



# LABORATORY TESTING THERMAL STABILITY



## Project Information

<b>Project Name</b>	TTII TRU-PLAY 57 COLORED EPDM INFILL Thermal Stability Behavior	
<b>Client Information</b>	Target Technologies International Inc. 8535 Eastlake Drive Burnaby, BC V5A 4T7	
<b>Date Performed</b>	August 22, 2016	
<b>Report Status</b>	Final	
<b>Job No.</b>	91356/1453	
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### Notes:

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## Summary

Sports Labs USA was commissioned to perform infill thermal stability behavior testing on tan TTII TRU-PLAY 57 COLORED EPDM INFILL. The purpose of this testing was to determine at which temperature the material will start to melt and agglomerate. Samples were received at the lab on August 19th, 2016

## Procedure

The equipment used was a Quincy 20AF Hydraulic forced air gravity convection oven to heat the material and an Omega HH147U Data logger to track temperature. The oven heat was increased by 5 °C at a time and stabilized for 15 minutes at each interval until changes caused by the effect of the heat was observed.

INFORMATION, ADVICE & KNOW-HOW: FROM THE SYNTHETIC SPORTS SURFACE EXPERTS



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## Results

Temp °C	Temp °F	Remark
70	158	No agglomeration noticed
75	167	No agglomeration noticed
80	176	No agglomeration noticed
85	185	No agglomeration noticed
90	194	No agglomeration noticed
95	203	No agglomeration noticed
100	212	No agglomeration noticed
105	221	No agglomeration noticed
110	230	Flashing of product becomes sticky
115	239	Flashing of product becomes sticky
120	248	Product begins to form clumps when pressure is applied, but breaks up after cooling
125	257	Product becomes malleable. When compacted pellets retain their compacted agglomerated state.
130	266	Agglomeration observed
135	275	Agglomeration observed, testing stopped

## Conclusion

The EPDM tested contained a small amount of flashing left over from the manufacturing process. This flashing was the first to show signs of stickiness. This resulted in a weak bond of material that once cooled was easily broken up between 110C and 120C. At 125C and above the EPDM pellet itself started to show signs of agglomeration that continues past the cooling phase.

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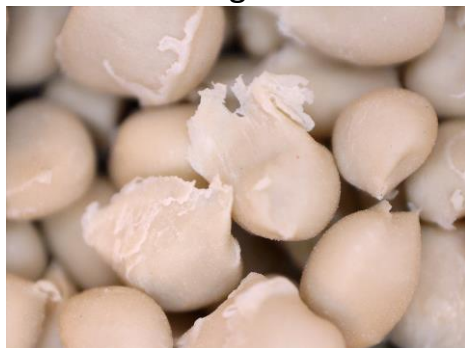
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## EPDM Pre-testing



## EPDM Agglomeration



First agglomeration observed at 125 °C



Material heated to 135 °C then cooled down



Material heated to 135 °C then cooled down



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