

Information and Products for use in Harsh Temperatures

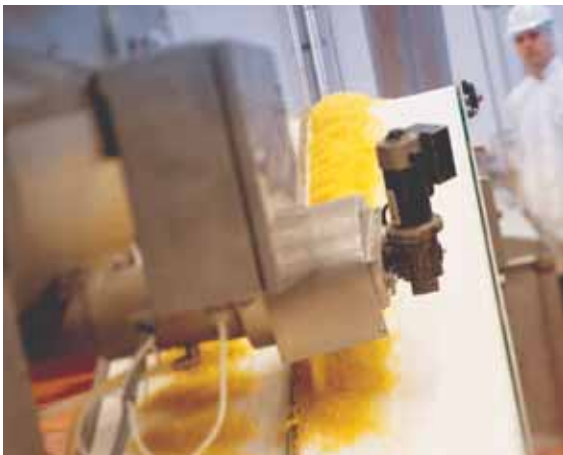


**Thomas & Betts**



**Extreme heat or cold** temperatures mark the range of applications in food and beverage processing such as industrial ovens, boilers and furnaces, kilns, pasteurization machinery or sub-zero packing rooms.

Industrial processing plants need advanced components to accommodate very specific temperature needs. The best technology is the one that includes predictable, reliable performance and control. The right installation will provide preventive maintenance, improve process control and increase operational performance. Rather than using



*Industrial ovens and room scalders produce environmental temperatures ranging to 140°C. Additionally, washdown areas may require solutions under pressure beyond 32°C (90°F).*

generic equipment, it's vital to your operation that you find a solution designed to meet your maintenance objectives and areas of work. With Thomas & Betts electrical products, you can improve your food or beverage operation by:

- providing safe, reliable connections for most demanding equipment.
- reliably extending equipment uptime.
- reducing wasteful maintenance schedules.
- improving energy consumption and cycle times.

**Combustion processes** for boilers, ovens, dryers, heaters, and controls for single or multiple burners require solutions for safe startup and operation. Some considerations are:

- What is the highest sustained temperature necessary for the application?
- What flammability ratings should be considered?
- How quickly can the maintenance be performed to reduce downtime?
- How much flexibility and strain relief is essential for optimum performance in the installation?
- Is this a "wet" location in addition to a high temperature setting?
- Is there a need for chemical and dust resistance in addition to extreme temperature performance?
- Which pin and sleeve plugs and receptacles work best for washdown and blowdown applications?

The following pages offer a brief explanation of products useful in extreme temperature settings for food and beverage processing plants.



*The T&B High/Low Temperature Liquidtight System suits the demanding conditions of food processing plants such as freezers and washdown areas.*



**Harsh temperatures** require advanced materials suitable for demanding applications and the environment in which they're performing. Along with steel, specific polymers are designed to withstand continuous exposure in extreme

temperature ranges, providing a reliable installation and minimizing downtime whenever the job runs hot or cold.



**T&B High/Low Temperature Liquidtight Fittings (-60°C to 150°C [-76°F to 302°F ])** include the exclusive design features of the popular T&B liquidtight fitting with the addition of an extreme temperature sealing ring and insulator. Trust only the 52 and 53 Series Liquidtight Fittings by Thomas & Betts in your next installation.

- Pumpkin shaped gland deflects water away from connector and prevents "pooling" of moisture. Look for the distinctive "pumpkin" appearance of the gland nut.
- **Operating temperature range -60°C to 150°C (-76°F to 302°F) intermitting to 165°C (329°F), and suitable for wet locations.**
- Available in straight, 45° and 90° designs.



**T&B ATX Flexible Metal Conduit (-60°C to 150°C [-76°F to 302°F ])** utilizes the flexibility of a standard core, coupled with the advantage of a thermoplastic rubber jacket that is virtually unaffected by temperature extremes and contains no halogens. The material has a flammability rating of UL 94-HB. It's the perfect complement to T&B's new HT Series Liquidtight Fittings.

- Available in sizes 3/8" to 4", in 25', 50' and 100' rolls depending on size.
- Standard Color: Black
- **Operating temperature range -60°C to 150°C (-76°F to 302°C) intermitting to 165°C (329°F).**



*For copper wire only*

### Set-Screw Vibration Proof / Visible Connection

#### External Cap

- Made of rugged, material rated at 150°C.
- Insulator cap locks securely in place to safeguard against accidental loosening in high vibration applications.

#### Brass Insert

- Combination and Robertson set screw. When tightened into the insert, provides a solid pressure type connection on all approved wire combinations.
- Copper-coated connector helps resist corrosion.
- Approved for circuits up to 600V, and lighting fixtures and signs up to 1000V.



Heat stabilized materials are crucial for the long-term success of your maintenance schedule. T&B offers several products uniquely designed to accommodate extreme temperature ranges and exceed nominal

performance ratings. T&B products are also designed to provide the lowest total cost to your installations in both long-term and immediate savings.



**Ty-Rap® Extra High Temperature Cable Ties (-40°C [-40°F] to 150°C [302°F])** are designed to withstand extended usage in extra high temperature applications. The advanced nylon heat stabilized material is suitable in an extra high temperature setting, thus reducing the need for expensive metallic fasteners.

- Smooth, low profile look unlimited tensioning range.
- Made of extra high temperature nylon.
- Quicker to install and less expensive than metallic fasteners, lacing cord or tape.
- **Maximum temperature rating: -40°C (-40°F) to 150°C (302°F).**



**Superstrut® Snap Guard® Cushioned Clamps (-40°C [-40°F] to 148°C [300°F])** absorb the shocks and associated vibrations from fluid surges in tubes, pipes and hoses. Installation is easy and requires no more time than for a simple pipe clamp. Secure pipes, tubes and hoses for fluid conductors.

- **Temperature rating from -40°C (-40°F) to 148°C (300°F).**
- Includes GoldGalv® finish steel clamp with bolt/locknut and cushion.
- **304 stainless steel** for long life and exceptional appearance.
- Available in 1/4" to 4" trade sizes, and in GoldGalv®, stainless steel and electrogalvanized (silver) finishes.



**Stainless Steel Superstrut® Framing Channel** is exceptionally tolerant to extreme temperature environments as well as offering superior corrosion resistance. Superstrut stainless steel framing provides dependable support, resulting in reduced maintenance cost. The channel is roll formed to shape when cold, enhancing its structural strength for the most demanding applications.

- 10' and 20' lengths in 14 gauge stainless steel.
- Supplied in type 304 stainless steel. Type 316 stainless steel available upon request.
- Threaded rods and an assortment of accessories are also available in stainless steel to complement the framing channel installation.



The one-piece cable and pipe clamp that takes a bite out of installation time

- **One-piece, heavy-duty construction** ready to install right out of the box, no need to break apart and re-assemble, no screws or bolts to drop.
- **Installs quickly and securely using one hand.**
- **Universal bolt head** accepts a range of tools.
- **Eliminates the guesswork** from clamp selection – one catalogue number attaches equal trade sizes of EMT and rigid conduit.
- **Parallel hook design** keeps conduits and cables square with strut.
- **Reconfigure wiring without complete disassembly.** Remove cables easily without disturbing neighbouring clamps.

Standard material is commercial-grade, bright electro-galvanized steel. Stainless steel 316L is also available; add the suffix "SS6" to catalogue number (i.e.: CPC050SS6). Stainless steel bolt head in hexagonal and slotted styles only. Not available in aluminum.



**T&B Self-Fusing Insulation Tape is a:**

- *Modified silicone rubber compound.*
- *Self amalgamating / bonding material. It only adheres to itself.*
- *No adhesives or heat required for permanent bond.*
- *Bond is immediate even if wet.*
- *High dielectric value.*
- *Insulation for high and low voltage connections.*
- *High and low temperature stability  
-90°C to 260°C (-130°F to 500°F)*
- *Radiation resistant.*
- *Arc track resistant.*
- *UV and ozone resistant.*
- *Steam / moisture resistant.*
- *Will not contaminate fresh water and is salt water resistant.*
- *Class "H" insulation.*