



## UV TEST

### Test of UV (Ultraviolet) resistance

Materials often undergo rapid photochemical degradation under the influence of sunlight, unless they have been stabilized in a durable fashion. Samples cut from the load-bearing materials of the FIBC are subjected for a certain period of time to irradiation from a light source of the UV type with specified spectral distribution.

The UV Light Resistance of plastics involves a number of factors that can affect your choice of material. There are three factors that figure most prominently; thickness, opacity, and the use of stabilizers. These three factors are combined to defend plastics against UV light.

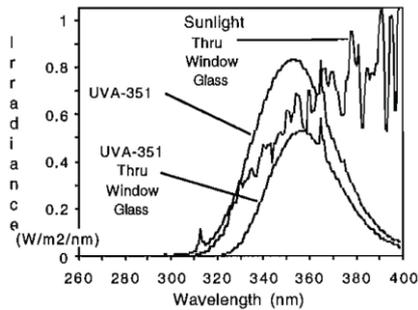
UV light is the light at shorter wavelengths than visible light, past the violet end of the spectrum (ultra, or beyond violet). There are three categories of UV light, UVA (400nm – 320nm), UVB (320nm – 290nm) and UVC (290nm – 100 nm). UVA light is not normally strong enough to harm plastics. UVB usually does the most damage to plastics and is the type of light we need to test when checking plastic's UV resistance. UVC light contains even more damaging energy but it is fortunately filtered out by the earth's ozone layer.

Stratospheric Oxygen and Ozone molecules absorb 97-99% of the sun's high frequency. Ultraviolet-B(UV-B) is a section of the UV spectrum.

UVA 400 nm - 320 nm

UVB 320 nm - 290 nm

UVC 290 nm - 100 nm



Typical UV tests quote ASTM G53 using a fluorescent UV-B lamp.

Laboratory UV tests, such as ASTM G53 allows us to perform quality control checks on materials without having to perform 5 and 10 years tests outdoors.

The test apparatus shall be in accordance with ASTM G53/96 using fluorescent UV-B lamp. The specimens are alternately exposed to UV light alone and to condensation alone in a repetitive cycle for at least 200 hours, using a test cycle of 8 h at 60°C with UV radiation alternating with 4 hours at 50°C with condensation.

After exposure is complete, the specimens are tested for breaking force and elongation at break in accordance with ISO 13934-1. The values are compared with results performed on simultaneously cut test specimens that have been stored under dark and cool conditions. All load bearing materials of the FIBC shall, after tested, retain at least 50% of the original values of the breaking force and elongation on the materials.

