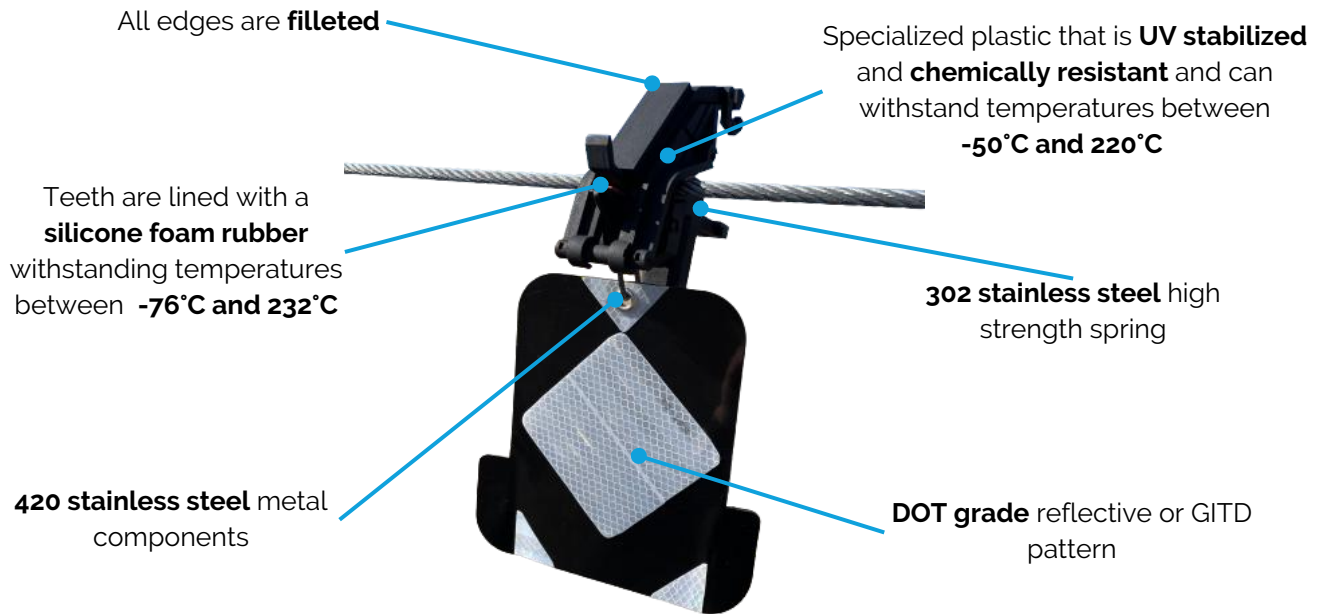


Material Ratings

We understand that safety and product longevity are a top priority for utilities. All materials on our design have gone through substantial testing and received official ratings pertaining to the outdoor sustainability, operation temperatures, and more. The FeatherFender as a whole is currently undergoing further testing to prove its safety and longevity.



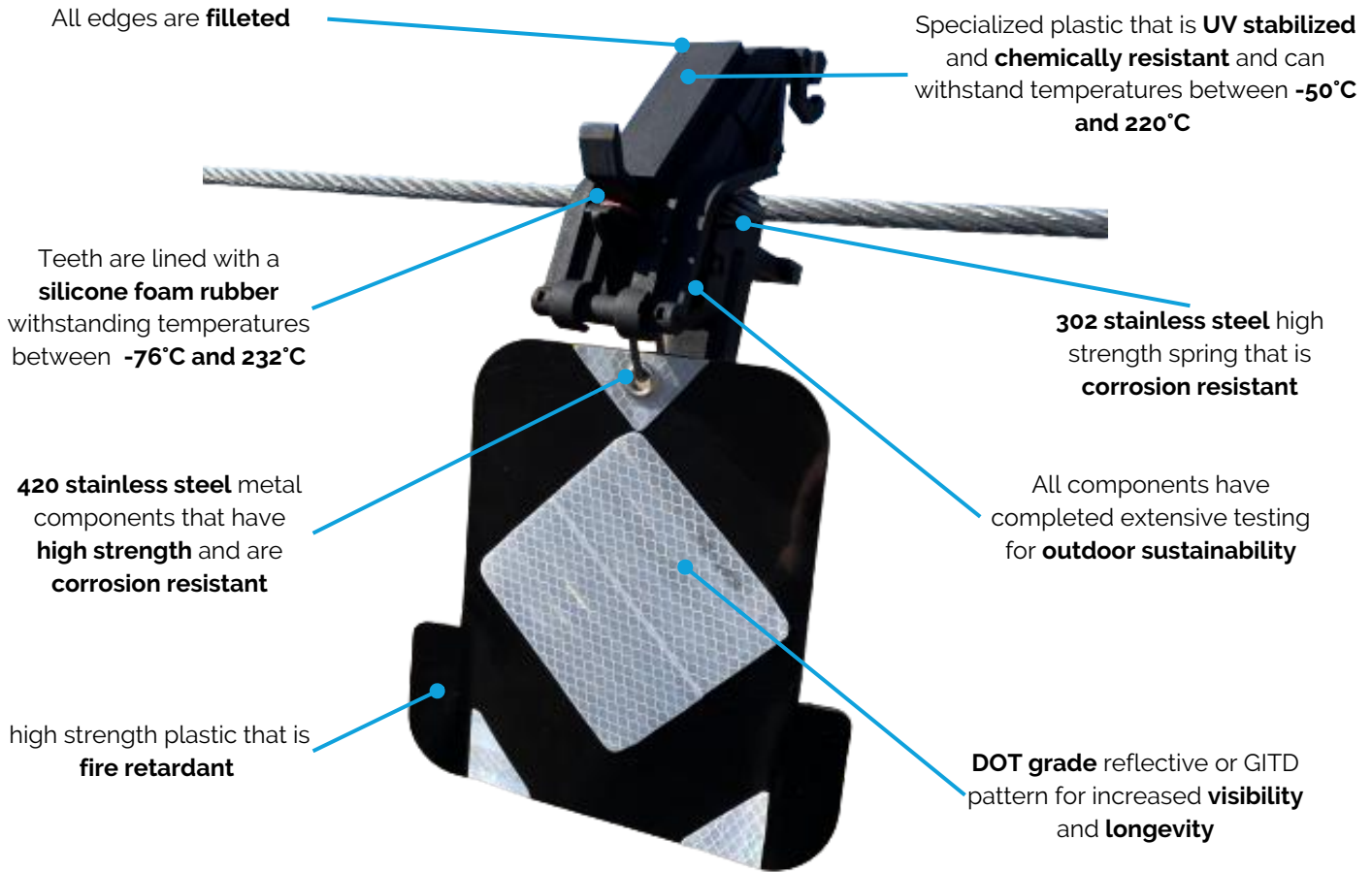
Our clamp is made with a specialized glass-reinforced plastic that is UV resistant with enhanced mechanical strength. This plastic has undergone the following tests and received the following ratings and scores:

- **UL94 testing and V-0 and 5VA ratings:** The UL 94 test includes applying a flame to the material and marking the burn and melting after the flame removal. A V-0 rating means the material did not have flaming combustion more than 10 seconds after flame removal, there were no drip flaming particles, and no glowing combustion for longer than 30 seconds after the flame removal. A 5VA rating means the burning stopped completely within 60 seconds, there were no burn through holes, and no drips of material. This certifies the material as **flame retardant**.
- **UL746B testing with a safe operating temperature between -50°C and 220°C:** The UL746B test is conducted to test the thermal aging of a material. This test measures mechanical and dielectric strengths. The safe operating temperature is the hottest temperature the material can reach before it degrades to 50% of its original properties.
- **UL746C testing and f-1 rating:** The UL746C test is for finding the **outdoor sustainability** of a material by placing the sample in a twin-enclosed carbon weatherometer for 720 hours, or a xenon-arc weatherometer for 1000 hours and then placed in 70°C water for 7 days. An f1 rating indicates it passed both tests.

The rest of FeatherFender's components are also suitable for outdoor use.

- All metal components are high strength **stainless steel** to prevent rusting.
- The reflective or glow in the dark material has these properties:
 - Stable in temperatures ranging from **-40°C to 104°C**
 - Is **weatherproof and UV resistant** and is proved through its use on road signs and semi trucks.
- The inside of the clamp is lined with a high temperature gripping silicon foam rubber with the following characteristics:
 - Durable in temperatures ranging from **-76°C to 260°C**
 - **UV, corona, and chemical resistance**

Material Ratings



Material Ratings					
Clamp Plastic	UL94 V-0, 5VA fire retardant	UL 746 HWI PLC 0 ignition resistant	UL746 HAI PLC 0 ignition resistant	UL 746 CTI PLC 4 comparative tracking index	ASTM D149 17 kV/mm dielectric strength
Clamp Plastic	ASTM D257 1E15 ohms*cm volume resistivity	ASTM D495 AR PLC 5 arc resistance	IEC 60112 CTI 175 V comparative tracking index	UL 746C f1 outdoor sustainability	UL 746 (HVTR) PLC4 high voltage track rate
302 Stainless Steel Spring	ASTM A240 low temperature service	ASTM A666 annealed certification	AMS 5516 corrosion resistant	ASTM SA240 chromium stainless steel	
Reflector Plastic	ASTM D4976 mechanical strength & outdoor sustainability			UL 94 HB fire retardant	
420 Stainless Steel Pins	AISI 420 identification	ASTM A276 hot or cold finished	AMS 5621 identification	QQS 763 stainless steel certified	
Reflective Pattern	DOT-C2 reflective certification			No. 108, S8.2.1.7 photometry requirements	

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- **UL746 HWI and PLC 0 rating:** The UL746 HWI test finds the time it takes to ignite or burn a material when wrapped with resistive wire that dissipates a specified energy level. A PLC 0 rating indicates an ignition time greater than 120 seconds.
- **UL746 CTI and PLC 4 rating:** The UL746 CTI test indicates the voltage that causes tracking in a material after 50 drops of 0.1% ammonium chloride solution has fallen on the material. A PLC 4 rating indicates a tracking voltage between 100 and 174 Volts.
- **ASTM D149 and 17 kV/mm rating:** The ASTM D149 test indicates the voltage per unit thickness at which the material will conduct electricity. Voltage is applied to the material until the material experiences dielectric breakdown or an electrical burn-through.
- **UL 746 HVTR and PLC 4 rating:** The UL746 HVTR test finds the rate that a tracking path can be produced on the surface of the material. A PLC 4 rating indicates a tracking rate greater than 150 mm/min.
- **ASTM D257 and 1E15 Ω·cm rating:** The ASTM D257 test indicates the volume resistivity or the resistance to leakage current through the body of an insulating material.
- **ASTM D495 and PLC 5 rating:** The ASTM D496 test finds the number of seconds that a material resists the formation of a surface conducting path when subjected to an intermittently occurring arc of high voltage and low current characteristics. A PLC 5 rating indicates a mean time of arc resistance between 120 and 179 seconds.

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