



WARNING: Ultra-violet light degradation and abrasion in personal fall protection equipment made from textiles

There is irrefutable evidence that ultra-violet light (UV) weakens many man-made fibres. IRATA members and rope access technicians are recommended to check with equipment suppliers that equipment made from textiles, e.g. polyamide, polyester, polyethylene, polypropylene, aramid, is protected from the adverse effects of UV. UV is emitted by sunlight, fluorescent light and all types of electric-arc welding. The normal way to provide protection is by the inclusion of UV inhibitors at the fibre production stage but there are other possibilities, such as the type and colour of any dye used or the use of a protective covering.

It is difficult to inspect for UV degradation but tell-tale indicators are fading of colours and any powdering of the surface of the materials. However, these indicators also apply to degradation by chemicals. Any textile equipment showing these signs should be taken out of service.

Users of textile equipment should also carefully and regularly inspect their equipment for signs of abrasion. This applies to both external abrasion and internal abrasion. External abrasion is easy to spot but sometimes it is difficult to determine the extent of its detrimental effect. Internal abrasion is more difficult to spot but can often be substantial, particularly if grit has penetrated the outer surface. All levels of abrasion lower the strength of textile equipment: as a rule of thumb, the greater the abrasion the greater the loss of strength.

The effects of UV degradation and abrasion combined weaken the materials even further.

Although European Standards for personal fall protection equipment incorporate safety factors, they do not address explicitly the potential for degradation by UV and abrasion during use of the product, relying instead on its strength when new. There has been a strong attempt by the United Kingdom to include tests in at least one European Standard, to ensure that the materials used in the construction of webbing and ropes have adequate protection. However, this campaign has failed. It is, therefore, left to specifiers, purchasers and users of equipment to determine the appropriateness of the materials used.

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