EXAM
BBG Prüf- und Zertifizier GmbH

TRANSLATION

Expert Body for
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- Mining
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Report

on the testing

of the electrostatic properties

of a plastic material

Client: Fr. Jacob Söhne GmbH & Co
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Germany

Responsible: Dr.-Ing. Carsten Blum
Reference: 1100/178E/06 BVS-Bl
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Bochum, Germany, 28 August 2006

Signed: Dr Hesener

Signed: Dr Blum

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1. Subject:	Tube-sealing material
2. Type designation:	1. Flange gasket made from EPDM, conductive with FDA-approval (Bördeldichtring EPDM, leitfähig mit FDA Zulassung) 2. Gasket made from PTFE, conductive with FDA-approval) (Dichtring aus PTFE, leitfähig mit FDA Zulassung)
3. Client:	Fr. Jacob Söhne GmbH & Co
4. Test documents:	1.) Test order of 9 May 2006 2.) Test sample
5. Description:	Tests were conducted with stainless steel tube connections DN 150 that consist of a flange gasket made from EPDM, or of a gasket made from PTFE, and of a tension ring connected to each other.

6. Evaluation:

The gaskets were tested in accordance with 60093. With a measuring distance of 1 cm, the following surface resistance values R_O resulted:

Flange gasket made from EPDM	$R_{o1} \approx 8.3 \cdot 10^3\ \Omega$
Gasket made from PTFE	$R_{o2} \approx 5.6 \cdot 10^4\ \Omega$

The test was conducted after at least 16 hours of storage in normal climate in accordance with DIN 50 014 -23/50-2 at a temperature of 23 °C and a relative humidity of 50 %.

In an electrostatic sense, the gaskets must be classified conductive. In addition, the tube connections were tested on whether the use of the above-mentioned gaskets results in a sufficient electrical conductivity.
For both test samples it is true that the electrical resistance between the tube sections was less than $10^4\ \Omega$ even without the tension ring being attached. This means that there is sufficient electrical contact via the tube-sealing material. This is also valid for galvanised tube parts.

Given that such a tube systems resistance to earth is less than $10^6\ \Omega$, no additional grounding needs to be applied between the tube sections.

Bochum, Germany, 28 August 2006

Responsible
Signed: Dr Blum