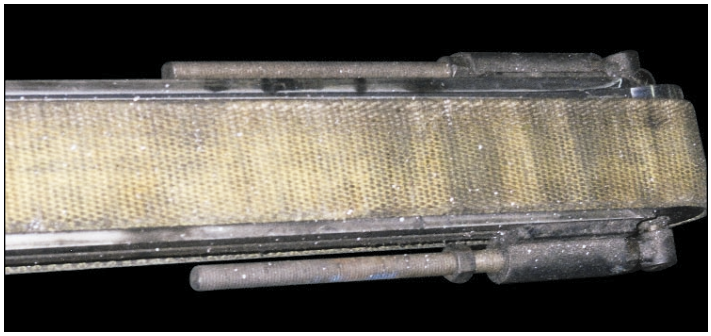
Info-Email: sales@tufftemp.com

TUFF TEMP ENDLESS TRANSFER BELTS:

TUFF TEMP Corp. manufactures a unique Endless Transfer Belt that combines both superior heat and abrasion resistance with outstanding mechanical performance.

As previously noted, TUFF TEMP can provide unmatched levels of durability and wear life for your handling system. However, for Endless Transfer Belts, mechanical performance issues, such as minimal belt stretch and proper belt tracking are equally important, and TUFF TEMP Corp. exerts 25+ years of engineering expertise to ensure a high standard on these measures.



All TUFF TEMP Transfer Belts are joined endless using a unique splice that contains only 100% Kevlar non-marking textile materials and functions as a virtually seamless joint. The strength, integrity and dimensional stability of this join is excellent. Belts can be driven on pulleys as small as 3" (75 mm) in diameter, and belt stretch has consistently proven to be minimal.

Any potential belt stretch is also further controlled through our use of pre-stretched belts. Prior to installing the endless splice, all transfer belts are either Wear Gard treated or Water Stretched treated in one of our in-house curing ranges. Both treatments subject the belting to a high degree of tension during operation, effectively pre-stretching it *before* it runs on your system. Once pre-stretched, the belting is carefully measured to your defined length specification, and our unique splice is then installed.

All TUFF TEMP Endless Transfer Belts are fabricated and thoroughly inspected to exacting standards for consistency in both width and straightness throughout the length of the belting, including the spliced area. With a high degree of dimensionally stability and consistency in both width and lack of curvature, TUFF TEMP ensures good tracking on your conveyors, with minimal belt travel.

TUFF TEMP Endless Transfer Belts are custom fabricated to your specific width and length requirements (up to a 24" or 610 mm maximum width, and no defined limitation on length). Belt thickness can vary from a nominal 1/4" (6 mm) thickness to a nominal 3/8" (9 mm) thickness, dependent upon which TUFF TEMP belt pattern and treatment is selected.

TUFF TEMP WOVEN MATERIALS:

CHEMICAL, THERMAL & PHYSICAL PROPERTIES

Temperature Resistance	Up to 1000°F / 540°C Continuous Up to 1400°F / 760°C Intermittent
Thermal Conductivity	0.04 Btu.in/(h.ft^2.°F)
Abrasion Resistance	Excellent
Cut Resistance	Good
Chemical Resistance	Good resistance to acids and alkalis Excellent solvent resistance Degraded by strong mineral acids and bases Excellent resistance to mildew and aging

TUFF TEMP CORPORATION
— HEAT RESISTANT TEXTILES AND BELTING —
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928 JAYMOR ROAD
SUITE C-150
SOUTHAMPTON, PA 18966

TUFF TEMP Corporation

MANUFACTURING EXTENDED-LIFE HIGH TEMPERATURE AND WEAR RESISTANT TEXTILE PRODUCTS FOR USE ON ALUMINUM EXTRUSION HANDLING SYSTEMS.

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COMPANY PROFILE

Founded in 1974, TUFF TEMP CORP. is a U.S. manufacturer of woven high temperature resistant textile products. The TUFF TEMP product line was originally developed to be a replacement material for asbestos, for use, primarily, in the glass industry for hot end handling and conveyance.

Today's TUFF TEMP products have been uniquely engineered to have temperature resistance up to 1,400°F / 760°C, and possess unsurpassed cut and abrasion resistance. Our roots supplying the glass industry have served us well for the aluminum extrusion market. Glass manufacturing processes tend to be abrasive and very hot (upwards of 1,200°F / 649°C), and remain at higher temperatures for longer periods of time than those seen in most aluminum extrusion plants.

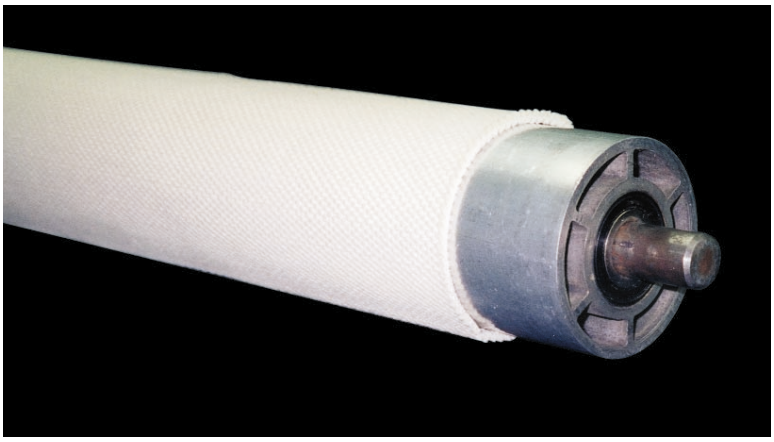
In addition to superior heat resistance, TUFF TEMP products have *unmatched* durability. In head to head testing at a number of the largest U.S. aluminum extrusion plants, TUFF TEMP has consistently shown longer wear life than the leading needle punched felt materials, longer wear life than woven aramid blended materials, and longer wear life than comparable thickness carbon blocks. This performance directly translates into longer continuous production runs and less maintenance down-time for our customers.

In addition to superior wear life, TUFF TEMP also possesses a very low thermal conductivity, so it will not leave unacceptable "shadow spots" like carbon. The more forgiving TUFF TEMP fabric also eliminates the scratches, dents, and streaking commonly found with rigid carbon blocks.

Noted for your review on the next few pages are the TUFF TEMP products that we developed for your industry. We invite you to let us know the dimensions of your various handling system materials. It is our pleasure to supply you with no charge product samples for direct head to head comparison testing. This is the best way for us to prove our value to you, and we welcome the opportunity to do so!

TUFF TEMP ROLLER COVERS:

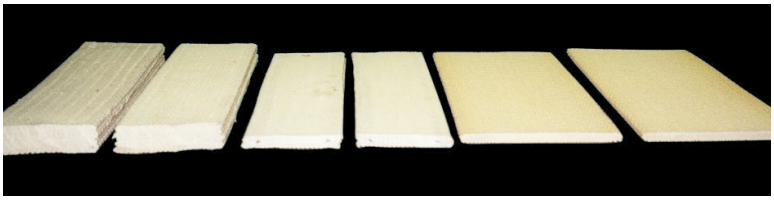
Ideal for use on Run-Out Table rollers, our TUFF TEMP seamless woven Heavy Wall Kevlar Tubings possess superior heat resistance and outstanding durability. TUFF TEMP also has a very low thermal conductivity, so we can eliminate the off quality "shadow spots" imparted by typical carbon rollers. Hot aluminum extrusions exiting the die on to the Run-Out Table are at their most susceptible point for picking up scratches, marks and "shadow spots". As your customers become increasingly more demanding about perfect quality extrusions, the use of a highly durable, yet more forgiving *fabric* roller cover, becomes the answer for *eliminating* these off quality problems.



TUFF TEMP tubings are available in a variety of Inside Diameter (I.D.) sizes, and the product is sold as a stand alone item without metal rollers. In doing so, you can refit your own rollers, thereby avoiding the added handling and freight expense of receiving and returning metal rollers.

TUFF TEMP PADS

FLIGHT BAR PADS:



Available in nominal 1/2" (12 mm) thick and nominal 1" (25 mm) thick multiple plied woven constructions, our TUFF TEMP high-density flight bar pads have proven to be the industry's longest lasting and most durable Flight Bar Pads.

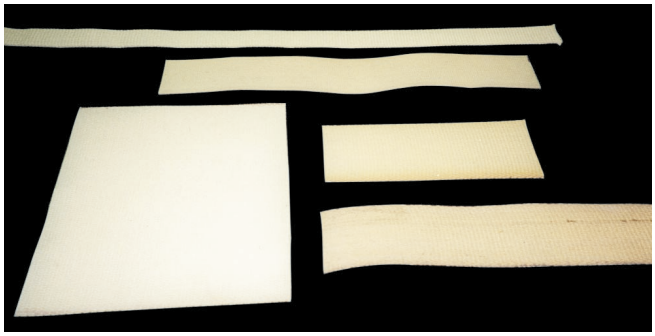
In starting out with tough mechanically enhanced 100% Kevlar yarns, all TUFF TEMP woven products have inherent cut and abrasion resistance. However, this durability is significantly enhanced in our Flight Bar Pads through use of dense, multiple ply constructions. Our 1/2" (12 mm) thick pads are comprised of 8 dense plys of woven Kevlar, and our 1" (25 mm) thick pads are comprised of a full 16 woven plys.

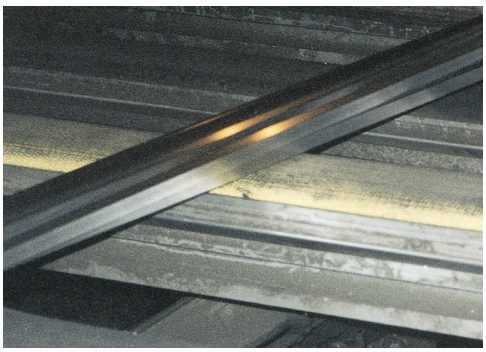
TUFF TEMP Pad durability is also significantly enhanced from application of our value-added treatments, called Wear Gard, or Wear Gard Plus, for conveyance of your hottest and heaviest weight extrusions. Applied through a heated, high tension curing range, our protective Wear Gard treatment imparts added cut and abrasion resistance to the base material. It also makes the pads markedly stiffer, making them ideal for fabricating, while substantially reducing the risk of fraying. TUFF TEMP Flight Bar pads can be effectively bonded to your equipment with good industrial grade contact cement. This eliminates the risk of potential scratches associated with countersunk screw heads that are typically used for attaching other types of handling system materials.

TRANSFER ARM AND WALKING BEAM PADS:

Although Transfer Arms and Walking Beams do not typically see temperatures or abrasion as great as that seen on the Run-Out Table, the process is still highly dynamic in nature, and it requires a material with a high degree of temperature resistance, abrasion resistance and cushioning. TUFF TEMP Transfer Arm Pads and Walking Beam Pads are ideally suited for this purpose.

TUFF TEMP 2-ply, nominal 1/4" (6 mm) thick and nominal 3/8" (9 mm) thick 100% Kevlar belting, Wear Gard or Wear Gard Plus treated, provide outstanding durability and wear life for your handling system. Higher thickness, multiple ply pads are available if needed, although they are not often required for this area of your process. All pads can be fabricated to your specific width and length requirements, up to a 24" (610 mm) width maximum, with no defined limitation on length.





COOLING TABLE PADS:

TUFF TEMP Cooling Table Pads are also available in a variety of different thickness', densities, and plys. However, our 2-ply nominal 1/4" (6 mm) thick and nominal 3/8" (9 mm) thick 100% Kevlar belting, Wear Gard or Wear Gard plus treated, has proven to be the most cost-effective product for your handling system. Again, pads can be custom fabricated to your specific width and length requirements, up to a 24" (610 mm) width maximum, with no defined limitation on length.