3 minutes.

Apply the stockinette and undercast foam padding. Leave some extra material at both ends to create a smooth edge.

Measure the patient from the toe base to mid-calf. Cut your X-LITE CLASSIC material to make a two layers splint. Heat the splint in the water bath for 1 minute. Remove it and press the layers firmly together. Place the splint in the water bath. When you work with larger applications you may need to add a few centimeters, as X-LITE® shrinks slightly when heated.



Apply the posterior splint.

Start casting your patient at the distal end of the foot 1-2 cm below the padding. Fold the first 10 cm of the roll for a nice smooth edge at the start of the cast. The ankle joint should be positioned in 90° with no eversion or inversion of the foot. Remove the plastic separator continuously during the process.

For extra strength, overlap by 66% around the foot and ankle. Smooth the X-LITE material to ensure a good fit at the arch of the foot.



Continue casting ensuring that all layers are well laminated. Finish the cast below the bony prominence of the fibula head.



Complete the cast with a folded edge. If the patient is allowed to walk on the cast attach the sole when the material is still soft.



X-LITE® PLUS - ROLLS, SHEETS AND DISPENSERS				
Item No.	Colour	Width	Length	Package
64701 0000	White	25 mm	1,8 m	5 rolls
64702 0000	White	50 mm	1,8 m	20 rolls
64703 0000	White	75 mm	1,8 m	20 rolls
64704 0000	White	100 mm	1,8 m	10 rolls
64706 0000	White	125 mm	1,8 m	10 rolls
64707 0000	White	150 mm	1,8 m	10 rolls
64708 0000	White	150 mm	1,8 m	2 rolls
64711 0000	Red	25 mm	1,8 m	5 rolls
64712 0000	Red	50 mm	1,8 m	20 rolls
64713 0000	Red	75 mm	1,8 m	20 rolls
64714 0000	Red	100 mm	1,8 m	10 rolls
64716 0000	Red	125 mm	1,8 m	10 rolls
64717 0000	Red	150 mm	1,8 m	10 rolls
64718 0000	Red	150 mm	1,8 m	2 rolls
64721 0000	Blue	25 mm	1,8 m	5 rolls
64722 0000	Blue	50 mm	1,8 m	20 rolls
64723 0000	Blue	75 mm	1,8 m	20 rolls
64724 0000	Blue	100 mm	1,8 m	10 rolls
64726 0000	Blue	125 mm	1,8 m	10 rolls
64727 0000	Blue	150 mm	1,8 m	10 rolls
64728 0000	Blue	150 mm	1,8 m	2 rolls
64731 0000	Black	25 mm	1,8 m	5 rolls
64732 0000	Black	50 mm	1,8 m	20 rolls
64733 0000	Black	75 mm	1,8 m	20 rolls
64734 0000	Black	100 mm	1,8 m	10 rolls
64736 0000	Black	125 mm	1,8 m	10 rolls
64737 0000	Black	150 mm	1,8 m	10 rolls
64738 0000	Black	150 mm	1,8 m	2 rolls
64741 0000	Hot Pink	25 mm	1,8 m	5 rolls
64742 0000	Hot Pink	50 mm	1,8 m	20 rolls
64743 0000	Hot Pink	75 mm	1,8 m	20 rolls
64744 0000	Hot Pink	100 mm	1,8 m	10 rolls
64746 0000	Hot Pink	125 mm	1,8 m	10 rolls
64747 0000	Hot Pink	150 mm	1,8 m	10 rolls
64748 0000	Hot Pink	150 mm	1,8 m	2 rolls
64791 0000	Blue	150 mm	10 m	1 dispenser
64753 0000	Blue	200 mm	375 mm	8 sheets
64792 0000	Black	150 mm	10 m	1 dispenser
64754 0000	Black	200 mm	375 mm	8 sheets
64793 0000	Hot Pink	150 mm	10 m	1 dispenser
64790 0000	Red	150 mm	10 m	1 dispenser

X-LITE® CLASSIC - ROLLS, SHEETS AND DISPENSERS				
Item No.	Colour	Width	Length	Package
64103 0002	White	50 mm	1,8 m	20 rolls
64133 0003	White	75 mm	1,8 m	20 rolls
64143 0004	White	100 mm	1,8 m	10 rolls
64153 0005	White	125 mm	1,8 m	10 rolls
64163 0006	White	150 mm	1,8 m	10 rolls
64104 0000	Blue	50 mm	1,8 m	20 rolls
64134 0000	Blue	75 mm	1,8 m	20 rolls
64144 0004	Blue	100 mm	1,8 m	10 rolls
64154 0005	Blue	125 mm	1,8 m	10 rolls
64164 0006	Blue	150 mm	1,8 m	10 rolls
64278 0000	White	25 mm	500 mm	50 sheets
64293 0003	White	75 mm	375 mm	15 sheets
64294 0004	White	100 mm	375 mm	15 sheets
64295 0005	White	125 mm	375 mm	15 sheets
64296 0006	White	150 mm	375 mm	15 sheets
64297 0006	White	150 mm	900 mm	15 sheets
64290 0008	White	200 mm	375 mm	15 sheets
64291 0008	White	200 mm	1,2 m	15 sheets
64292 0008	White	200 mm	900 mm	15 sheets
64298 0018	White	450 mm	500 mm	10 sheets
64299 0020	White	500 mm	500 mm	10 sheets
64250 0000	White	75 mm	10 m	1 dispenser
64251 0000	White	100 mm	10 m	1 dispenser
64254 0000	White	125 mm	10 m	1 dispenser
64252 0000	White	150 mm	10 m	1 dispenser
64253 0000	White	200 mm	10 m	1 dispenser

X-LITE® PREMIUM - ROLLS, SHEETS AND DISPENSERS				
Item No.	Colour	Width	Length	Package
64205 0002	White	50 mm	1,8 m	5 Rolls
64207 0003	White	75 mm	1,8 m	5 Rolls
64209 0004	White	100 mm	1,8 m	5 Rolls
64210 0005	White	125 mm	1,8 m	5 Rolls
64211 0006	White	150 mm	1,8 m	5 Rolls
64215 0003	Beige	75 mm	375 mm	10 Sheets
64217 0004	Beige	100 mm	375 mm	10 Sheets
64219 0006	Beige	150 mm	375 mm	10 Sheets
64220 0008	Beige	200 mm	375 mm	10 Sheets
64225 0000	Beige	75 mm	10 m	1 Dispenser
64226 0000	Beige	100 mm	10 m	1 Dispenser
64227 0000	Beige	150 mm	10 m	1 Dispenser
64228 0000	Beige	200 mm	10 m	1 Dispenser

X-LITE® - STOCKINETTE				
Item No.	Colour	Width	Length	Package
64394 0000	White	30 mm	25 m	1 Dispenser
64395 0000	White	50 mm	25 m	1 Dispenser
64396 0000	White	70 mm	25 m	1 Dispenser
64397 0000	White	100 mm	25 m	1 Dispenser
64398 0000	White	150 mm	25 m	1 Dispenser

STOCKINETTE				
Item No.	Colour	Width	Length	Package
64401 0001	White	30 mm	10 m	1 Roll
64411 0002	White	50 mm	10 m	1 Roll
64421 0003	White	70 mm	10 m	1 Roll
64431 0004	White	100 mm	10 m	1 Roll
64441 0006	White	150 mm	10 m	1 Roll
64442 0008	White	200 mm	10 m	1 Roll

X-LITE® - FOAM				
Item No.	Colour	Width	Length	Package
64480 0003	White	75 mm	2,75 m	20 Rolls
64485 0000	White	100 mm	2,75 m	16 Rolls
64490 0005	White	125 mm	2,75 m	10 Rolls

X-LITE® - FINISHING/EDGING TAPE				
Item No.	Colour	Width	Length	Package
64185 0000	White	18 mm	7,5 m	1 Dispenser
64180 0000	White	25 mm	7,5 m	1 Dispenser
64190 0000	White	50 mm	7,5 m	1 Dispenser
64183 0000	White	18 mm	500 mm	50 Sheets
64187 0000	White	25 mm	500 mm	50 Sheets
64189 0000	White	50 mm	500 mm	50 Sheets

X-LITE® - THERMOPLASTIC HOOK				
Item No.	Colour	Width	Length	Package
64195 0000	White	50 mm	500 mm	5 Sheets
64196 0000	White	50 mm	5 m	1 Dispenser

CAST SCISSOR PLASTIC HANDLE		
Item No.	Model	Length
51206 0000	Cast Scissor Plastic Handle	18 cm

SUPER CAST SCISSOR 18 CM		
Item No.	Model	Length
51207 0000	Stainless Steel	18 cm

X-LITE® PLATE COATED WITH SILICONE		
Item No.	Width	Length
64811 0000	325	530 mm

Support for Better Life!

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