Inspection report: 429810/1.1/92708

Client: POLIPLAST Sp. Z.o.o.
ul. Energetyczna 6
PL-56-400 OLESNICA

Production plant: PL-56-400 Olesnica

Third party control: 1st half-year 2010

Product: Domestic waste pipe, group 1
Pipe PP DN 50
Trade name: "POLiphon"

Letter of: --- Reference: ---

Samples received: 2010-07-02 Sampling: 2010-06-02

Test period: 2010-08-07 to 2010-11-19

Result: The requirements of algemeine bauaufsichtliche Zulassung Z-42.1-399 of DIBt are met.

The inspection report comprises 3 pages.

Würzburg, 2010-11-26
W/t/Sz/stei

i. V. Dr.-Ing. Günter Nawroth

i. A. Dipl.-Ing. Christian Winkler

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www.szk.de
1. Inspection scope

The inspection scope complies with allgemeine bauaufsichtliche Zulassung Z-42.1-399 of Deutsches Instituts für Bautechnik (DIBt).

2. Sampling

The samples were taken by an inspector of SKZ - TeConA GmbH on 2 June 2010 at the production plant in PL-56-400 Olesnica.

3. Results

3.1 Dimensions

<table>
<thead>
<tr>
<th>designation</th>
<th>actual value in mm</th>
<th>set value in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>maximum</td>
<td>minimum</td>
</tr>
<tr>
<td>outside diameter $d_1$</td>
<td>50.1</td>
<td>50.1</td>
</tr>
<tr>
<td>wall thickness $d_{1/2}$</td>
<td>2.0</td>
<td>1.9</td>
</tr>
<tr>
<td>wall thickness $d_{3/4}$</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>wall thickness of socket $d_{3}$</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>wall thickness of bead $d_3$</td>
<td>2.1</td>
<td>1.9</td>
</tr>
<tr>
<td>socket depth $A$</td>
<td>---</td>
<td>29.3</td>
</tr>
<tr>
<td>width of bead $f$</td>
<td>8.6</td>
<td>8.4</td>
</tr>
<tr>
<td>socket length behind the bead $C$</td>
<td>18.0</td>
<td>---</td>
</tr>
</tbody>
</table>

3.2 Material properties

<table>
<thead>
<tr>
<th>designation</th>
<th>unit in</th>
<th>mean value</th>
<th>set value</th>
</tr>
</thead>
<tbody>
<tr>
<td>melt mass-flow rate MFR 230/2.16</td>
<td>g/(10 min)</td>
<td>0.35</td>
<td>≤ 1.4</td>
</tr>
<tr>
<td>density of the center layer DN 40 - DN 50</td>
<td>g/cm³</td>
<td>0.92</td>
<td>0.9 - 1.1</td>
</tr>
<tr>
<td>longitudinal reversion</td>
<td>%</td>
<td>0.3</td>
<td>≤ 2.0</td>
</tr>
<tr>
<td>thermal stability OIT 200°C</td>
<td>min</td>
<td>38.6</td>
<td>≥ 8</td>
</tr>
<tr>
<td>diametral stiffness</td>
<td>KN/m²</td>
<td>8.5</td>
<td>≥ 4.0</td>
</tr>
</tbody>
</table>
3.2.1 Resistance to external blows (round-the-clock method)

<table>
<thead>
<tr>
<th>designation</th>
<th>unit</th>
<th>actual value</th>
<th>set value</th>
</tr>
</thead>
<tbody>
<tr>
<td>temperature</td>
<td>°C</td>
<td>0 ± 1</td>
<td>0 ± 1</td>
</tr>
<tr>
<td>mass of striker</td>
<td>kg</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>fall height of striker</td>
<td>mm</td>
<td>1600</td>
<td>1600</td>
</tr>
<tr>
<td>number of test pieces</td>
<td>---</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>number of impacts</td>
<td>---</td>
<td>&gt; 25</td>
<td>≥ 25</td>
</tr>
<tr>
<td>failures</td>
<td>---</td>
<td>0</td>
<td>---</td>
</tr>
<tr>
<td>breaking rate</td>
<td>%</td>
<td>0</td>
<td>≤ 10</td>
</tr>
</tbody>
</table>

was carried out at the production plant was carried out on dimension DN 110

3.3 Condition after heat ageing: without objection

3.4 Surface finish: without objection

3.5 Condition as delivered and colour: without objection


3.7 Colour of the pipes: blue / white / grey

3.8 Marking of the sealing ring: Art. 581 M.O.L. Ø 50 / DN 50 EN 681-1/WCL/60 KOMO DNV 2-29 10

3.9 Fire behaviour: The material tested within the scope of the third-party inspection complies with the requirements of non-flammable building materials (building material class DIN 4102-B2) according to DIN 4102-1.

4. Assessment of production plant

Assessment of laboratory staff and device equipment as well as internal production control. Result: without objection
Inspection report: 430310/1.3/92728

Client: POLIPLAST Sp. Z.o.o.
ul. Energetyczna 6
PL-56-400 OLESNICA

Production plant: PL-56-400 Olesnica

Third party control: 1st half-year 2010

Product: Waste and sewage pipes, group 1
Double socket PP-HT DN 50
System name: "AMAX 2"
Application area: "B"

Letter of: --- Reference: ---

Samples received: 2010-07-02 Sampling: 2010-06-02

Test period: 2010-10-14 to 2010-11-10

Result: The requirements of DIN EN 1451-1: 1999-03 and DIN 19560-10: 1999-03 are met subject to the fire behaviour test.

Würzburg, 2010-11-11
Wi/Pfu/uschm

The inspection report comprises 2 pages.

Dr.-Ing. Günter Nawroth

Dipl.-Ing. Christian Winkler

i. V. i. A.

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1. Inspection scope

The inspection scope complies with DIN EN 1451-1: 1999-03 and DIN 19560-10: 1999-03.

2. Sampling

The samples were taken by an inspector of SKZ - TeConA GmbH on 02 June 2010 at the production plant PL-56-400 Olesnica.

3. Results

3.1 Dimensions

<table>
<thead>
<tr>
<th>designation</th>
<th>actual value in mm maximum</th>
<th>minimum</th>
<th>set value in mm maximum</th>
<th>minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>inside diameter of socket (d_4)</td>
<td>50.9</td>
<td>51.0</td>
<td>50.8</td>
<td>50.8</td>
</tr>
<tr>
<td>wall thickness of socket (e_2)</td>
<td>2.0</td>
<td>2.0</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>wall thickness of bead (e_3)</td>
<td>2.5</td>
<td>2.6</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>length behind the bead (A)</td>
<td>---</td>
<td>---</td>
<td>35.8</td>
<td>35.8</td>
</tr>
</tbody>
</table>

3.2 Material properties

<table>
<thead>
<tr>
<th>designation</th>
<th>unit in</th>
<th>mean value</th>
<th>set value</th>
</tr>
</thead>
<tbody>
<tr>
<td>melt mass-flow rate MFR 230/2.16</td>
<td>g/(10 min)</td>
<td>0.95</td>
<td>≤ 3.0</td>
</tr>
</tbody>
</table>

3.3 Condition: without objection

3.4 Marking of the fittings: AMAX 2 HTU 50 EN 1451 B PP-H DIN 4102 B1+1 ÜSKZ Logo 2010

3.5 Colour of the fittings: grey

3.6 Marking of the sealing ring: ROG ROBBER PRODUCTS EN 681-1AWCL/60 SBR BL DN 50 CE 2010

3.7 Fire behaviour test: The fire behaviour test is conducted by the BAY 26 inspection body.

4. Assessment of the production plant

Assessment of laboratory staff and device equipment as well as internal production control.

Result: without objection