

**HOT PLAYGROUNDS = 3<sup>RD</sup> DEGREE BURNS**

**HOT PLAYGROUNDS,  
HIDDEN RISKS: WHY SHADE MATTERS**

Playground safety has improved over the years, but one danger remains largely unaddressed: extreme heat. In the South and Southwest, where summer temperatures regularly hit the 90s and 100s, unshaded playground equipment can reach burn-causing levels. Yet national playground safety guidelines barely mention heat.

A pilot study led by Jennifer Vanos, an atmospheric scientist at Texas Tech University, shows that a simple solution—shade—can dramatically reduce temperatures and prevent burns. Working with researchers from Arizona State University, the team studied a playground in Gilbert, Arizona, using both aircraft-based thermal imaging and ground measurements.

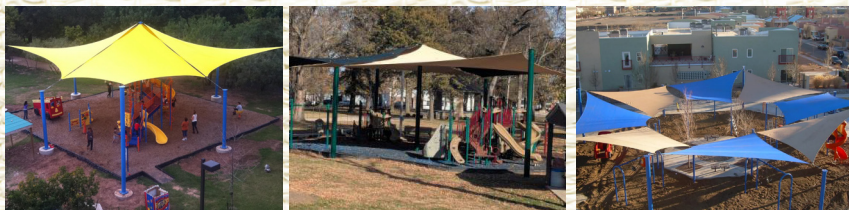
The results were alarming. The rubber playground surface reached 189°F in direct sun—nearly boiling. In tree shade, that same surface dropped to 108°F, and under a shade sail it measured 116°F, close to the air temperature of 106°F. Plastic slides showed similar extremes: 161°F in the sun vs. 111°F in shade. Burn thresholds for these materials can be reached in mere seconds.

Despite the risks, national playground safety training includes almost no heat-related guidance. Vanos, who became a Certified Playground Inspector herself, found no standards addressing surface temperatures or shade requirements.

With rising temperatures and growing urban heat islands, the need for shaded play areas is only increasing. Shade sails, trees, and removable seasonal shade structures could make playgrounds safer nationwide. The researchers hope to expand their work to create tools that predict playground surface temperatures and guide safer designs.

Ultimately, the goal is simple: make playgrounds comfortable and safe so children can play, explore, and thrive—without the danger of burning their skin on a hot slide.

**SHADE TODAY, SAFE TO PLAY.**



**STEEL COLORS AND SPECIFICATIONS**

Powder coating over galvanized substrate provides substantial corrosion resistance superiority over powder coating a raw/uncoated substrate. Powder coating over a galvanized surface provides corrosion protection at least 5-6 times longer than the same coating over a raw or bare surface.

RAL 1001	RAL 1003	RAL 1013	RAL 1015	RAL 1018	RAL 1019	RAL 1023
RAL 1023	RAL 1028	RAL 1037	RAL 2003	RAL 2004	RAL 2010	RAL 3000
RAL 3001	RAL 3002	RAL 3003	RAL 3004	RAL 3004	RAL 3005	RAL 3020
RAL 4005	RAL 5002	RAL 5003	RAL 5005	RAL 5010	RAL 5011	RAL 5012
RAL 5013	RAL 5013	RAL 5015	RAL 5017	RAL 5019	RAL 5024	RAL 6005
RAL 6009	RAL 6016	RAL 6018	RAL 6027	RAL 6029	RAL 6029	RAL 7001
RAL 7004	RAL 7006	RAL 7011	RAL 7012	RAL 7015	RAL 7016	RAL 7021
RAL 7022	RAL 7023	RAL 7024	RAL 7030	RAL 7032	RAL 7035	RAL 7073
RAL 7038	RAL 7040	RAL 7042	RAL 7043	RAL 7044	RAL 7045	RAL 7046
RAL 7047	RAL 8011	RAL 8014	RAL 8016	RAL 8017	RAL 8019	RAL 8025
RAL 8028	RAL 9001	RAL 9002	RAL 9003	RAL 9005	RAL 9010	RAL 9011
RAL 9016	RAL 9017					



**THROWING SHADE SINCE 2022**



660.464.4660  
7606 N 14TH STREET • RICH HILL, MO 64779

## ABOUT US

Duffer Hollow Designs was established to meet the growing demand for a responsive, customer friendly shade structure company that offers products that are technically functional, architecturally distinctive and easy to install.

We are a group of experienced individuals with diverse disciplines that apply directly to the products and services we offer.

Individually we started in the tensile structure business in 2009, designing and manufacturing sun protection structures for the automotive, agricultural, and recreational industries. Our team has a combined 50 years of experience in the industrial steel manufacturing industry which has taught us to understand the importance of good customer service while providing a quality product in a timely manner.

Our research into why structures did not perform guided us in developing a design approach, structural steel details, fabric selection and fabrication methods that gave us products that differentiate what we do from all other manufacturers in our industry.

In 2022, Duffer Hollow Designs delivered its first shade structure and since then we have enjoyed a growing number of loyal customers that recognize the many benefits that come with our products.

## HOW WE WORK

### 1. CONSULTATION

Give us a call with any questions and we'll listen to your needs.

### 2. RECOMMENDATION

After the call, we'll make a recommendation, and walk you through our standard and custom options and examples.

### 3. DESIGN

Concept sketches, review key design features, budgets and cost proposals.

### 4. ANALYSIS

Engineering & submittals for customer approval, schedule.

### 5. FABRICATION

Materials selection, fabric & steel fabrication, quality inspections.

### 6. INSTALLATION

Easy installation by you the customer, a general contractor or even our personnel.

### 7. ONGOING SUPPORT

Duffer Hollow Designs provides a standard 12-year warranty buyer's warranty, effective upon full payment and valid only if installed per company instructions or by an authorized installer.

## STANDARD STRUCTURES

Duffer Hollow Designs delivers durable, American-made shade solutions for commercial, municipal, and residential projects. Our standard models—from 150 to 4,000 sq. ft.—come in dozens of fabric and powder-coat colors, backed by fast service and industry-leading technical innovation.

Architects, aquatic centers, cities, and businesses trust our in-house design and manufacturing for standout quality, custom options, and economical nationwide shipping. With experience across hundreds of installations, we make shade structures simple, reliable, and built to last.



## CUSTOM STRUCTURES

During the development of our standard structures, we established many key features that are not ordinary, and we utilize these in our custom structure designs. This keeps development cost down and raises customer satisfaction.

We excel when a customer needs prompt accurate results in concept development, analysis and budgets, as well as short delivery schedules. Clients looking for technical assistance or advice on design approach will find we provide current information on a wide range of materials and code compliance issues.

All our clients get great service and quality they will appreciate. We provide full engineering for local permitting and 3rd party review. Foundation design and technical installation instructions are available when needed.

Our quality products and unmatched customer service keep our clients coming back.

## FABRIC COLORS AND SPECIFICATIONS

Duffer Hollow Designs utilizes the highest quality knitted HDPE shade fabrics and PVC architectural membranes. Not only do we offer a broad range of colors, but we also offer several grades of fabrics to meet the project's needs. Our fabrics meet local and national codes regarding structural performance and fire resistance.

### XTRA™



### Comtex®+



### Polytex®+

Roll Width: 150 inches • Weight: 70 center folded

