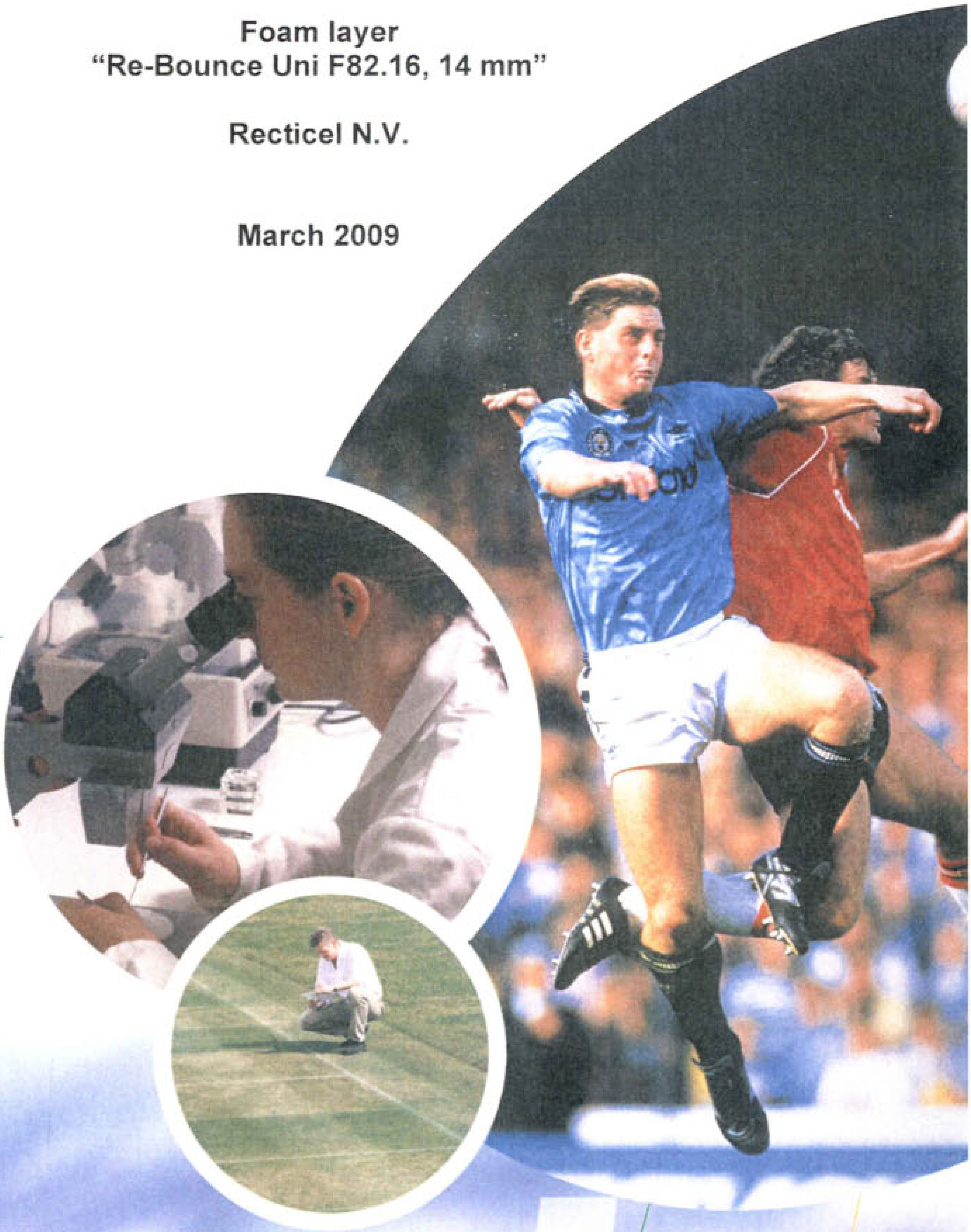
Instituut voor
Sportaccommodaties

RESEARCH REPORT

Foam layer "Re-Bounce Uni F82.16, 14 mm"

Rectiel N.V.

March 2009



NOC*NSF

RESEARCH REPORT - LABORATORY

PROJECT	:	Foam layer "Re-Bounce Uni F82.16, 14 mm"
PURPOSE RESEARCH	:	Suitability foam layer for use in sports constructions
PRINCIPAL	:	Recticel N.V. Contact: Mr. P. Tytgat
EXECUTION	:	ISA Sport Innovation & Quality Project manager: Mr. J.G. Kieft
RESEARCH DESCRIPTION	:	Page 2
RESEARCH RESULTS	:	Pages 3 - 5

CONCLUSION

Based on the material characteristics the foam layer "Re-Bounce Uni F82.16, 14 mm" is suitable for use in sports constructions.

A sports functional research has to be performed for each individual construction in which the foam is applied to determine the sports functional characteristics of the system.

March 2009

Instituut voor Sportaccommodaties B.V.

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RESEARCH DESCRIPTION

Recticel N.V. asked ISA Sport to perform the material research on a foam layer "Re-Bounce Uni F82.16, 14 mm" for use in sports constructions.

To test the quality of the foam layer the following characteristics are investigated:

- Weight;
- Thickness;
- Uniformity;
- Water permeability;
- Water absorption;
- Resistance to continuous load static;
- Resistance to continuous load dynamic;
- Creep;
- Stability;
- Dimensional stability;
- Coefficient of expansion;
- Tensile strength;
- Shock Absorption.

This research is restricted to measurements on the material characteristics of the foam layer. Other characteristics like sports functional characteristics can only be measured after application in a sports construction. The results of this research therefore give an indication of the suitability.

The results of the research are given on the next page.

MATERIAL RESEARCH

Description foam layer

The foam layer "Re-Bounce Uni F82.16, 14 mm" consists of various foam particles with an open cell structure. A photograph of the material is given in figure 1

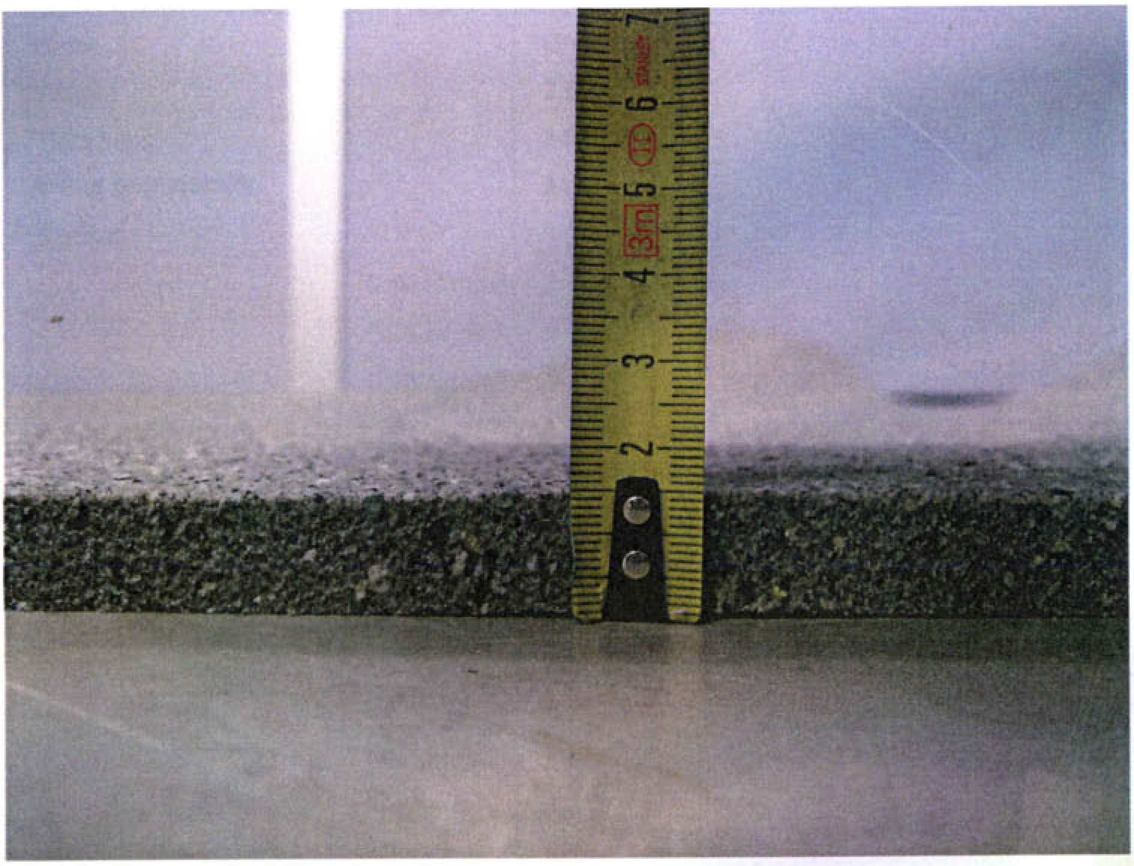

Figure 1: Re-Bounce Uni F82.16, 14 mm.

Test results

In table 1 below the results of the material research are summarized. The individual results are listed hereafter.

Table 1: Summary of the results of the material research.

Characteristics	Results
Color	Grey
Weight	3,6 kg/m^2
Thickness	14.1 mm
Water permeability	3420 ml/min
Stability	
0.10 N/mm²	1.1 mm
0.25 N/mm²	4.2 mm
0.50 N/mm²	6.9 mm
Creep (0.5 N/mm²)	$1.6 \cdot 10^{-3}$ mm/s
Uniformity	Uniform
Tensile strength	0.3 MPa
Coefficient of expansion	$1.2 \cdot 10^{-4}$ °C^{-1}
Water absorption	175%
Resistance to continuous load	
Static deformation	10%
Dynamic deformation	17%
Dimensional stability Δl	1.3%
Shock absorption on concrete	
Dry	52 %
Wet	60 %

The value for the water absorption of the foam is high due to the open cell structure.

The shock absorption of the product is higher in wet circumstances. When installed in a pitch the difference in uniformity of shock absorption will be much less due to the top layer. Due to the application below a carpet, the foam will stay moist in almost all situations.

The value for the dimensional stability of the foam is high. Under influence of water and temperature a significant change in length can appear. When applied in a sports construction the change in length reduces due to the weight of the overlying carpet.

Similar Recticel N.V. material has been applied in several sports constructions and has not given any problems. When the installation orders of the supplier are followed, no risks are to be expected.

Based on the material characteristics the foam layer "Re-Bounce Uni F82.16, 14 mm" is suitable for use in sports constructions.

A sports functional research has to be performed for each individual construction in which the foam is applied to determine the sports functional characteristics of the system.

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