

LABORATORY TESTING INFILL DYNAMIC FATIGUE



Project Information

Project Name	Camofill Infill Dynamic Fatigue – 10,000 Repeated Impacts	
Client Information	Western States Wholesale PO Box 4225 Ontario, CA 91761	
Report Date	February 12, 2021	
Report Status	Final	
Job No.	96342/6684	
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Notes:

1. This report has been prepared by Firefly Sports Testing with all reasonable skill, care and diligence within the terms of the contract with the Client and within the limitations of the resources devoted to it.
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4. Opinions and interpretations are not within the scope of Firefly Sports Testing's ISO 17025 Accreditation.
5. The results within this report relate only to the samples as tested by this laboratory.

Summary

Firefly Sports Testing was commissioned to perform a repeated impact infill resiliency comparison of a Camofill infill sample that was sent to our laboratory. The received sample was split into two parts. The first portion was tested per the standards in the test method table below. The second portion of infill was subjected to a repeated impact procedure. The modified dynamic fatigue procedure consisted of loosely placing the infill in a confined cylinder measuring 25.4 mm deep with a diameter of 105 mm. The sample received a set drop to establish initial consolidated depth and then subjected to 10,000 repeated impacts at 750N. Upon completion of the 10,000 impacts, the sample was removed from the cylinder and tested per the standards in the test method table below. Comparative particle size distribution, bulk density results and compaction data of the infill sample before and after undergoing the repeated impact procedure can be found in subsequent sections of this report.



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Test Methods

Test Type	Test Method	Test Description
Dynamic Fatigue	EN 17324:2020	Surfaces for sports areas – Test method for the determination of the resistance to dynamic fatigue of shock pads and sports surfaces
Particle Size	EN 933-1	Tests for Geometrical Properties of Aggregates – Part 1: Determination of Particles Size Distribution – Sieving Method
Bulk Density	EN 1097-3	Tests for mechanical and physical properties of aggregates - Part 3: Determination of loose bulk density and voids

Table of Contents

Summary	1
Test Methods.....	2
General Information.....	2
Pre and Post Repeated Impact Results.....	3
Compaction Results.....	4
Particle Size Distribution Comparison	5

General Information

Sample Description	Camofill
Test Date	1/28/2021
Air Temp (°F)	74
Humidity (%)	45

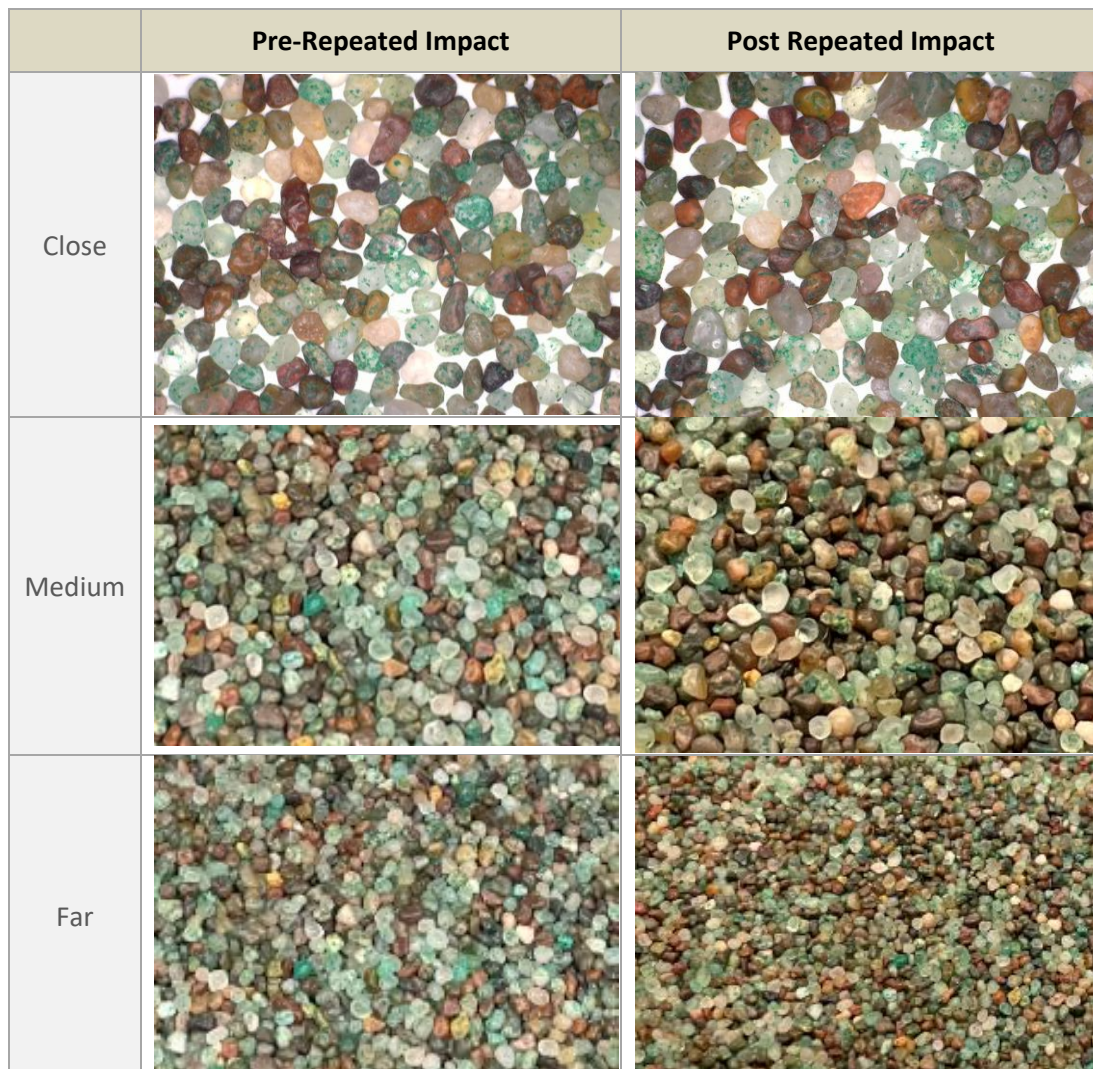


LABORATORY TESTING INFILL DYNAMIC FATIGUE



Pre and Post Repeated Impact Results

Characteristic		Results	Characteristic		Results
Pre-Repeated Impact	Particle Size (mm)	0.80-1.25	Post Repeated Impact	Particle Size (mm)	0.80-1.25
	Particle Shape	Round		Particle Shape	Round
	Bulk Density (g/cm ³)	1.552		Bulk Density (g/cm ³)	1.559

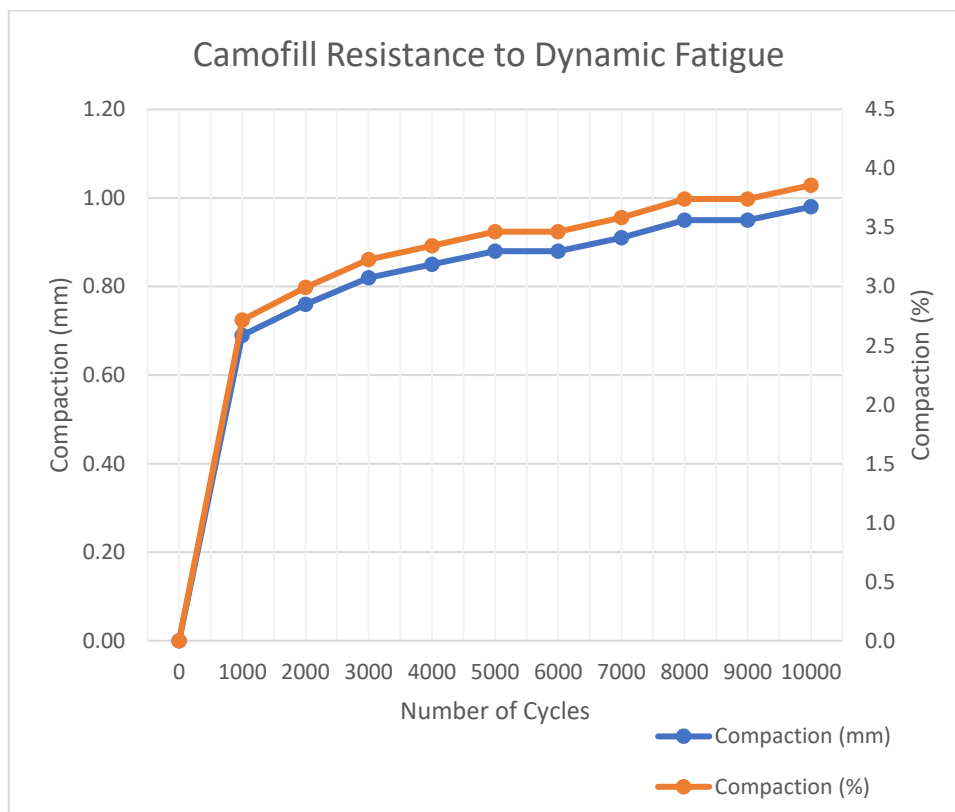


LABORATORY TESTING INFILL DYNAMIC FATIGUE



Compaction Results

Number of Impacts	Infill Compaction (mm)	Percentage Compaction from Original Depth (%)
0	0.00	0.0
1000	0.69	2.7
2000	0.76	3.0
3000	0.82	3.2
4000	0.85	3.3
5000	0.88	3.5
6000	0.88	3.5
7000	0.91	3.6
8000	0.95	3.7
9000	0.95	3.7
10000	0.98	3.9

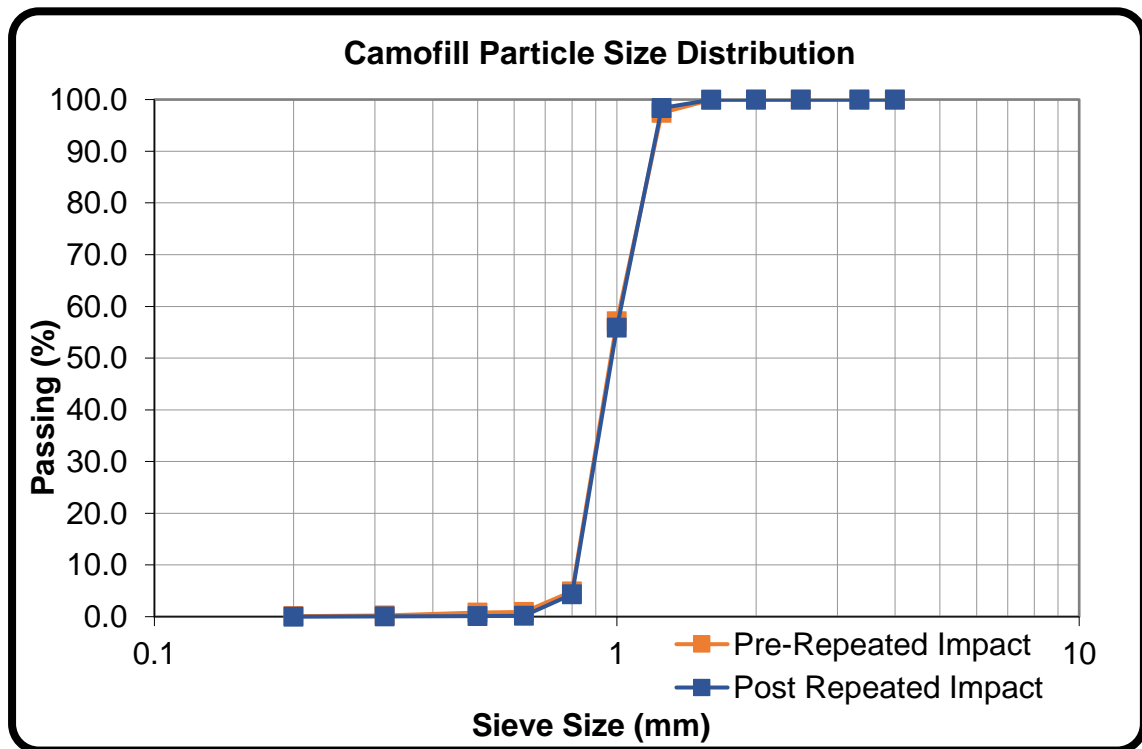


LABORATORY TESTING INFILL DYNAMIC FATIGUE



Particle Size Distribution Comparison

Pre-Repeated Impact		Passing % Variation	Post Repeated Impact	
Sieve Size (mm)	Passing (%)		Sieve Size (mm)	Passing (%)
4.000	100.0	0.0	4.000	100.0
3.350	100.0	0.0	3.350	100.0
2.500	100.0	0.1	2.500	99.9
2.000	100.0	0.1	2.000	99.9
1.600	99.9	0.0	1.600	99.9
1.250	97.4	0.9	1.250	98.3
1.000	57.1	1.3	1.000	55.9
0.800	4.9	0.5	0.800	4.3
0.630	0.9	0.8	0.630	0.2
0.500	0.8	0.7	0.500	0.1
0.315	0.2	0.2	0.315	0.0
0.200	0.1	0.1	0.200	0.0



End of Report

