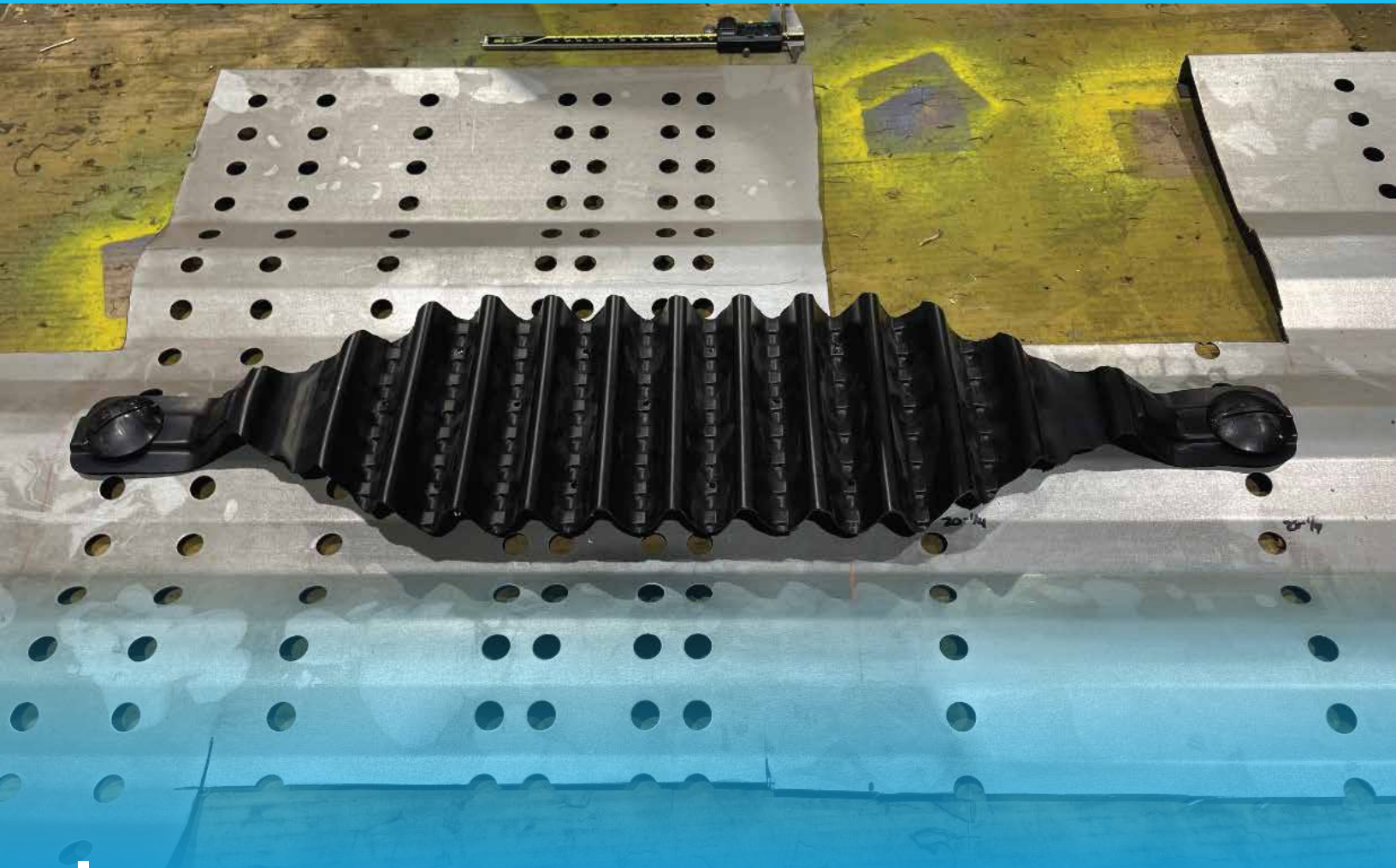




## Door Defender™ Side Post Guard Design Detail

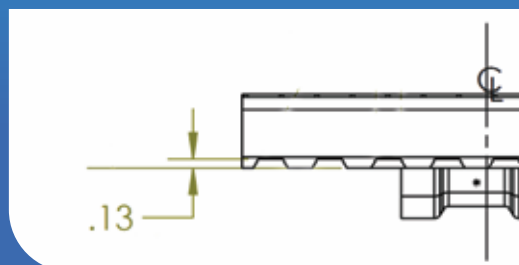


### Testing Overview

Holland's team of engineers stretched expandable side post guard to various lengths, including a length beyond the application limits, and measured the ridge height. They also placed the side post guard in a test frame to understand the force it would take to collapse a ridge.

### Measurements

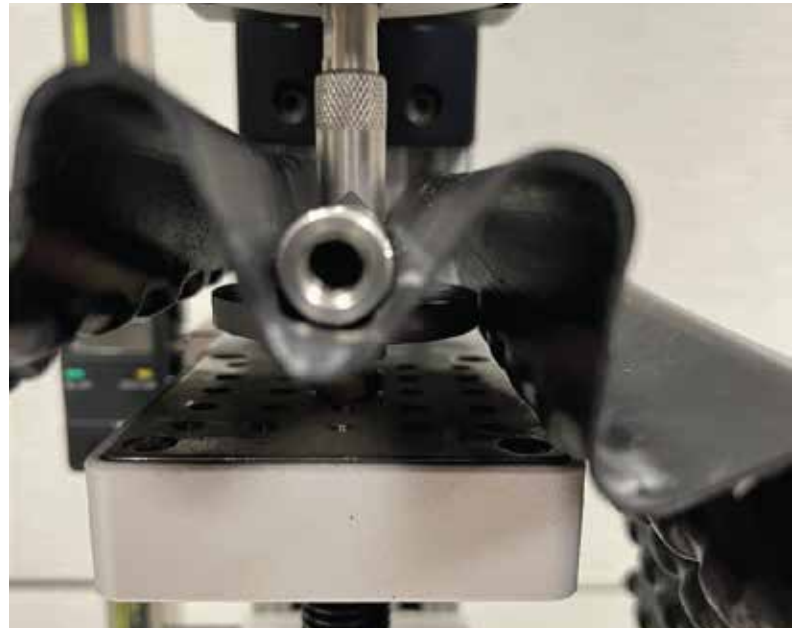
Standard height of ridge is .13"





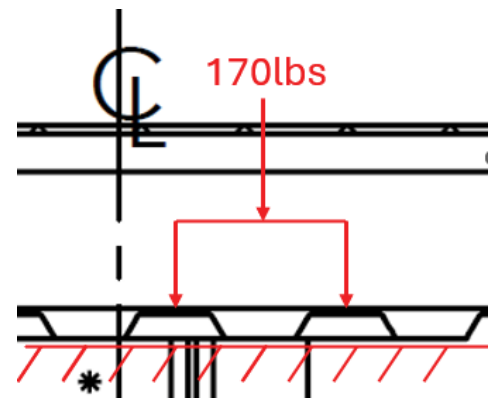
# THE PROCESS

- Small hole was drilled into the center of each ridge to allow the caliper to measure the distance between the ridge top and the surface of the sample side screen.
- Measurements were taken with side post guard stretched to: 20-1/4", 28-1/4" and 35"
- Side post guard could not stretch to 37 -1/4"
- All ridges on the expandable side post guard measured at or above .13" between the top of the ridge and the side screen in all locations per the drawing above.
- Being stretched did not affect the height of the ridges.



## Force Measurement Data

- Two ridges were loaded into a test frame supported by three bottom ridges.
- Averaged 170 pounds to compress 2 ridges to contact the support piece below.



## Summary

Only when the top of two ridges are compressed with a force of 170 pounds will Holland's side post guard not provide protection to vehicle door edge. Day-to-day use of side post guards, stretched within application limits, will maintain an air gap providing door edge protection indeterminate of location side post guard is struck by vehicle door.