Wind Testing – Interflex Hazard

Technical Report

Assessing uplift resistance of roof matting – April 2024

This report addresses an experimental investigation into the suitability of Interflex Hazard for roof matting, evaluated on April 30, 2024, at the 7x5 Wind Tunnel in Southampton, United Kingdom.

The primary objective was to identify uplift resistance as a function of wind speed by testing Interflex Hazard in a speed-controlled wind environment.

Testing set up

The setup consisted of placing the mat flat onto the wind tunnel's wooden floor surface (example a), then connecting straps to ensure the safety restraint in the event of uplift and/or rolling. These safety links were required to protect the integrity of the facility and installed approximately 0.55m downstream the leading edge of the mat, (example b) in

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order to not impact the performance of the mat when exposed to a given wind speed.

Example a

Example b

The evaluation of Interflex Hazard, mostly, consisted in the following procedure:

1. Ensure correct positioning of the mat
2. Installation of a pair of safety links
3. Close the testing section area to initiate tests
4. Set the test section at 10mph* wind speed
5. Reach and sustain the wind speed at stable for at least 20 seconds
6. Increase the wind speed by 5 miles per hour (mph)
7. Repeat iterations 5. and 6. until (i) a maximum speed of 80mph, or (ii) any significative motion (e.g. uplift, rolling, sliding)

Testing scenarios

- Scenario A – Interflex Hazard placed with its smaller edge faced to the wind direction (e.g. aligned configuration)
- Scenario B – Interflex Hazard placed with its larger edge faced to the wind direction (e.g. side wind configuration)

Testing sample

- 100cm x 150cm Interflex Hazard Mat

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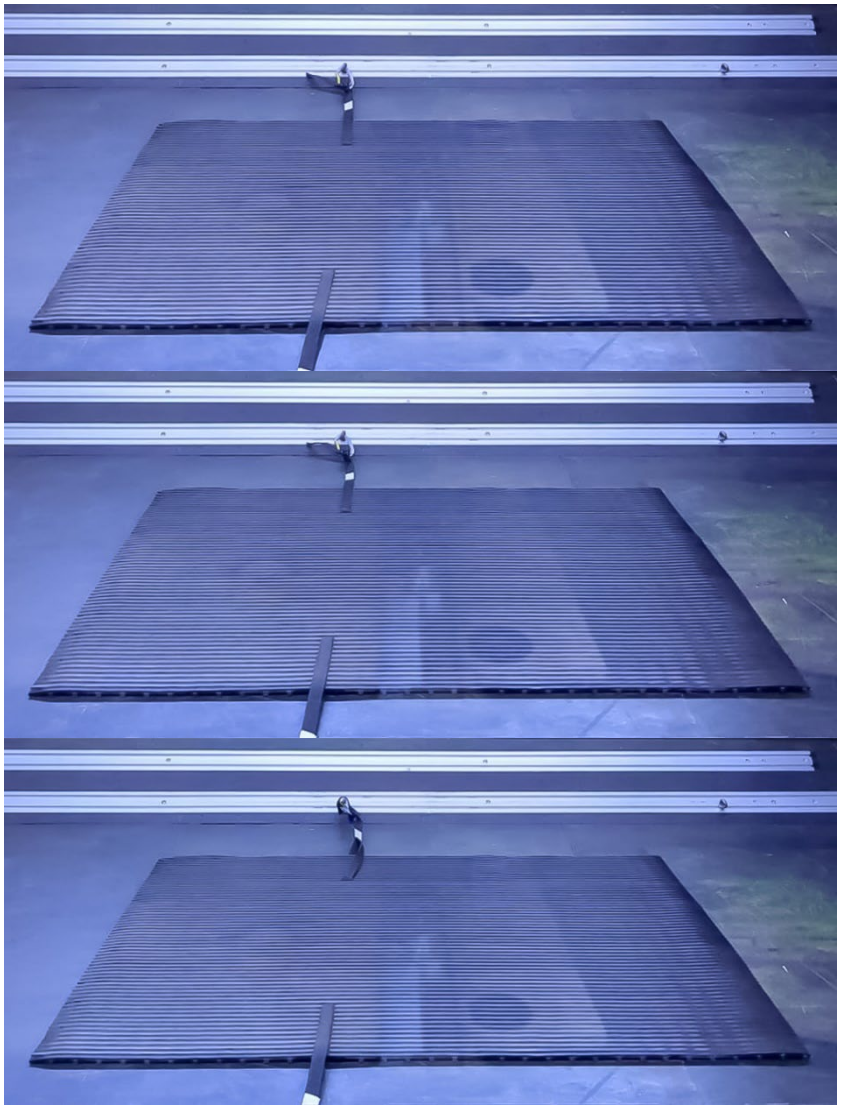
Scenario A results – aligned to wind direction

- No wind



- 25 mph
- 30 mph

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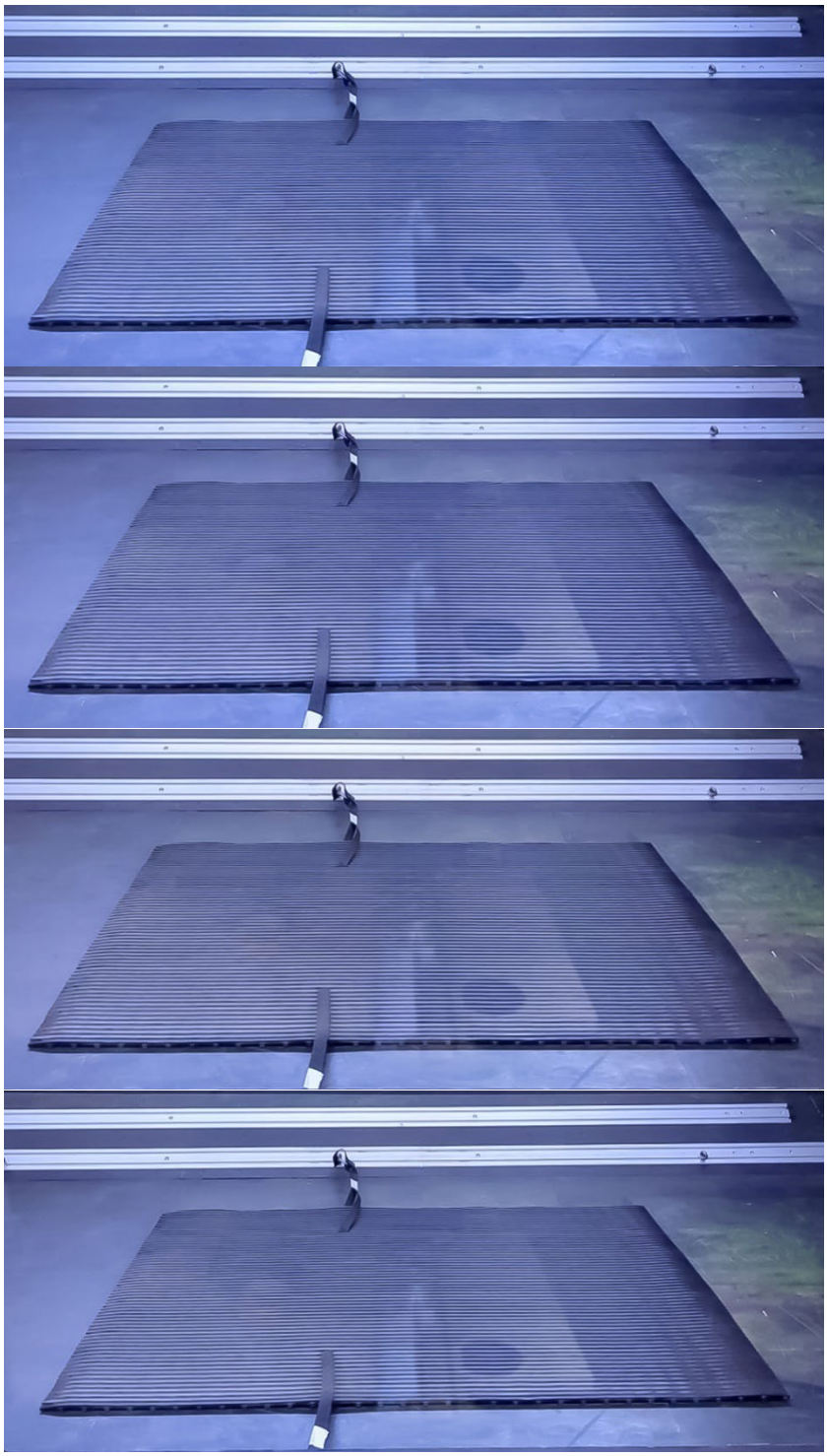
- 35 mph
- 40 mph
- 45 mph
- 50 mph



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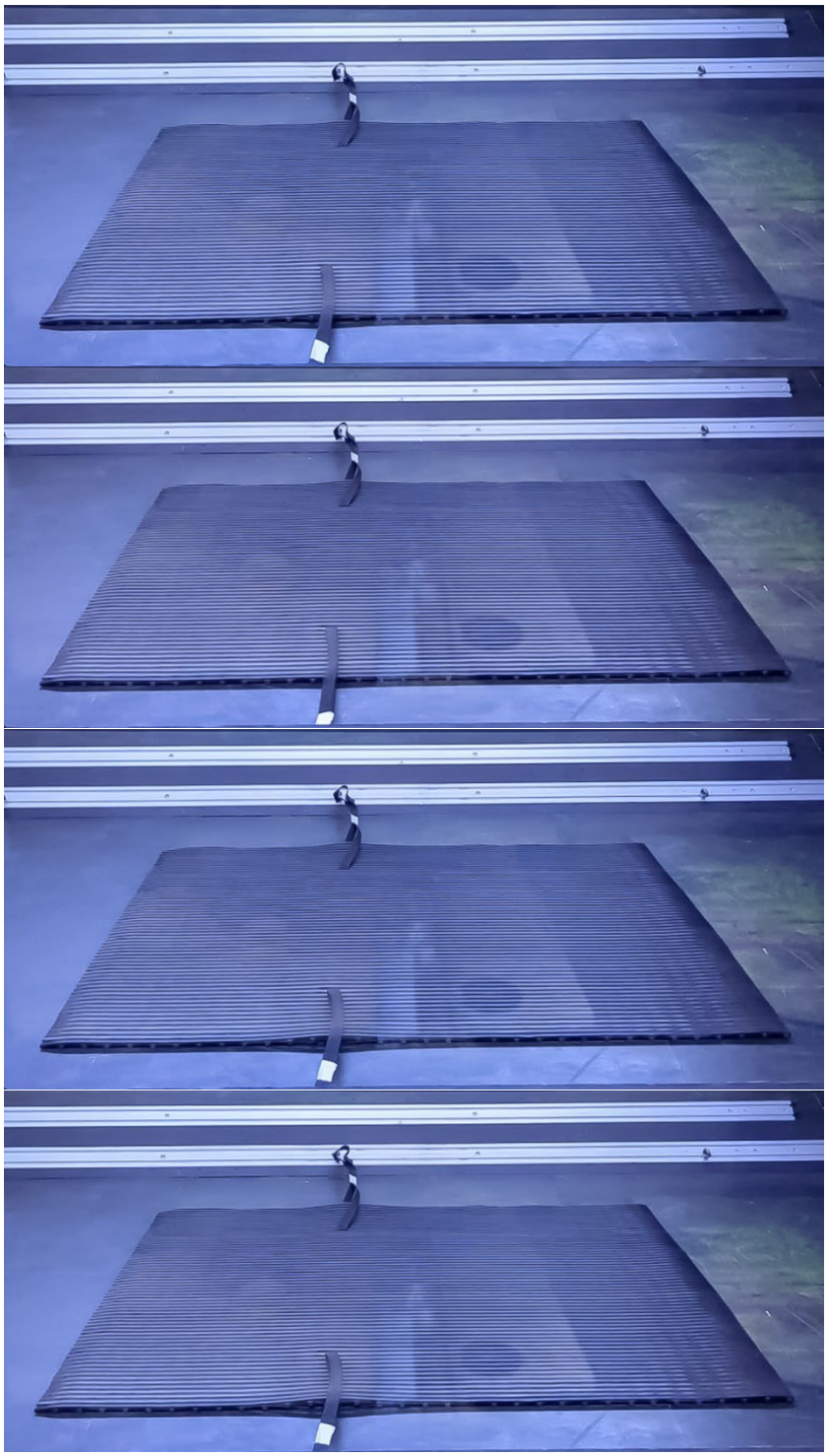
- 55 mph
- 60 mph
- 65 mph
- 70 mph



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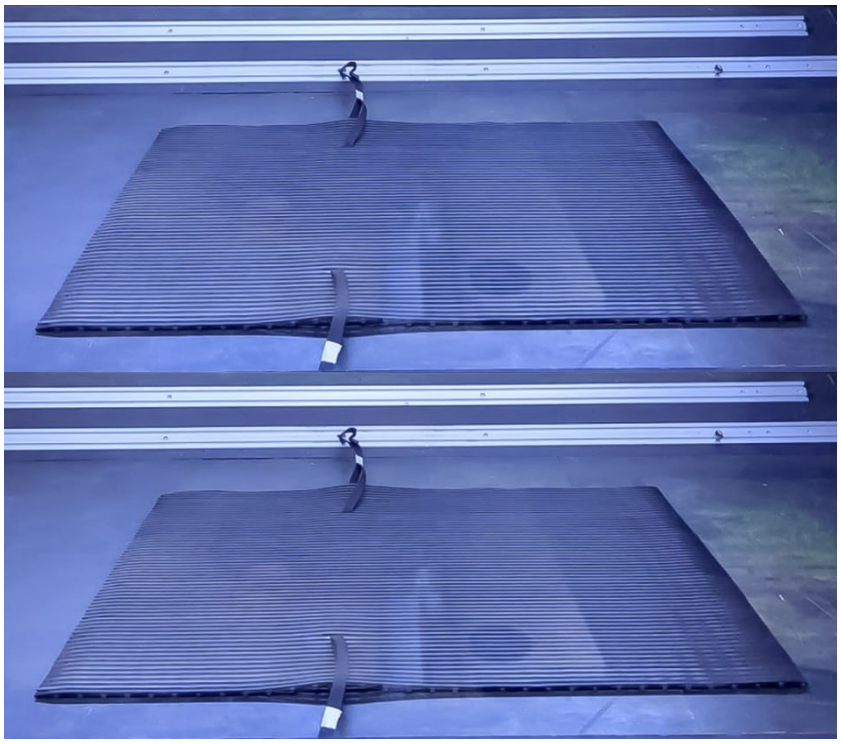
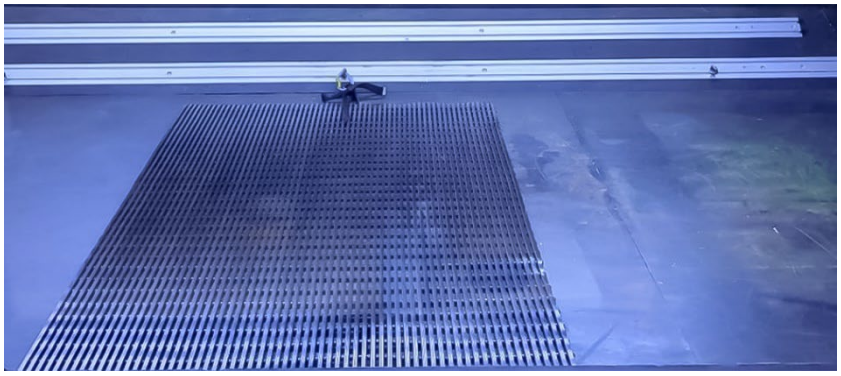
- 75 mph



- 80 mph

Scenario B results - wind towards longer edge (lateral wind)

- No wind



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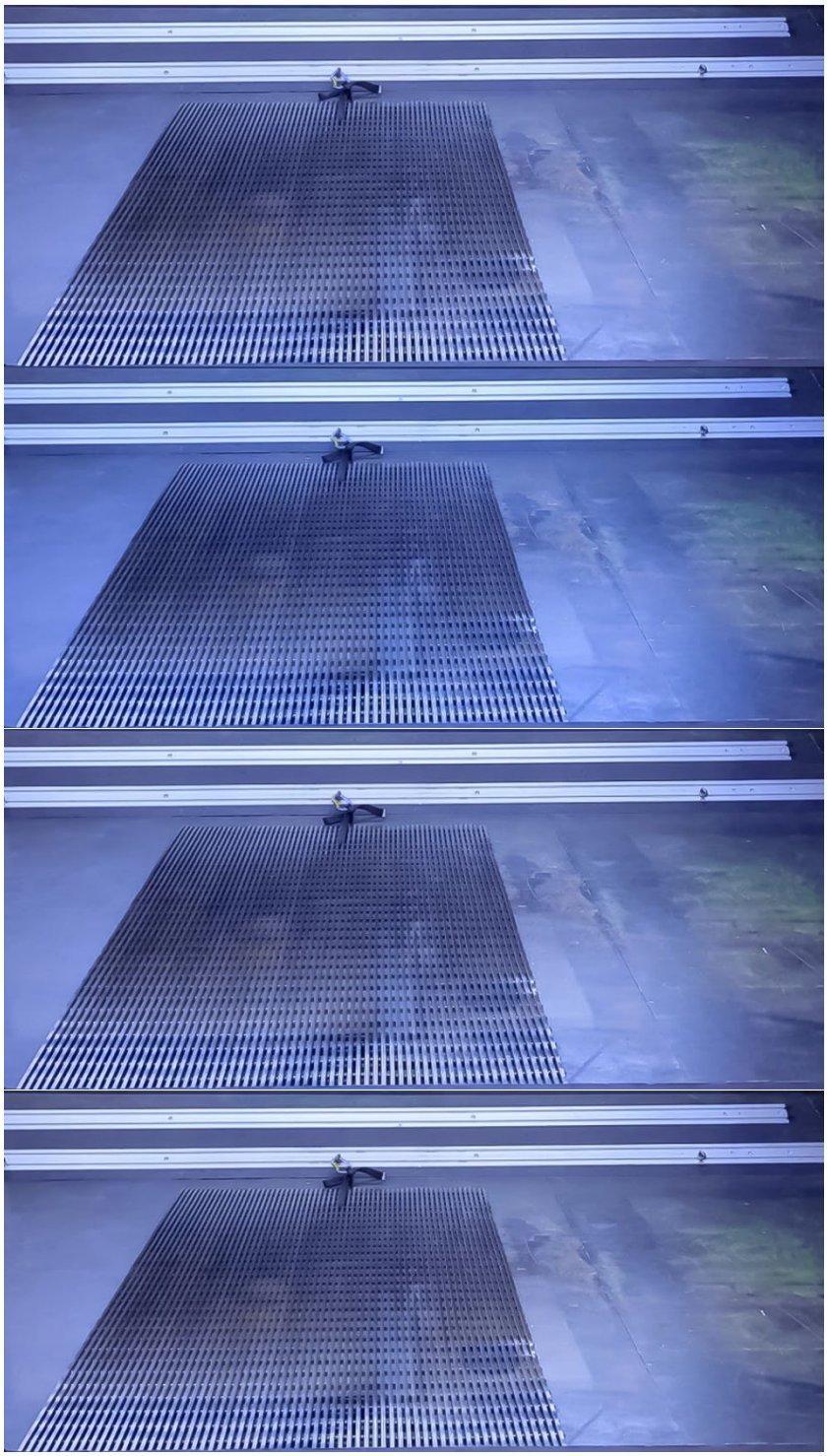
- 25 mph
- 30 mph
- 35 mph
- 40 mph



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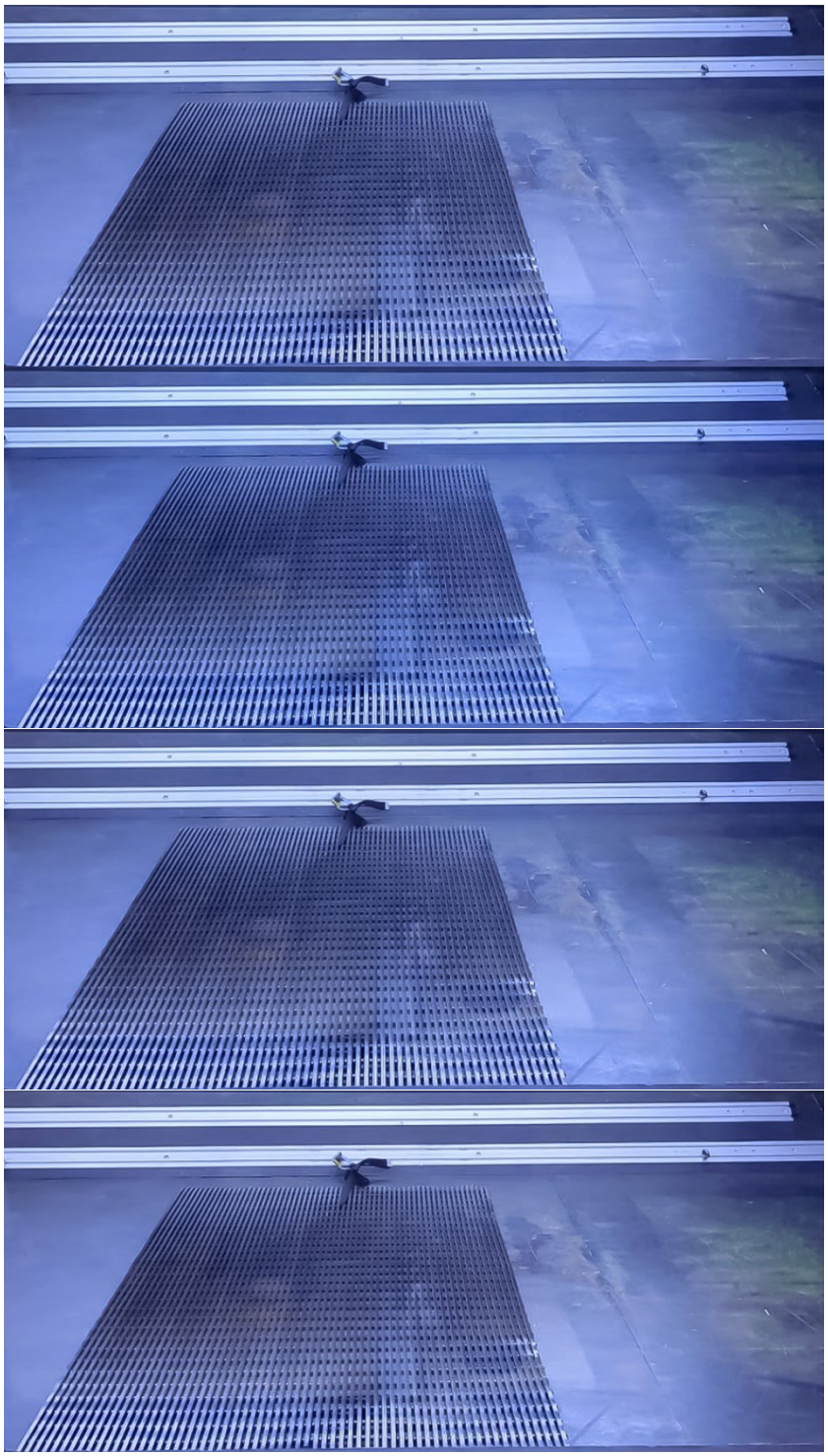
- 45 mph
- 50 mph
- 55 mph
- 60 mph



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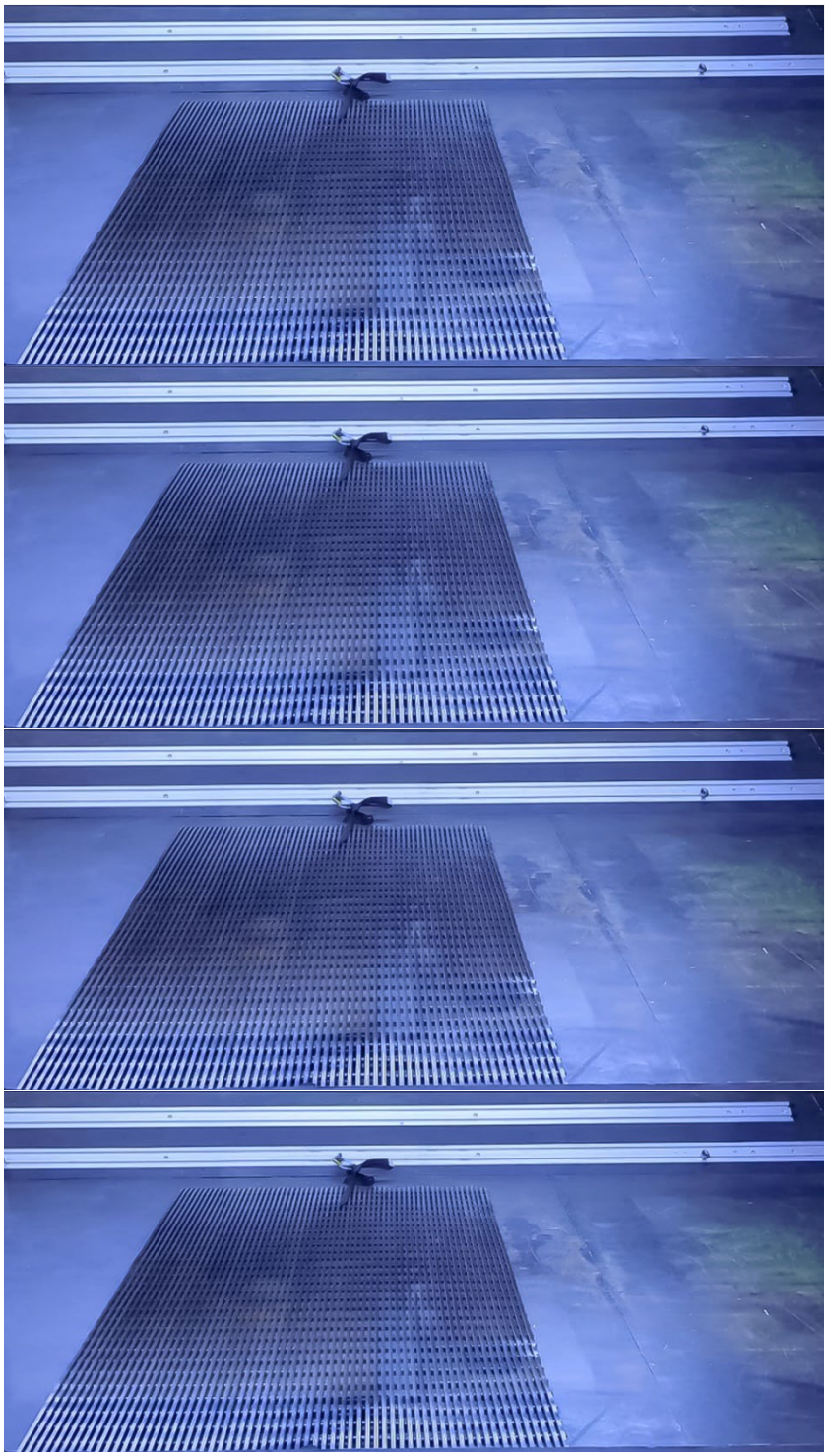
- 65 mph
- 70 mph
- 75 mph
- 80 mph



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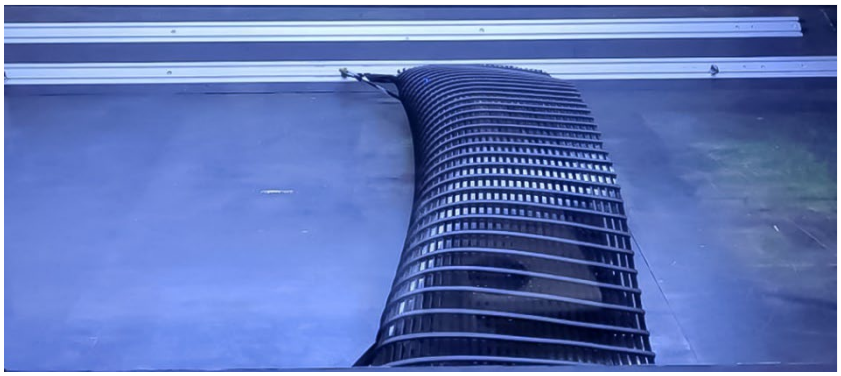
- 85 mph



Overall performance

Following the experimental test, it was observed that the maximum stable wind speed for Interflex Hazard, considering all the respective scenarios was:

Up to 80 mph

Note - the qualitative observations were obtained in a controlled-environment facility in ideal conditions (i.e. clean and flat testing surface; no wind fluctuations; turbulence level below 0.5%). The conditions and behaviours of Interflex Hazard may differ in real applications due to intrinsic environmental differences in wind conditions and scenarios.