

## Test Sample Sizes & Quantities

Tests	Number & Size of Samples	Notes
<b>Bunsen Burner Tests</b>		
Vertical	3-4 samples: 3" x 12" (75 mm x 305 mm)	1, 2, 3
Horizontal	3-4 samples: 3" x 12" (75 mm x 305 mm)	1, 2, 3, 4
45-Degree	3-4 samples: 10" x 10" (250 mm x 250mm)	1, 2, 3
60-Degree	15 feet (4.5 meters)	3
Aircraft Blanket	12-16 samples: 11" x 11" (280 mm x 280 mm)	5
<b>Seat Cushion Oil Burn (Fireblock)</b>	<b>3-4 Seat Backs:</b> 18" x 25" x 2" (457 mm x 635 mm x 51 mm) <b>AND</b> <b>3-4 Seat Bottoms:</b> 18" x 20" x 4" (457 mm x 508 mm x 102 mm)	6
<b>Cargo Liner Oil Burn</b>		
Sidewall Panel	3-4 pieces: 16" x 24" (405 mm x 610 mm)	
Ceiling Panel	3-4 pieces: 16" x 24" (405 mm x 610 mm)	
Sidewall/Ceiling Combination	3-4 of each piece: 16" x 24" (405 mm x 610 mm)	
<b>Heat Release Rate (OSU)</b>	3-4 pieces: 5.9" x 5.9" (150 mm x 150 mm) Maximum Thickness: 1.75" (45 mm)	3
<b>Smoke Density</b>		
Flaming Mode	3-4 pieces: 2.90" x 2.90" (73.7 mm x 73.7 mm) Maximum Thickness: 1" (25 mm)	3
Flaming & Non-flaming Modes	3-4 pieces: 2.90" x 2.90" (73.7 mm x 73.7 mm) Maximum Thickness: 1" (25 mm)	3
Insulated Wire & Cable	<b>Diameter 3.3 to 6.4 mm:</b> 60 ft (18 m) <b>Diameter less than 3.3 mm:</b> 90 ft (27 m)	3
<b>Insulation Flame Propagation</b>		
Insulation Batts	3-5 pieces: 23.0" x 12.5" (584 mm x 318 mm)	2, 3
Foams	3-5 pieces: 23.0" x 11.5" (584 mm x 292 mm)	2, 3
Damping Parts	3-5 pieces: 4" x 12" (102 mm x 305 mm)	2, 3
Hook & Loop	3-5 pieces: 4" x 12" (102 mm x 305 mm)	2, 3
Tape	3-5 pieces: 23.0" x 12.5" (584 mm x 318 mm)	2, 3
<b>Insulation Burnthrough</b>	6-8 pieces: 32" x 36" (813mm x 915mm)	8
<b>Powerplant Fire Penetration</b>	<b>Panels:</b> 1-2 pieces: 24" x 24" (610 mm x 610 mm) <b>or</b> 11.5" x 11.5" (292mm x 292 mm) <b>Non-Panels:</b> Contact us	7
<b>Combustion Toxicity</b>		
Flaming Mode	3-4 pieces: 2.90" x 2.90" (73.7 mm x 73.7 mm) Maximum Thickness: 1" (25 mm)	3
Non-Flaming Mode	3-4 pieces: 2.90" x 2.90" (73.7 mm x 73.7 mm) Maximum Thickness: 1" (25 mm)	3
Insulated Wire & Cable	Diameter 3.3 to 6.4 mm: 60 ft (18 m) Diameter less than 3.3 mm: 90 ft (27 m)	3
<b>FMVSS 302 Automotive Flammability</b>	5-7 pieces: 3.9" x 14" (99 mm x 355 mm)	1, 2, 3

**Notes:**

1. When fabricating the test samples, please note:
  - Samples must be tested as either a section cut from a fabricated part as installed in the aircraft or as a sample simulating a cut section (e.g. cut from a flat sheet of the material or a model of the fabricated part).
  - Fabricated units, such as sandwich panels, may not be separated for test.
  - The shorter edge of the test sample must not consist of a finished or protected edge, i.e. it must represent a cross-section of the material or part as installed in the aircraft.
  - The sample thickness must be the minimum thickness to be qualified for use in the aircraft (or thinner).

- Test samples made up of thick foam parts must be ½-inch in thickness. If the sample consists of two or more foams glued together, the sample should be made up of two ¼-inch pieces (or three 1/16-inch pieces, etc).
2. Woven Specimens that have an orientation difference (i.e. machine & cross-machine directions) will need to be tested in both directions. You should provide the listed number of samples cut from *across* the roll **AND** the listed number of samples cut from *up* the roll. Please label the samples accordingly.
  3. Materials may be sent in large rolls or panels as long as there is sufficient material for us to cut the number of samples needed. Materials that are sent uncut may incur an additional fee of \$75 per hour.
  4. For the Horizontal 4 in/min test, samples must be no more than ⅛-inch in thickness.
  5. If each side of the blanket is composed of a different material, then each side must be tested. We will need 24-32 samples in this case.
  6. Instructions for fabrication of seat cushion test samples can be found on our [Resources](#) page in document titled *How to Build Seat Cushion Fireblock Test Samples*.
  7. In general, specimen size will be 24 x 24 inches (610 x 610 mm). Larger specimens will be used if required to accommodate a critical design feature of the component. Smaller specimens 11.5" x 11.5" (292mm x 292 mm) may be used if all design features are included and the specimen is representative of the intended use. Non-standard specimen sizes may incur additional charges.
  8. For the Insulation Burnthrough test, samples are tested two at a time.
  9. Vertical burn samples thicker than ¼" requires both faces to be tested if they are different materials. We suggest sending an additional 3 samples in these cases.

## Why extra samples?

We request additional samples for the following reasons:

- Some specifications specifically require extra pieces
- Additional samples may be required to validate the test results
- Damage in shipment or a non-conformance in one of the samples
- Unforeseen circumstances that may occur (e.g. power outages, equipment failure, etc.)

**Customers may choose to send only three samples, but delays may occur in the event that additional samples are needed.**