



LED Neon  

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FLEX

# MATERIALS

PVC - POLYURATHANE - SILICONE

# OVERVIEW OF FIXTURES

- PVC - GLLS - Vivid Wave - Dynamic White
- PU - LED LINEAR - VENUS - Tunable White
- SILICONE - GLLS - Vivid Wave - Dynamic White



## PVC

VIVID WAVE - PVC

### HYDROPHILIC

Water remains on the fixture when wet

Dirt and Debris can embed onto the fixture

20m Max Run Length

3.66W/ft - (12W/m)

### OPERATING TEMPERATURE

-13°F to 140°F  
(-25°C to 60°C)

### HUMIDITY

0-95% non condensing

UL676 Rated Accessories

### CERTIFICATIONS

Tested to UL & CSA by Underwriters Laboratory for use in USA and Canada, complies with California Title 24 Requirements, Lighting Facts.Exceeds ANSI C78.377A, CE & RoHS Compliant.

## PU

LED LINEAR - POLYURETHANE

### HYDROPHILIC

Water remains on the fixture when wet

Dirt and Debris can embed onto the fixture

5m Max Run Length

3.7W/ft - (12.15W/m)

### OPERATING TEMPERATURE

-13°F to 104°F  
(-25°C to 40°C)

### HUMIDITY

Not-Specified

IP67 Rated Accessories

### CERTIFICATIONS

Undetermined

## SILI

VIVID WAVE - SILICONE

### HYDROPHOBIC

Water is expelled from the fixture

Self-Cleaning Surface requires minimal maintenance

30m Max Run Length

3.66W/ft - (12W/m)

### OPERATING TEMPERATURE

-40°F to 122°F  
(-40°C to 50°C)

### HUMIDITY

0-95% non condensing

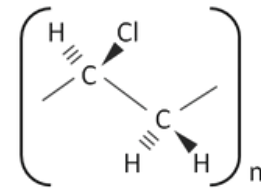
IP67 Rated Accessories

### CERTIFICATIONS

Tested to UL & CSA by Underwriters Laboratory for use in USA and Canada, complies with California Title 24 Requirements, Lighting Facts.Exceeds ANSI C78.377A, CE & RoHS Compliant.

# CHALLENGES & LIMITATIONS

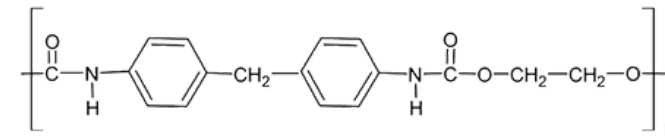
## PVC



### Polyvinyl Chloride

- UV Degradation
- Color Shifting
- Thermal Expansion & Contraction
- Debris Buildup & Adhesion
- Limited Operating Temperatures

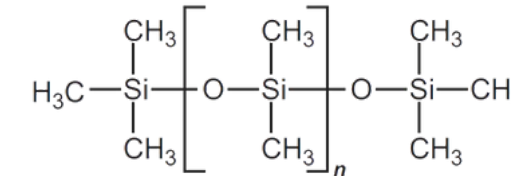
## PU



### Polyurethane

- More expensive than PVC
- Tackier than PVC
- Limited Operating Temperatures
- Less Layers vs PVC (less durable)
- Lower Ambient Temps
- Debris Buildup & Adhesion

## SILI



### Silicone

- Complicated VULCANIZED Manufacturing
- Higher Production Cost
- Longer Factory Lead times
- Expensive Raw Materials
- Not Submersible

# THERMAL FLUCTUATIONS

Linear Expansion Coefficients (lower is better)

## PVC - 0.5%

### Coefficiency Rating

**82**

A 20 meter (65.6 ft) run of PVC Neon Flex can fluctuate up to 4" through hot and cold environmental temperatures

## PU - 0.4%

### Coefficiency Rating

**57**

A 20 meter (65.6 ft) run of PU Neon Flex can fluctuate up to 3.5" through hot and cold environmental temperatures

## Silicone <0.025%

### Coefficiency Rating

**4**

A 20 meter (65.6 ft) run of Silicone Neon Flex can fluctuate up to 0.2" through hot and cold environmental temperatures



# NANO-TECH BLEND

Hydrophobic Self-Cleaning Light Surface

Properly  
Maintained  
PVC Fixture

Unmaintained  
& Untreated  
PVC Fixture

Testing Condition: Outdoor testing for 120 days

Original PVC

Coated PVC - AGED

Not Coated PVC - AGED



# UV & TEMPERATURE TESTS

## UV ACCELERATED PERFORMANCE TEST

Testing Conditions: 340nm & 55°C for 30 days



PVC

PU

SILICONE

## CONSTANT HIGH TEMPERATURE PERFORMANCE TEST

Testing Condition: Constant Temperature 70°C for 30 days



PVC

PU

SILICONE

# BENDING TEST



Testing Conditions: 1m lit sample bent on a 100mm diameter  
Cycled 1000 times or until circuit is damaged

**GLLS**  
PVC

✓ 1000 Times (PASS)

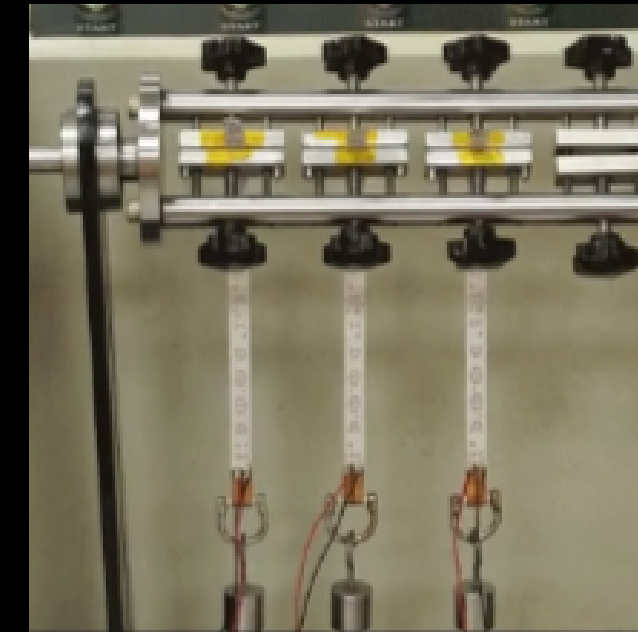
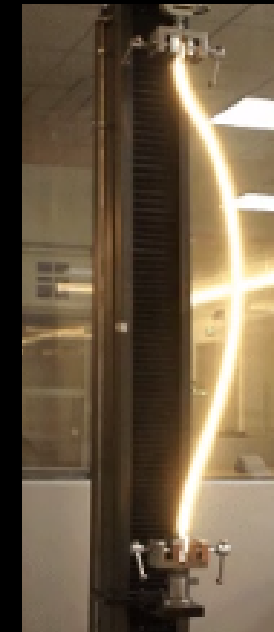
**LED LINEAR**  
PU

✗ 657 Times (FAILED)

**GLLS**  
Silicone

✓ 1000 Times (PASS)

# TENSILE STRENGTH TESTS



Testing Conditions: 1m lit sample pulled to its failure-point  
and lead wire soldering tests.

**GLLS**  
PVC

✓ 67.4 KG.F (PASS)

**LED LINEAR**  
PU

✗ 20.8 KG.F (FAILED)

**GLLS**  
Silicone

✓ 79.1 KG.f (PASS)

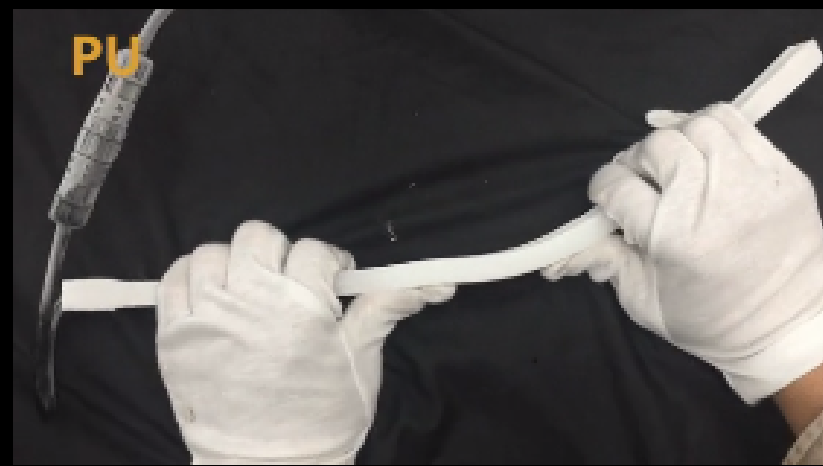


# THERMOPLASTICITY

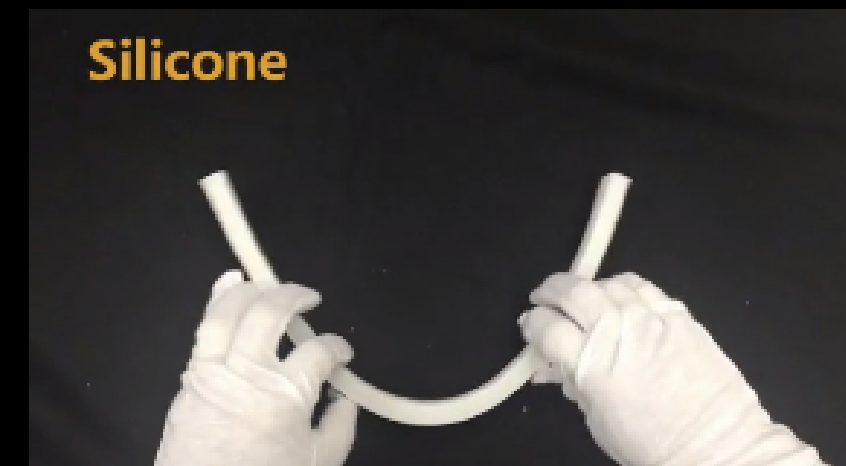
LOW TEMPERATURE  
FLEXIBILITY TEST



PVC - Shattered



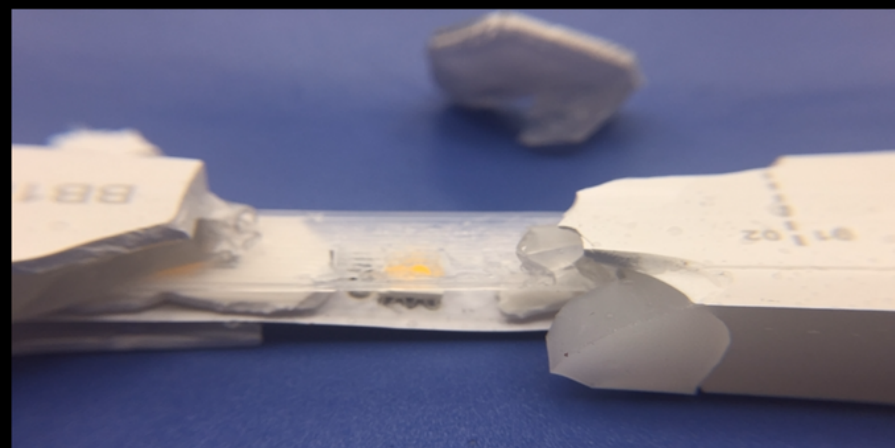
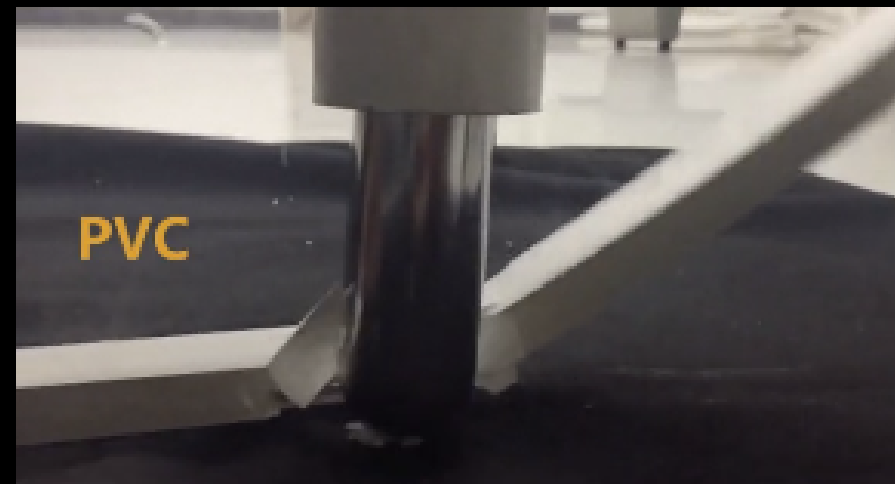
PU - Difficult to bend



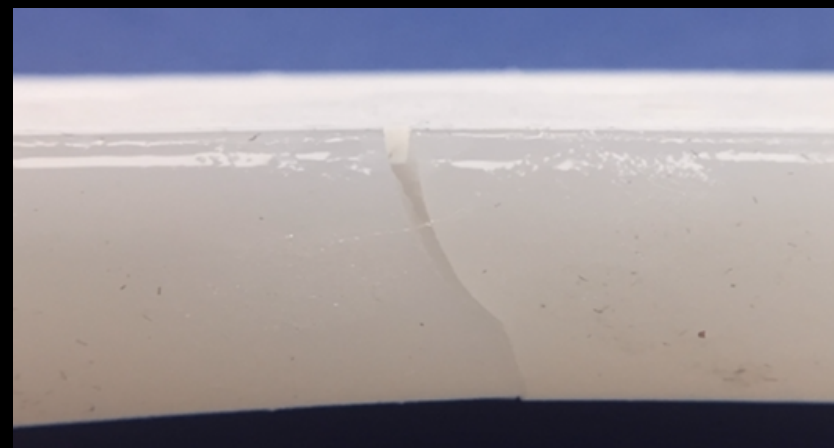
SILICONE - Remains Malleable

# IK08 IMPACT TEST

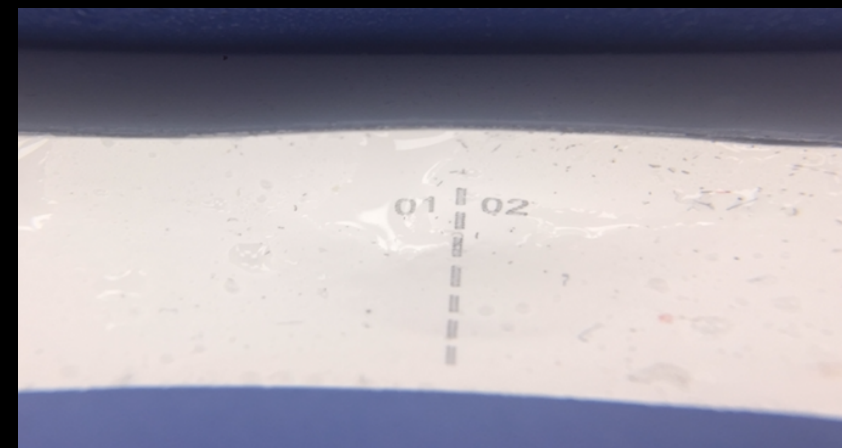
PERFORMANCE IN LOW TEMPERATURES



Diffuser Broken



Cracked Diffuser and Casing

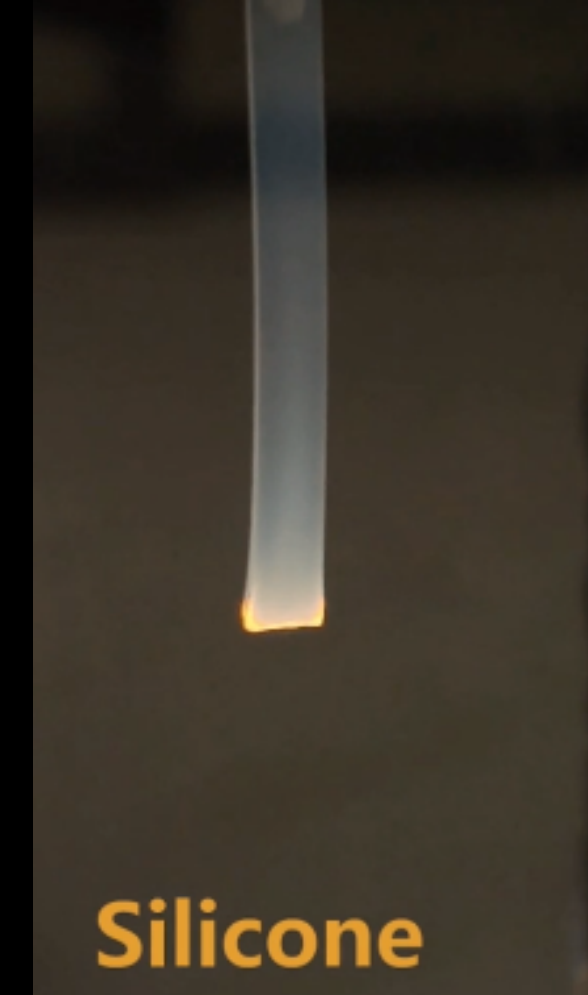
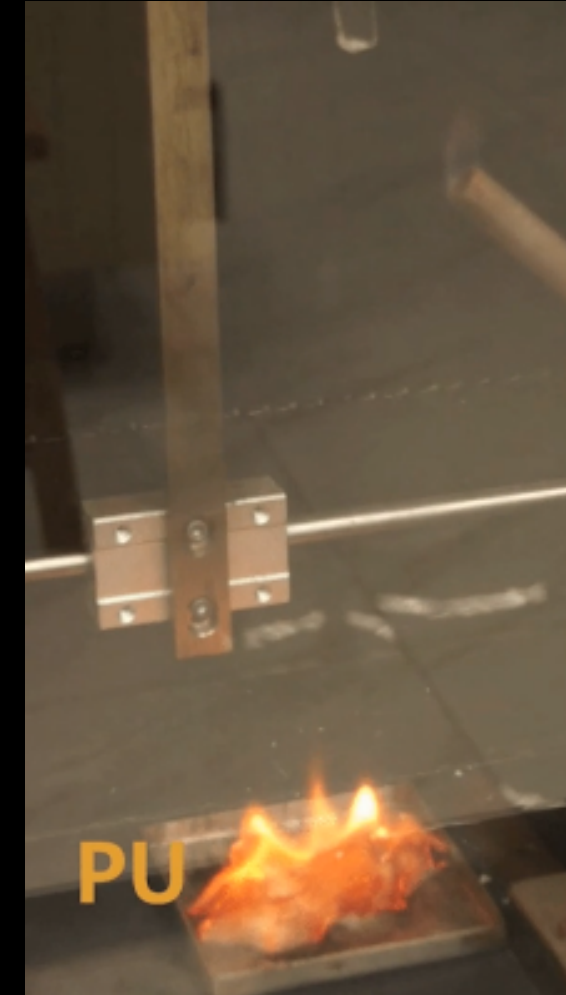
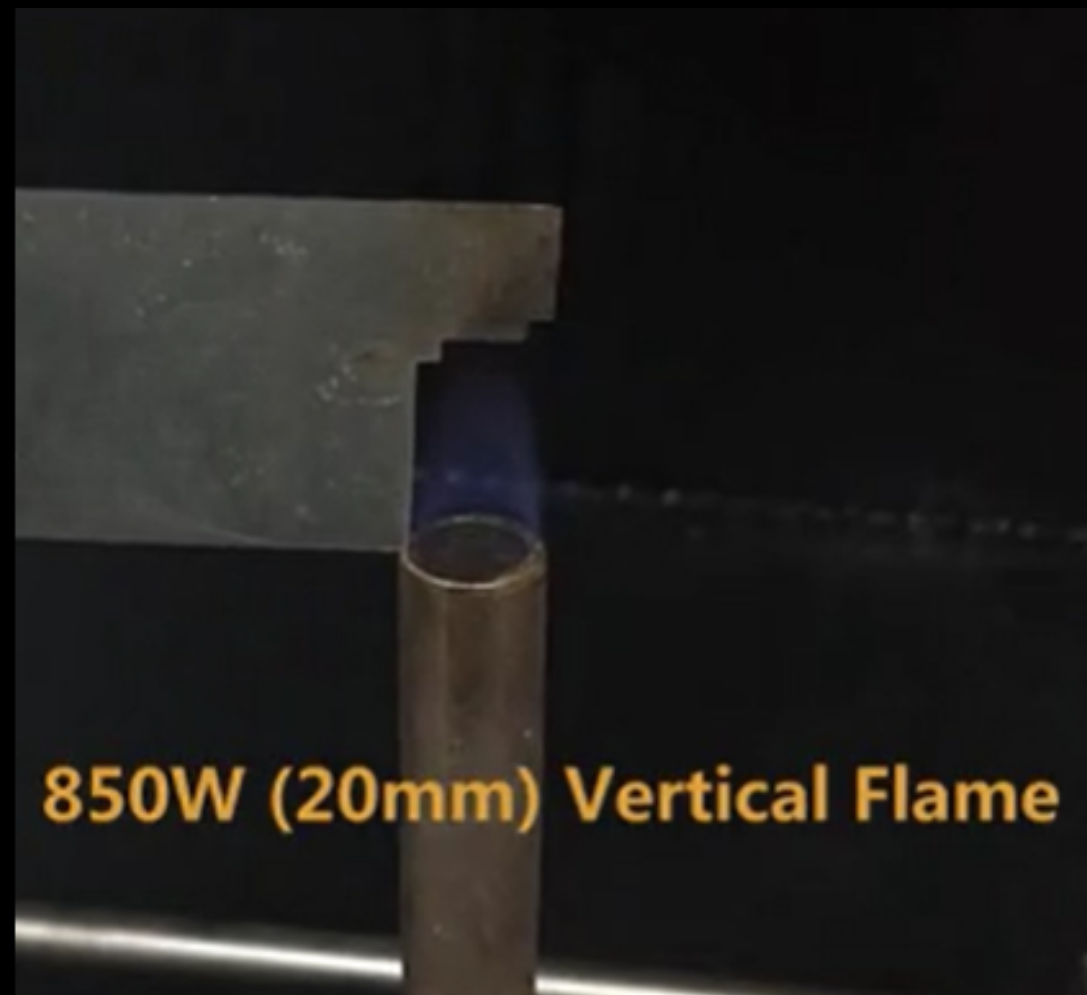


Dented but not Perforated



# FLAMMABILITY TESTING

IN ACCORDANCE WITH UL94 STANDARD



Melted

Burned

Minimal Changes

# WARRANTY

**GLLS**  
PVC

5 YEAR WARRANTY



**LED LINEAR**  
POLYURATHANE

UNDETERMINED



**GLLS**  
SILICONE

10 YEAR WARRANTY



GLLS S 270 PVC

GLLS Silicone S 270

# SEE THE DIFFERENCE

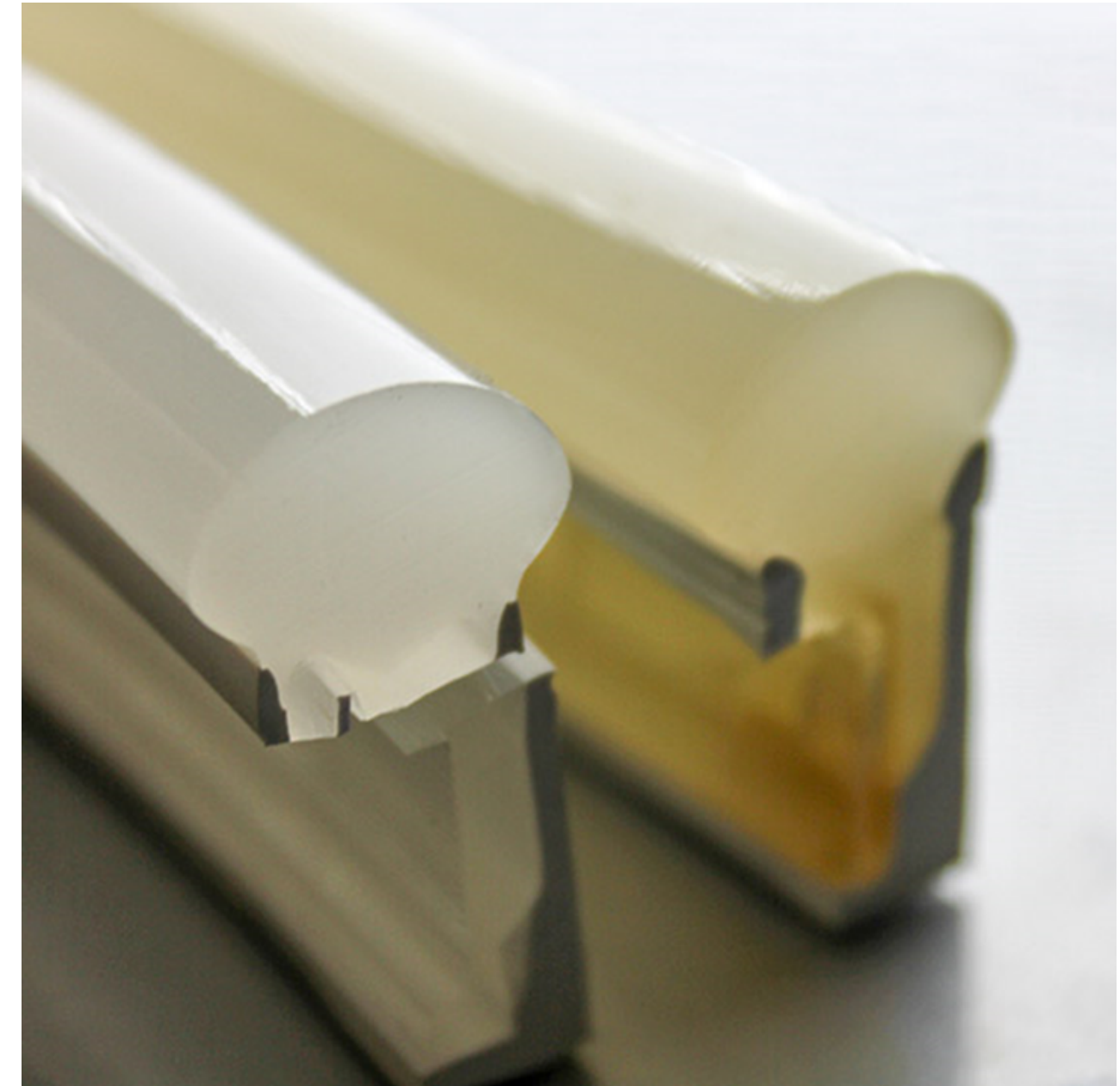
LEDneon·flex

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*GLLS vs Imitator*