

3M Advanced Materials Division

# 3M™ Nextel™ Ceramic Textiles for Aerospace Applications

## Introduction

3M™ Nextel™ Ceramic Textiles are widely used for heat and flame-shielding applications in the aircraft and aerospace industries. Proven in flight and in space, they meet the toughest thermal, mechanical and electrical performance requirements, including FAA criteria for firewalls and NASA standards for shuttle launch and re-entry.

## Flexible and Durable

Nextel ceramic textiles remain flexible even after being exposed to high temperatures and harsh conditions over long periods of time, meaning fewer repairs and replacements, less wasted fuel, and enhanced safety.

Silicone coatings can be applied to Nextel fabrics to help protect against environmental impacts.

## Aircraft Firewalls

Firewall blankets made from 3M™ Nextel™ Ceramic Fibers 312 are lightweight, flexible and durable alternatives to metal shields for protecting aircraft engine struts and composite fan cowls. They pass the flame barrier test (no flame propagation) per ISO 2685 and FAR 25.856(a) while weighing significantly less than metal shields. As a non-intumescent, they do not require regular touch-ups and other paint-based maintenance.



Firewall blanket shields made with 3M™ Nextel™ Ceramic Fibers 312.



3M™ Nextel™ Ceramic Textiles are used in aircrafts, with potential applications that include fan cowl door insulators, struts, thrust reversers, and firewalls around engines.

## Flame Penetration

3M™ Nextel™ Ceramic Fabric 312 AF-10 passes the flame Barrier Test (no Flame Propagation) per ISO 2685 and FAR 25.856(a).



**Figure 1.** Flame Propagation Test as per ISO2685 : AF-10 Fabric one layer, when tested per ISO2685 conditions, after 15 min exposure there is no flame penetration and no after flame

## Technical Support

For more information on Nextel products or design support, call 1-800-367-8905 or visit [3M.com/ceramics](http://3M.com/ceramics). Technical Support



**Figure 2.** Flame Propagation Test as per FAR25.856-a : AF-10 fabric one layer, when tested per FAR25.856-a, after 4 min exposure, shows no after flame and no flame propagation

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