

Introduction

We have compiled the following images to demonstrate examples of non-conforming and non-fit for purpose powder coated tubular steel fencing.

The main issues are:

1. Imported fencing materials that have poor metal pretreatment and resulting powder coating.
2. Imported powder coated materials with the use of low quality powders that will fade and chalk within 3-5 years.
3. Imported fencing materials that will likely fail to comply with zinc coating masses stipulated in specifications. The corrosion protection afforded by the zinc coating is a direct function of the coating mass.
4. Installation of gates that are the wrong design and or use light non-conforming sections of tube.
5. Installation of gates with light non-conforming hinges.
6. Installation of gates with the wrong locking hardware on the gate.

These issues can give rise to potentially serious public liability risks for the asset owner. They will also seriously reduce the service life of the product and so undermine the value for money. We encourage asset owners to ensure they are getting a conforming product. We also remind them of the old adage "you normally get what you pay for".

We have prepared a generic recommended specification for powder coated security fencing with commentary. We offer this to purchases of fencing to help manage these risks.



The failure of the coating to pass the basic MEK solvent rub test under AS4506. This indicates poor quality powder, poor metal pretreatment and under cure of the powder. Image of 'new' fence.



The coating failing the basic cross hatch test under AS4506. A blade creates a cross hatch on the powder surface. The powder sections should adhere when flicked with the edge of the blade. Image of 'new' fence.



This finish show excess powder has been applied and will have poor adhesion as a result.



The delamination of the powder film is a result of poor metal pretreatment. Image taken less than 1 month after installation.



Blistering of the powder coating is a result of poor quality metal surface preparation on an imported panel. Fence installed 18 months.



The delamination of the powder film is a result of oxidisation (white rust). Fence installed less than 18 months.



Delamination of the powder film. Proper chemical pretreatment and quality powders cost more.



The 'orange peel' is a result of low quality powders and poor pretreatment and cleaning of the product and/ or inferior tube.



Red rust starting to appear through the powder coating at 3 years.



Red rust starting to appear through the powder coating at 3 years.



A mild steel or 'black' weld has been used instead of Silicon Bronze which is normally the case with imported panels. The mild steel is hotter than the bronze resulting in damage to the galvanised coating on the tube. In addition the mild steel weld is more prone to corrosion and is a lesser substrate for powder adhesion. This panel had been installed about 12 months.



This is an image of the same section of fencing as image at left some 3 years later. Note the severe fading and the aggressive corrosion of the mild steel weld.



Another image of a mild steel or 'black' weld. This panel had been installed about 1 month.



A cut away of a mild steel weld. The effect of weld heat on the gal coating is clearly evident. A silicon bronze weld is cooler so results in less damage to the zinc coating.



This corrosion suggests the tube may not be galvanised internally



A mild steel weld similarly used on the gate frame. The effect of weld heat on the gal coating is clearly evident. The 'black' weld and damaged gal has begun to rust on this gate installed for less than 12 months.



This is an imported panel installed about 15 months. The poor quality tube is brittle resulting in splitting during manufacture and consequent corrosion.



This is an image of a spear in the same section of fencing as the spear (left) some 3 years after installation.



This was a sharp spear picket (on an imported panel) that has been rounded with a grinder to meet the specification. It is already showing signs of corrosion.



This gate has failed due to the top and bottom hinges seizing and failing.



This is a dry top hinge. The pin has corroded, seized and failed.



This is light weight Goliath ball bearing hinge that has seized and failed. These hinges are not sealed and cannot be greased. Tek screws have been used installed of a bolt through the post. Two of the three teks have failed.



A Goliath hinge that has seized and failed snapping where it affixes to the gate resulting in the gate falling over.



A school teacher holds a gate that had fallen off due to not fit for purpose hinge being used and installed (incorrectly).



A goliath hinge tek screwed to the gate post and gate stile. The hinge has been installed upside down, it has seized resulting in the teks pulling out of the wall of the gate stile.



This is light weight Goliath ball bearing hinge that has been welded on upside down such that the 'female' housing collects water. The white corrosion can be seen on the oiling hole on the lower part. This results in the hinge eventually seizing and then failing resulting in the hinge coming loose.



A Goliath hinge tek screwed to the gate post.



This is tapered roller bearing that has been installed upside down and incorrectly as a top hinge. It is a load bearing hinge that is only meant to be used as a bottom hinge. It also has not been greased after install. The hinge bracket has been welded on crooked.



A 'black' steel bracket has been used welded to the bearing housing and post on site and 'touched up' with paint. It has begun corroding almost immediately.



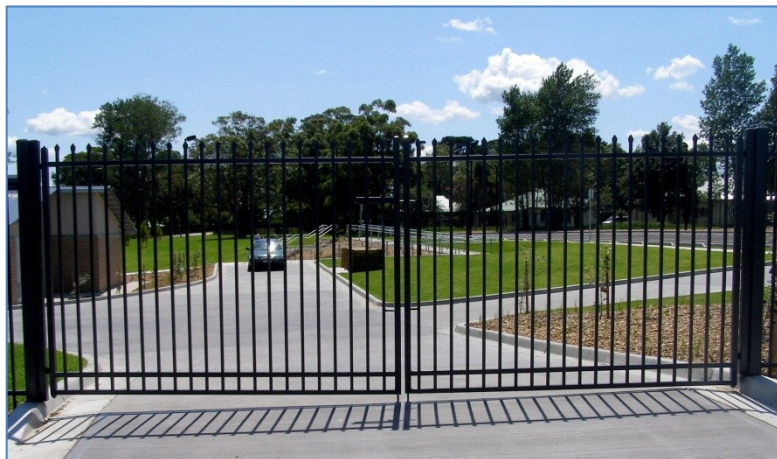
This is an adjustable sealed bearing. It is not a load bearing hinge yet it has been installed as the bottom hinge. The hinge has been welded on site to the gate stile resulting in damage to



Similarly this is a sealed ball bearing installed incorrectly at the bottom. This type of bearing is not load bearing. In this position it will collect water and

the powder coating.

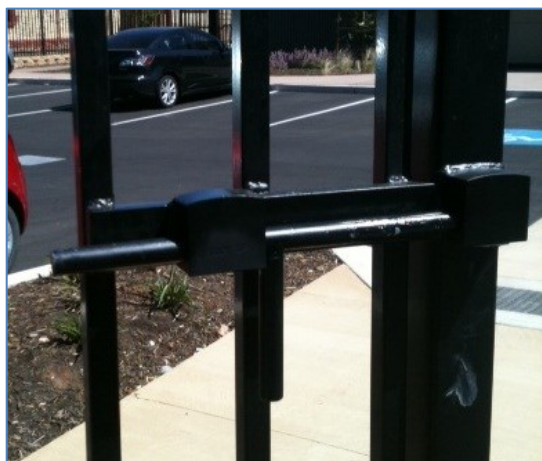
grit resulting in eventual seizure.



6m double gate frame with light 40x40x1.6mm stiles and rails swung from Goliath Hinges



Large double gates swung from Goliath hinges sagging. The gates will soon become inoperable.



A slide bolt installed without perforated mesh to prevent it being used as a climb point over the gate.



The slide bolt backing plate has been cut onsite to suit the incorrect stile and rail size that has been used.