

MITTEILUNG

12.12.2004

Prooftesting of the tyre sealing means „PREMIUM-SEAL-REPAIR“

Operational area



For our new luxury coach NEOPLAN Starliner II which will be delivered starting spring 2005 to selected customers the tyre sealing means

„PREMIUM-SEAL-REPAIR“

will be part of the standard equipment of the coaches.

Abstract

The tyre sealing means PREMIUM-SEAL-REPAIR has passed all tests successfully. During the test damaged locations were reliably sealed. It is simply to handle. Cost, weight and space requirements speak in favour of the elimination of the spare wheel.

Completed tests:

1. Broken in nail with $\varnothing$ 4 mm in tyre shoulder
2. Broken in bolt with $\varnothing$ 10 mm in the tread
3. Broken in bolt with $\varnothing$ 12 mm in the tread

1. Test

One tyre was damaged through a stitch of a nail with $\varnothing$ 4 mm in the shoulder. Afterwards the tyre was mounted on the front axle of the test car Skyliner N 1122/3 L with a front axle load of ca. 8 t. In risen state there was filled 1,5 dm³ PREMIUM-SEAL Repair through the valve into the airless tyre. Afterwards the tyre was slowly turned by hand several times. Through this the sealing means was distributed equally in the tyre and could seal the damage canals immediately when air was filled in. The tyre was filled with air via an air dryer through the on board air pressure equipment to 8 bar. Subsequently a test drive of ca. 60 min was made. The stitch canal of $\varnothing$ 4 mm in the shoulder was sealed by PREMIUM-SEAL-REPAIR.

2. Test

In another tyre a fixed bolt of $\varnothing$ 8 mm broken in. After releasing the bolt from the tyre analogue to test 1 the sealing means was filled into the tyre in risen state. The damaged location showed to the bottom in order to be filled. Afterwards the tyre was refilled through the on board air pressure equipment to 9,55 bar.

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During the test drive of ca. 40 km the air pressure rose to 10,5 bar due to the rise of temperature in the damage canal (41, 7 °C). The coach was parked over night and the next morning a remaining pressure of 9,61 was measured in the tyre. The small pressure differences are due to the different temperatures during the measurements.

Afterwards a fixed bolt of Ø 10 mm was broken in. While the car was still rolling the bolt was drawn out of the damage canal and the sealing means closed the canal immediately. The air pressure sank only to 9,6 bar during this process. The tyre was sealed immediately.

3. Test

Another tyre was damaged through a fixed bolt of Ø 12 mm. There was a blowout immediately. Even in this case after a test drive on roads wet from rain (115 km) and after 15 days of parking a pressure drop of only 0,3 bar was measured.

Water solubility:

Water solubility:

Because the sealing means of Premium Seal is water soluble test drives on wet roads and a diving test of the complete tyre were made. During the rain drive there was no pressure drop noticed. After 14 days in water bath the pressure was only 0,4 bar lower. The damaged location was sealed reliably and a break off of the sealing plug was not observed.

Five weeks after the tests all three tyres were disassembled. Rims and tyres could be cleaned with water from the sealing means without any problems.

Evaluation:

The specifications for a „home bringer“ PREMIUM-SEAL-REPAIR has far exceeded in our tests. Several 1000 km distance are possible even with full load, velocities up to 100 km/h and big damage canals.
gez.

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Test car: NEOPLAN Skyliner

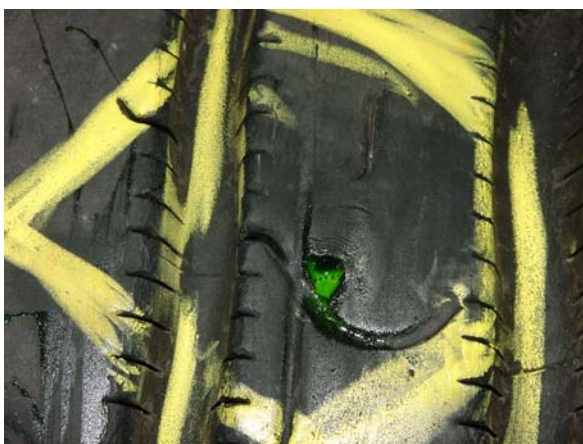
through a 12 mm bolt: Small amount of sealing means comes out. Damaged location is sealed immediately. Tyre remains sealed.



Broken in nail 4 mm in the shoulder



Bolt 8 mm with damage canal



Sealed damage canal 8 mm bolt



Water test

Info and photos from NEOPLAN BUS GMBH