

# **K-FLEX**

## **K-FIX TYPE O**



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In the past, simple wood block or dowel inserts were normally used with pipe insulation protection shields to support insulation at hanger locations, but things have changed. With increasing environment concerns, like mold and mildew problems, and a greater emphasis on green building, engineers are taking a close look at their support systems to choose the most efficient. In addition, newer specifications call for colder piping system for chilled water and other cold lines, which has created the need for a wider array of pipe insulation support systems than currently offered by manufacturers.

**K-FLEX K-FIX TYPE O**

K-Fix Type O the innovation pipe insulation support, which engineered designed to meet MSS Standard SP-69 (Manufacturers standardization society of the Valve and Fitting Industry, Inc.) Each set of K-Fix Type O is preformed to fir the O.D of the pipe.

High density and compressive strength of conventional pipe support insulation does not necessarily deliver the best condensation control. High density and compressive strength are also prone to crack at load bearing point. K-Fix Type O density is designed to withstand the weight of the pipe, valves, flanges and fluid media inside without compressing the K-Fix Type O thickness. K-Fix Type O compressive strenght is engineered to meet the recommended spacing between supports and extend the life expectancy of the system

**TECHNICAL DATA**

| <b>Property</b>                 | <b>Value/Assessment</b>  | <b>Special Remark</b>                                      |
|---------------------------------|--|--|
| <b>Density</b>                  | 100 to 120 kg/m <sup>3</sup>   |  |
| <b>Recommend Pipe Size</b>      | Up to 24 inch (DN600)  |  |
| <b>Temperature Range</b>        | Max. service temperature: +120°C<br>Min. service temperature: -200°C |  |
| <b>Thermal Conductivity</b>     | $\lambda \leq / \geq 0.025$ W/(m.K)<br>0.17 Btu-in/hr.ft. °F         | Tested according to ASTM C518                              |
| <b>Compressive Strength</b>     | Perpendicular 20 kg/cm <sup>2</sup>                                  | Tested according to ASTM D1621                             |
| <b>Water Absorption by Wt.</b>  | < 1%   | Tested according to ASTM D209                              |
| <b>Water Vapor Permeability</b> | Polyurethane: 2 Perm - inch<br>Elastomeric Foam: 0.1 Perm - inch     | Tested according to ASTM E96                               |
| <b>Close Cell Content</b>       | Min 92%  |  |
| <b>Flammability</b>             | Class V-0<br>Self Extinguishing                                      | Tested according to UL 94<br>Tested according to ASTM D635 |
| <b>Environmental Aspect</b>     | Non CFC / HCFC material  |  |

For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.  
The reaction to fire classification is valid on metal or solid, mineral surfaces.  
Further documents such as test certificates, approvals and the like can be requested using the registration number given.  
**K-FLEX** reserves the right to change data and technical requirements without notice.

**MATERIAL**

| <b>Property</b>             | <b>K-Fix Type O</b>          |                                | <b>Other Materials</b>      |                               |                                    |
|-----------------------------|------------------------------|--------------------------------|-----------------------------|-------------------------------|------------------------------------|
|                             | <b>Moulded Foam</b>          | <b>Wood Block</b>              | <b>Phenolic Foam</b>        | <b>PVC Pipe Half Cut</b>      | <b>PU (Sliced Foam)</b>            |
| <b>Material</b>             | Closed Cell PU foam          | Hard Wood                      | Phenolic foam               | PVC injection                 | Semi open cell PU foam             |
| <b>Condensation Control</b> | Very good                    | Poor                           | Poor                        | Poor                          | Medium                             |
| <b>Density</b>              | 100 to 120 kg/m <sup>3</sup> | 400 to 800 kg/m <sup>3</sup>   | 80 to 160 kg/m <sup>3</sup> | 1400 kg/m <sup>3</sup>        | 150 to 250 kg/m <sup>3</sup>       |
| <b>Thermal Conductivity</b> | 0.021 W/m.K                  | 0.17 W/m.K                     | 0.6 W/m.K                   | 0.15 W/m.K                    | 0.28 W/m.K                         |
| <b>Compressive Strength</b> | 15 to 20 kg/cm <sup>2</sup>  | 100 to 1000 kg/cm <sup>2</sup> | Easy to crack               | 550 to 890 kg/cm <sup>2</sup> | Too stiff and more likely to crack |
| <b>Fire Performance</b>     | Self extinguish              | Flammable                      | Self extinguish             | Melt & Drip                   | Self extinguish                    |
| <b>Service Temperature</b>  | -200 to 120°C                | 0 to 120°C                     | -180 to 125°C               | <60°C                         | -200 to 80°C                       |
| <b>Installation</b>         | Easy & Fast                  | Difficult & Slow               | Easy & Fast                 | Difficult & Slow              | Easy & Fast                        |
| <b>Price</b>                | Economical                   | High                           | High                        | Low                           | Medium                             |

## PRODUCT RANGE ▶ K-FIX TYPE O

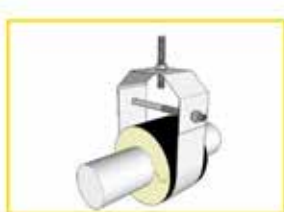
| Steel       | Copper      | K-Fix Type O | Length | Thickness |              |              |            |                |                |
|-------------|-------------|--------------|--------|-----------|--------------|--------------|------------|----------------|----------------|
|             |             |              |        | mm (inch) | 13 mm (1/2") | 19 mm (3/4") | 25 mm (1") | 32 mm (1 1/4") | 38 mm (1 1/2") |
| -           | 3/8" (10)   | 10           | 50     | KF-13x010 | KF-19x010    | -            | -          | -              | -              |
| -           | 1/2" (12)   | 12           | 50     | KF-13x012 | KF-19x012    | -            | -          | -              | -              |
| -           | 5/8" (15)   | 15           | 50     | KF-13x015 | KF-19x015    | KF-25x015    | -          | -              | -              |
| -           | 3/4" (20)   | 20           | 50     | KF-13x020 | KF-19x020    | KF-25x020    | KF-32x020  | KF-38x020      | KF-50x020      |
| 1/2" (15)   | 7/8" (22)   | 22           | 50     | KF-13x022 | KF-19x022    | KF-25x022    | KF-32x022  | KF-38x022      | KF-50x022      |
| 3/4" (20)   | 1 1/8" (28) | 28           | 50     | KF-13x028 | KF-19x028    | KF-25x028    | KF-32x028  | KF-38x028      | KF-50x028      |
| 1" (25)     | 1 3/8" (35) | 35           | 50     | KF-13x035 | KF-19x035    | KF-25x035    | KF-32x035  | KF-38x035      | KF-50x035      |
| 1 1/4" (32) | 1 5/8" (42) | 42           | 50     | KF-13x042 | KF-19x042    | KF-25x042    | KF-32x042  | KF-38x042      | KF-50x042      |
| 1 1/2" (40) | -           | 48           | 50     | KF-13x048 | KF-19x048    | KF-25x048    | KF-32x048  | KF-38x048      | KF-50x048      |
| -           | 2 1/8" (54) | 54           | 50     | KF-13x054 | KF-19x054    | KF-25x054    | KF-32x054  | KF-38x054      | KF-50x054      |
| 2" (50)     | -           | 60           | 50     | KF-13x060 | KF-19x060    | KF-25x060    | KF-32x060  | KF-38x060      | KF-50x060      |
| -           | 2 5/8" (67) | 67           | 50     | KF-13x067 | KF-19x067    | KF-25x067    | KF-32x067  | KF-38x067      | KF-50x067      |
| -           | -           | 73           | 50     | KF-13x073 | KF-19x073    | KF-25x073    | KF-32x073  | KF-38x073      | KF-50x073      |
| 2 1/2" (65) | -           | 76           | 50     | KF-13x076 | KF-19x076    | KF-25x076    | KF-32x076  | KF-38x076      | KF-50x076      |
| 3" (80)     | -           | 89           | 50     | KF-13x089 | KF-19x089    | KF-25x089    | KF-32x089  | KF-38x089      | KF-50x089      |
| 4" (100)    | -           | 114          | 50     | KF-13x114 | KF-19x114    | KF-25x114    | KF-32x114  | KF-38x114      | KF-50x114      |
| 5" (125)    | -           | 140          | 50     | -         | KF-19x140    | KF-25x140    | KF-32x140  | KF-38x140      | KF-50x140      |
| 6" (150)    | -           | 168          | 50     | -         | KF-19x168    | KF-25x168    | KF-32x168  | KF-38x168      | KF-50x168      |
| 8" (200)    | -           | 219          | 75     | -         | KF-19x219    | KF-25x219    | KF-32x219  | KF-38x219      | KF-50x219      |
| 10" (250)   | -           | 273          | 75     | -         | KF-19x273    | KF-25x273    | KF-32x273  | KF-38x273      | KF-50x273      |
| 12" (300)   | -           | 324          | 75     | -         | KF-19x324    | KF-25x324    | KF-32x324  | KF-38x324      | KF-50x324      |
| 14" (350)   | -           | 355          | 75     | -         | KF-19x355    | KF-25x355    | KF-32x355  | KF-38x355      | KF-50x355      |
| 16" (400)   | -           | 406          | 75     | -         | KF-19x406    | KF-25x406    | KF-32x406  | KF-38x406      | KF-50x406      |
| 18" (457)   | -           | 457          | 100    | -         | KF-19x457    | KF-25x457    | KF-32x457  | KF-38x457      | KF-50x457      |
| 20" (500)   | -           | 510          | 100    | -         | KF-19x510    | KF-25x510    | KF-32x510  | KF-38x510      | KF-50x510      |
| 24" (600)   | -           | 609          | 100    | -         | -            | -            | KF-32x609  | KF-38x609      | KF-50x609      |

For enquiries of other sizes, please contact [kflexmktg@kflex.com.my](mailto:kflexmktg@kflex.com.my)

**RECOMMENDED SPACING**

| NPS    | DN  | K-Fix Type O | Wt. per ft. Empty Pipe" |       | Wt. per ft. Fully Flooded" |        | Hanger Spacing, ft. per meter acc. to MSS-SP-69 |   |       |   |        |   |
|--------|-----|--------------|-------------------------|-------|----------------------------|--------|---|---|-------|---|--------|---|
|        |     |              |                         |       |                            |        | Standard Steel Pipe                             |   |       |   | Copper |   |
|        |     |              |                         |       |                            |        | Water   |   | Steam |   | Water  |   |
|        |     |              |                         |       |                            |        | ft  | m | ft    | m | ft     | m |
| 1/2"   | 15  | 22           | 0.85                    | 0.39  | 0.98                       | 0.44   | 7   | 2 | 8     | 2 | 5      | 2 |
| 3/4"   | 20  | 28           | 1.13                    | 0.51  | 1.36                       | 0.62   | 7   | 2 | 9     | 3 | 5      | 2 |
| 1"     | 25  | 35           | 1.68                    | 0.76  | 2.05                       | 0.93   | 7   | 2 | 9     | 3 | 6      | 2 |
| 1 1/4" | 32  | 42           | 2.27                    | 1.03  | 2.92                       | 1.32   | 7   | 2 | 9     | 3 | 6      | 2 |
| 1 1/2" | 40  | 48           | 2.72                    | 1.23  | 3.6                        | 1.63   | 9   | 3 | 12    | 4 | 8      | 2 |
| 2"     | 50  | 60           | 3.65                    | 1.66  | 5.11                       | 2.32   | 10  | 3 | 13    | 4 | 8      | 2 |
| 2 1/2" | 65  | 76           | 5.79                    | 2.63  | 7.87                       | 3.57   | 11  | 3 | 14    | 4 | 9      | 3 |
| 3"     | 80  | 89           | 7.58                    | 3.44  | 10.8                       | 4.90   | 12  | 4 | 15    | 5 | 10     | 3 |
| 4"     | 100 | 114          | 10.8                    | 4.90  | 16.3                       | 7.39   | 14  | 4 | 17    | 5 | 12     | 4 |
| 5"     | 125 | 140          | 14.6                    | 6.62  | 23.3                       | 10.57  | 16  | 5 | 19    | 6 | 13     | 4 |
| 6"     | 150 | 168          | 18.9                    | 8.57  | 31.5                       | 14.29  | 17  | 5 | 21    | 6 | 14     | 4 |
| 8"     | 200 | 219          | 28.6                    | 12.97 | 50.3                       | 22.82  | 19  | 6 | 24    | 7 | 16     | 5 |
| 10"    | 250 | 273          | 40.5                    | 18.37 | 74.7                       | 33.88  | 20  | 6 | 24    | 7 | 18     | 5 |
| 12"    | 300 | 324          | 53.5                    | 24.27 | 102.2                      | 46.36  | 20  | 6 | 24    | 7 | 19     | 6 |
| 14"    | 350 | 355          | 63.4                    | 28.76 | 122.2                      | 55.43  | 20  | 6 | 24    | 7 | -      | - |
| 16"    | 400 | 406          | 82.8                    | 37.56 | 159.5                      | 72.35  | 20  | 6 | 24    | 7 | -      | - |
| 18"    | 450 | 457          | 104.7                   | 47.49 | 201.8                      | 91.53  | 20  | 6 | 24    | 7 | -      | - |
| 20"    | 500 | 510          | 123.1                   | 55.84 | 243.9                      | 110.63 | 20  | 6 | 24    | 7 | -      | - |

**APPLICATIONS**



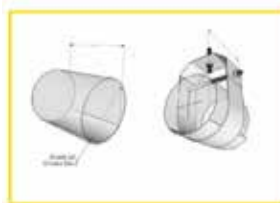
▶ With Clevis Pipe Hanger



▶ With Pipe Support Element



▶ With U-Bolt and Pipe Support



▶ With Pipe Shield

K-FLEX K-FIX TYPE O\_V2\_0523