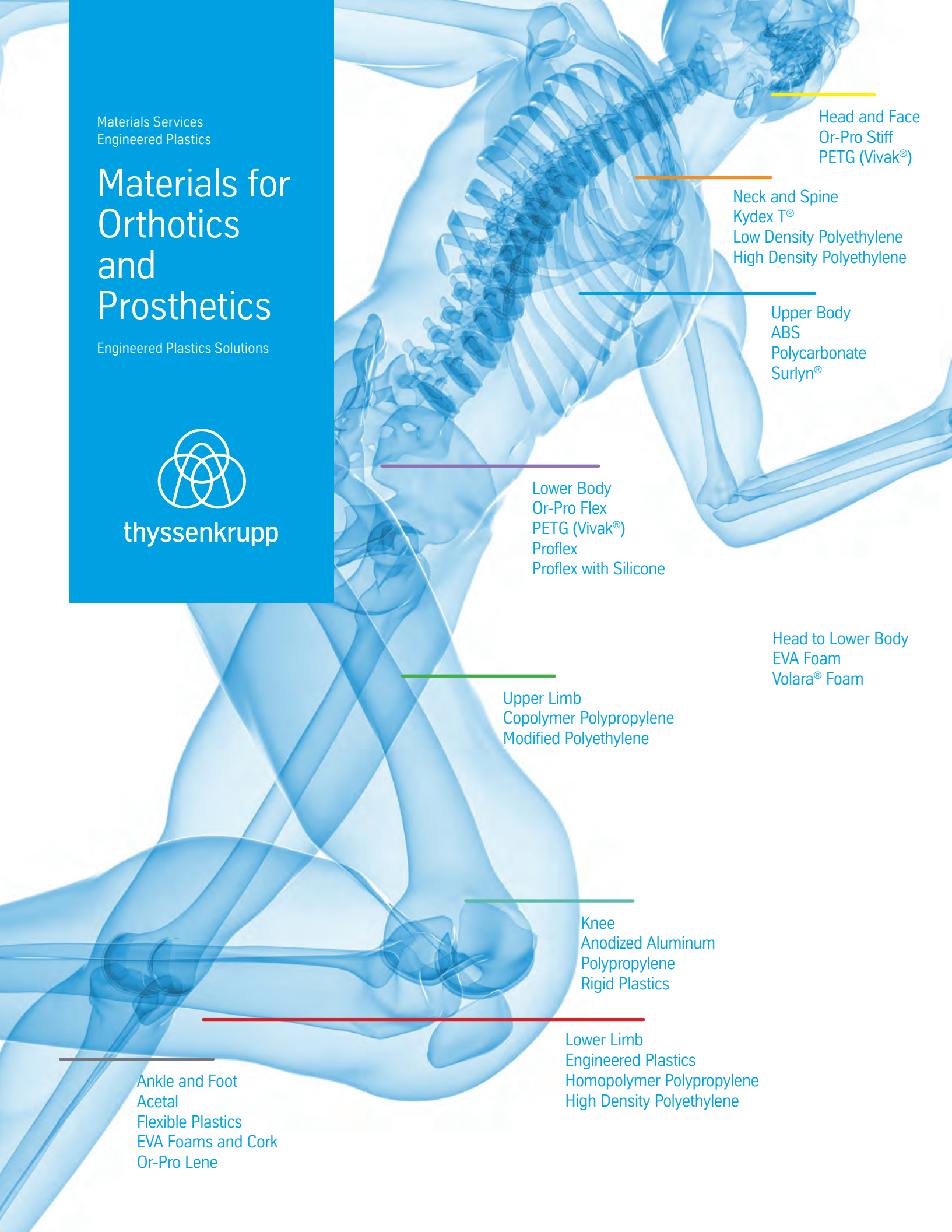
Materials Services
Engineered Plastics

Materials for Orthotics and Prosthetics

Engineered Plastics Solutions

thyssenkrupp



Head and Face
Or-Pro Stiff
PETG (Vivak®)

Neck and Spine
Kydex T®
Low Density Polyethylene
High Density Polyethylene

Upper Body
ABS
Polycarbonate
Surlyn®

Lower Body
Or-Pro Flex
PETG (Vivak®)
Proflex
Proflex with Silicone

Head to Lower Body
EVA Foam
Volara® Foam

Upper Limb
Copolymer Polypropylene
Modified Polyethylene

Knee
Anodized Aluminum
Polypropylene
Rigid Plastics

Lower Limb
Engineered Plastics
Homopolymer Polypropylene
High Density Polyethylene

Ankle and Foot
Acetal
Flexible Plastics
EVA Foams and Cork
Or-Pro Lene

Quality Is Our Priority

We are honored to be a provider to O&P professionals and to be able to provide materials that ultimately help your patients live life to the fullest.

To that end we have built a selection of products starting with the highest quality, most consistent plastics. We then partnered them with high quality adhesives, foams, plasters and more so you can easily get what you need in one place.

Not all plastics are alike. Plastic sheet extruders each utilize their own manufacturing parameters. In our experience we have seen these variations in process and resins lead to varying mechanical properties and residual stress. In fact, this is why like-named materials may form differently from one supplier to the next.

tkEP maintains strategic partnerships with industry leading extruders that provide consistent lot-to-lot quality. These manufacturers use only resins produced to the highest standards for cleanliness and stability.

You can count on your thermoforming to perform the way you expect time after time. The Polypropylene and Polyethylene Products we stock meet FDA criteria aiding in reducing sensitization and cytotoxicity concerns.

Our labeling ensures proper identification and traceability with each order. Included is a full material description and directional arrow indicating the forming direction which is reliant on the extrusion direction. The QR code will take you to our website where more information on the product is available.

thyssenkrupp

Engineered Plastics
Orthotic & Prosthetic Grade Materials

HDPE Natural
P/N:
PO:
Lot/Batch:

FORMING DIRECTION

877.246.7700

Scan for more product info.

Content

Polyolefin Sheet

O&P Grade Polypropylene		
Thickness	Dimensions	Color
.062, .093, .125, .156, .187, .250, .375, .500, .625	48 x 96	Natural

O&P Grade Polypropylene is made from a proprietary grade of FDA compliant 100% virgin homopolymer polypropylene that is specially formulated to turn clear when heated which visually aids lab technicians during the thermoforming process. In addition the O&P grade provides a somewhat higher degree of stiffness than standard grade.

Sheets are stress-relieved to be as stable as possible during thermoforming to ensure maximum results with every pull.

Features and Benefits

- Turns clear when heated to aid in thermoforming process
- High stiffness than standard grade
- FDA compliant
- Stress relieved for improved consistency

Homopolymer Polypropylene		
Thickness	Dimensions	Color
.060, .093, 125, .156, .187, .250	48 x 96	White
.062, .125, .156, .187, .250	48 x 96	Black
.125, .187, .250	48 x 96	Black, White, Flesh

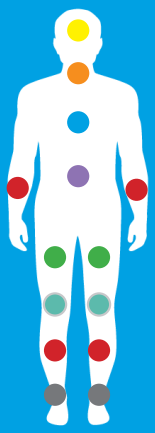
Homopolymer Polypropylene is the standard grade and material of choice for many O&P applications. It is impact resistant as well as resistant to chemicals and fatigue. This material also does not absorb moisture.

Features and Benefits

- Rigid
- Forms easily
- Wide variety of uses
- Impact resistant
- Good chemical resistance

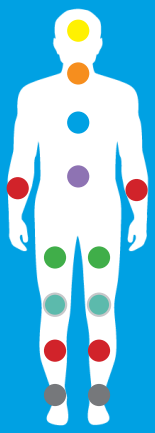
Typical Applications

O&P Grade Polypropylene



- Dynamic lower extremity orthoses
- Posterior AFOs
- Spinal orthoses
- Upper extremity orthoses

Homopolymer Polypropylene



- Dynamic lower extremity orthoses
- Posterior AFOs
- Spinal orthoses
- Upper extremity orthoses

Polyolefin Sheet

Copolymer Polypropylene		
Thickness	Dimensions	Color
.062	48 x 96	Black, Natural
.093	48 x 96	Black, Natural
.125	48 x 96	Black, Blue Sparkle, Brown, Flesh, Light Blue, Natural, Neon Green, Pink, Pink Sparkle, Purple, Red, Royal Blue
.156	48 x 96	Black, Natural
.187	48 x 96	Black, Blue Sparkle, Brown, Flesh, Light Blue, Natural, Neon Green, Pink, Pink Sparkle, Purple, Red, Royal Blue
.250	48 x 96	Black, Natural
.375	48 x 96	Natural
.500	48 x 96	Natural
.625	48 x 96	Natural

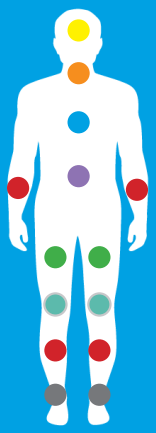
Copolymer Polypropylene looks very similar to homopolymer but the difference in chemistry makes copolymer polypropylene flexible, pliable, and less stiff. The combination of properties and ease of forming makes homopolymers and copolymers the most widely used materials for orthotics and prosthetics.

Features and Benefits

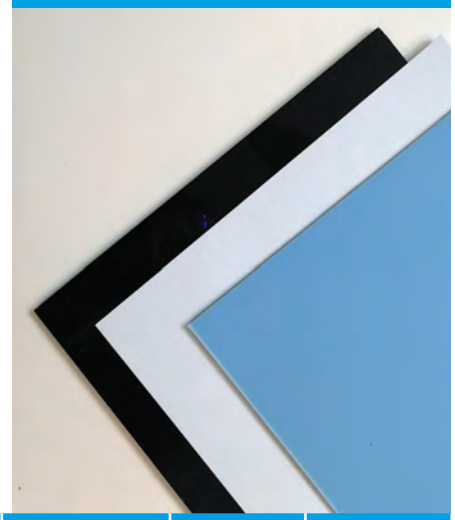
- Flexible and pliable
- Resistant to cracking at low temperatures
- No moisture absorption
- FDA compliant
- Can be welded
- Can be bonded

Typical Applications

Copolymer Polypropylene



- Lower extremity orthoses requiring flexibility
- Spinal braces
- Upper extremity orthoses



Material	Strength to Weight Ratio	Chemical Resistance	Formability / Pliability	Can be welded	Stiffness	No Moisture Absorption	Crack Resistant	FDA Compliant
O&P Grade Polypropylene	■■■	■■■	■■	Yes	■■■	■■■	■	Yes
Homopolymer Polypropylene	■■■	■■■	■■	Yes	■■	■■■	■	
Copolymer Polypropylene	■■■	■■■	■■■	Yes	■	■■■	■■■	Yes

Key: Good ■ Very Good ■■ Excellent ■■■

Polyolefin Sheet

HDPE (High Density Polyethylene)		
Thickness	Dimensions	Color
.125, .187, .250, .375, .500	48 x 96	Black
.125, .187, .250, .375, .500	48 x 96	Natural

High Density Polyethylene (HDPE) is a lightweight plastic that is highly durable and strong. Compared to LDPE it is harder, more rigid and has a much higher compressive strength. HDPE appears whiter than LDPE. HDPE can shrink slightly, from 1% - 3%.

LDPE (Low Density Polyethylene)		
Thickness	Dimensions	Color
.125, .187	48 x 96	Black
.062, .093, .125, .156, .187, .250, .375	48 x 96	Natural

Low Density Polyethylene (LDPE) compared to HDPE, is flexible and lightweight. It can be heat welded

Features and Benefits

- Less rigid than HDPE
- Lightweight
- Slightly self-adhesive when hot
- Can be welded

Modified LDPE		
Thickness	Dimensions	Color
.062, .093, .125, .156, .187, .250	48 x 96	Natural

Modified Polyethylene (LDPE) characteristics fall in between HDPE and LDPE. It is stiffer than LDPE but more flexible than HDPE.

Features and Benefits

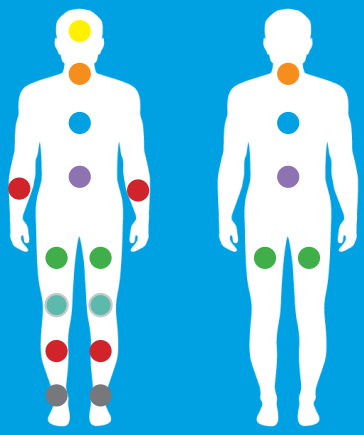
- Slightly self-adhesive when hot
- Good tear resistance
- Rigidity between HDPE and LDPE
- Vacuum formable

Product	Chemical / Corrosion Resistance	Pliability	Heat Weld	Moisture Absorption	Resistance to cracking
HDPE	■■■	■	Yes	■■	■
LDPE	■■■	■	Yes	■■	■■■
Modified LDPE	■■■	■■	Yes	■■	■■

Key: Good ■ Very Good ■■ Excellent ■■■

Typical Applications

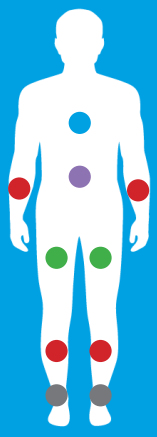
HDPE LDPE



HDPE
- Spinal orthoses
- Body jackets
- C.R.O.W. Boots

LDPE
- Spinal orthoses requiring rigidity
- Upper extremity orthoses
- Flexible prosthetic sockets

Modified PE



- Spinal orthoses requiring slight to moderate rigidity
- Upper extremity orthoses
- Flexible prosthetic sockets

Rigid Plastic Sheets

ABS		
Thickness	Dimensions	Color
.125, .250, .375, .500	48 x 96 48 x 120	Black, Natural

ABS Haircell Texture (One Side)		
Thickness	Dimensions	Color
.060, .118, .177, .236	48 x 96	Black, White

ABS is a rigid plastic known for it's excellent thermoforming properties. It works well for a variety of O&P applications and is available in a smooth finish or a haircell texture on one side. Other colors are available by special order. Minimums may apply.

Features and Benefits

- Excellent Formability
- Very high impact resistance
- High strength and stiffness
- Chemical resistant
- Withstands a wide range of temperatures

KYDEX®		
Thickness	Dimensions	Color
.030, .060, .0990, .093, .125, .187, .250	48 x 96	Available in multiple colors

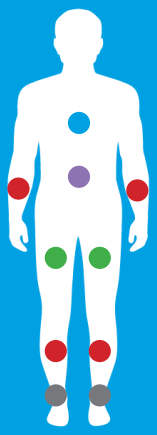
KYDEX® is a proprietary blend of PVC and acrylic. The result is a very rigid plastic sheet. It is available in many colors and in smooth or haircell textures.

Features and Benefits

- Excellent Formability
- Excellent abrasion resistance
- Rigid
- Chemical resistant
- Mar-resistant
- No moisture absorption

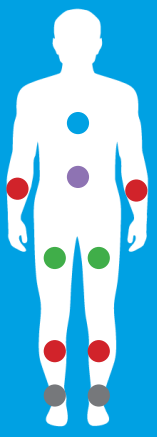
Typical Applications

ABS



- All purpose structural material
- Stiffening panels
- Braces

KYDEX®



- Neck braces
- Spinal orthoses
- Upper extremity orthoses
- Body jackets
- Used to add additional rigidity

Clear Plastics

PETG (Vivak®)		
Thickness	Dimensions	Color
.118, .177, .220, .236, .375, .500	48 x 96	Clear

PETG (Vivak®) is the traditional standard for check / test sockets. It forms easily and uniformly and provides a translucent product when finished.

Or-Pro Stiff		
Thickness	Dimensions	Color
.375, .500, .625	32 x 48	Clear

Or-Pro Stiff is a crystal clear, hard copolyester sheet that is extremely crack and break resistant. For this reason it is an excellent choice for check or test sockets for above average weight or size patients.

Features and Benefits

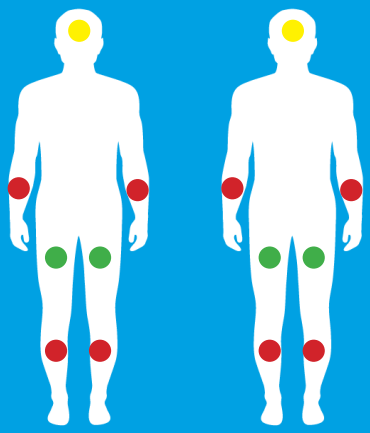
- Excellent clarity
- Can be molded and welded
- Will not crack shatter or break
- No shrinkage when pulled
- High stiffness
- Pulls easily and uniformly

Best Practice Notes for Or-Pro Stiff Deep Draw Applications

- Make sure your plaster mold is completely dry and hand warmed. The surface of your casting should be smooth and sprayed with an even coating of Or-Pro 100 6% silicone-spray or for optimum clarity spray with water.
- For thermoforming, infra-red ovens are preferred for use, but other ovens/heating cabinets will work as well.
- Be sure the deep draw frame is at 160°C to 170°C and placed in a way that hot air will evenly heat all parts of the bubble formed Or-Pro Stiff material.
- When working with extra large TF-stump molds many users have found it is best to pre-form the “bubble” by hand. Be sure to wear soft protective gloves and use talcum powder to help avoid finger prints.

Typical Applications

PETG (Vivak®) Or-Pro Stiff



PETG (Vivak®)
- Check / Test Sockets
- Sports masks
- Burn management orthoses

Or-Pro Stiff
- Check / Test Sockets
- Sports masks
- Burn management orthoses
- Ideal for extra large sizes or above average weight

Above: Or-Pro Stiff formed using sprayed water. Below Or-Pro Stiff formed using silicone

Flexible Plastics

DuPont™ Sulyn®		
Thickness	Dimensions	Color
.125, .187, .250, .375, .500	48 x 96	Natural

DuPont™ Surlyn® is commonly used in applications where the need is high for toughness, durability and high resistance to chemicals and oils.

Features and Benefits

- Good shock absorption
- Impact resistant
- Abrasion resistant
- Chemical and oil resistant
- Good seaming
- Translucent

Proflex®		
Thickness	Dimensions	Color
.125, .187, .250, .375, .500, .625	48 x 96	Natural

Proflex® with Silicone		
Thickness	Dimensions	Color
.125, .187, .250, .375, .500, .625	48 x 96	Natural

Proflex® and Proflex® with Silicone are ethylene based thermoplastics used in soft sockets. Silicone version is less tacky and aids in donning. Note, this material should be trimmed when cold.

Features and Benefits

- Flexible
- Vacuum Formable
- Tacky when hot, will bond to itself
- Best worked at low temperatures
- Excellent durability
- Resistant to shrinking

Or-Pro Flex (Formerly AIN Flex)		
Thickness	Dimensions	Color
.125, .156, .187, .250, .375, .500, .625	48 x 96	Black, Flesh, Natural

Or-Pro Flex is a polypropylene material designed for O&P applications. Or-Pro Flex is excellent for bubble forming applications. A typical 3/8 inch thick piece will pull evenly to approximately 1/8 inch thickness with no thin spots.

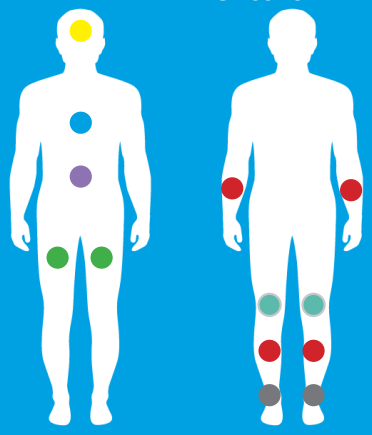
Features and Benefits

- "Soft-Touch Finish"
- Good shock absorption
- Good strength
- Fatigue resistant
- Pulls easily and uniformly
- Flesh is semi-transparent
- Smooth glossy surface
- No silicone lubrication needed

Typical Applications

DuPont™ Surlyn®

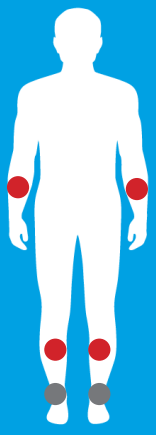
Proflex® / Proflex® with Silicone



DuPont™ Surlyn®
- Test sockets
- Post-operative body jackets
- BK, AK socket liners
- AFO cushioning

Proflex® / Proflex® with Silicone
- Flexible socket liners
- Ideal for active patients
- Aid in socket comfort

Or-Pro Flex



Or-Pro Flex
- AK Sockets
- BK Sockets
- AFO Cushioning where shock absorption is important

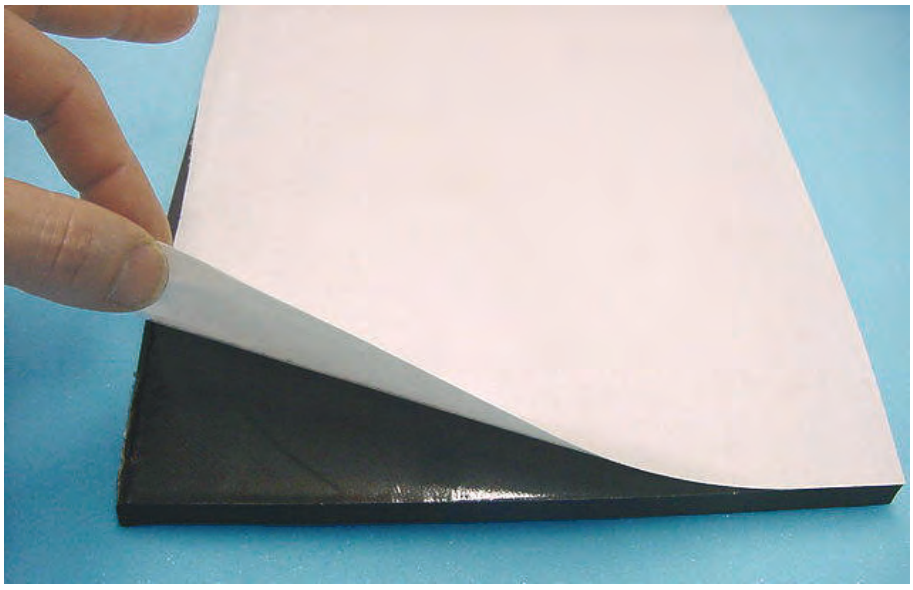
Foams

Volara Foam®			
Thickness	Dimensions	Density	Color
.125, .187, .250	30 x 50 30 x 50 30 x 100 30 x 200	2EO	White
.125, .187, .250	30 x 50 30 x 50 30 x 100 30 x 200	4EO	White

Volara® foam combines the toughness of a cross-linked EVA copolymer with the comfort and softness typical of EO foams. Premium Volara® Foam is flexible and soft to the touch. The closed cell makeup of this foam gives it a clean smooth surface. In fact, Volara® was designed specifically for skin contact and it has achieved FDA compliance for medical applications.

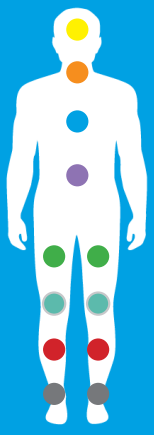
Features and Benefits

- Premium medical and industrial tape substrate
- Heat mold-able
- Bonds well to plastics
- Excellent chemical resistance
- Smooth finish
- Flexible, soft, and comfortable
- Easy to cut and form
- FDA compliant for medical and other applications
- Available in full rolls and convenient sheets
- 2EO and 4EO in stock



Typical Applications

Volara® Foam

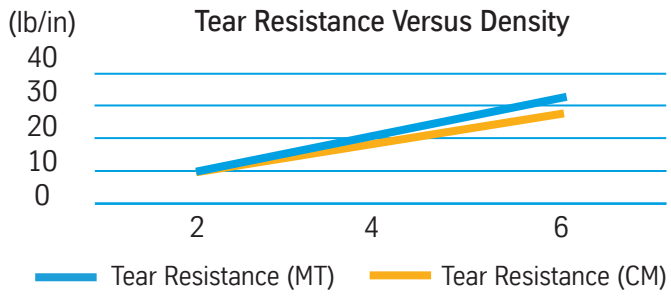


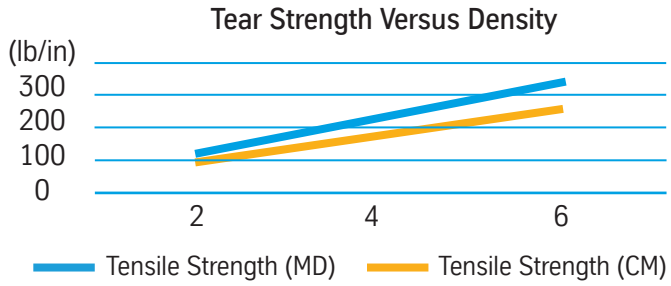
- Used as cushioning to aid in patient comfort
- Ideal for applications where the foam will come into direct contact with skin

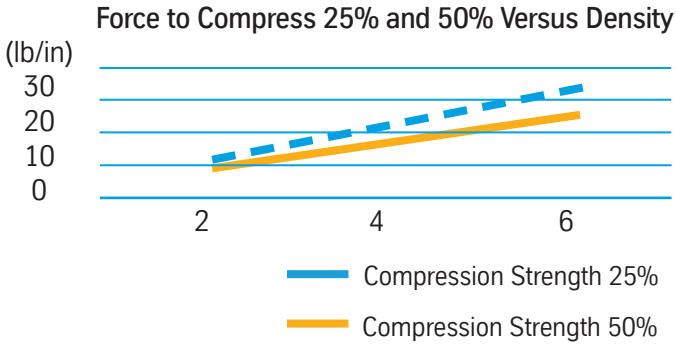
Photos Courtesy of Orthomerica Product, Inc.© 2015

Manufacturer Test Results of Volara® ED Foam

Typical Properties of Volara® Foam	2pcf	4pcf	6pcf
Compression Strength / (ASTM D3575)			
(lb/sq-in) at 25% compression	4	6	8
(lb/sq-in) at 25% compression	12	17	21
Tensile Strength / (ASTM D3575)			
(lb/sq-in) Machine Direction	65	146	230
(lb/sq-in) Cross-Machine Direction	40	102	162
Tensile Elongation / (ASTM D3575)			
(%) Machine Direction	224	324	331
(%) Cross-Machine Direction	220	358	375
Tear Resistance / (ASTM D3575)			
(%) Machine Direction	8	18	27
(%) Cross-Machine Direction	10	21	33
Compression Set / (ASTM D3575)			
(%) Original Thickness	24	12	6
Shore Hardness / (ASTM D2240)			
A Scale	0	11	17
OO Scale	39	54	59
Thermal Stability			
24 Hour Test at 158°F (70°C)			
AVE MD%	-1.9	-1.9	-1.8
AVE CD% Change	-1.6	-1.1	-1.1
AVE TH%	1.1	3.1	4.3







Data and information provided is from the manufacturer. Results may vary based on environment and application. No guarantee or warranty is implied.

Foams

EVA Antibacterial Infused Foam			
Thickness	Dimensions	Density	Color
.062, .125	40 x 72 48 x 72	15A HR	Natural
.125, .187, .250	50 x 50	25A	Natural
.062, .125, .187, .250, .375, .500, 1.00, 1.25, 1.50	44 x 44	35A	Natural
.062, .125	44 x 44	35A	Marble Swirl
.125, .187, .250, .375, .500, 1.00	42 x 42	45A	Natural
.062, .125, .187, .250, .375, .500	37 x 37	55A	Natural

Solu-Cell Antibacterial High Density EVA (Ethylene Vinyl Acetate) is a proprietary material engineered to inhibit the spread of bacteria on the material surface. Testing by a third-party laboratory confirms this product meets or exceeds target levels of anti-microbiality.

Features and Benefits

- Bacterial inhibiting
- Superior molding capabilities
- Easy to grind

Plastazote®			
Thickness	Dimensions	Density	Color
.062, .125, .187, .250, .375, .500, 1.00	40 x 80	LD45 Medium	Pink
.062, .125, .187, .250, .375, .500, 1.00	50 x 50	LD70 Firm	White
.125, .187, .250, .375, .500	26 x 34.5	HD110 Rigid	Black

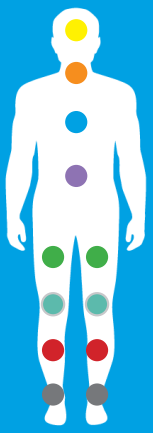
Plastazote® is a closed cell cross-linked polyethylene foam that is engineered to offer superior performance and lighter weight. The absence of any chemical agents along with consistency of cell structure and density makes Plastazote® one of the world's lightest cross-linked foams.

Features and Benefits

- Outstanding molding properties
- Can be shaped by grinding
- Variety of densities available
- Ability to maintain physical properties over time

Typical Applications

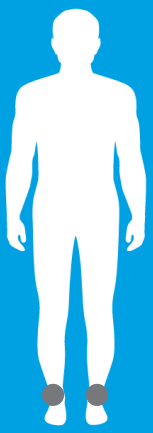
Solu-Cell EVA Foam



- Used to aid in patient comfort

Typical Applications

Plastazote®



- Top Cover
- Posting Material
- Orthotic applications

NOTE: tkEP stocks Plastazote® in pink, white, and black in the sizes and densities listed. Other colors available by special order. Minimum quantities may apply.

Pedorthic Materials

Casting Foam from tkEP is manufactured to minimize cracks and splits on the foam block walls. This along with the deep trays allow for clean accurate castings. We stock of medical blue. *Pink is available by special order.

Features and Benefits

- Sets up fast
- Deep trays allow for excellent detail and capture of high arches
- Medical Blue color helps details to stand out clearly

Description	Sizes (in inches)	Case Qty.
Medical Blue Double Tray (Side by Side)	14 x 6 x 2¼ 14 x 6 x 2	12
Medical Blue Double Tray (Folding)	14 x 6 x 2¼ 14 x 6 x 2	12

Description	Sizes (in inches)	Case Qty.
Medical Blue Bulk Singles	14 x 6 x 2¼ 14 x 6 x 2	24
Medical Blue Single Trays	14 x 6 x 2¼ 14 x 6 x 2	24

Or-Pro Lene is a high quality PE, produced specifically for the orthopedic industry where it has been tried, tested and used successfully for years in the manufacture of custom made insoles, AFO's, and more. Excellent for deep drawing and welding, Or-Pro Lene shows very little shrinkage compared to conventional industrial produced PE materials. Our sheet size is approximately 20% larger to other leading insole materials resulting in a better yield.

Features and Benefits

- Shrinkage: approximately 4-5%
- Easy processing, grinding, and forming
- Available in white, flesh, black
- Forming Temperature Range 320 °F to 340 °F

Color	3 mm Thick	4 mm Thick	5 mm Thick
Flesh	40" x 40"	40" x 40"	40" x 40"
White	40" x 40"	40" x 40"	40" x 40"
Black	40" x 40"	40" x 40"	40" x 40"

Antibacterial Cork from tkEP is a natural material that provides excellent comfort and shock-absorption.

Features and Benefits

- Antibacterial
- Superior molding capabilities
- Easy to grind

Thickness	Length	Width
.125	70"	35"
.187	70"	35"
.250	70"	35"
.375	70"	35"
.500	70"	35"
1.00	70"	35"
1.25	70"	35"

•Minimum quantities may apply on special orders.

Donning Tubes

We manufacturer Or-Pro Donning Tubes. A lightweight plastic tube shape designed to make the application of shrinker socks easier and less painful and ensure the sock is evenly applied providing best comfort and fit.
Many practitioners tell us the donning tubes are such an aide to patients in reducing the pain and difficulty with applying the shrinker sock that they give one to every patient when they are fitted for their prosthesis.

Features and Benefits

- Available in 6” and 8” sizes
- Lightweight and very durable
- Patient can apply sock on their own
- Excellent for sensitive limbs
- Available with optional bright white enamel finish
- Soft edges won't catch
- Less brittle than traditional acrylic

How to use an Or-Pro Donning Tube to apply a Shrinker Sock

Use of a donning tube can aid in properly pulling on a shrinker sock. It can also make the process less painful, faster, and allow an individual to complete the process of pulling on a shrinker sock by themselves.

1. Stretch the shrinker over the outside of the tube. Rubber gloves with some tackiness can help to pull the shrinker over the plastic donning tube as the shrinker will be tight.
2. Start with the end that has the shrinker sock stretched over it and push the tube up over the limb.
3. As you push move the shrinker sock ff the plastic donning tube and onto the limb.
4. Once the shrinker sock is applied to the limb pull the tube off.
5. Smooth and finish pulling up the shrinker sock as needed.

Start Your Patients Out Right!
Ask how we can provide you with a custom labeled quantity of Or-Pro Donning Tubes, manufactured by tkEP, for your practice.
Call us at 877.246.7700

Adhesives, Threadlockers and Accelerators

Or-Pro 300 General Purpose Spray Adhesive is formulated to bond a variety of substrates It offers quick tack and produces bonds that may be temporary or permanent. It is well known for it's excellent fine spray pattern.

RP 100 Cyanoacrylate Adhesive is a medium viscosity adhesive that cures rapidly and is capable of bonding dissimilar surfaces, including acrylic, nylon, aluminum, polycarbonate, polyester, polystyrene, PVC and more.

MP5405NS is a 2-part unfilled thixotropic epoxy designed to bond metals and most plastics. It is excellent for vertical applications. When fully cured 5405NS becomes semi-rigid with good resistance to water, salt spray, and many inorganic solvents. Available in cartridges.

Quick Tac 2 Accelerator is used in conjunction with cyanoacrylate adhesives to bring about faster set times and aid in curing. It is amber in color and comes in a 2 or 8oz. spray/pump or 1 gallon cans. Shelf life is two years.

MP55305 is a 2-part high performance methacrylate with excellent bond strength, impact, and weathering capabilities. It withstands extreme temperature fluctuations, thermal cycling and resists a wide variety of chemicals.

SI 120 Cyanoacrylate Adhesive is a clear fast curing with an initial set time of 8 seconds. It bonds dissimilar surfaces as well as materials such as ABS, acrylic, nylon, aluminum, polycarbonate, polyester, polystyrene, PVC and more. It can also withstand many acidic elements.

Threadlockers

42TL (BLUE) threadlocker is formulated to cure fast and work reliably on most "as received" fasteners. It is a thixotropic anaerobic that is blue in color. It works well on a variety of fasteners.
62TL (RED) threadlocker is a medium viscosity anaerobic adhesive that is well suited for large diameter studs, nuts, and bolts that will require dismantling. It is highly resistant to heat, corrosion, vibration, water, gases, oils, hydrocarbons and many chemicals. Functional strength is achieved in approximately 24 hours.

Product	Type	Color	Viscosity	Work / Cure Time	Fixture Time
General Purpose					
RP 100	Cyanoacrylate	Clear	Medium Viscosity	15 seconds	8 hours
SI 120	Cyanoacrylate	Clear		8 seconds	8 hours
MP5405NS	2-part unfilled epoxy	Clear	Thixotropic Paste	3-5 minutes (20 gr)	
Or-Pro 300	Aerosol Spray	Translucent	Fine Spray		
Maximum Performance					
MP55305	2-part methacrylate	Natural	Non-Sag	2-3 minutes	5-6 minutes
Quick Tac 2	Acetone based	Amber/Clear	Liquid	N/A	N/A
Threadlockers					
42 TL	Anaerobic	Blue	Thixotropic	10 minutes	8 hours
62 TL	Anaerobic	Red	Medium Viscosity	10 minutes	8 hours

Or-Pro 100 6% Silicone Spray is ideal as a mold release or as a lubricant on metal or plastic parts. It has a light mint scent that dissipates quickly and it is FDA compliant and can be in contact with skin.

Plaster

USG #1 Moulding Plaster also known as "Plaster of Paris" or soft plaster. This material is ideal for waste molds or temporary patterns or any application where surface hardness and strength are not a factor.

Set up Time: 25-35 minutes

USG Laboratory Dental Plaster varies from USG #1 in that it is able to pick up and hold intricate details while maintaining an acceptable hardness and strength. It is a good option for waste molds or temporary patterns.

Set up Time: 6 to 9 minutes

Product	Size
USG #1 Moulding Plaster	50 lb. bag
Laboratory Dental Plaster	50 lb. bag

General Practices for Mixing Plaster Materials

1. Always weigh out the amount of plaster you need, then look up the water by weight percentage. For example, USG # 1 Pottery for making molds uses 70% water to plaster. So 10 lb. of plaster requires 7 lb. of water. First weigh out the plaster you need, take that amount and multiply it by 0.7 (7/10), this gives you how much water to use.
2. Generally speaking the larger the percentage of water the softer and more absorbent the plaster will be. The harder the plaster the less water used.
3. Hot water will speed up the set time and cold water will slow it down.
4. Place the water in a suitable sized container. Always add plaster to water. Pour the plaster into the water and let slake for one minute. Mix by hand or with a Jiffy Mixer, being careful not to suck air into the plaster. When the mixture is lump free it is ready to pour; don't wait for it to start to thicken.

NOTE: These materials generate heat while curing. Do not use as a cast material.

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thyssenkrupp Engineered Plastics has over 40 years of experience in the plastics industry, not only selling plastics but machining and fabricating them as well. Our experts will work with you to create parts you need. We will also assist you in setting up scheduling so you get the right number of parts as you need them and we can provide material assistance to ensure your parts are made from the best material for quality and value.

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Forming Temperatures and General Properties

Product Type	Description	Flexural Modulus (psi per ASTM D790)	Forming Temperature (˚F)	Head and Face	Neck and Spine	Upper Body	Upper Limb	Lower Body	Lower Limb	Knee	Ankle and Foot
Polyolefin Sheets											
Polypropylene	• Rigid and impact resistant • No moisture absorption • Good resistance to chemicals and fatigue	190,000	310 - 325	■	■	■	■	■	■	■	■
Copolymer	• Very good formability • More flexible that hoopolymer	160,000	310 - 325	■	■	■	■	■	■	■	■
LDPE	• Softest and most flexible olefin • Softer feel for patient comfort	32,000	275 - 330		■	■	■	■			
HDPE	• High durability and strength • Resists cracks • Lightweight	170,000	275 - 330			■	■	■	■		■
Modified (PE) Polyethylene	• Properties in-between copolymer and LDPE • Improved tear resistance • Self-adhering when hot	52,000	275 - 330		■	■		■			
Note: Standard stock colors in most polyolefin products are natural, white, or black. Custom colors available upon request. Certain minimums may apply.											
Rigid Plastics											
KYDEX®	• PVC and acrylic blend • Very rigid • Good strength • Variety of colors	335,000	380 - 390			■		■			
ABS	• High strength and stiffness • Bondable • Easy to fabricate with high draw ration when thermoforming	270,000	325 - 400								

Learn more about these products and more from tkEP on our online catalog www.onlineplastics.com

Product Type	Description	Flexural Modulus (psi per ASTM D790)	Forming Temperature (°F)	Head and Face	Neck and Spine	Upper Body	Upper Limb	Lower Body	Lower Limb	Knee	Ankle and Foot
Clear Plastics											
Or-Pro Stiff	• Ultra tough • Forms evenly • Crystal clear		320 - 338	■			■		■		
PETG (Vivak®)	• High clarity • Vacuum formable • Easy to bond and fabricate • Good toughness and hardness	309,000	280 - 320	■			■		■		
Flexible Plastics											
Proflex®	• Rubber-like ethylene based • Very durable • Very tacky when hot • Predictable heat formability	3,500	325 - 350				■		■		
Proflex® with Silicone	• Very flexible • Less sticky than Proflex when hot	3,500	325 - 350				■		■		
Surlyn®	• Minimal rigidity • Vacuum formable	4,300	250 - 325								
Or-Pro Flex	• Special "Soft-Touch" texture • Pulls evenly • Smooth glossy surface • Pulls evenly and easily	3,500	325 - 350				■		■		
Other											
Volara® Polyethylene Foam (Aliplast)	• White medium density foam • Thermoformable and thermobondable	-	165-170	■	■	■	■	■	■	■	■

877.246.7700

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thyssenkrupp Engineered Plastics has 11 branch locations with full inventory and processing capabilities. In addition we have warehousing of select materials in California for fast and economical local deliveries.

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