

GROUND ENGINEERING CONSULTANTS LTD.

CIVIL & GEOENVIRONMENTAL ENGINEERS

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FILE: GE-0-1234

July 8, 2020

Greener Shingles
2233 MacPherson Avenue
REGINA, Saskatchewan
S4S 4E4

ATTENTION: MR. BRUCE ROBINSON

Dear Sir:

**SUBJECT: INVESTIGATION OF IMPACT RESISTANCE
OF PREPARED ROOF COVERING MATERIALS
ASPHALT SHINGLES – STANDARD UL2218
REGINA, SASKATCHEWAN**

1.0 INTRODUCTION

Greener shingles of Regina, Saskatchewan retained our services to perform and document the results of impact testing on prepared asphalt shingles in accordance with Standard UL 2218 (Impact Resistance of Prepared Roof Covering Materials).

2.0 DISCUSSION

Representatives of Greener Shingles prepared asphalt shingle test specimens for impact resistance testing to be performed in accordance with Standard UL 2218 Class 4 specification. The asphalt shingles used in the testing were approximately ten (10) years old and were removed from a residential home located in the City of Regina for testing purposes. The shingles were treated with Greener Shingles spray-on treatment prior to testing.

A MEMBER FIRM OF THE ASSOCIATION OF CONSULTING ENGINEERING COMPANIES - SASKATCHEWAN

· SOIL MECHANICS AND FOUNDATION CONSULTANTS · SITE INVESTIGATIONS · FOUNDATION DESIGN · SPECIFICATIONS · CONSTRUCTION SUPERVISION · INSPECTION AND LABORATORY TESTING SERVICES · SOILS · CONCRETE · ASPHALT · PAVEMENT DESIGN AND EVALUATION · SLOPE STABILITY · REPORTS · SEEPAGE CONTROL BARRIERS FOR MUNICIPAL AND INDUSTRIAL WASTE CONTAINMENT · ENVIRONMENTAL SITE ASSESSMENTS

3.0 CONCLUSIONS

The asphalt shingles were tested in accordance with Standard UL 2218, Class 4 specification. The shingles were examined on both the exposed surface and back surface after testing was complete. There was no evidence of tearing, fracturing, cracking, splitting, rupture or crazing in the asphalt shingles. The asphalt shingles that were treated by Greener Shingles were more flexible than asphalt shingles from the same source that were not treated. The asphalt shingles that were treated by Greener Shingles were found to be in compliance with Standard UL 2218, Class 4 specification.

We trust this letter satisfies your present requirements. If you have any questions or require additional information, please contact this office.

Yours truly
Ground Engineering Consultants Ltd.



Prepared by: Kelly Maunder, A.Sc.T.
Laboratory Supervisor



Reviewed by: Tim Adelman, P. Eng., P. Geo.



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