MODERN HOT-APPLIED BITUMEN SEALANT FOR AIRFIELD PAVEMENTS JOINTS

O.V. Kanunnikov *
Dr., Progresstech, Ltd., Moscow, Russia
V.A. Bashkatova
Dipl, Engineer, Progresstech, Ltd., Moscow, Russia
* Progresstech, Ltd., Bld.124, Mikroraion imeni Gagarina, E-179, Moscow, 105179, Russia, **kanunnikov@progresstech.ru**; vera@progresstech.ru.

ABSTRACT
New hot-applied sealant suitable for airfield pavements in the areas with ambient temperatures variation from –60 °C up to +50°C was developed. The design of most airfield pavements in Russia and CIS is distinguished by a quite narrow joint groove ranging from 8 to 12 mm wide. Besides, some runways are paved with slabs 20 to 40 meters long. Sealants used for filling such pavement joints need to be characterized by high relative elongation in negative temperature environment.

The joints' movement monitoring performed by Progresstech specialists at four airdromes in 1995 – 1999 revealed that filled-in sealant relative elongation should equal at least 160 % at temperature of –20 °C.The trial for relative elongation measurement was conducted at temperature of –20 °C and sample extension rate of 1 mm/min by using a specially designed laboratory equipment. It should be noted that such testing requirements make more severe demands for sealant behavior as compared to US and European standards. Subject to testing were over 200 sealant batch samples. The tests revealed that relative elongation was at least 200 %.

Pavement technical condition monitoring performed by Progresstech at Mirny (Russia), Mineralnye Vody (Russia), Aktobe (Kazakhstan) and Manas (Kyrgyzia) airports displayed that newly developed sealant maintained its high performance characteristics within ambient temperature range from –61 °C (at Mirny airport) to +47 °C (at Manas airport). The above correlates with the trial results very well.

KEY WORDS: pavement, joint sealant, joints' movement, relative elongation.