

B1

Rigorous Tests and Physical Properties of Stainless Steel

B2

STRENGTH: Panduit® Pan-Steel® Stainless Steel Ties and Straps are tested per the SAE Standard AS23190 formerly U.S. Military Specification MIL-S-23190, minimum loop tensile test. This test consists of applying a tie to a split mandrel and then measuring the force required to separate the (two) halves until the tie fails. These minimum loop tensile strengths are given for the various products on pages B3.5 – B3.26.

B3

TEMPERATURE EXTREMES: Panduit® Pan-Steel® Stainless Steel Ties and Straps are 100% stainless steel in the alloy provided (locking head, locking ball, and body all provided from the same grade of material ordered).

Various temperature tests have been successfully completed. One such test is the U.S. Military Temperature Cycling Test per Thermal Shock Method 107, Test Condition B of MIL-STD-202. This test exposes the parts from low temperature -85°F (-65°C) to high temperature 275°F (135°C) to low temperature -85°F (-65°C). After exposure, the parts must be free of cracks, distortions, breaks, release of locking device, and meet the minimum loop tensile requirements.

C1

SHOCK AND VIBRATION: Panduit® Pan-Steel® Standard and Heavy Cross Section ties have passed the U.S. Military random vibration Test Method 214. Test Condition II, Letter J of MIL-STD-202. This test consists of applying parts to a bundle and then vibrating them with random vibration for eight hours in each of two mutually perpendicular directions. The parts are then subjected to further temperature testing and finally have to pass the minimum loop tensile strength test.

C2

Panduit® Pan-Steel® Extra-Heavy, Super-Heavy, MSW50 Strapping and MSW63 Strapping have passed the U.S. Military Shock and Vibration Testing per MIL-STD-167 and MIL-S-901D. The ties were subjected to vibrations in all three planes from 4 – 50 Hz and Shock testing in all three planes utilizing a hammer shock machine.

C3

SALT SPRAY: Panduit® Pan-Steel® Stainless Steel Ties and Straps have been subjected to salt spray tests without signs of corrosion or reduction in performance.

C4

OUTDOOR EXPOSURE: Panduit® Pan-Steel® Stainless Steel Ties and Straps have been exposed outdoors in Northern Illinois, USA since 1985. At the printing of this catalog, there has been no sign of corrosion or loss of performance.

D1

FLUID IMMERSION: Panduit® Pan-Steel® Stainless Steel Ties were immersed in: 1-Hydraulic Fluid, 2-Turbine Fuel, 3-Lubricating Oil, and 4-Isopropyl Alcohol for four hours at temperatures of 122°F (50°C). Per SAE Standard MS23190, the parts were then subjected to and passed the minimum loop tensile test.

D2

RADIATION: Installed cable ties of various materials have been exposed to different amounts of radiation to determine the maximum acceptable limit. These tests were conducted by Panduit to determine the acceptability for use in various areas of nuclear power plants (accumulated over 40 year life). Radiation resistance is 2x10⁸ rads.

D3

Military Cross Reference (M23190)

Military Standard Part Number	Panduit Part Number
M23190/3-1	MLT2S-CP
M23190/3-1	MLT2S-CP316
M23190/3-2	MLT4S-CP
M23190/3-2	MLT4S-CP316
M23190/3-3	MLT6S-CP
M23190/3-3	MLT6S-CP316
M23190/3-4	MLT8S-CP
M23190/3-4	MLT8S-CP316
M23190/3-5	MLT2H-LP
M23190/3-5	MLT2H-LP316
M23190/3-6	MLT4H-LP
M23190/3-6	MLT4H-LP316
M23190/3-7	MLT6H-LP
M23190/3-7	MLT6H-LP316
M23190/3-8	MLT8H-LP
M23190/3-8	MLT8H-LP316
M23190/3-9	MLT10H-LP
M23190/3-9	MLT10H-LP316

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