

BPW airbag quality, operating maximums and life expectancy

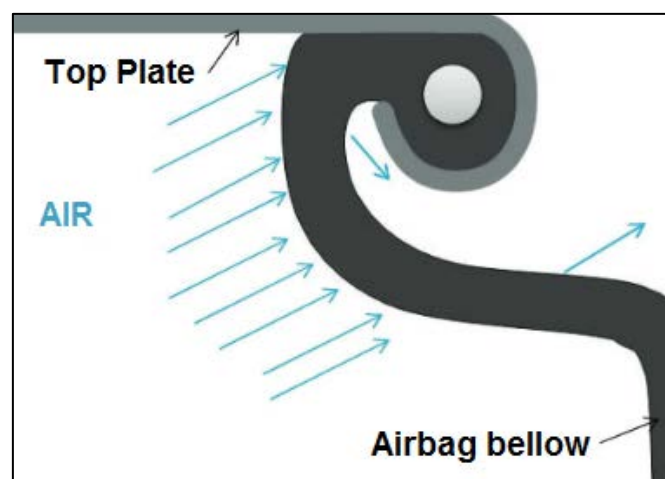
Introduction

The wall thickness of an airbag is typically 4.3 mm to 4.5 mm thick and is designed to achieve an optimum coverage of several and partially competing and performance aspects – mechanical endurance of rubber material and rubber / fabric adhesion, temperature resistance, bellow rolling flexibility in low pressure conditions, air tightness, etc.

The rubber used in an airbag bellow is made up of four different layers:

1. An inner liner – which performs the sealing function.
2. Fabric layers (plies) – to keep the shape constant and carry the load forces.
3. A rubber matrix – to join the reinforcement material and separate the layers of fabric plies.
4. An outer liner – to protect the airbag from friction (mechanical) and chemical (environment) factors.

Due to the natural gas permeability of the rubber components, air is known to diffuse through the walls of an airbag bellow – even when new. The higher the internal pressure the higher the rate of diffusion. Air diffusion is not related to production or material faults; it is product typical and does not indicate a technical leakage.



The correct test, installation and operating procedure of BPW airbags

1. Inflate the airbag to 3.5 bar and allow to stand for 12 hours.
2. The pressure should not drop below 3 bar in that time.
3. If the airbag pressure drops below the low point (3 bar) the airbag needs to be replaced.

The foam leakage test is not applicable for rubber products like air springs (airbags). Small non-critical foam formation on the bellows might occur sporadically and do not indicate diffusion.

