

X-LITE

Airy & Lightweight

Casting, Bracing & Splinting Technology

GENERAL APPLICATION INSTRUCTIONS

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WORKING / SETTING TIME

IMPORTANT: Water Temperature must be approx. 160°F (70°C)

	CLASSIC SPLINT	PREMIUM SPLINT	CLASSIC CAST	PREMIUM CAST	TFS HOOK	FINISHING TAPE
Heating Time	1 minute	1 minute	2 minutes	2 minutes	15-20 seconds	10-15 seconds
Working Time	45-60 seconds	30-45 seconds	2-3 minutes	60-30 seconds	20-30 seconds	15-20 seconds
Cooling Time	60-75 seconds	45-60 seconds	6-15 minutes	3-5 minutes	15-20 seconds	5-10 seconds
Load Bearing			15-20 minutes			

- Splint can be removed and you can begin finish work after 60-75 seconds, but allow 4-15 minutes for splint to reach maximum hardness.
- The TFS (Thermoplastic Fastening System) will offer a more aggressive seat to X-Lite when dry heat (heat gun or hair dryer) is applied to the backing for 5-10 seconds.

CAST ROLL PREPARATION

Preparation:



Make certain rolls are fully immersed in water at a temperature of 160°F for at least 2 minutes. If you have an unexpected interruption—don't worry, it won't damage X-Lite to be in longer.



Prepare the patient using stockinet then foam padding. Allow an extra 2 inches at the distal and proximal ends to produce a rolled and padded edge on the cast. All bony prominences should be well protected.

CAST ROLL PREPARATION



Use tongs to remove a roll and place it on a towel to allow it to drain. Hold the roll by the label and gently shake to remove any excess water.



Remove Outer Wrap. Pull to start separation of X-Lite from plastic film.

CAST ROLL APPLICATION



Apply the bandage with the plastic separator on TOP of the bandage. Use the separator to help you guide the roll around the extremity. Wrap with a 50% overlap to form two layers, smoothing as you apply. NOTE: You increase rigidity by the number of layers you use. As a general guide, two layers (formed by the overlap) provide sufficient rigidity for small anatomy. Increase the layers as needed for larger anatomy. Smooth with the palm of your hand to fit the contours of the anatomy.



While the X-Lite is still soft, roll the stockinet and foam back over the cast material at the distal and proximal ends to form a smooth edge.

CAST ROLL APPLICATION



To relieve pressure points or smooth rough areas, apply a moderate heat source (preferably a hair dryer - a heat gun may burn the patient) across the relevant area using a circular motion. When the material has softened, the cast material may be adjusted or smoothed as necessary.


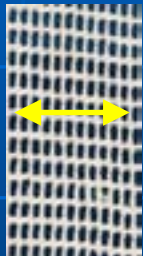



For removal, standard cast room instruments may be used: serrated edge plaster shears or electric cast saw with standard blade.

IMPORTANT: *If you didn't use a full roll- don't throw it away! Another advantage of the separator is it keeps the material from sticking to itself so you can just let that remaining section of the roll dry and use on your next cast!*

SPLINT/BRACE MATERIAL APPLICATION

Stretch & Rigidity

STRETCH			RIGIDITY
Minimum	Moderate	Maximum	<i>For MAXIMUM RIGIDITY:</i> Apply the X-Lite so the longer side of the rectangular holes follow the direction of the anatomy to be immobilized or stabilized. For more rigidity, add layers.
			

- Observe the direction of the rectangular holes



GENERAL APPLICATION



Immerse the splint into the heated water and allow to rest in the water for 1 minute. (It won't hurt for it to rest longer if you should get interrupted!)



Moisten the anatomy to be splinted with cool or lukewarm water. This helps to assure X-Lite will not be sticky against the skin.

Use tongs to remove from the water.



Drain splint material on a towel just long enough to remove excess water.

GENERAL APPLICATION



Drape the splint material around the area to be splinted and use your hands to smooth as you fit the contours of the anatomy. Overlap or pinch together sections you would like joined.



Use dry erase pen or China marker to mark trim lines. Remove the splint. Cut just inside trim lines so no marks remain.

ADDING LAYERS

To add reinforcement to the whole splint:

1. BEFORE immersing in water, cut as many layers as needed.
2. Align the layers

FOR OPTIMUM AERATION

Align holes so they match



FOR OPTIMUM STRENGTH

X-lite has a 100% natural cotton base. As such, it has a bias. Flip alternating layer (s) so they are laid together with opposing bias.



3. Dip the edges in water just long enough to seal the layers together and remove from the water.

4. Follow previous "GENERAL APPLICATION" instructions.

Reinforcement

To reinforce a Specific segment of the splint:

1. Cut two strips of X-Lite the width and length of the area to be reinforced.
2. Return the reinforcement strip to water for one minute.
3. Press into desired location on the splint.



For Extremity Splints, it is easiest to apply to the splint after the splint has been formed.



For Torso splints, reinforcement strips are generally applied prior to forming.

X-Lite Finishing Tape



Tear or cut off desired length. It is easier to work with a few shorter lengths rather than one long length.



Immerse into 160°F (70°C) water until well moistened. Use tongs to remove from water.



Lay and press to seal slightly less than 1/2 width of the tape onto the top edges of the splint.



Fold the unattached tape to the underside of the splint, pressing to form a good seal and smooth surface.





X-Lite Finishing Tape



For curved areas of the splint, it is helpful to make small slits into the unattached half of the tape. This will make it easier to fold the tape to the underside of the splint. If the tape dries before you have folded it in, just submerge the clipped end of the tape into the water for a few seconds to re-soften.

X-Lite TFS

Thermoplastic Fastening System (Hook)

	<p>Cut off desired length.</p>
	<p>Apply dry heat to back (8-10 seconds for heat gun – 25-30 seconds for hair dryer).</p>
	<p>Apply dry heat for a few seconds to the spot on splint where the Velcro is to be attached.</p>
	<p>Press and hold for 10-15 seconds to form an aggressive bond.</p>

OPTIONS FOR “SMOOTHING” EDGES

X-LITE FINISHING TAPE



Use X-Lite Finishing Tape. Heat the tape in in 160°F (70°C) water for 8-10 seconds. Apply to outer surface border so that it extends about 3/8" (10mm) beyond the border – then fold over to inner surface.

X-LITE STRIP



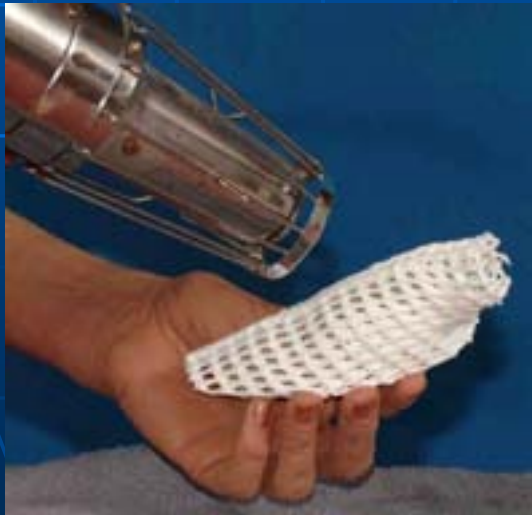
Cut a strip of 1" wide X-Lite Classic or Premium (Premium is slightly smoother) the length you need for the edges of the splint. Be sure the rectangular holes are horizontal on the strip since this is the direction of greatest stretch. Heat the strip in 160°F (70°C) water for one minute. Apply to outer surface border so that it extends about 3/8" (10mm) beyond the border – then fold over to inner surface.

FOLD OVER



Roll back the edges as you make the splint. If the splint material is no longer soft, dip only the edges back into the heating pan or use a small beaker or measuring cup to scoop a little more 160°F water out of the heating pan and pour only on the edges to re-soften and then roll back.

Making Modifications



If you need to relieve pressure areas, you may dip that particular section back in the water, use a cup to pour the hot water on that particular section, or use a heat gun and re-mold. *(You can even start over if you need to - just put the splint back in the water, separate any joined areas – put the splint back into the water, and the splint material will become flat again.)*

OPTIONS FOR ATTACHING STRAPS

ENCASE ENDS WITH X-LITE SCRAPS OR FINISHING TAPE



Soften the X-Lite scrap or Finishing Tape, encase the ends of the strap, pressing firmly to make a good seal. Just before adding the strap to the splint, apply dry heat (heat gun) to both the X-Lite end of the strap and the location you are going to place it on the splint. Press firmly to form a good seal.

MAKE X-LITE RIVETS



Punch two holes into the end of the strap. Select a small off-cut, soften in the hot water and make a ball. Put the X-Lite ball into the hole of the Velcro and press it onto the splint.

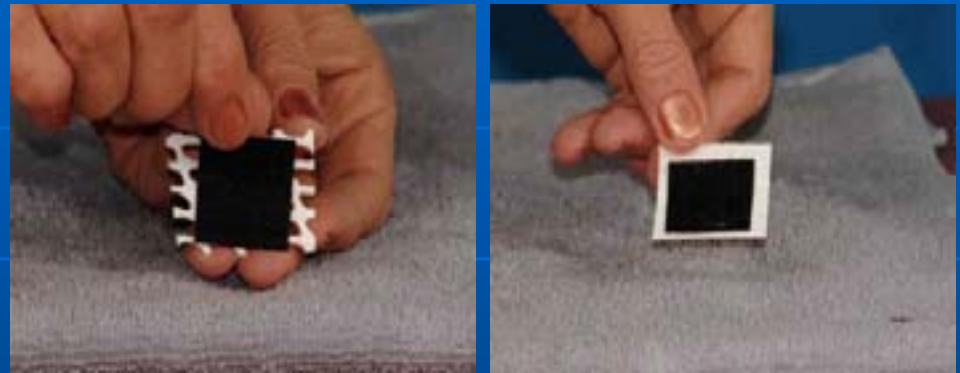
OPTIONS FOR ATTACHING VELCRO

X-LITE TFS



X-Lite TFS (Thermoplastic Fastening System) is hook with a thermoplastic backing. Apply dry heat (8-10 seconds with heat gun, 25-30 seconds with hair dryer) to the back of the hook until it becomes "floppy" and then the spot on the splint where you want to apply the strap (3-5 seconds) – press and hold firmly for 8-10 seconds.

X-LITE SCRAPS or X-LITE FINISHING TAPE



Cut two narrow strips of X-Lite Splint material or X-Lite Finishing Tape (slightly longer than the width of the Velcro) and soften in the hot water. Apply dry heat (8-10 seconds with heat gun, 25-30 seconds with hair dryer) to the back of the hook until it becomes "floppy" and then the spot on the splint where you want to apply the strap (3-5 seconds) – press and hold firmly for 8-10 seconds.

ATTACHING D-RINGS/LOOPS



Cut a strip of X-Lite slightly shorter than the width of the D Ring/Loop and 3" (7.5cm) long (rectangular holes should be in opposite direction of the holes in the splint at the location where D-Ring/Loop will be placed). Heat the strip in 160°F (70°C) water just enough to soften and wrap around the inside edge of the loop. Drop the loop with the X-Lite tab into the 160°F water for 2 minutes. While the splint is still warm, press the X-Lite tab into the location desired. If the splint is not still warm, use a cup to pour a small amount of the 160°F (70°C) water in the location where you want to place the D Ring/Loop to "soften" (or apply dry heat) and then press the X-Lite tab into it and hold for 8-10 seconds.

SPLINTING TIPS

INCREASING SMOOTHNESS & ADDING SKIN INTERFACES:

COMPRESS WITH ROLLING PIN



Place X-Lite in water until semi-soft. Place on Formica-type surface and use a wet rolling pin to smooth the material prior to fabricating the splint.

STOCKINETTE INTERFACE



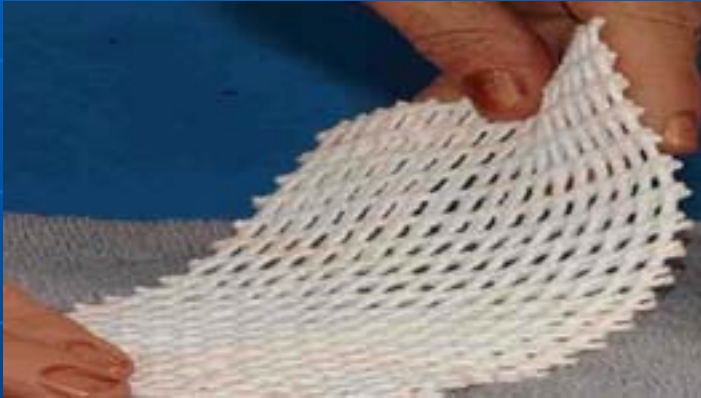
For extra sensitive skin, use tubular stockinette as an interface between the splint and the skin.

COTTON TERRY CLOTH INTERFACE

X-Lite adheres to cotton, Cut some terry cloth the shape and size of the inner surface of the splint. Apply dry heat just to a few key areas on the splint and press the terry cloth into those areas. If the terry cloth becomes soiled, pull loose and replace with clean terry.

APPLICATION TO THE SKIN OR OVER DRESSINGS

Upon removal of the X-Lite material from the water, lay it on a towel just to drain off excess water. The material may then be applied directly to the skin.*



To apply over dressings, first wrap the dressing with a thin polyethylene film. If the X-Lite should adhere to the film, cut the film to remove it from the dressing and then pull it loose from the formed splint.



If area to be splinted has excessive hair, moisten well with cool or lukewarm water or cover with Stockinet. The X-Lite will adhere to the stockinet. After removing the splint from the patient, pull on the stockinet to remove from the splint.

Note: Skin temperature, water temperature, length of time in the water, and air humidity can affect the non-skin stickiness properties of X-Lite. If in doubt, prep the area to be splinted by moistening with cool or lukewarm water, or wrap with thin polyethylene. If using polyethylene, remove immediately after the splint is formed. *Lotion will prevent X-Lite from adhering to the skin but will also prevent the X-Lite from adhering to itself.*

USE X-LITE OFF-CUTS



Reinforce a section of a splint.



Add to a splint to separate the fingers.



Make a bracket for a dynamic hand splint.



Use to attach straps or Velcro

About X-Lite

Incomparable Ventilation

- X-lite's ventilation is achieved right from the beginning with its cotton mesh base, providing "natural" openings for heat or fluids to escape.

Lightweight

- With the copolymer added only to the cotton mesh itself, X-Lite is the lightest weight casting and splinting material on the market (to the best of our knowledge).

Totally Reversible

- If you start to fabricate a splint and it isn't coming out quite like you planned – just drop it back in the water and the material will return to the original flat condition. Even if you have adhered X-Lite to itself – just return it to the heated water for a few seconds and you can separate the adhered areas, and even remove any Finishing Tape or strap/Velcro attachments!

Some more info on X-Lite

Stretch Where You Want It

- X-Lite has a natural cotton base so has stretch characteristics similar to cotton fabric – moderate to maximum resistance to stretch horizontally or vertically – minimum resistance to stretch diagonally.

No Waste

- For X-Lite splinting material, you can re-use all cut-offs, and for X-Lite casting material, you can use any leftover portion of the roll for another application. To the best of our knowledge, there is no other casting material that you can activate and then be able to use the leftover material for another application.

Unique and Unsurpassed Bonding Properties

- No solvents required! The X-Lite resin formula is unique in that it allows you to easily and aggressively seal the material to itself. In the case of the splinting material, this formulation is such that the adhesion can take place, yet the material is not sticky on the skin. Plus, the complete integration of two pieces of the material doesn't take place until the material starts to cool so you can separate and re-apply as needed.

Some more info on X-Lite

Variable Rigidity

- Each X-Lite product is offered in just one thickness (less inventory!). Due to the superb bonding characteristics, you vary the rigidity by the number of layers you use. Small or cylindrical splints generally require only one layer – for larger splints like a resting hand splint, increase to two or three layers depending on the size of the patient or amount of spasticity. When assessing degree of rigidity, keep in mind that although X-Lite splinting material cools to sufficient rigidity to remove from the patient in only 30-60 seconds, and at that time you may remove the splint for trimming and finishing work – allow another 15-20 minutes for the material to reach maximum rigidity.
- Most casts will offer sufficient rigidity with just two layers (by overlapping as recommended), but more can be added if needed. The other advantage the bonding characteristics of X-Lite offers is that you can vary the rigidity by adding only strips to any specific area – so you can keep the splint flexible in one area and very rigid in another.

Some more info on X-Lite

Low Cost

- X-Lite splinting materials are lower in cost per square inch than most thermoplastic materials. X-Lite cast material is comparable to most fiberglass casting materials – and don't forget you can use any left-leftovers (can't do that with fiberglass!).

Non-Toxic

- The product consists of a cotton mesh impregnated with a copolymer. The polymer is fully reacted, which means that it does not contain any of the residues in un-reacted form and therefore will not release such residues when the bandages are applied or when wearing them.

Biodegradable

- This is an important feature for those of us who are concerned about the future of our environment. The Microbial Ecology Laboratory, University of Liege, Belgium, studied X-Lite and stated: "Consequently, we are pleased to conclude: Runlite X-Lite Thermoplastic Products are in full conformity with the French and U.S. standards for biodegradability."

F.A.Q.

Can X-Lite be applied directly against the skin?

- Yes. However, if area to be splinted has excessive hair, it is recommended to cover with stockinet. The X-Lite will adhere to the stockinet. After removing the splint from the patient, pull the stockinet to remove from the splint.

Will X-Lite Stick to the Skin?

- For most applications, X-Lite will not adhere to the skin. However, occasionally the water, room, or skin temperature can cause "stickiness". To alleviate this possibility, moisten the anatomy to be splinted with cool or lukewarm water before application of the X-Lite.

F.A.Q.

Is X-lite as easy to work with as is the material I'm currently using?

- We believe with just a little practice, you'll find it's even easier! X-lite offers superior contouring. It adheres to itself without messy solvents. It's easier to cut than competitive products. X-lite comes in convenient, easy to use and store, dispenser packages (but yes, we have sheets too). It's extremely "forgiving" (if you make a mistake, just put it back into the heated water and start over). You won't have fingerprints and fingernail marks like you do with some competitive products. You can control the degree of rigidity, by selecting where you want more or less. You can also re-use any trimmings or cut offs. You have a variety of options to attach components. You can also re-use any trimmings or cut-offs.

Can Cast roll material be used to make splints?

- Yes, but keep in mind that the cast roll material is stickier so it is highly recommended to use a stockinet and/or padding material as an interface between the skin and the X-Lite.

F.A.Q.

Does X-Lite Stretch?

- X-lite is a cotton fabric weave, or mesh, which has been impregnated with low temperature thermoplastic. This cotton base allows it to “stretch” if you pull it diagonally while resisting stretch if you pull it vertically or horizontally. The benefit of this is that you simply align the material on the patient according to the degree of stretch you desire.

Does X-lite have “memory”?

- X-Lite does not have memory but it is reversible. When the splinting material is returned to heated (160°F) water, the material will return to its original flat state.

Will X-Lite shrink as it cools and hardens?

- X-Lite does not have memory, it will not shrink as it cools.

F.A.Q.

Can components for dynamic splinting be attached?

- Yes. X-lite offers several different methods for attaching components. Depending on user preference, components can be attached using X-lite itself, X-lite finishing tape or, most conventional “off the shelf” materials.

What is the difference between CLASSIC & PREMIUM?

- Both CLASSIC and PREMIUM use 100% natural cotton mesh as a base. The mesh used for CLASSIC has larger holes than the mesh used for PREMIUM. The larger holes in the CLASSIC offers increased aeration – generally preferred for larger anatomy. PREMIUM is a little softer and contours more precisely to smaller anatomy – generally preferred for finger splints, splints for small hands, and for pediatrics.

F.A.Q.

I use a perforated material to achieve ventilation. How does X-Lite compare?

- While perforated materials have holes to let air in and out, they are still “flat” in construction. When those holes contact the skin, the skin forms a near perfect “seal” over the holes, which really doesn’t let much, if any, air in or out. X-lite is an over/under “weave” which is not “flat”. Even when X-lite contacts the skin, there is no “seal” formed due to this “weave”, thus still allowing air to circulate throughout, and allowing fluids to escape.

F.A.Q.

What about cost? Is X-lite competitively priced?

- X-lite costs less per square inch of material than most competitive splinting materials. Further, you vary the rigidity of a splint made with X-lite by the number of layers you would use, versus having to stock varying thicknesses of competitive products. This means you will only need to stock one inventory item. Less inventory means less money sitting on the shelf in the supply room! Add the cost saving facts that (1) X-lite is completely reversible – if you make a mistake, just dip it back in the water and start over; (2) all trimmings and cut-offs may be re-used in another application, (3) X-Lite splints can be made very easily and quickly, significantly reducing fabrication time.