

Wax Bloom on Air Springs

Ozone is generated in the atmosphere by several processes. It is naturally formed by the photolysis of oxygen. It is also a byproduct of discharge from electrical equipment like motors and switches. Ozone is one of rubber's worst enemies. The minute amounts of ozone present in the atmosphere will eventually harden and crack most rubber over time. It is often referred to as "dry rot" or ozone checking. In some urban and industrial environments the levels of ozone are significantly higher than normal. This causes the accelerated decay of the physical properties of rubber.

To Combat this and produce a long lasting air spring, Firestone uses a combination of antioxidant (chemicals) and antiozonant waxes that form a physical barrier on the rubber's surface.

The waxes bloom to the surface and form a white, waxy film on the surface of the bellows. This happens over time even when the part is sitting at rest, but it forms more rapidly if the part is flexed (see the picture). The reason these waxes are put into the rubber compound and not just wiped on the surface is that over time they will wash or wear off with the use of the air spring. Having the wax in the rubber will allow these waxes to continue to bloom out over time to renew the

protective shield.

We often get questions about this appearance, but it is only the protective components of the rubber compound doing their job. Remember when you see the wax blooming to the surface of the air spring and it has that "whitish" color; it is evidence that the parts last well during long-term use.

