

DESCRIPTION

Q-Fiber® Felt is formed from pure silica fibers using a water deposition process. It is clean, flexible, without binder of any kind, and possesses the thermo-physical and chemical stability of pure silica. Q-Fiber Felt is effective in a wide range of applications. It is unaffected by moisture, will not accelerate or cause corrosion, and is inert to most acids.

ADVANTAGES

Q-Fiber Felt is unaffected by moisture. It will not accelerate or cause corrosion. The chemical composition of Q-Fiber Felt makes it incombustible and resistant to most acids. Q-Fiber Felt possesses the lowest thermal conductivity value per unit weight of any commercially available high temperature fibrous insulation. The long fibers trap and absorb undesirable noise to provide excellent sound absorption. Q-Fiber Felt offers high heat resistance, remaining effective up to 1800°F for steady state applications.

AVAILABLE FORMS

Q-Fiber Felt is only available in sheets of 36" (91 cm) width and 60" (152 cm) or 120" (305 cm) length. Q-Fiber Felt is manufactured based on areal weight (weight per area) and is not produced or dimensioned to an exact thickness or density. For approximation purposes, refer to the table below.

| Nominal Density | | Nominal Thickness | | Areal Weight | |
|-----------------|-------------------|-------------------|------|--------------------|-------------------|
| pcf | kg/m ³ | in | mm | lb/ft ² | kg/m ² |
| 3 | 48 | 3/16 | 4.8 | 0.05 | 0.23 |
| | | 1/4 | 6.4 | 0.06 | 0.31 |
| | | 3/8 | 9.5 | 0.09 | 0.46 |
| | | 1/2 | 12.7 | 0.13 | 0.61 |
| 3.5 | 56 | 3/16 | 4.8 | 0.06 | 0.27 |
| | | 1/4 | 6.4 | 0.07 | 0.36 |
| | | 3/8 | 9.5 | 0.11 | 0.53 |
| | | 1/2 | 12.7 | 0.15 | 0.71 |
| 4 | 64 | 3/16 | 4.8 | 0.06 | 0.31 |
| | | 1/4 | 6.4 | 0.08 | 0.41 |
| | | 3/8 | 9.5 | 0.13 | 0.61 |
| | | 1/2 | 12.7 | 0.17 | 0.81 |
| 6 | 96 | 3/16 | 4.8 | 0.09 | 0.46 |
| | | 1/4 | 6.4 | 0.13 | 0.61 |
| | | 3/8 | 9.5 | 0.19 | 0.92 |
| | | 1/2 | 12.7 | 0.25 | 1.22 |



TYPE

Binderless Felt

TEMPERATURE LIMIT

1800°F (982°C)

APPLICATIONS

Q-Fiber Felt is useful in many applications requiring steady state heat resistance to 1800°F. Intermittently, it may be used above 1800°F. It provides excellent thermal insulation for aircraft, missiles, spacecraft and special industrial applications. It can also be used to provide reinforcement for high-temperature plastics such as exhaust nozzles, nose cones, and aerodynamically heated surfaces. It is particularly useful in components where the factors of space and weight are highly important. These felts are also very effective in cryogenic applications.

PROPERTIES

- Moisture Resistant
- Noncorrosive
- Low Thermal Conductivity
- Resists Thermal Shock
- Low Shrinkage

THERMAL CONDUCTIVITY (Btu • in)/(ft² • hr • °F) (ASTM C-518)

| Nominal Density (pcf) | Mean Temp. °F (between hot surface and cold surface) | | | | | | | |
|-----------------------|--|-------|-------|-------|-------|-------|-------|--------|
| | 300°F | 400°F | 500°F | 600°F | 700°F | 800°F | 900°F | 1000°F |
| 3 | 0.33 | 0.39 | 0.46 | 0.54 | 0.63 | 0.72 | 0.83 | 0.96 |
| 4 | 0.32 | 0.37 | 0.43 | 0.5 | 0.57 | 0.65 | 0.74 | 0.84 |
| 6 | 0.31 | 0.36 | 0.41 | 0.46 | 0.52 | 0.58 | 0.65 | 0.72 |

THERMAL CONDUCTIVITY (Watt/Meter • °C) (ASTM C-518)

| Nominal Density (kg/m ³) | Mean Temp. °C (between hot surface and cold surface) | | | | | |
|--------------------------------------|--|-------|-------|-------|-------|-------|
| | 149°C | 204°C | 260°C | 316°C | 371°C | 427°C |
| 48 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 |
| 64 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 |
| 96 | 0.05 | 0.05 | 0.06 | 0.07 | 0.07 | 0.08 |

SHRINKAGE*

| Temperature | | Direction of Shrinkage (%) | | |
|-------------|------|----------------------------|-------|-----------|
| °F | °C | Length | Width | Thickness |
| 1000 | 538 | 0.7 | 0.8 | 0.9 |
| 1200 | 649 | 1.4 | 1.5 | 1.0 |
| 1400 | 760 | 1.8 | 2.2 | 1.8 |
| 1600 | 871 | 2.0 | 2.2 | 2.0 |
| 1800 | 982 | 2.6 | 4.0 | 9.0 |
| 2000 | 1093 | 6.2 | 17.0 | 40.0 |

* When felted to 6.0 pcf (96 kg/m³) nominal density



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INFORMATION**

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Technical specifications as shown in this literature are intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product. The physical and chemical properties of Q-Fiber Felt listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Any references to numerical flame spread or smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

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