X-LITE Tips and Tricks Breathable User Guide

Contents

X-LITE Tips and Tricks Breathable

Specifications:

- Breathable
- Lightweight
- Biodegradable

Product Information:

X-Lite is a splinting material made from 100% cotton mesh, providing excellent ventilation and comfort to the user. It is reusable, remouldable, and environmentally friendly, as it is biodegradable once disposed of. X-Lite offers therapists the flexibility to create various splints while minimizing waste through efficient material usage.

Product Usage Instructions

Materials and Accessories:

X-Lite is a natural material base made from 100% cotton mesh. It can be used with accessories such as Velcro loops and wires by heating a small piece of material and attaching it to the accessory, then pressing firmly onto the splint.

Step-by-Step Guides:

X-Lite offers a range of step-by-step guides for creating different splints, including thumb post splint, thumb spica splint, long thumb splint, radial bar wrist cock-up, thumb hole wrist cock-up, and resting splint. Templates for these splints can be downloaded from the provided link.

Tips & Tricks:

- Recommended materials: Follow the recommended materials for optimal splint fabrication.
- Edging: Soften and round the edges of X-Lite when it is soft to ensure a comfortable fit.
- Layering: Double layer X-Lite Classic for the same strength as 2.4 mm thickness.
- Strapping: Attach accessories by heating a small piece of material and pressing it firmly onto the accessory

FAQs

Can I use a heat gun to heat and spot heat the material?

Yes, you can use a heat gun to heat most thermoplastic materials, but avoid using it on X-Lite Plus.

How many layers of X-Lite Classic do I need for the same strength as 2.4 mm?

A double layer of X-Lite Classic is required.

How do I attach accessories to my splint?

Heat a small piece of material, attach it to the accessory, then press firmly onto the splint.

Why does X-Lite only come in one thickness?

X-Lite can be layered for added strength, reducing the need for multiple thickness options.

Why does X-Lite come in different sizes and packaging?

X-Lite is available in predetermined sheets and dispenser boxes for ease of use.

- **WHAT TEMPERATURE SHOULD I HEAT X-LITE?**
  - The correct water temperature is 67-70°.
- **CAN I USE A HEAT GUN TO HEAT AND SPOT-HEAT THE MATERIAL?**
  - Yes, you can use a heat gun to heat most of our thermoplastic materials. We do not recommend using a heat gun on X-Lite Plus as it will burn the polyester fabric.
- **HOW MANY LAYERS OF X-LITE CLASSIC DO I NEED TO HAVE THE SAME STRENGTH AS 2.4 MM?**
  - You need a double layer of X-LITE Classic
- **HOW DO I ATTACH ACCESSORIES TO MY SPLINT?**
  - You can attach all accessories e.g Velcro loop, wires, etc. by heating a small piece of material and attaching it to the accessory, then spot heat your splint and press the two pieces firmly together.
- **WHY DOES X-LITE ONLY COME IN ONE THICKNESS?**
  - Instead of choosing between different thicknesses depending on which splint you are going to make, you can simply add layers making X-LITE stronger. It is easy to layer and means stocking less products. X-Lite is a strong material with a very low profile compared with other materials. You can also settle for only adding reinforcements and save even more material.
- **Why therapists love X-Lite:**
  - **Lightweight & Excellent Ventilation:**
    - The open structure of the material provides great ventilation and comfort
    - Allows the skin to breathe and provides an optimal environment for wound healing
  - **Variable Rigidity:**
    - Add layers for additional rigidity without compromising the low profile
    - Add strips to areas where additional reinforcement is desired
  - **Remouldable & Reusable:**
    - X-Lite can be reheated an unlimited amount of times, saving you money and time
    - Make small changes on an already made splint instead of making a new one Easy, Strong Bonding:
    - X-Lite easily adheres to itself, bringing many benefits to the clinician when splinting
- **WHAT CAN I DO TO PROTECT THE EDGES?**
  - Always cut the edges when the material is soft – it will make them more rounded when cooling down. You can add X-Lite or Plus Edging material for a softer, smoother edge or you can simply roll the edge to make it softer. See our tips & tricks for edging on p20.
- **WHAT IS THE DIFFERENCE BETWEEN X-LITE CLASSIC, PREMIUM AND PLUS?**
  - Classic is the original material. It is the most airy and ventilated, yet strongest. Premium has more stretch and conforms better over small bony prominences. The holes are smaller and it is not as airy. You need an extra layer to have the same strength as Classic. Plus is almost as strong as Classic and has a soft surface of fabric on one side. You can choose between five colours. There are no limitations which material to choose for which application as it is more a preference for the therapist
- **HOW DO I LAMINATE LAYERS OF X-LITE TO MAKE THE MATERIAL STRONGER?**
  - To laminate layers of X-LITE you heat the material and gentle press the layers together. When it cools down you have a permanent bond. You can laminate as many layers as needed to obtain the right strength. Always remember that the two layers you laminate should both be warm and soft for a permanent bond. See our tips & tricks for layering on p21.
- **WHY DOES X-LITE COME IN SO MANY DIFFERENT SIZES AND PACKAGING?**
  - X-LITE comes in predetermined sheets and dispenser boxes in 10 meters length for splinting and in rolls

in different widths for casting. The width of the material determines which splint you can make, and you have substantially less waste and easier handling than if you cut from a large sheet. If you need a wider piece of material, you can easily bond two pieces.

- **DOES X-LITE HAVE A COATING?**
  - X-LITE has no coating. Gentle pressure laminates permanently when the material cools. However, if you change your mind – you can leave the bonded material a little longer in the splint bath and you are then able to separate the layers again. It is easy to attach all kinds of Velcro and accessories. With other Low Thermoplastic materials, you need to choose from the beginning if you want to work with coated or non-coated material. Non-coated material can not be separated once it has been merged together.
- **CAN I CUT X-LITE WITH A REGULAR SCISSOR?**
  - X-LITE is easily cut with regular scissors with multiple layers. With competitor materials you will have to use a utility knife if the material is more than 2 mm thick.

ENVIRONMENTAL BENEFITS

-  **Natural Material:**
  - X-Lite is made from 100% cotton mesh, a natural material base.
-  **Waste Less:**
  - Significantly less material used in splint fabrication. Reheat X-Lite an unlimited amount of times and use offcuts to edge, leaving nothing to waste.
-  **Biodegradable:**
  - Once the patient is finished with their X-Lite splint, it will degrade in compost or landfill. ISO14855-1 biodegradability tested.

CLINICAL INDICATIONS

All of the splints referred to in this guide can be used for a whole array of hand/wrist/thumb conditions/injuries. Splint assessment, fabrication & provision is led by the clinical reasoning of the therapist. Please see below the suggested splints for the specified clinical indications

Resting Splint

- Pain management
- Oedema control
- Conditions including: osteoarthritis, rheumatoid arthritis, wrist &/or hand soft tissue, injuries or conditions, immobilisation post trauma / surgery

Thumb Spica Splint

- Pain management &/or instability of the thumb CMC joint
- To aid functional use of the thumb
- Conditions including: osteoarthritis, hypermobility of the thumb

Thumb Post Splint

- Pain management &/or instability of the thumb
- To aid functional use of the thumb
- Conditions including: osteoarthritis, hypermobility of the thumb, soft tissue injuries or conditions of the thumb MCP joint, immobilisation post trauma/surgery to the thumb region especially MCP joint

Long Thumb Spica Splint

- Pain management ie for conditions on the radial border of the wrist/thumb region
- To aid functional use of the wrist / thumb, soft tissue injuries or conditions on the radial border of the wrist &/or thumb, immobilisation post trauma/surgery to the wrist / thumb region

Radial Bar Wrist Cock-Up Splint

- Pain management ie for conditions on the wrist
- To offer support to the wrist area
- To aid functional use of the hand / wrist
- Conditions including osteoarthritis, rheumatoid arthritis, soft tissue injuries or conditions of the wrist, immobilisation post trauma/surgery to the wrist

Thumb Hole Wrist Cock-Up Splint

- Pain management ie for conditions on the wrist
- To offer support to the wrist area
- To aid functional use of the hand/wrist
- Conditions including osteoarthritis, rheumatoid arthritis, soft tissue injuries or conditions of the wrist, immobilisation post trauma/surgery to the wrist

THUMB POST SPLINT

STEP-BY-STEP GUIDE

The following step-by-step guidance will enable you to create a thumb splint. For the purpose of this guide X-Lite® Classic is used. Clinicians can clinically reason how many X-Lite® layers are required, one layer has been used for this splint.

1. To create the splint pattern you can either use the Thumb D-Model template or draw a pattern.

2. The splint width needs to be large enough to wrap around the thumb

3. Once a pattern has been selected/created it can be drawn/transfered onto the splint material. A crayon is often used.

4. X-Lite® can be cut when the material is activated (heated) or not activated (cold). For other thermoplastic materials, it is recommended that the material is activated to enhance the edge finishing. X-Lite® can be reactivated at any point whilst cutting.

5. Once the splint is fully cut \out undertake a final size check. The material can then be activated by heat, usually in a water-splint pan.

- Cut inside markings on the material so that this is not seen on the finished splint.
- All offcuts of X-Lite® can be used for edging as the material easily bonds to itself – leaving no waste! X-Lite® only takes a few seconds to activate in the heat pan – quicker than most thermoplastics.

6. On removing the splint from the splint pan allow water to drip off the splint and dry the splint material with a towel as required.

7. Once the splint material temperature is appropriate transfer to the patient and position the limb as required.

8. Once the material has set the splint can be assessed to see if any final adjustments are required

9. Now we can edge the splint. There are a range of techniques used to edge X-Lite® – here we have used X-Lite® offcuts. Please refer to the edging tips and tricks guide
10. Once all adjustments have been made the splint straps can be added. Please refer to the straps tips and tricks guide on p22.

THUMB SPICA SPLINT STEP-BY-STEP GUIDE

The following step by step guidance will enable you to create a thumb splint. For the purpose of this guide X-Lite® Classic is used. Clinicians can clinically reason how many X-Lite® layers are required, one layer has been used for this splint.

1. To create the splint pattern you can either use the Thumb Spica template or draw a pattern.

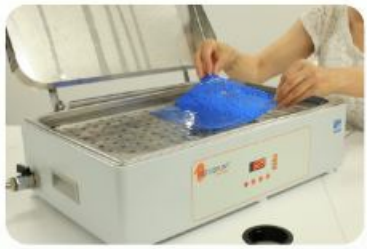
2. The palm aspect of the pattern should distally run across the distal palmer crease and proximally just distal to the wrist crease. The pattern should be big enough to wrap around the dorsal aspect of the thumb and ulnar aspect of the hand.

3. Once a pattern has been selected/created it can be drawn/transfered onto the splint material. A crayon is often used.

4. X-Lite® can be cut when the material is activated (heated) or not activated (cold). For other thermoplastic materials it is recommended that the material is activated to enhance the edge finishing. X-Lite® can be reactivated at any point whilst cutting.

5. Once the splint is fully cut out undertake a final size check. The material can then be activated by heat, usually in a water splint pan.

6. On removing the splint from the splint pan allow water to drip off the splint and dry the splint material with a towel as required.



7. Once the splint material temperature is appropriate transfer to the patient and position the limb as required

8. Once the material has set the splint can be assessed to see if any final adjustments are required.

9. Now we can edge the splint. There are a range of techniques used to edge X-Lite® – here we have used X-Lite® offcuts. Please refer to the edging tips and tricks guide on p22.

10. Once all adjustments have been made the splint straps can be added. Please refer to the straps tips and tricks guide

LONG THUMB SPLINT STEP-BY-STEP GUIDE

The following step by step guidance will enable you to create a Long Thumb Splint. For the purpose of this guide X-Lite® Classic is used. Clinicians can clinically reason how many X-Lite® layers are required, two layers have been used for this splint.

1. To create the splint pattern you can either use the Long Thumb Splint template or draw a pattern.

2. If using the splint template, to pick the most appropriate size, size the splint from the IP joint of the thumb to two thirds of the forearm. Also consider the circumference of the forearm, which should be approximately half the forearm circumference.

3. For the purpose of this splint we are going to use two layers of X-Lite®. Please see our tips and tricks guide for layering guidance.

4. Once a pattern has been selected/created it can be drawn/transferred onto the splint material. A crayon is often used.

5. X-Lite® can be cut when the material is activated (heated) or not activated (cold). For other thermoplastic materials it is recommended that the material is activated to enhance the edge finishing. X-Lite® can be reactivated at any point whilst cutting.

6. Once the splint is fully cut out undertake a final size check. The material can then be activated by heat, usually in a water splint pan.

7. On removing the splint from the splint pan allow water to drip off the splint and dry the splint material with a towel as required
8. Once the splint material temperature is appropriate transfer to the patient and position the limb as required.
9. Once the material has set the splint can be assessed to see if any final adjustments are required.



10. Now we can edge the splint. There are a range of techniques used to edge X-Lite® – here we have used X-Lite® offcuts. Please refer to the edging tips and tricks guide on p22.
11. Once all adjustments have been made the splint straps can be added. Please refer to the straps tips and tricks guide.

Watch on YouTube

Watch video tutorials for each of the splint patterns on our YouTube channel@kinetecofficial. Learn tips and tricks for edging, layering and handling X-Lite® to better understand how to use it for splinting

- Learn tips and tricks for using X-Lite®! @kinetecofficial

RADIAL BAR WRIST COCK-UP STEP-BY-STEP GUIDE

The following step-by-step guidance will enable you to create a wrist splint. The splint can be moulded to create either a volar or dorsal wrist splint. For the purpose of this guide X-Lite® Classic is used. Clinicians can clinically reason how many X-Lite® layers are required, two layers have been used for this splint.

1. To create the splint pattern you can either use the Radial Bar Wrist CockUp template or draw a pattern.

2. If using the splint template, to pick the most appropriate size ensure the distal edge of the pattern is below the distal palmar crease. Ideally the splint should be approximately half the forearm circumference and two thirds the length of the forearm.

3. Once a pattern has been selected/created it can be drawn/transfered onto the splint material. A crayon is often used.

4. X-Lite® can be cut when the material is activated (heated) or not activated (cold). For other thermoplastic materials it is recommended that the material is activated to enhance the edge finishing. X-Lite® can be reactivated at any point whilst cutting.
5. Once the splint is fully cut out undertake a final size check. The material can then be activated by heat, usually in a water splint pan

6. On removing the splint from the splint pan allow water to drip off the splint and dry the splint material with a towel as required.
7. Once the splint material temperature is appropriate transfer to the patient and position the limb as required
8. Once the material has set the splint can be assessed to see if any final adjustments are required.

9. Now we can edge the splint. There are a range of techniques used to edge X-Lite® – here we have used X-Lite® offcuts. Please refer to the edging tips and tricks guide on p20
10. Once all adjustments have been made the splint straps can be added. Please refer to the straps tips and tricks guide on p22

THUMB HOLE WRIST COCK-UP STEP-BY-STEP GUIDE

The following step by step guidance will enable you to create a thumb-wrist splint. For the purpose of this guide X-Lite® Classic is used. For the purpose of this splint we are going to use two layers of X-Lite®. Please see our tips and tricks guide for layering guidance

1. To create the splint pattern you can either use the Thumb Hole Wrist Cock-Up template or draw a pattern.
2. Distally the splint should be below the distal palmar crease, the length two thirds of the forearm and width over

half the forearm circumference.

3. The hole of the splint pattern is where the thumb MCP joint is located

4. Once a pattern has been selected/created it can be drawn/transfered onto the splint material. A crayon is often used
5. X-Lite® can be cut when the material is activated (heated) or not activated (cold). For other thermoplastic materials it is recommended that the material is activated to enhance the edge finishing. X-Lite® can be reactivated at any point whilst cutting.
6. Once the splint is fully cut out undertake a final size check. The material can then be activated by heat, usually in a water splint pan.

7. On removing the splint from the splint pan allow water to drip off the splint and dry the splint material with a towel as required.
8. Once the splint material temperature is appropriate transfer to the patient and position the limb as required
9. Once the material has set the splint can be assessed to see if any final adjustments are required.

10. Now we can edge the splint. There are a range of techniques used to edge X-Lite® – here we have used X-Lite® offcuts. Please refer to the edging tips and tricks guide on p22.
11. Once all adjustments have been made the splint straps can be added. Please refer to the straps tips and tricks guide on p20.

RESTING SPLINT STEP-BY-STEP GUIDE

The following step by step guidance will enable you to create a Resting Splint. For the purpose of this guide X-Lite® Classic is used. For the purpose of this splint we are going to use two layers of X-Lite®. Please see our tips and tricks guide for layering guidance.

1. To create the splint pattern you can either use the Resting Splint template or draw a pattern. The same pattern can be used to produce a POSI (position of safe immobilisation).
2. Using the splint template or by creating a pattern, the splint should be distal to the tip of the middle finger and thumb and approximately half the forearm circumference and two thirds the length of the forearm

3. Once a pattern has been selected/created it can be drawn/transferred onto the splint material. A crayon is often used.
4. X-Lite® can be cut when the material is activated (heated) or not activated (cold). For other thermoplastic materials it is recommended that the material is activated to enhance the edge finishing. X-Lite® can be reactivated at any point whilst cutting
5. Once the splint is fully cut out undertake a final size check. The material can then be activated by heat, usually in a water splint pan.

6. On removing the splint from the splint pan allow water to drip off the splint and dry the splint material with a towel as required
7. Once the splint material temperature is appropriate transfer to the patient and position the limb as required.
8. Once the material has set the splint can be assessed to see if any final adjustments are required.



9. Now we can edge the splint. There are a range of techniques used to edge X-Lite® – here we have used X-Lite® offcuts. Please refer to the edging tips and tricks guide on p20.
10. Once all adjustments have been made the splint straps can be added. Please refer to the straps tips and tricks guide on p22.

RECOMMENDED MATERIALS TIPS & TRICKS

X-Lite® is provided in three different options, Classic, Premium and Plus. The choice of product depends on the clinical indication and preference.

X-Lite® Classic:

- The original X-Lite® material
- Large mesh openings provide excellent ventilation
- It stretches and conforms well to contours for a perfect fit
- One way stretch: the longest side of the rectangle is the way it will stretch
- Extra rigidity and load bearing
- Available in White, Royal Blue & Anthracite, in sheets, dispensers or rolls

X-Lite® Premium:

- X-Lite® Premium has a finer mesh than the Classic material and is even more conformable and stretchable
- It is ideal for smaller joints and therefore for splints and casts for the upper extremity and children
- Our most conformable material for casting
- Choose between rolls and sheets or a 10 m dispenser box

X-Lite® Plus:

- It is made with X-Lite® premium combined with a soft, coloured polyester layer
- You can choose between rolls in all 5 colors in 7 different widths
- Plus is almost similar in strength to Classic and can be used to make any cast or splint of your choice
- A finer mesh with a soft fabric surface

X-Lite® Accessories:

- Stockinette: X-Lite® stockinette
- Edging: X-Lite® Plus Edging Tape and X-Lite® Edging/Finishing tape
- Recommended: Silicone plate and rolling pin to prevent the material from adhering to the towel
- Strapping: Standard non-adhesive loop and non-stretch AFO strapping
- Hook: Specialist X-Lite® Hook
- Bandages: Elastic bandage to assist when moulding

EDGING TIPS & TRICKS

There are a range of ways to edge X-Lite® splints, the below information demonstrates an array of different options.

Flaring back the X-Lite® material:

- Identify where the splint edge needs adjusting.
- Activate the area carefully with either dry or wet heat.
  Note: X-Lite® activates very quickly.

- Flare back the edge as desired to ensure that it is rounded and smooth.
- For larger splints, if the splint is still in its flat format, once activated edges can be rolled back and then a rolling pin can be used to flatten the edges.

X-Lite® Offcuts:

- Any of the offcuts from X-Lite® can be used to edge the splint.
- Begin by cutting single layers of offcut X-Lite® into long strips. Note: If users have any double layered X-Lite® offcuts, these can be activated and pulled apart to create single layers.
- The strips can then be activated and placed along the edges of the splint. Working quickly, push the offcut strips around both sides of the splint edge to ensure a smooth finish is created

X-Lite® edging material:

- You can choose between X-Lite® Plus Edging (made from X-Lite® Plus material) or X-Lite® finishing tape. They are both supplied in dispenser boxes.
- Cut the X-Lite® edging material to the desired length.
- The strips can be activated in a heat pan and placed along the edges of the splint. Working quickly, push the X-Lite® edging material around both sides of the splint edge to ensure a smooth finish is created.

LAYERING TIPS & TRICKS

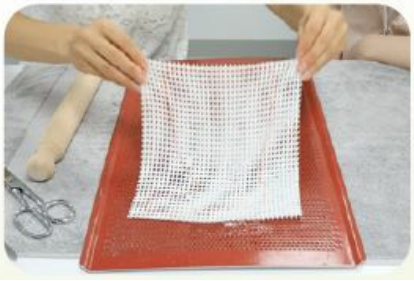
- X-Lite® is a lightweight yet strong material that has a unique structure, allowing the user to layer the material for extra rigidity.
- X-Lite® is self-adhering, so users can easily layer the material by activating the layers and combining them. Clinicians can clinically reason how many layers are required, this is dependent on how much rigidity is required.

Tip = When layering X-Lite® consider:

- If the holes of the X-Lite® layers are aligned this will achieve optimum aeration
- If the user off sets the holes of the X-Lite® layers this achieves more strength

The below provides some helpful tips and guidance on how to layer X-Lite®.

1. Carefully place the X-Lite® sheets into the splint pan so when they activate in the water they are on top of one another.
2. On removing the materials from the splint pan allow the water to drip off the material and dry with a towel as required.
3. Place the layers onto our silicone sheet, which provides an ideal surface without the material sticking to anything. Then using a silicone rolling pin, roll the layers together.


- X-Lite® can be re-heated many times allowing clinicians to remould splints as required.
- If the user desires, once the layers have been combined together they can be separated. Simply reactivate the material in the heat pan and once removed, the layers can be pulled apart

STRAPPING TIPS & TRICKS

Straps can be applied/attached in multiple ways, therefore clinicians should clinically reason where they wish to apply them. The following will provide some tips and guidance on how to ensure straps stay in place. For X-Lite® it is highly recommended that X-Lite® hook is used. If clinicians only have access to hook adhesive materials this can be used as an alternative.

Application 1 – Dry Heat:

For the dry heat application we will be using a heat gun.

1. Cut the X-Lite® hook or adhesion hook strap to the size required. Round the edges of the hook to help it stay in place.
2. For X-Lite® hook the back can be activated with the heat gun – take care when doing this. Once the back of the X-Lite® hook is activated it can be placed in the desired place on the splint.
3. For hook adhesive peel off the backing and then carefully activate using dry heat, then stick on the back of the hook material. Place on the desired place on the splint.
4. Clinicians can choose the type of strap they wish to utilise to hold the splint in place. Straps can be cut in different lengths and widths as needed for the patient.

Application 2 – Wet Heat:

For this application wet heat can be created by using a heat pan at approximately 65 degrees.

1. Cut the X-Lite® hook to the size required, again rounding the edges.
2. Place the pieces into a splint pan. Once the back of the X-Lite® hook is activated it can be placed in the desired place on the splint.
3. Clinicians can choose the type of strap they wish to utilise to hold the splint in place. Straps can be cut in different lengths and widths as needed for the patient.

BREATHABLE | LIGHTWEIGHT | BIODEGRADABLE

EXCELLENT QUALITY WITH

BIODEGRADABLE TECHNOLOGY

- **Biodegradable**
  - ISO 148551-1 test showed that X-Lite® is 25% biodegraded after 90 days.
- **Strong Material, Less Plastic**
  - X-Lite® is an extremely strong material. Use significantly less layers of material for equal strength.
- **Reusable and Remouldable**
  - Save money and time. X-Lite® can be reheated an unlimited amount of times, allowing you to reuse rolls and leftovers. Make small changes on an already made cast/splint instead of a new one costing extra money, extra time and discomfort for your patient.
- **Excellent Ventilation**
  - The open structure in the material gives great ventilation and comfort. This allows the skin to breathe, besides providing an optimal environment for wound healing.

- **Variable Rigidity**
  - Add layers for additional rigidity without compromising the low profile. Add strips to areas where additional reinforcement or support is desired.

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Documents / Resources

	X-LITE Tips and Tricks Breathable [pdf] User Guide Tips and Tricks Breathable, Tricks Breathable, Breathable

References

- Accueil - Kinetec
- Home - Kinetec UK
- Home - Kinetec UK
- User Manual