

## **Test Report 08-0165ITSE issued on August 25<sup>th</sup> 2008**

Test have been carried out in laboratory.

**Brock International LLC**

**DRAINING SYSTEM / ELASTIC LAYER**

**Draining system/elastic layer moulded from with  
expanded polyethylene with perforated drainage holes**

### **Object:**

**To determine if the physical and chemical properties of the product satisfy the applicable requirements (at the time of test) of the “Procedura di Attestazione del Sottotappeto” issued by the F.I.G.C. – L.N.D. in accordance with DIN 18035-7**

**This is NOT A CERTIFICATE of F.I.G.C. – L.N.D.  
This Report does not imply F.I.G.C. – L.N.D. approval or certification of the on product.**

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The results are only valid for the sample submitted for test

This Test Report is contains 4 pages.

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**Client**

Brock International LLC  
 2840 Wilderness Place  
 80301 Boulder  
 COLORADO  
 USA

**Test details**

- F.I.G.C. – L.N.D. protocol 54/GG of July 3rd 2008
- Order received on May 13th 2008
- Samples received on May 13th 2008
- Test started on My 8th 2008

The name of the sample presented for the test is **BROCK PERFORMANCE BASE F24** manufactured by:

	<b>Manufacturer</b>	<b>Commercial name</b>	<b>Color</b>	<b>Type</b>
<b>Shock-pad</b>	Brock Interenational	Brock	white	Expanded polypropylene

**Sample identification**

	<b>Result or caratheristic</b>
<b>Sample thickness</b>	24.6mm.
<b>Surface's aspect</b>	White shaped and drilled
<b>Nature of the product</b>	Expanded polypropylene
<b>Holes diameter</b>	6.5mm.
<b>Horizontal drainage</b>	Omni-directional on the top and bottom of the product
<b>Weight/ m<sup>2</sup></b>	1.4Kg/m <sup>2</sup>
<b>Weight/ m<sup>3</sup></b>	55Kg/m <sup>3</sup>

**Performance data**

	Result or caratheristic
<b>Shock absorbtion</b>	62%
<b>Joint strenght</b>	569N
<b>Dimensional stability</b>	No variation recorded
<b>Permeability</b>	15000mm/h
<b>Horizontal drainage</b>	36000mm/h

**Toxicology tests (according DIN 18035-7 results according LND requirements):**

Results are obtained using the test procedures described in DIN 18035-7. To satisfy the LND requirements both Zinc values have to be satisfied.

Elements	Standards	Results	DIN requirements
Lead (Pb)	NF EN ISO 11885	< 0.0003 mg/l	≤ 0,040 mg/l
Cadmium (Cd)	NF EN ISO 11885	< 0.0003 mg/l	≤ 0,005 mg/l
Chromium total (Cr)	NF EN ISO 11885	< 0.018 mg/l	≤ 0,050 mg/l
Cromium hexavalent	NF T90-043	< 0.008 mg/l	≤ 0,008 mg/l
Mercury (Hg)	NF EN 13506	0.0010 mg/l	≤ 0,0010 mg/l
Tin (Sn)	ISO/DIN 17294-2	< 0.0003 mg/l	≤ 0,050 mg/l
Dissolved organic carbon (DOC)	NF EN 1484	6.42 mg/l	≤ 40 mg/l
Zinc (Zn1) with CO <sub>2</sub>	NF EN ISO 11885	0.08 mg/l	≤ 3 mg/l
Zinc (Zn2) without CO <sub>2</sub>	NF EN ISO 11885	0.08 mg/l	≤ 0,5 mg/l
EOX	DIN 38414-17	< 10 mg/Kg	≤ 100 mg/Kg

**For Pb, Cd, Cr, CrVI, Hg, Sn and Zn1:**

Leaching with non-ionic water with CO<sub>2</sub> bubbling and the second eluate (24h to 48h) is analysed.

**For Zn2 and DOC:**

Leaching with non-ionic water and the second eluate (24h to 48h) is analysed.

**For EOX and HAP:**

On dry granules

**MEB scanning for heavy metal detection****Results: no heavy metals detected****HAP detection**

Elements	Results (mg/kg)
Naphtalene	0.22
Acenaphtene	<0.05
Fluorene	0.06
Phenanthrene	0.24
Anthracene	0.05
Fluoranthene	0.15
Pyrene	0.15
Benzo [A] Anthracene	0.05
Chrysene	<0.03
Benzo [B] Fluoranthene	0.06
Benzo [K] Fluoranthene	0.04
Benzo [A] Pyrene	<0.03
Dibenzo [A.H] Anthracene	<0.05
Benzo [G.H.I] Perylene	<0.05
Indeno 1.2.3. [C.D] Pyrene	<0.05
Acenaphtylene	<0.05
<b>Addition of HAP (max) mg/Kg</b>	<b>1.37</b>

**End of Test Report**

Cernusco Lombardone, 25 agosto 2008.



Labosport Italia S.r.l.  
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Direttore del laboratorio