
ECS Composites

TSC Composite Transit Cases

Product Specification-Authorized for Reprinting

Photo Highlights

- **Conventional “Clam Shell” and Removable Cover Transit Case Configurations**
- **TSC Composite Exteriors**
- **Optional Removable Cover or Hinged Cover**
- **External Draw Pull Latches and Cam Action Latches**
- **Water Tight Closures**
- **Recessed and Surface Mounted Hardware**
- **Molded-in Stacking Features**
- **Foam Cushions**
- **Casters and Tote Handles**



TSC Composite Transit Cases – Maximum Durability, Light Weight

Case Description Summary – TSC composite transit cases shall include –

- One TSC composite bottom shell.
- One TSC composite cover, either removable or hinged.
- Integrally molded TSC closures with gaskets.
- Stainless steel exterior hardware.
- Integrally molded external case-to-case stacking features.
- One automatic air pressure relief valve.

TSC Composite Case Components – TSC transit case bottom shells and cover shells shall –

- Be manufactured using proprietary TSC high pressure compression molding technology to produce high impact, light weight, TSC composite components which are molded on compression molding presses up to 1,200-tons in capacity.
- Be compression molded TSC components reinforced with 40% continuous glass fibers by weight in the composite material. Remaining material in TSC case components shall primarily consist of thermoplastic polypropylene resin, with a small percentage of pigment for coloration of the composite parts.
- Provide extraordinary impact resistance and rugged durability at temperatures which exceed a range of -65° F to +185° F.
- Be very rigid under heavy stacking loads, but resilient during impacts.
- Absorb approximately one third of all impact energy by the deflection of the TSC case walls before impact forces are transferred to the foam cushions or shock mounts that provide the final shock and vibration attenuation required to protect the enclosed equipment.
- Have male and female closure features included as integral parts of the molded TSC case shells.
- Be compression molded TSC components with corners that are thicker than the flat wall sections to provide enhanced impact resistance.
- Be permanently pigmented and shall not be painted.

Standard TSC Transit Cases – TSC transit cases shall –

- Protect enclosed equipment from the world’s most challenging climatic and environmental conditions and fulfill a unique set of very challenging case performance requirements.
- Provide the ultimate in rugged durability and the light-weight advantage of high-pressure compression molded TSC thermoplastic composite materials.

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- Standard TSC Transit Cases –** • Be water tight and provide protection from moisture, salt spray, sand and dust throughout the world's climate extremes.
- TSC transit cases shall –
- Be impervious to fuels, oils and solvents and capable of being decontaminated if exposed to chemical warfare agents.
 - Be manufactured in uncomplicated designs – either as removable lid designs, hinged clam-shell designs or as toteable versions.
 - Be available in a number of standard sizes for military and industrial applications.
 - Allow the installation of optional features and hardware to satisfy unique requirements of enclosed equipment.

- Water Tight Closures –** • Have integrally molded resealable closures comprised of male and female features which consist of the same TSC material as the rest of the composite case components.
- Removable covers shall –
- Have closure gaskets that provide a water tight seal and shall be retained in the female profile with adhesive.

- Exterior Hardware –** • Be available with numerous latch styles, including externally mounted cam-action latches, recess mounted draw-pull latches and lever-action latches.
- TSC composite transit case exterior hardware shall –
- Employ latching solutions and closure designs that permit rapid opening of sealed cases and rapid reinstallation and resealing of covers.
 - Employ latches and closure designs which do not require the use of tools for opening or closing of cases.
 - Be available with numerous handle styles.
 - Unless specified otherwise, be 304 grade stainless steel with a clear passivated finish but shall also be available in stainless steel with black oxide finish or powder coated finishes.
 - Be manufactured from cold rolled steel with appropriate plated finishes or powder coated finishes if suitable 304 grade stainless steel hardware is not available.

- Foam Cushions and Shock Mounts –** • Be available with fabricated foam cushions to contain individual pieces of equipment and to provide shock and vibration protection.
- TSC transit cases shall –
- Be available with fabricated foam cushion designs which are manufactured using CAD/CAM controlled foam cutting machinery and water-jet foam cutting equipment.
 - Have foam cushion designs which are able to incorporate a virtually unlimited range of foam cushioning materials to create shapes and sizes of fabricated foam cushions required for the enclosed equipment.
 - Be available with shock mounts for shock and vibration control and/or shock mounted equipment platforms for the installation of equipment.
 - Be available with shock mount configurations and spring rates that are able to support a broad range of equipment weights and equipment centers-of-gravity.

- Colors and Options –** • Be available in the most commonly specified military colors in accordance with FED-STD-595.
- TSC composite transit cases shall –
- Allow the installation and operation of numerous options and accessories, including casters, air conditioners and ventilation systems, exterior plug receptacles and other options which are required for effective utilization of enclosed electronic equipment.

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- MIL-STD-810F Performance Testing –**
- **High and Low Temperature** – TSC transit cases and their components shall not exhibit any significant degradation in performance and/or strength when exposed to temperatures ranging from -65° F to +185° F in accordance with MIL-STD-810F, Methods 501 and 502 for storage and operational conditions.
 - **Drop** – TSC transit cases with covers in place shall show no evidence of damage and/or degradation when drop tested in accordance with MIL-STD-810F, Method 516, Procedure IV from a height of 24 to 48 inches onto a 2-inch thick plywood surface backed by concrete. Impacts shall be conducted on all corners, flats and edges for a total of 26 drops.
 - **Basic Transportation Vibration** – TSC transit cases with covers in place shall show no evidence of damage and/or degradation when exposed to vibration environments for a duration of 30 minutes per mutually perpendicular axis when tested in accordance with MIL-STD-810F, Method 514, Procedure I, Basic Transportation.
 - **Loose Cargo Bounce** – A TSC transit case positioned in the upright position and with the covers in place shall show no evidence of damage and/or degradation when exposed to Loose Cargo Transportation environments for 30 minutes when tested in accordance with MIL-STD-810F, Method 514, Procedure II.
 - **Wind Blown Rain** – TSC transit cases with the covers installed shall show no evidence of water intrusion and/or damage as a result of exposure to 40 mph wind blown rain conditions when tested in accordance with MIL-STD-810F, Method 506.4, Procedure I.
 - **Wind Blown Sand and Dust** – TSC transit cases with covers installed shall show no evidence of damage and/or sand or dust intrusion when tested in accordance with MIL-STD-810F, Method 510, Procedures I & II – Blowing Sand and Dust.
 - **Fungus Growth** – TSC transit cases and their components shall consist of materials that will not support fungus growth when tested in accordance with MIL-STD-810F, Method 508.
 - **Low Pressure** – TSC transit cases shall not be damaged and/or degraded when exposed to low pressure environments when tested in accordance with MIL-STD-810F, Method 500, Procedures I and II.

- General –**
- TSC transit cases shall comply with applicable performance requirements of the following commonly used standards and specifications.

• MIL-P-116	• MIL-C-4150J
• MIL-STD-130	• MIL-T-4734
• ATA-300	• MIL-T-21200
• MIL-STD-454	• MIL-T-28800F
• MIL-STD-648C	• MIL-STD-1472
• FED TEST METHOD STD 101	

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