Technical Compliance & Safety Solutions Report: Screenflex Welding Protection

Manufacturer: Screenflex | **Authorized Compliance:** Envirazone

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1. The Safety Mandate: Legal & Regulatory Requirements

In industrial welding environments, compliance is not elective; it is a legal requirement under workplace health and safety regulations to protect personnel from non-ionizing radiation. Envirazone screens are specifically engineered to provide the documented solution to these regulatory demands.

ISO 25980: The Global Safety Solution

This international standard defines the health and safety requirements for transparent welding curtains.

- **The Solution:** Envirazone screens solve the compliance gap by meeting every metric of ISO 25980, ensuring that your facility adheres to the primary international benchmark for "Health and safety in welding and allied processes".
- **Radiation Control:** It mandates the exact spectral transmittance required to neutralize hazardous ultraviolet (UV) radiation, a requirement fully met by our Screenflex material.

EN 1598: Fire & Spectral Certification

The European standard EN 1598 governs the optical and physical integrity of the barrier.

- **The Solution:** Our screens solve the risk of secondary fires. Compliance with EN 1598 guarantees the material is self-extinguishing; it will not support a flame if struck by molten spatter or a high-intensity arc.
- **Material Integrity:** This certification ensures the screen maintains its optical protective properties even after prolonged exposure to intense UV, solving the problem of material degradation found in standard PVC.

AWS F2.3M: Retinal Protection Standards

The American Welding Society specification focuses on the "Blue Light" hazard function.

- **The Solution:** Envirazone screens solve the risk of cumulative retinal damage. By meeting AWS F2.3M, our screens utilize specific pigmentation (Red, Bronze, or Green) to absorb the precise wavelengths that cause painless, permanent vision loss.

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2. Problem/Solution: Mitigating Biological Hazards

The welding arc is a source of invisible, destructive energy. Envirazone Screenflex provides the physiological shield required to solve these health risks.

Problem: Photokeratitis (Welder’s Flash)

Unprotected personnel can suffer a severe "sunburn" of the cornea from UV-B and UV-C radiation, leading to intense pain and temporary blindness.

- **The Envirazone Solution:** Our screens block **>99.9%** of radiation between 100nm and 400nm. This creates a "safe zone" outside the welding cell, allowing staff to move freely without the need for individual welding helmets.

Problem: Retinal Blue Light Damage

High-energy visible light (400nm–500nm) causes photochemical damage to the retina that is often not felt until the damage is permanent.

- **The Envirazone Solution:** Screenflex acts as a selective filter, absorbing high-energy blue photons while remaining transparent enough for supervision to monitor work, solving the conflict between safety and visibility.

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3. Engineering Specifications & Physical Performance

A technical library resource must provide the engineering data required for safe installation and long-term durability.

Structural & Load Data

Envirazone Screenflex possesses a density of **1.22 g/cm³**, providing the mass required for a "steady-state" drape that prevents "blow-back" from air extraction systems.

Product Specification	**Thickness**	**Width**	**Mass-per-Meter**
Standard Grade Strip	2.0 mm	200 mm	**0.49 kg/m**
Heavy Industrial Strip	3.0 mm	300 mm	**1.10 kg/m**
Safety Curtain (Sheet)	0.4 mm	1370 mm	**0.67 kg/m**

Mechanical Durability Specs

- **Tensile Strength (~17 MPa):** Solves the problem of frequent material replacement by offering high resistance to tearing from forklifts or heavy machinery.
- **Shore A Hardness (75–80):** Specifically calibrated to remain flexible for worker passage while staying rigid enough to maintain a proper safety seal.
- **Acoustic Insulation (>35 dB):** Solves the "noise pollution" problem by dampening the high-frequency hiss of plasma cutting and arc welding.
- **Thermal Conductivity (0.16 W/m.K):** Solves the issue of heat bleed, containing the thermal energy of the weld within the extraction zone.

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4. Operational Performance Summary

- **Weld Spatter Solution:** Our surface chemistry is treated to resist "pitting". Molten sparks bounce off the surface rather than melting into it, ensuring the screen stays clear and effective for a longer service life.
- **Optical Class 1 Rating:** Solves eye strain and safety monitoring issues by providing a distortion-free view through the material, a critical requirement for supervisors.
- **Self-Extinguishing Chemistry:** The infusion of Fire Retardant additives ensures that the material is a fire-safe solution for the hottest industrial environments.