

AB Technology Group Inc.

- Wire, Cable, Hose, Equipment & Personnel Protection

- Thermal Protection Solutions for cold, heat, flame, fire, weld splatter and liquid metal exposure
- Abrasion Resistance & Organization Solutions
- Silicone & Ceramic Thermal Adhesives
- High Temperature Ceramics
- Equipment Covers and Blankets for Thermal Efficiency & Personnel Protection



1: SLEEVE / JACKET

2: TAPE / TADPOLE

3: ROPE / PACKING

4: FABRIC / CLOTH

5: INSULATION

6: Abrasion Protection Sleeve & Spiral Wrap. Wire Organization Sleeve and Shrink Tube

7: Custom Fabrications & Supplies

8: Ceramic Materials Rod, Plate, Bar, Fasteners, Crucibles

9: Silicone Rubber Tubing, Plugs, Extrusions, Heaters

10: Fire Stop / Retardant Foams, Caulk, Mortar Putty & Spray Wire & Cable Transits

11. Silicone & Ceramic Adhesives / Sealants Protective Coatings

12: METAL FOILS

Cross Reference Guides

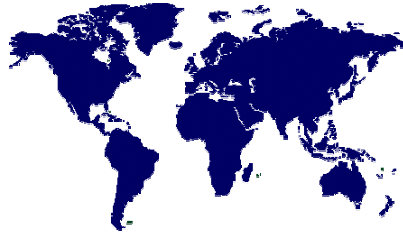
**Terms & Conditions
Account Application Form**

- Aerospace • Industrial • Commercial • Marine
- Military • Automotive • Bio-Pharma • Food
- Metal Processing • Mining • Petro-Chemical

Annual Catalogue # 22 / Rev Feb 2018

Please visit our web site for the latest version of this catalogue

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Thermal Protection Solutions™

Serious Solutions. Serious Service™

Keeping Our World Cooler™

Other Catalogues from A/B Technology Group

- **High Temperature Industrial Seals & Gaskets**
Feb 2015
- **Uncured Silicone Adhesives Sealants & Coatings**
Dec 2015

IMPORTANT NOTICE

Before using any product(s), you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use.

With the exception of some silicone products designed for prosthetics, no product from A/B Technology Group may be used for medical devices or instruments without our express consent.

Warranty; Limited Remedy; Limited Liability.

Product will be free from defects in material and manufacture at the time of purchase. **A/B Technology Group makes no other warranties including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at A/B Technology Group's option, to replace or repair the product or refund the purchase price of the product. **Except where prohibited by law, A/B Technology Group will not be liable for any indirect, special, incidental or consequential loss or damage arising from this product, regardless of the legal theory asserted.**

Protection From:

Heat, Flame, Fire, Molten Splash, Weld Splatter, Grinding & Electrical Sparks, Infrared Radiant Heat, UV, Contamination, Abrasion & Harsh Chemicals

Providing Superior Protection for Hydraulic Hoses & Lines, Cables & Wires, Equipment & Personnel in Harsh and Extreme Environments

Primary Materials

Fiberglass (Fibreglass) – Nomex – Kevlar - Basalt - Silica – Ceramic – Alumina - Silicone Rubber - PTFE (Teflon[®] is a branded version of PTFE from DuPont) – Expanded PTFE – Viton[®] - EPDM – Neoprene - Stainless Steel – Inconel – Bronze – Monel - Hastalloy

Available Coatings

Vermiculite – PTFE – Viton[®] - Graphite – Silicone Rubber Elastomer – White Rubber - Acrylic Resin – Oleoresinous Varnish – Silicone Resin (Anti-Fray) - Aluminum & Stainless Steel (Heat Reflecting) Acrylic and Silicone Pressure Sensitive Adhesive (Self Adhesive)

Finished Products

**Sleeve – Tape – Fabric – Rope – Insulation - Gaskets & Seals
Custom Fabricated Curtains – Blankets – Shields – Covers
Tadpole Gaskets – Stove Gaskets - Oven Gaskets - Furnace Gaskets - Kiln Gaskets - Boiler Gaskets - Exhaust Duct Gaskets
Ring & Face Gaskets – Slit and Machined Envelope Gaskets
Silicone Electrical Strip Heaters
Fire Retardant Fabric Spray
Intumescent Firestop Paint & Coatings
General Industrial Gaskets
General Industrial Sheet Gasket and Packing – Compression Packings
Custom Fabricated Removable Pipe and Exhaust Insulation Blankets
Outdoor Non-Metallic Pipe Insulation & Protection Systems**

Products Proudly Made at USA & Canada Plants

Products

- ✓ **Silicone Rubber Coated Fiberglass High-Temperature Protection Materials**
- ✓ **High Temperature Silicone Rubber Adhesive, Sealant and End-Seal Dip**
- ✓ **Kevlar Protection Sleeve**
- ✓ **Nomex Protection Sleeve**
- ✓ **Very High-Temperature E-Type & S-Type Fiberglass Protection Materials**
- ✓ **Very High-Temperature Vermiculite Coated Protection Materials**
- ✓ **Extreme Temperature Silica Protection Materials**
- ✓ **Very High Temperature Graphite Coated Sleeve and Rope**
- ✓ **Extreme Temperature Plus Ceramic Fiber Protection Materials**
- ✓ **Radiant Heat Reflective Protection Materials**
- ✓ **High Temperature PTFE (Teflon® is a branded version of PTFE from DuPont) Coated Sleeve, Tape, Rope & Fabric**
- ✓ **High Temperature PTFE and ePTFE Ring and Full Face Gaskets**
- ✓ **High Temperature Slit PTFE Envelope Gaskets: TecPac™, TecBlue™, TecGraph™ Corrugated Steel, Stainless Steel, Neoprene or Viton fillers**
- ✓ **High Temperature Machined PTFE Envelope Gaskets: TecPac, TecBlue, Corrugated Steel, Stainless Steel, Neoprene or Viton fillers**
- ✓ **Abrasion, Wear and Blowout Protection Products for Hoses and Cables**
- ✓ **Stainless Steel Sleeve**
- ✓ **Mesh Rope Seals and Cores**
- ✓ **Very High Temperature & Extreme Temperature Custom Manufactured Blankets, Curtains, Shields & Covers. Welding Curtains, Blankets and pads.**
- ✓ **High Temperature Silicone Rubber Electrical Strip Heaters**
- ✓ **Fire Retardant Fabric Spray**
- ✓ **Intumescent Firestop Paint & Coatings**
- ✓ **General Industrial Gaskets**
- ✓ **General Industrial Sheet Gasket and Packing**
- ✓ **Compression Packings for Valves and Shafts**
- ✓ **Custom Fabricated Removable Pipe and Exhaust Insulation Blankets**
- ✓ **Outdoor Non-Metallic Pipe Insulation & Protection Systems**

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Meets ASTM-E-162, ASTM-E-662 & SMP-800-C Flammability and Toxic Gas Production Limits

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Meets ASTM-E-162, ASTM-E-662 & SMP-800-C Flammability and Toxic Gas Production Limits

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AMS3320 & AMS3315

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500°F / 260°C

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Terms & Conditions F-1
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Technical Notes

General

Molten Metal & Weld Splatter Protection. Silicone rubber coated materials resist molten metal splash and heavy weld splatter very well, as the molten metal does not stick to the silicone. The silicone rubber also has a high thermal dispersion index, transferring the heat at the contact area very rapidly into the surrounding area – minimizing burn-through. For applications involving only weld splatter, curtains, shields and blankets fabricated from silica materials such as cloth, tapes and ropes provide superior protection to burn-through. Plain Fiberglass materials should not be used for weld splatter burn-through protection, although vermiculite coated fiberglass with additional latex or neoprene coating provides moderate protection for light to medium weld splatter.

Premium vs. Industrial. Premium and Industrial products provide the same dimensional values in terms of width, inside diameter, thickness or wall thickness; however, Premium products are fabricated from a higher bulk yarn and with a denser weave. Premium products will weigh more and are stiffer than the Industrial version as a result. Premium can be considered a Heavy Duty version of the Industrial item. Premium tapes coated with Vermiculite will retain their pre-coat thickness better than Industrial versions, as the pinch rollers in the coating and drying process can more easily squeeze the Industrial version tapes.

Silica vs. Ceramic Fiber. With almost the same temperature range, Ceramic Fiber offers a harder/stiffer material than Silica in the same form. Ceramic based materials are typically composed of approximately 50% SiO₂ and 50% Al₂O₃ fibers while Silica based materials are almost 100% SiO₂ fibers. Ceramic based materials have a slightly higher continuous use and slightly higher excursion temperature range. Silica based materials provide burn-through protection from molten metal and weld splatter.

Silica vs. Silica XT. Standard silica products are made by starting with a fiberglass base material and then leeching the product to result in a mostly silica composition. Silica XT products are made from amorphous silica yarn, resulting in a stronger product with an enhanced temperature rating and less shrinkage.

Temperature & Application Ratings. The temperature ratings listed for these products is the maximum continuous “heat soaked” exposure. The ratings are deliberately conservative so that there will be a buffer to allow for short duration over-temperature conditions without detrimental effect or failure of the material.

For most materials, short duration exposure to considerable higher temperatures is possible. Short duration can be several minutes to an hour, and depends on the particular circumstances and installation. One of the important considerations is “heat soak” – materials with thermal inertia will withstand short-term extended temperature exposure without becoming heat soaked.

Many of our materials meet or can provide compliance to the following: U.S. Coast Guard 164.009, CAN/ULC S102-M, UL 723, ANSI/FM 4950, MIL-I-24244, ASTM E-84, ASTM C 795, ASTM E-136, NFPA 701-1999, NFPA-96 , NFPA 255, Mercury Free, ROHS complaint.

Heat Cleaning / Heat Treating. Heat Cleaning removes organic content from the fibers (burns them off). Heat Treating is a higher temperature process than Heat Cleaning, which changes the actual crystal structure of the fiber. It improves chemical resistance, anneals some of the stress inside the fiber, and improves the stiffness of the fiber.

Knitted / Woven. Knitted products, especially tapes, are more flexible and conformable than the equivalent size in a woven version.

Heat Reflecting Fiberglass with Aluminum Foil / Aluminum Coated Mylar. Aluminum foil coated fiberglass can withstand higher temperature exposure than Mylar-aluminum coated fiberglass, but the aluminum foil is subject to mechanical and abrasion breakdown with handling, flexing and vibration. It is well suited for applications such as curtains, equipment covers and exhaust system blankets. The aluminum is calendared onto the fiberglass base fabric along with an adhesive. Aluminum foil coated fiberglass can be used to temperatures up to 1000°F / 537°C, however the adhesive will smoke-off above 475°F.

Mylar is a trade name for polyester. On Fiberglass coated with Mylar-aluminum, the Mylar coating will melt and vaporize at a lower temperature than aluminum foil, but it performs better for applications such as bellows, flexible hose and cable covers, moving aperture shields, festoon covers, etc. where there is repetitive movement or flexing or abrasion. Mylar-aluminum coated fiberglass is typically suited to temperatures up to 440°F / 226°C.

Materials

PTFE Products. Polytetrafluoroethylene (PTFE) is a fluorocarbon-based polymer material (Teflon® is a branded version of PTFE from DuPont). It is hydrophobic (hates water), biologically inert, non-biodegradable and also has very low friction characteristics. The chemical inertness of PTFE is related to the strength of the fluorine-carbon bond and this is why nothing sticks to PTFE. When stretched, PTFE forms a strong porous material called expanded PTFE (ePTFE) which makes excellent mechanical sealing materials. PTFE offers an excellent temperature range of -200°C to +300°C and is suitable for both cryogenic and high temperature application.

E-glass and S-glass. Two types of fiberglass most commonly used are S-glass and E-glass. E-glass has good insulation properties and it will maintain its properties up to 1000°F (815°C) continuous use and for non tensile loaded applications up to 1200°F (648°C). S-glass has a high tensile strength and is stiffer than E-glass, and useable to 1200°F (648°C) continuous and up to 1400° (760°C) for non-tensile loaded applications.

TecPac™. TecPac is a compressed sheet, available in 1/64", 1/32", 1/16", 3/32" and 1/8" thick sheets, 60" x 60" square. It is a non-asbestos compressed sheet which has similar properties as asbestos in low temperature applications, and can be used for similar applications. It has anti-stick properties and can be used against gases, water, steam, organic acids, alkalis, aromatic and aliphatic hydrocarbons, oils, greases and refrigerants. Available cut to shape as a filler for slit and machined gaskets.

TecGraph™. TecGraph graphite laminate sheet is used for high temperature applications and offers excellent chemical resistance. Available in 1/64", 1/32", 1/16" and 1/8" thick sheets, 39.4" x 39.4" square. Purity is >98%, Ash content is <.5%, Temperature rating of 2500°C.

TecBlue™. TecBlue is a blend of polymers and reinforcing materials which provides high compressibility, conformability, heat and chemical resistance. Used in sealing glass-lined equipment in food and chemical processing. Not to be used as a primary gasket material alone – must only be used as a filler. Available in 1/16" and 1/8" thick sheet, 68" x 71" square. Available cut to shape as a filler for slit and machined gaskets.

EPDM. Ethylene Propylene. **EPDM rubber (ethylene propylene diene M-class rubber)** is an elastomer which is characterized by wide range of applications. The E refers to Ethylene, P to Propylene, D to diene and M refers to its classification in ASTM standard D-1418. The "M" class includes rubbers having a saturated chain of the polymethylene type. EPDM exhibits satisfactory compatibility with fireproof hydraulic fluids, ketones, hot and cold water, and alkalis, and unsatisfactory compatibility with most oils, gasoline, kerosene, aromatic and aliphatic hydrocarbons, halogenated solvents, and concentrated acids. The main properties of EPDM are its outstanding heat, ozone and weather resistance. The resistance to polar substances and steam are also good. It has excellent electrical properties. It has the ability to retain light colour.

VITON. Fluoroelastomer. **Viton** is a brand of synthetic rubber and fluoropolymer elastomer commonly used in O-rings and other moulded or extruded goods. The name is a registered trademark of DuPont Performance Elastomers L.L.C. The fluorine content of the most common Viton grades varies between 66 and 70%.

Tuff-Flex™ Tacky Cloth. This fiberglass material is coated with uncured white rubber and must be cured in-situ. This material must be heated to a minimum of 300°F within 60 minutes, then it must sit at 300°F or higher for 90 minutes for the rubber to fully cure. Do not over-torque the material during this curing time or the rubber will be squeezed off of the base material. If the material is not fully cured, the rubber will drip from the material causing voids. After curing the material can be exposed to a lower operational temperature..

AB Technology Group

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Conversions:

Length: 1 Metre = 3.28 Feet 1 Metre = 1.09 Yards 1 inch = 25.4 mm 1 mm = 0.039 inches
 1 foot = 0.3048 meters 0.001 inch = 0.025 mm
Temperature: °C = (°F-32) x 5/9 °F = (°C x 9/5) + 32
Time: Seconds (Canadian) = (US) / 0.6 Seconds (US) = Seconds (Canadian) x 1.666

NEMA Grades:

For sleeves that have UL / CSA approval rating, the following NEMA grades are assigned:

NEMA Grades	
Grade	Voltage Rating
A-1	7000* volt average, 5000 volt minimum individual
B-1	4000* volt average, 2500 volt minimum individual
C-1	2500* volt average, 1500 volt minimum individual
C-2	1500* volt average, 800 volt minimum individual
C-3	No dielectric guarantee

Coated sleeving is categorized by the type of coating, base fabric material, dielectric breakdown voltage, temperature index, and inside diameter as follows:

Type 2

A flexible treated sleeving made from inorganic-base yarns such as fibrous glass and impregnated or coated with an insulating material which can be shown by applicable experience or accepted test to have at temperature index of 130 (continuous use at 130°C).

Type 3

A flexible treated sleeving made from inorganic-base yarns such as fibrous glass and impregnated or coated with an insulating material, such as polyvinyl chloride, which can be shown by applicable experience or accepted test to have a temperature index of 105 (continuous use at 105°C).

Type 4

A flexible treated sleeving made from inorganic-base yarns such as fibrous glass and impregnated or coated with an insulating material, such as silicone resin or polytetrafluoroethylene, which can be shown by applicable experience or accepted test to have a temperature index of 200 (continuous use at 200°C).

Type 5

A flexible treated sleeving made from inorganic-base yarns such as fibrous glass and impregnated or coated with an insulating material, such as silicone elastomer, which can be shown by experience or accepted test to have a temperature index of 200 (continuous use at 200°C).

Type 6

A flexible treated sleeving made from inorganic-base yarns such as fibrous glass and impregnated or coated with an insulating material, such as epoxies, polyesters, or acrylics, which can be shown by experience or accepted test to have a temperature index of 155 (continuous use at 155°C).

Sleeving Splices

Most sleeving is produced to NEMA TF 1 1993, which allows for the following maximum number of splices; 50 foot spool, 2 splices; 100 foot, 3 splices; 150 foot, 3 splices; 250 foot, 4 splices; 500 foot, 7 splices; 1000 foot, 10 splices. Please enquire if you require splice free lengths.

TradeMarks

The following are trademarks of AB Technology Group:

FlameShield™, DeltaGlass™, Thermal Protection Solutions™, Keeping Our World Cooler™, TecPac™, TecGraph™, GraphTek™, TecBlue™, SnapSleeve™, ZipSleeve™, Scuff-Sleeve™, Tuff-Flex™, Tuff-Wrap™, InSilMax™, InSulMax™, InsulDynamic™, EasyInstall™, FestoonShield™, ThermalShield™, WeaveHold™, SleeveSeal™, HoseSaver™, CableSaver™, ThermoSleeve™, ThermoTape™, ThermoRope™, ThermoTube™, CerMax™, BlackMax™, PowerTorque™, SilverGuard™, GoldGuard™, InfraShield™, ReflecSleeve™, FireFlex™, SplashGuard™, TTWearGuard™

Other trademarks are property of their respective owners.

Selecting Materials

Color Coded Pictures to Help You Choose The Correct Product
for Your Application. Need Help? Expert Advice By Phone or E-mail.

Technical Assistance: (610) 906-3549 or info@abthermal.com


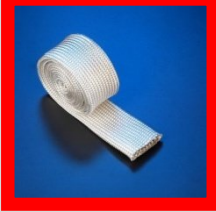



				
500°F 260°C	1000°F 537°C	1500°F 537°C	2000°F 1093°C	2300°F 1260°C

Photo Boarder Color Shows Continuous Rating
with higher short exposure

Selecting Materials

Selecting materials and designing a protection system can be assisted by understanding the kind of heat in the situation.

Ambient Heat. This is the surrounding atmospheric temperature in the area, situation or environment. For example, in an office it might be 70°F, in a firewalk it might be 2000°F.

Conductive Heat. This is the heat from direct contact with an object: picking up a hot tray from an industrial oven or kiln at 500°F or the surface of a furnace wall at 1000°F.

Radiant Heat. Objects like the Sun, or fire, or molten metal streams, glowing slabs or billets of metal radiate heat waves, which can travel through space or air or objects, and is absorbed by people or other objects. A great example is that it feels cooler standing in shade on a hot day as the shade blocks the radiant heat waves from the sun.

Molten Metal Splash or Weld Splatter. Materials with high temperature silicone rubber coating provide excellent protection from molten metal splash and weld splatter as the splash/splatter does not stick to the silicone. As well, the silicone has a high thermal dispersion, quickly dissipating the heat and preventing burn-through. The heavier or larger the splash/splatter then the heavier grade of silicone coated material should be selected.

Products & Applications: Our High Temperature Protection Materials have wide ranging application in industry, aviation, Marine and military markets. They are most commonly used in steel making, metal processing & refining, smelting, foundries, robotic welding, heat treating, steam plants, power plants (fossil and nuclear), engine and vehicle manufacturing, tire and glass manufacturing, brick & tile manufacturing, petrochemical refining, etc. In fact, any industry with a hot process, boiler, oven or kiln can use our products. It is the customers' responsibility to ensure the suitability of products to applications.

How To Order

Pricing: Prices shown are \$USD and may be subject to change without notice. Orders in other currencies may be accepted by quotation.

Accounts: Please complete our Account Application Form (available at the rear of this catalogue or on web-site) and return the form along with your standard credit reference sheet. Account application processing can take 2 to 3 business days.

New Customers: New customers may order immediately by paying via credit card, PayPal, bank wire transfer. We accept Visa, MasterCard and American Express payments by phone, fax and e-mail. Our payment gateway is PCI compliant for your information protection.

Purchase Orders: Purchase orders from established customers may be submitted verbally, by fax or by e-mail. Your PO will be acknowledged with an expected shipping date.

Verbal Orders: Call 610-906-3549. Customers accept responsibility for errors on verbal orders not confirmed by an e-mail or fax confirmation.

Minimum Order Value and Minimum Order Quantity: Minimum order value is \$50.00. Some products may have a *Minimum Order Quantity* (MOQ) such as a full spool, full coil, full carton, etc. If an order for a particular item is less than the minimum order value, then a surcharge may be applied to bring the order up to the \$50.00 minimum order value.

Most Orders Shipped Same Day: The vast majority of products are always in stock and can ship same day providing you order on-line, by fax or call by 1 PM EST. Many items can ship same day if ordered by 3PM; and some items may be available for shipping same day if ordered by 4:30 PM (may incur an expedite fee). Fabricated items require more time – please call for a fabrication quote. Tadpole Tapes, Sleeve with Velcro and Welding Curtains can typically be produced in 2 to 4 days, however it can run 5 to 10 business days for large orders or if we are particularly busy. Other fabrications with complex shapes can take up to 15 business days. Please call for an estimate.

Shipping: Unless otherwise specified, orders will be shipped UPS ground, prepaid and billed or collect on your account. Other carriers such as FedEx and USPS are available. For Dealers or Distributors, Blind or Drop shipping to your customer is available – please specify on your PO if you will be providing a Packing List and send it to us ASAP. We can also use your carrier and account if you prefer.

Customer Service Excellence: We are focused on customer service; your assurance of the correct product, quality checked & delivered on-time. All products are RoHS compliant.

AB Technology Group

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