Plastics for **Orthotics & Prosthetics**

WITH CURBELL PLASTICS, YOU CAN EXPECT:

- Consistent quality materials
- Cut-to-size material, packaged the way you want
- Qualified, responsive staff for consult
- Creative solutions to production challenges

A complete line of materials

Curbell O&P is your one source for plastics, foams, and fabrication supplies.

Our high-quality plastic sheet materials have consistent forming characteristics for easy fabrication and are available in a wide variety of sheet sizes, thicknesses, and colors. Our product line includes plastics ranging from flexible to very stiff.

Along with plastic sheet, we supply:

- Patterned transfer papers
- Volara® foam for cushioning
- Fabrication supplies

Material selection, expert advice

"Curbell Plastics introduced us to several new plastic sheet materials that have allowed us to make softer, more comfortable braces for our patients."

– Curbell Plastics Customer Feedback

TYPICAL APPLICATIONS:

- AFOs, KAFOs
- TLSOs (spinal jackets), LSOs
- Cervical collars
- Back braces & splints
- Check sockets
- Flexible inner liners
- Definitive sockets

COMMON MATERIALS:

Plastic Sheet
(stocked & clean-cut)

- ABS
- Orfitrans® Extra-Soft
- Orfitrans® Extra-Soft Silicone
- Orfitrans® Stiff
- CoPoly (copolymer PP)
- HDPE
- PETG/VIVAK® (clear co-polyester)
- Polypropylene (homopolymer PP)
- ProComp® (carbon reinforced polypropylene)
- KYDEX® Thermoplastic Sheet
- LDPE
- MPE
- Surlyn®
- TPE

Flexible Plastic Sheet

- Duraflex®
- OP-TEK® Flex EVA
- OP-TEK® Flex BiLam
- OP-TEK® Flex Comfort
- Proflex
- Proflex with Silicone

Transfer Paper
(many patterns)

- Heavy and standard weight

Fabrication Supplies

- Carbon braid
- Plaster
- Super-EZ® Release Spray
- Vacuum forming hosiery (stockinettes)
- Volara®

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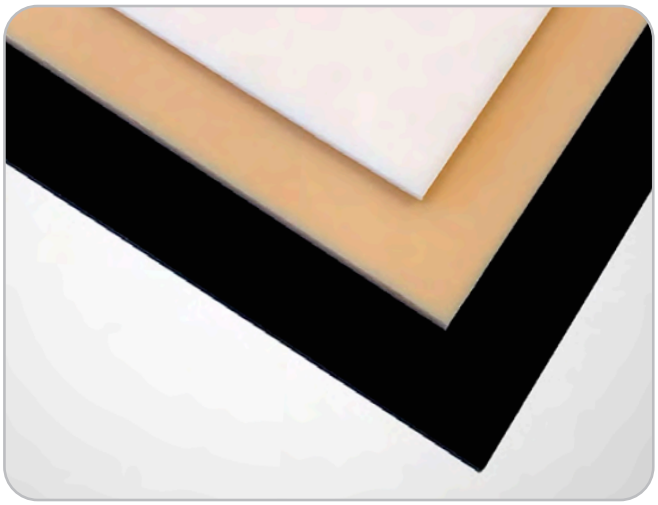
CMPE-500™

In-shoe orthotic material – rigid, retains shape, fatigue-resistant

CMPE-500™ is an ideal material used to provide patient support for in-shoe orthotics. When formed, its high molecular weight ensures lasting shape and rigidity for desired patient outcomes. Unlike other materials with equal stiffness, CMPE-500™ maintains stiffness without brittleness. Its fatigue properties exceed those of polypropylene.



Engineered for desired patient outcomes

APPLICATIONS:

- Foot plates for in-shoe orthotics, AFOs, UCBLs, and SMOs

PERFORMANCE CHARACTERISTICS:

- Excellent formability
- Lightweight

FORMING INFORMATION:

- Approximate forming temperature is 320°F. All ovens are different, this is only a guideline.

AVAILABILITY:

- 2mm, 3mm, 4mm, and 5mm Thickness
- Colors: Natural (White), Flesh, and Black
- Length: 36.5" Longest
- Width: 76" Longest

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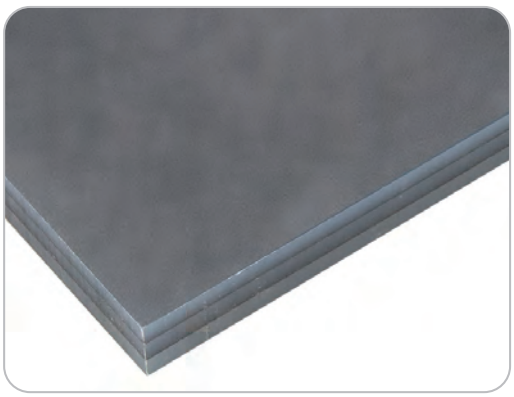
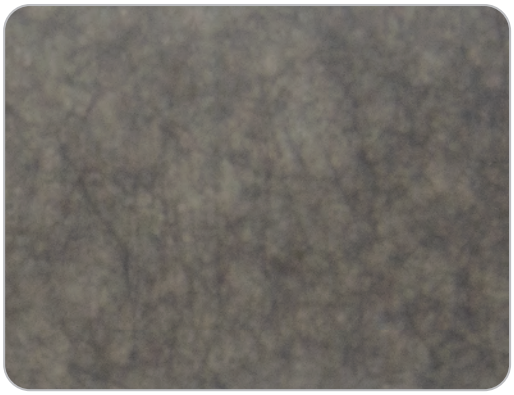
MAP 1882A 0724

ProComp®

Carbon reinforced polypropylene

ProComp® is an innovative polypropylene material reinforced with carbon fibers for increased stiffness. Layers of carbon fibers are infused between layers of homopolymer polypropylene which results in zero carbon fiber strand protrusion when finishing.





Save money when fabricating KAFOs by using ProComp® Trapezoids

- Available in .187" and .250" thicknesses

Exclusively from Curbell O&P

APPLICATIONS:

- AFOs, KAFOs, and SMOs
- Braces for hand and wrist

L-CODE 2755

- Additional reimbursement opportunities may be available

PERFORMANCE CHARACTERISTICS:

- 25% stiffer than standard Polypro
- Improved dimensional stability (less cold flow/creep)
- High melt strength
- Zero carbon fiber strand protrusion

FORMING INFORMATION:

- Can be formed using same techniques as standard polypropylene
- No special equipment needed to fabricate

AVAILABILITY:

- 1/4", 3/16", 5/32", 1/8" Thickness

Sheet Sizes:

- 48" x 96"
- 32" x 48"
- 24" x 48"
- 16" x 32"
- 16" x 24"
- 16" x 16"

ProComp® Evaluation Pack (Includes one sheet of each)

- 0.125" x 16" x 32"
- 0.156" x 16" x 32"
- 0.187" x 16" x 32"
- 0.250" x 16" x 32"

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MAP 1729F 0625

OP-TEK® Flex Family

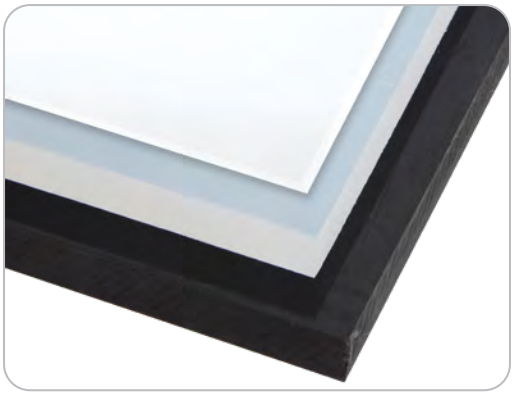
It's all about comfort and that soft touch

OP-TEK® Flex materials are soft, flexible EVA copolymers that provide outstanding patient comfort when used as an inner liner for rigid socket frames and as flexible inner boots in AFOs and SMOs. OP-TEK® Flex materials are specially formulated to maintain more consistent walls during forming compared to other flexible EVA copolymers.

OP-TEK® Flex is a natural (translucent) or black, flexible, formable EVA with excellent seaming characteristics and a soft touch.

OP-TEK® Flex Comfort is silicone free and internally lubricated to reduce friction while donning and doffing. It is a great option when silicone may irritate the patient's skin. The material also solves many of the fabrication challenges of EVAs containing silicone. OP-TEK® Flex Comfort is available in white or black. Black Comfort is only available in 1/8", 3/16", 1/4", and 3/8" thicknesses.

OP-TEK® Flex BiLam offers exceptional comfort, and the ability to hide the trim lines against a carbon fiber socket. When you want a black liner with low friction and need 1/2", OP-TEK® FlexBiLam is the perfect material.



Great for Flexible Inner Liners!

APPLICATIONS:

- Soft inner liners for rigid socket frames
- Inner boots for pediatric AFOs and SMOs
- Orthotics for hand and wrist

PERFORMANCE CHARACTERISTICS:

- Excellent formability
- Lightweight
- Maintains consistent walls when formed
- Cold flow (creep) resistant

MATERIAL PROPERTIES:

- Soft
- Very flexible
- Smooth surface
- Excellent drape forming and blister/bubble forming characteristics
- Excellent seaming characteristics
- Excellent valve interface for elevated vacuum socket liners
- Can handle rivets for attaching straps
- Good impact absorption

FORMING INFORMATION:

- Approximate forming temperature is 275°F. All ovens are different, this is only a guideline.

AVAILABILITY:

OP-TEK® Flex (Natural)
1/16" - 5/8" Thickness

OP-TEK® Flex (Black)
1/8", 3/16", 1/4", 3/8", 1/2", 5/8" Thickness

OP-TEK® Flex Comfort (White)
1/8" – 5/8" Thickness

OP-TEK® Flex Comfort (Black)
1/8", 3/16", 1/4", 3/8" Thickness

OP-TEK® Flex BiLam (Black/White)
1/2" Thickness

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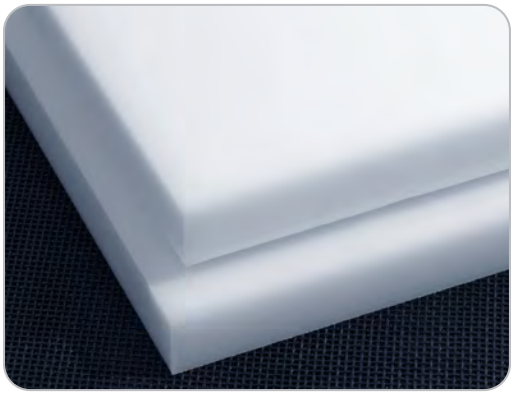
MAP 1595D 0724

C-TEK® MODStiff™

Increased stiffness without the weight

C-TEK® MODStiff™ is an innovative material with a chemistry based on polyethylene that offers a level of stiffness (flexural modulus) between modified polyethylene (MPE) and copolymer polypropylene (Copoly).

This material is used in applications where modified polyethylene is not stiff enough and copoly is too stiff. The ability to downgauge material thickness provides the opportunity to lighten an orthoses.



FLEXURAL MODULUS (ASTM D790) COMPARISON

Modified Polyethylene (MPE)	50 kpsi
C-TEK® MODStiff™	103-109 kpsi
Copolymer Polypropylene (Copoly)	200-215 kpsi

Great for body jackets!

APPLICATIONS:

- TLSOs (body jackets)
- Night splints
- AFOs and SMOs
- Wrist braces

PERFORMANCE CHARACTERISTICS:

- Increased Stiffness
- Lightweight
- Easy to fabricate and form
- Good chemical resistance

FABRICATION INFORMATION:

- No special fabrication techniques or equipment needed
- Material will “clear” in the oven similar to modified polyethylene and copoly

AVAILABILITY:

C-TEK® MODStiff™ (Natural)
.125" and .156" Thickness
Sheet Sizes: 24" x 48" - 48" x 96"

C-TEK® MODStiff™ (Black)
.156" Thickness
Sheet Sizes: 24" x 48" - 48" x 96"

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MAP 1770C 0724

Super-EZ® Release Spray

Save time and money while increasing productivity

Super-EZ® Release Spray is specially formulated to help decrease the time and cost associated with fabricating orthoses when carved foam (HDU) molds are being used.

This exclusive release spray makes pulls super easy and enhances stockinette release characteristics when pulling over foam molds.

Super-EZ® Release Spray was formulated with the environment in mind. It is non-toxic, eco-friendly, silicone free, and can be easily applied using standard trigger spray bottles.

Super-EZ® Release Spray can help you:

- **Save time** by not having to pull a sacrificial plastic layer or costly stockinette over the foam mold
- **Save money** by reducing labor and material costs
- **Increase productivity** by decreasing pulls from two to one

Made for fabricators!

APPLICATIONS:

Pulling over foam molds for:

- AFOs
- KAFOs
- SMOs
- TLSOs
- Cranial Helmets

PERFORMANCE CHARACTERISTICS:

- Excellent release properties
- Can be sprayed directly onto stockinette
- Will not harm plastics
- Non-toxic
- Non-staining
- No hazardous storage required

MATERIAL PROPERTIES:

- Water-based
- Biodegradable
- Made from natural plant-based resources
- VOC free
- Silicone free
- Store at room temperature

AVAILABILITY:

- Gallon jugs

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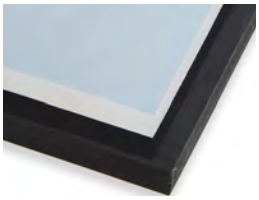
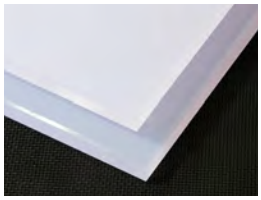
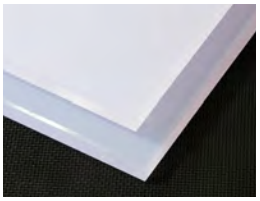
MAP 1801C 0724

EVA (Duraflex®, OP-TEK® Flex, Proflex)

Soft, flexible plastic with low-temperature toughness and stress-crack resistance







EVA is widely used for:

- Soft inner liners for rigid socket frames
- Inner boots for pediatric AFOs
- Orthotics for hand and wrist

Performance characteristics:

- Excellent moldability
- Lightweight
- Impact resistant

Flexible EVA (ethylene vinyl acetate) is the copolymer of ethylene and vinyl acetate. It is an extremely elastic material that can be processed like other thermoplastics. This material has low-temperature toughness, stress-crack and UV radiation resistance. In the Orthotics and Prosthetics market, fabricators know this material as either: Duraflex®, OP-TEK® Flex, or Proflex. (Note: Each brand may exhibit slight variations of grades and flexibility.)

EVA Material Options

OP-TEK® Flex– is a soft, flexible EVA copolymer that provides for outstanding patient comfort when used as a liner for rigid socket frames. OP-TEK® Flex is specially formulated to maintain more consistent walls during forming compared with many other flexible plastics.

OP-TEK® Flex Comfort– is a soft, flexible EVA copolymer with a proprietary additive that gives the material a softer feel. This enhanced surface provides superior patient comfort when used as a liner for rigid socket frames. The additive greatly reduces friction when patients don and doff prosthetic devices. Unlike EVAs with silicone, OP-TEK® Flex Comfort exhibits excellent seaming characteristics during drape forming and more consistent walls during blister/bubble forming compared with many other EVA copolymer materials. OP-TEK® Flex Comfort is available in both natural and black.

OP-TEK® Flex BiLam– provides added comfort and improves aesthetics for patients wearing carbon socket frames. The inner layer contains a hypoallergenic, FDA compliant additive that reduces friction, and the outer layer helps hide trim lines and window cut-outs of carbon socket frames.

Duraflex®– is a soft, flexible EVA copolymer that provides patient comfort when used as a liner for rigid socket frames. Duraflex® is harder and a little more rigid than OP-TEK® Flex and Proflex. It is available in natural (semi-transparent) and black.

Proflex– is a soft, flexible EVA copolymer that provides a superior level of patient comfort when used as a liner for rigid socket frames.

Proflex with Silicone (Proflex-S)– is a soft, flexible EVA copolymer with a silicone lubricant. Like Proflex it provides a superior level of patient comfort when used as a liner for rigid socket frames. The silicone reduces friction when patients don and doff prosthetic devices.

TYPICAL PROPERTIES OF EVA COPOLYMER SHEETS

PHYSICAL PROPERTIES	UNITS	ASTM Test	OP-TEK® Flex (All grades)	Duraflex®	Proflex and Proflex-S
Density (weight)	g/cm^3	D1505	0.952	0.885	0.950
Tensile strength @ yield	psi	D638	3480	2650	1520
Flexural modulus (stiffness)	psi	D790	3050	4790	3500
Shore hardness	-	D2240	D-28	D-31	D-33
Forming Temperature	ºF		250º-260º F	266º F	350º F

Values may vary according to brand name. Please ask your Curbell Plastics representative for more specific information about an individual brand.

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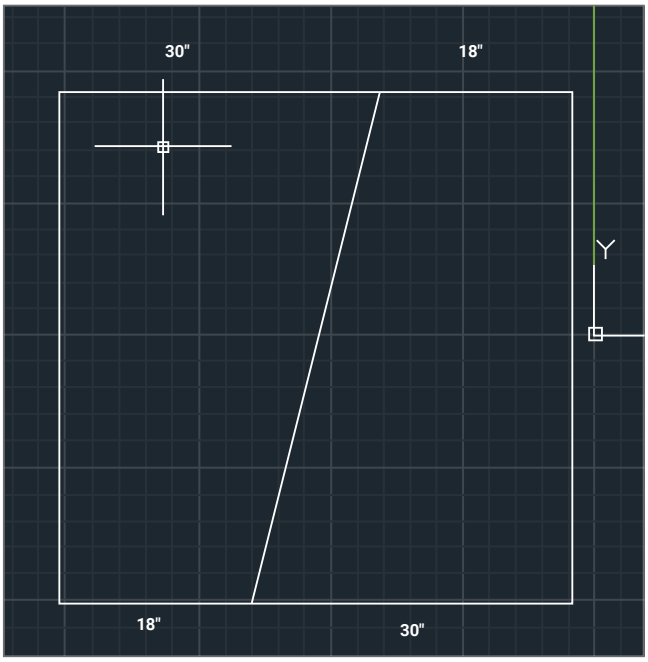
Trapezoids for Orthotics

Decrease your KAFO plastic material cost by using a different shaped sheet



WHEN TO USE:

- For fabrication of KAFOs
- If customer is using 32" x 48" sheets to make KAFOs

WHY WE CUT AND OFFER TRAPEZOIDS:

- To maximize sheet yield and reduce material waste:
  - Four trapezoids can be cut out of a 48" x 96" sheet
  - If cutting larger 32" x 48" trapezoids, only three fit within a 48" x 96" sheet

ITEM NUMBERS

Material	Color	Thickness	Item Number	Description
Polypro	NAT	0.156	86730	(M) POLYPRO 0.156" NAT TRAPEZOID
Polypro	NAT	0.187	86731	(M) POLYPRO 0.187" NAT TRAPEZOID
Polypro	NAT	0.25	86732	(M) POLYPRO 0.250" NAT TRAPEZOID
Polypro	BLK	0.156	86733	(M) POLYPRO 0.156" BLK TRAPEZOID
Polypro	BLK	0.187	86735	(M) POLYPRO 0.187" BLK TRAPEZOID
Polypro	BLK	0.25	86736	(M) POLYPRO 0.250" BLK TRAPEZOID
Copoly	NAT	0.156	86738	(M) COPOLY 0.156" NAT TRAPEZOID
Copoly	NAT	0.187	86740	(M) COPOLY 0.187" NAT TRAPEZOID
Copoly	NAT	0.25	86742	(M) COPOLY 0.250" NAT TRAPEZOID
Copoly	BLK	0.156	86744	(M) COPOLY 0.156" BLK TRAPEZOID
Copoly	BLK	0.187	86746	(M) COPOLY 0.187" BLK TRAPEZOID
Copoly	BLK	0.25	86748	(M) COPOLY 0.250" BLK TRAPEZOID
ProComp	NAT	0.187	86750	(M) PROCOMP 0.187" NAT TRAPEZOID
ProComp	NAT	0.25	86752	(M) PROCOMP 0.250" NAT TRAPEZOID

ProComp® composite thermoplastic resin-fiber materials are sold under license from, and are a product of, Rhode 401, LLC.

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MAP1909B 0625

OP-TEK® Frame Release Tape

Creates an easy release surface to aid material removal after forming

OP-TEK® Frame Release Tape is an easy to apply high temperature release tape that prevents flexible inner liner materials from sticking to frames used for bubble/blister forming during fabrication. Available in 2" and 4" roll widths.

TAPE APPLICATION DIRECTIONS:

1. Make sure frame faces are clean and free of debris (use alcohol wipe as needed).
2. Cut lengths of tape for application according to image.
3. Remove release liner and place end of the tape strip on frame.
4. Slowly start to press tape strip onto frame face working horizontally.
5. Work slowly to prevent any air bubbles from getting under tape during application.
6. Trim excess lengths of the tape and frame opening with scissors or razor knife.

Easy to apply!

APPLICATIONS:

- High temperature release surfaces (bubble/blister pulling frames)

PERFORMANCE CHARACTERISTICS:

- Nonstick surface—low coefficient of friction creates excellent release characteristics
- High temperature range (-100°F - 500°F)
- Adhesive backing makes it easy to apply

STANDARD ROLL SIZES:

- .006" Thickness
- Length: 18 Yd
- Width: 2", 4"

Frame with 2" width tape applied.

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MAP 1873B 0724