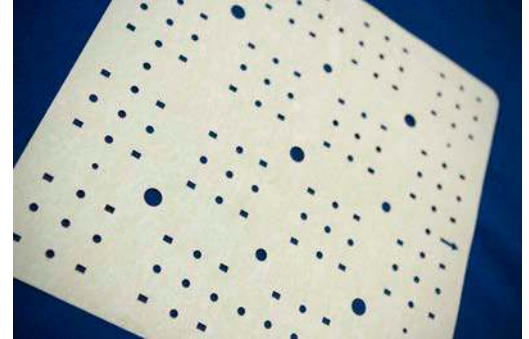


## 3M Flame Barrier FRB Series

**What is 3M™ FRB?** It is a thin flexible insulation made primarily of inorganic materials that is easily converted. The FRB barrier provides the very high flammability and ignitability resistance, excellent arc and track resistance, good dielectric strength and good thermal performance to safely contain electrical hazards.

**Key applications:** Class 1 Integrated LED Luminaires, Electric Vehicles, Appliances, Electrical Devices



### Advantages of 3M FRB:

- Thin material (<0.245mm) & light weight - allows for low profile, aesthetically pleasing luminaire designs
- Meets [UL 94 5VA flammability requirements \(see box below\)](#) – enables LED design to meet [UL 8750 safety standard requirements \(see box below\)](#)
- Available in white or black to enhance optical output – white exhibits reflectivity of greater than 90% - maximizing light output
- Easy to die-cut & laminate – allowing for a variety of diode patterns
- Insulating properties protect installers and maintenance crews from electrical shock
- Resistance reduces the risk of shorts and subsequent LED product failures

### Competitive Materials:

Mica-based Materials: A limited number of mica-based materials meet UL 95 5VA flame ratings. Such materials which do not die-cut well, mica shards easily break off during the cutting process.

Glass plate: Bulky and more expensive

Flame retardant plastic lens: Bulky and more expensive



**UL 8750** - Safety Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products. - As LEDs evolves this standard addresses safety concerns such as overheating, electric shock and fire.

**UL 94 5VA** - Flammability Standard \*Five times more severe than V-0\*  
**Requirements:**

Burning stops within 60 seconds on a vertical specimen; No drips allowed;  
Plaque specimens may not develop a hole