

Maxis™ Joint Design Document

DEVELOPMENT

Computer flow simulation is used in the design of the methoding, to significantly reduce the potential of casting defects.

MATERIAL

The Maxis is and investment cast from AISI 1045 steel.

COATING

Zinc Aluminium (without hexavalent chromium Cr(VI)) is compatible with hot-dip galvanised and aluminium products.

QUALITY

All components are visually inspected for defects and percentage Magnetic Particle Inspected for non-visible cracks. All components are inspected for dimensional compliance with the use of precision gauges.

Material testing is performed to ensure adherence to chemical and mechanical property requirements, and every component can be traced back to the batch in which it was cast via batch numbers cast into each part.

Prior to delivery random inspection is performed at the manufacturing plant by a trained third-party inspector, to ensure compliance to visual, dimensional, chemical, and mechanical specifications. flow simulation is used in the design of the methoding, to significantly reduce the potential of casting defects.

SALT-SPRAY TESTING (figure 1, 2 and 3)

Tested for 1,000 hours.

The standard requirement for salt-spray testing is 500 hours.

Results below (figure 1 - 3) reflect exceptional results.

HG = Hot-dip Galvanised

Al = Aluminium

Zn/Al = Zinc Aluminium



Figure 1
HG Conduit with HG Maxis™ joint



Figure 2
HG Conduit with Zn/Al Maxis™ joint



Figure 3
Al Conduit with Zn/Al Maxis™ joint

SAFETY PIN WITH LANYARD

As shown in figures 1, 2 and 3, slight corrosion is evident due to dissimilar metals being stainless steel lanyard against Zinc Aluminium coated steel safety pin.

Solution - Design nylon UV rated lanyard that eliminates the dissimilar metal issue and is load tested in excess of 30kg (figure 4).



Figure 4

BOLTS (figure 5)

M12 x 19mm (3/4") head grade 8.8 Zn/Al coated

Torqueing of bolts

In field use of Maxis™ joint - Recommended torque setting 40Nm to 80Nm.

Torque testing carried out on the Maxis™ joint in excess of 110Nm (tension wrench capacity 110Nm) testing continued until bolt failure with no ill-effect to the joint.



Figure 5

WASHERS (figure 6)

Wedge-locking Zn/Al coated washers tested and proven to last three times more than spring washers.

Spring washers, although still widely available today, in the 1990's were found to have negligible effect in the prevention of fastener loosening and the relevant standard DIN 127 withdrawn.



Figure 6

GRUB SCREWS (figure 7 and 8)

M8 knurled point grade 8.8 Zn/Al coated, thread lock patch.

Knurled point, bites into the opposing metal ensuring non-slip, non-loosening and bonding of the metals. Thread lock patch is a non-loosening, non-vibration solution.

Torqueing of grub screws

In field use of Maxis™ joint - Recommended torque setting 30Nm to 34Nm.



Figure 7



Figure 8

SEAL (figure 9 and 10)

The seal prevents water ingress.

The seal is made of EPDM (Ethylene Propylene Diene Monomer), has a high UV rating, and has been used globally for many years in extreme conditions in variety of applications.



Figure 9



Figure 10

GREASE & ELECTRICAL CONTINUITY (figure 11)

The Maxis™ joint is delivered assembled and is greased internally using a premium heavy duty grease.

The longevity of the grease has been proven to last for almost two decades on the Safe Swivel™ joint. The design of the Maxis™ joint protects the grease more effectively than the Safe Swivel™ joint.

Electrical continuity

The Maxis™ joint has been tested and approved for electrical continuity in conjunction with the grease.



Figure 11