

LOCTITE**Adhesives for more
reliable assemblies****APPLICATION CASE HISTORY****No. 262**

Loctite® 587 Blue High Performance RTV Silicone Seals Lead Balance Weights On Aircraft Wheels

Does Not Corrode Magnesium; Provides Good Visibility

Situation:

An Alaskan-based regional air carrier has a large fleet of airplanes. Routine Maintenance calls for balancing the nose wheels every 140-flight hours. To balance the wheels, lead weights are applied with sticky back tape, and the perimeter and tops are then sealed against the environment and de-icing material. Maintenance personnel at this air carrier were using a red, acetoxy-based RTV silicone to seal the weights on all the aircraft wheels in their fleet. Unfortunately, the acetoxy-based silicone reacted with the magnesium nose wheels, causing corrosion wherever the silicone was used.

The wheel manufacturer also requires that once corrosion depth exceeds 0.030", the wheel must be discarded. A wheel can last 10-15 years if properly maintained, but to have to discard a wheel due to corrosion after only 5 years is not cost-effective. In 1993, each two-piece nose wheel assembly cost \$3,000 and in 1996 each assembly cost \$8,3100. Today, they cost even more. This aircraft carrier was forced to discard 16 wheels from 1990-1996, costing approximately \$90,480. That's when they asked Loctite for help.

Solution:

Loctite® 587 Blue High Performance RTV Silicone is an instant gasket maker and sealant that offers excellent adhesion to oily surfaces. It withstands temperatures from -75° to +500° F (-59° to + 260° C), is resistant to most chemicals and solvents, and fills gaps to 0.25". Loctite 587 is manually applied to the nose wheel of the aircraft around the perimeter of the lead weight, and then over the top of the weight.

Results:

The non-corrosive properties of Loctite 587 do not cause corrosion on the magnesium wheel assemblies, while its blue color allows maintenance personnel to do a quick visual check for missing weights. Loctite 587 Blue has been so successful in sealing the lead balancing weights on the magnesium nose wheels, the air carrier has instituted its use on all the aircraft wheels in its fleet.



Corrosion caused by acetoxy-based silicone to the magnesium nose wheels of airplanes, forced an Alaskan-based air carrier to put 16 wheels out of service, costing the company \$90,480 in 1990-96.



Loctite® 587 Blue High Performance Silicone does not cause corrosion, protects against de-icing material, and allows for a quick visual check for missing balance weights.

Loctite Americas

U.S.A.
Loctite Corporation
1001 Trout Brook Crossing
Rocky Hill, Connecticut 06067
860-571-5100
Telefax: 860-571-5465

CANADA
Loctite Canada Inc.
2225 Meadowpine Blvd.
Mississauga, Ontario L5N 7P2
800-263-5043 (within Canada)
905-814-6511
Telefax: 905-814-5391

MEXICO
Loctite Company de México, S.A. de C.V.
Calzada de la Viga s/n, Fracc. Los Laureles
Loc. Tulpetlac, C.P. 55090
Ecatepec de Morelos, Edo. de México.
01-800-8499-412
Telefax: 011-525-787-9404