KERAFOL®
Keramische Folien GmbH & Co. KG

# SOFTTHERM®

**Thermally Conductive Compressible Silicone Pad**

Made In Germany

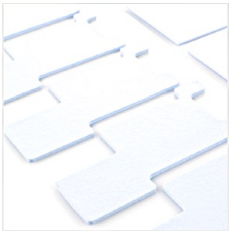
## Overview:

SOFTTHERM® compressible thermally conductive silicone pad series are designed to be highly conductive that provide well-balanced thermal, electrical, dielectric and low outgassing behaviour, also provide good surface conformability with good inherent tack characteristics.
Applications that required better mechanical strength can be achieved through fiberglass reinforcement and adhesive coating is an optional availability.

## Applications:

■ Automotive ■ Telecommunication ■ Power Supplies ■ Audio and Video Components ■ White Goods

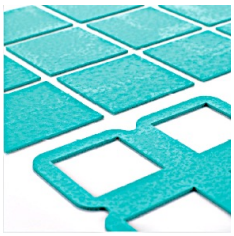
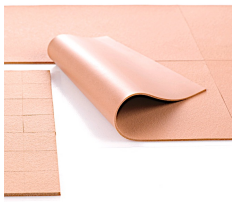


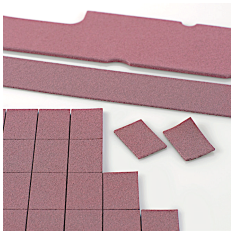
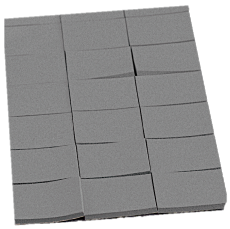




### Non-Reinforced Compressible Thermally Conductive Silicone Pad

| Properties | Unit | 86/125 | 86/225 | 86/235 | 86/300 | 86/320 | Test Method |
|---|---|---|---|---|---|---|---|
| Colour | - | Orange | Orange | Yellow | Blue | Yellow | Visual |
| Reinforcement | - | None | None | None | None | None | Visual |
| **Thermal Properties** | | | | | | | |
| Thermal resistance $R_{th}$ | K/W | 0.08 | 0.6 | 0.6 | 0.41 | 0.5 | Kerafol |
| Thermal impedance $R_{ti}$ | °Cmm²/W | 322 | 240 | 240 | 164 | 147 | Kerafol |
| | Kin²/W | 0.5 | 0.37 | 0.37 | 0.25 | 0.23 | Kerafol |
| Thermal conductivity λ | W/m-K | 1.5 | 2.0 | 2.0 | 3.0 | 2.5 | ASTM D5470 |
| **Electrical Properties** | | | | | | | |
| Breakdown voltage $U_{d;ac}$ | kV | 6 | 6 | 6 | 7 | 5 | ASTM D149 |
| Dielectric breakdown $E_{d;ac}$ | kV/mm | 12 | 12 | 12 | 14 | 10 | ASTM D149 |
| Volume resistivity | Ωm | $61.3 \times 10^{9}$ | $2.2 \times 10^{11}$ | $176.1 \times 10^{9}$ | $1.0 \times 10^{11}$ | $0.68 \times 10^{12}$ | ASTM D257-3 |
| Dielectric loss factor tan σ | 1 | $153 \times 10^{-3}$ | $1.0 \times 10^{-3}$ | $20.2 \times 10^{-3}$ | $5.0 \times 10^{-3}$ | $29 \times 10^{-3}$ | ASTM D150 |
| Dielectric constant $\varepsilon_r$ | 1 | 4.28 | 3.6 | 3.7 | 3.3 | 3.4 | ASTM D150 |
| **Mechanical Properties** | | | | | | | |
| Measured thickness (+/-10%) | mm | 0.500 | 0.500 | 0.500 | 0.500 | 0.500 | ASTM D734 |
| Hardness | Shore 00 | 10 - 25 | 30 - 45 | 25 - 40 | 60 - 75 | 25 - 38 | ASTM D2240 |
| Young's Modulus | N/cm² | 23.6 | 58 | 32 | 24 | 32 | ASTM D412 |
| **Physical Properties** | | | | | | | |
| Operating temperature | °C | -40 to +180 | -40 to +180 | -40 to +180 | -60 to +200 | -40 to +180 | Kerafol |
| Density | g/cm³ | 2.0 | 1.65 | 1.65 | 1.71 | 1.69 | Kerafol |
| Flame rating | UL 94 | VO | VO | VO | VO | VO | U.L. E140693 |
| Total Mass Loss (TML) | Ma.-% | <0.29 | <0.44 | <0.10 | <0.35 | <0.46 | ASTM E 595 |
| Thickness available | mm | 0.5 - 5.0 | 0.5 - 5.0 | 0.5 - 5.0 | 0.5 - 5.0 | 1.0 - 5.0 | Kerafol |

* Data provided are nominal values that should not be used to write specifications. Users are advised to test and decide the suitability of the product to fit their applications.

# Non-Reinforced Compressible Thermally Conductive Silicone Pad

| Properties | Unit | 86/325 | 86/450 | 86/500 | 86/525 | 86/600 | Test Method |
|---|---|---|---|---|---|---|---|
| Colour | - | Mint | Brown | Brown | Violet | Grey | Visual |
| Reinforcement | - | None | None | None | None | None | Visual |
| **Thermal Properties** | | | | | | | |
| Thermal resistance $R_{th}$ | K/W | 0.41 | 0.27 | 0.25 | 0.22 | 0.2 | Kerafol |
| Thermal impedance $R_{ti}$ | °Cmm$^2$/W | 164 | 108 | 100 | 89 | 80 | Kerafol |
| | Kin$^2$/W | 0.25 | 0.18 | 0.15 | 0.14 | 0.12 | Kerafol |
| Thermal conductivity λ | W/m-K | 3.0 | 4.5 | 5.0 | 5.5 | 6.0 | ASTM D5470 |
| **Electrical Properties** | | | | | | | |
| Breakdown voltage $U_{d;ac}$ | kV | 6 | 5 | 1 | 1.25 | 1.5 | ASTM D149 |
| Dielectric breakdown $E_{d;ac}$ | kV/mm | 12 | 10 | 2 | 2.5 | 3.0 | ASTM D149 |
| Volume resistivity | Ωm | 84.5 x $10^9$ | 3.6 x $10^{12}$ | 1.0 x $10^{11}$ | 16 x $10^{12}$ | 1.7 x $10^{10}$ | ASTM D257-3 |
| Dielectric loss factor tan σ | 1 | 145 x $10^{-3}$ | 3.0 x $10^{-3}$ | 1.5 x $10^{-3}$ | 1.0 x $10^{-3}$ | 2.0 x $10^{-3}$ | ASTM D150 |
| Dielectric constant $\varepsilon_r$ | 1 | 3.77 | 2.5 | 3.9 | 2.7 | 2.5 | ASTM D150 |
| **Mechanical Properties** | | | | | | | |
| Measured thickness (+/-10%) | mm | 0.500 | 0.500 | 0.500 | 0.500 | 0.500 | ASTM D734 |
| Hardness | Shore 00 | 35 - 50 | 65 - 75 | 65 - 75 | 50 - 65 | 60 - 75 | ASTM D2240 |
| Young's Modulus | N/cm$^2$ | 64 | 94.5 | 70 | 98.5 | 77 | ASTM D412 |
| **Physical Properties** | | | | | | | |
| Operating temperature | °C | -40 to +180 | -40 to +180 | -60 to +200 | -40 to +180 | -60 to +180 | Kerafol |
| Density | g/cm$^3$ | 1.95 | 1.32 | 1.33 | 1.18 | 1.28 | Kerafol |
| Flame rating | UL 94 | VO | VO | VO | VO | VO | U.L. E140693 |
| Total Mass Loss (TML) | Ma.-% | <0.35 | <0.40 | <0.24 | <0.35 | <0.40 | ASTM E 595 |
| Thickness available | mm | 0.5 - 4.0 | 0.5 - 4.0 | 0.5 - 2.0 | 0.5 - 4.0 | 1.0 - 1.5 | Kerafol |

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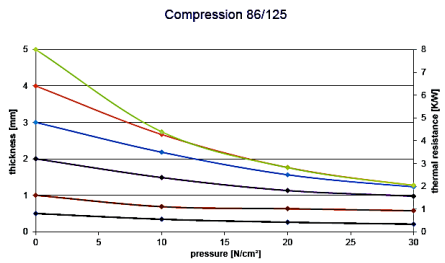


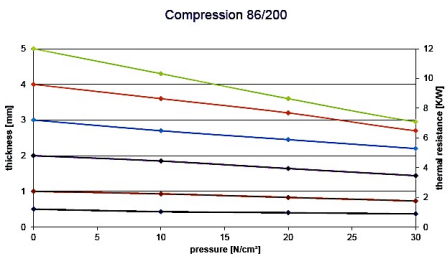


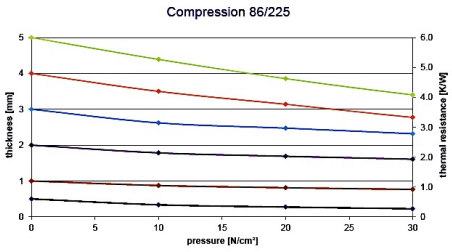


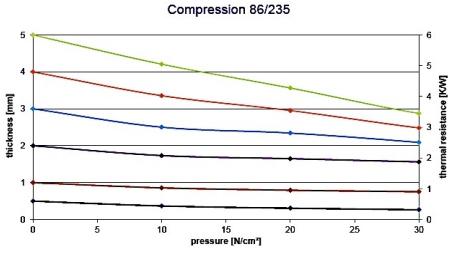


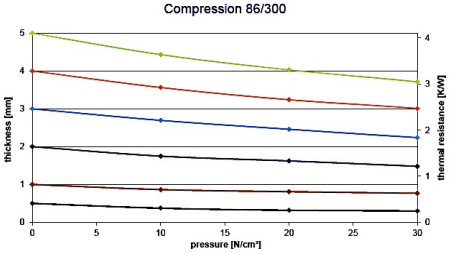


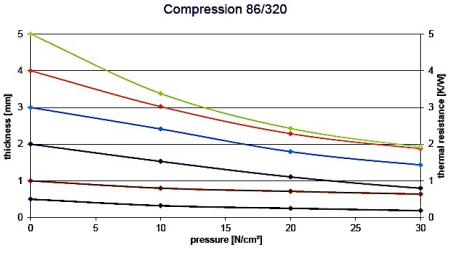

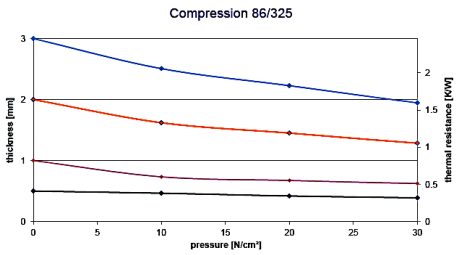


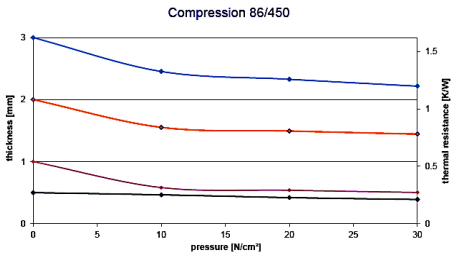


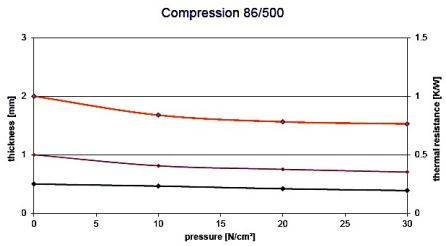


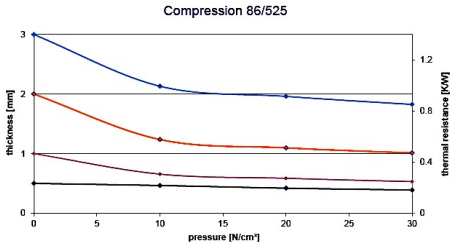


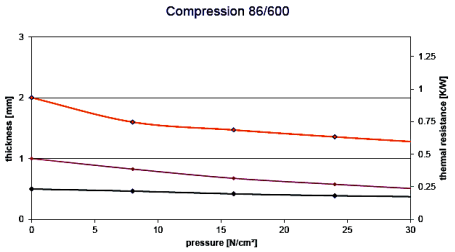


## Reinforced Compressible Thermally Conductive Silicone Pad

| Properties | Unit | 86/128 | 86/200 | 86/228 | 86/238 | Test Method |
|---|---|---|---|---|---|---|
| Colour | - | Orange | Pink/yellow | Yellow | Yellow | Visual |
| Reinforcement | - | 86/52 | 86/52 | 86/52 | 86/52 | Visual |
| **Thermal Properties** | | | | | | |
| Thermal resistance $R_{th}$ | K/W | 0.8 | 1.2 | 0.6 | 0.6 | Kerafol |
| Thermal impedance $R_{ti}$ | °Cmm²/W | 322 | 480 | 240 | 240 | Kerafol |
| | Kin²/W | 0.5 | 0.75 | 0.37 | 0.37 | Kerafol |
| Thermal conductivityλ | W/m-K | 1.5 | 1.0 | 2.0 | 3.0 | ASTM D5470 |
| **Electrical Properties** | | | | | | |
| Breakdown voltage $U_{d;ac}$ | kV | 6 | 8 | 6 | 6 | ASTM D149 |
| Dielectric breakdown $E_{d;ac}$ | kV/mm | 12 | 16 | 12 | 12 | ASTM D149 |
| Volume resistivity | Ωm | $61.3 \times 10^{9}$ | $1.0 \times 10^{11}$ | $2.2 \times 10^{11}$ | $176.1 \times 10^{9}$ | ASTM D257-3 |
| Dielectric loss factor tan σ | 1 | $153 \times 10^{-3}$ | $1.5 \times 10^{-3}$ | $1.0 \times 10^{-3}$ | $20.2 \times 10^{-3}$ | ASTM D150 |
| Dielectric constant $\varepsilon_r$ | 1 | 4.28 | 3.9 | 3.6 | 3.7 | ASTM D150 |
| **Mechanical Properties** | | | | | | |
| Measured thickness (+/-10%) | mm | 0.500 | 0.500 | 0.500 | 0.500 | ASTM D734 |
| Hardness | Shore 00 | 10 - 25 | 10 - 20 | 30 - 45 | 25 - 40 | ASTM D2240 |
| Young's Modulus | N/cm² | 23.6 | 22 | 58 | 32 | ASTM D412 |
| **Physical Properties** | | | | | | |
| Operating temperature | °C | -40 to +180 | -60 to +200 | -40 to +180 | -40 to +180 | Kerafol |
| Density | g/cm³ | 2.0 | 1.61 | 1.65 | 1.65 | Kerafol |
| Flame rating | UL 94 | VO | VO | VO | VO | U.L. E140693 |
| Total Mass Loss (TML) | Ma.-% | <0.29 | <0.40 | <0.44 | <0.10 | ASTM E 595 |
| Thickness available | mm | 0.5 - 4.0 | 0.5 - 5.0 | 0.5 - 4.0 | 0.5 - 2.0 | Kerafol |

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