

CLIENT: TUFF INDUSTRIES INCORPORATED
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Canada V4V 1S7

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| Test Report No: TJ8150-1C-SUMMARY | Issue Date: March 8, 2024 |
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SAMPLE ID: Tufdek Type III internally reinforced, vinyl-backed Polyvinyl Chloride (PVC) sheet-applied decking membranes of 60 mils thickness for use in light foot traffic areas.

SAMPLING DETAIL: Samples were selected at the location of manufacture by QAI representative Michael Fallon on July 16, 2021. Sample selection including the random selection of samples from minimum 4 dates of production, including various color and texture options available for Tufdek PVC membranes.

DATE OF RECEIPT: Samples were received at QAI Tulsa, OK division on July 26, 2021.

TESTING PERIOD: Testing of the Tufdek PVC membrane occurred from September 1, 2021 until completion in April 2023.

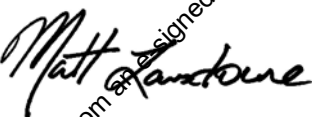
AUTHORIZATION: QAI proposal 21JL04081R5 dated May 11, 2021 signed by Tuff Industries Inc. personnel Bryan Hughes on May 12, 2021.

TEST(S) REQUESTED: Testing in accordance with the following method(s):

- ASTM D4434-21 *Standard Specification for Poly(Vinyl Chloride) Sheet Roofing* (ASTM D4434).

CONCLUSIONS: Tufdek PVC sheet-applied decking membranes of 60 mils thickness products confirmed to be representative of normally manufactured product at the point of manufacture, were found to comply with Type III material requirements as specified in ASTM D4434.

Prepared By:



Matt Lansdowne
VP of Operations

Signed for and on behalf of
QAI Laboratories Inc.



Rob Giona
Operations Manager

SUMMARY OF TEST RESULTS

Table 1: Summary of Tufdek Results of Evaluation to ASTM D4434

| PHYSICAL REQUIREMENTS | | UNIT | REQUIREMENT | RESULTS |
|--|--------|------|------------------------------------|-----------------------|
| Overall Thickness | | mm | $\geq 1.2 \pm \text{thickness}$ | 1.54 |
| Thickness of Coating Over Scrim (Reinforcing Fabric) | | mm | ≥ 0.4 | MD: 0.66 CMD: 0.88 |
| Breaking Strength | MD | N | ≥ 890 | 1925 |
| | CMD | | | 1709 |
| Elongation at Break | MD | % | ≥ 15 | 24 |
| | CMD | | | 27 |
| Seam Strength | | % | ≥ 75 Breaking Strength | 127% |
| Breaking Strength After Heat Aging | MD | % | ≥ 90 Breaking Strength | 98% |
| | CMD | % | | 99% |
| Tearing Strength | MD | % | ≥ 200 | 368 |
| | CMD | % | | 436 |
| Low Temperature Bend | | - | No Cracks -40°C | No Cracks |
| Accelerated Weathering | | - | No cracking, crazing or blistering | No Damage PASS |
| Linear Dimensional Change | Length | % | ≤ 0.5 | 0.4% |
| | Width | % | ≤ 0.5 | 0.0% |
| Change in Weight After Immersion in Water | | % | ≤ 3 | 2.6 |
| Static Puncture Resistance | | kg | ≥ 15 kg | > 15 kg |
| Dynamic Puncture Resistance | | J | > 20 | > 20 J |

Detailed results can be found in QAI test report TJ8150-1C dated February 12, 2024.

*****END OF SUMMARY REPORT*****

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