

Light weight structural fire fighting suit (Mark I)

Ground conditions can be rather dangerous and demanding for our firefighters and they should not be asked to choose between comfort and protection level. The Centre for Fire, Explosive and Environment Safety, DRDO has now developed a structural fire fighting suit that has been engineered to offer a perfect blend of flame-resistant protection and comfort level.

At present, the structural firefighting clothing being worn by the Indian firefighters conform to EN469. The structural fire-suits developed by CFEES, offers a much higher level of protection conforming to NFPA 1971 (Thermal Protective Performance > 44) without adding any weight obligation. The entire suit, including coat and trousers weighs < 2.8 kgs. The clothing developed is an ensemble of several layers; each having its own role to play.

Outer shell

As the name suggests, this external layer is the most durable component of the fire suit's assembly, and has the following functions:

- Protects against heat and flames
- Protects against water and chemicals
- Protect against abrasion, cuts and lacerations

Moisture barrier

This layer is the middle layer which helps the firefighters stay cooler and comfortable, by serving the following functions. The same has been developed indigenously.

- Allows vapour to move out of the body.
- Provides extra protection against water penetration.
- Provides protection against heat and other chemicals.

Thermal barrier

This is the innermost layer in the fire suit assembly, serving the following functions:

- Provides insulation by creating air cushions and micro climate chambers to favour comfort and minimize heat stress.
- Increases the wearer comfort level by wicking away moisture away from the body.
- Facilitates easy donning and doffing with a thin inner liner providing a sense of comfort.
- Protects the moisture barrier from any damage from within.

