

# ELASTOMERIC ACOUSTICAL FLOOR MOUNTINGS

for FLOATING FLOORS & OTHER SUITABLE APPLICATIONS



In 1976 the acoustical community asked us to develop a floating floor mounting that would last as long as the building and provide response frequencies lower than two inch (50mm) thick fiberglass.

We were pleased to find that Neoprene molded in exact accordance with DuPont formulations had addressed the life expectancy requirement as bridge supports. Outdoor applications are far more severe than within a building because of the temperature extremes, sunlight, rain, snow and ice.

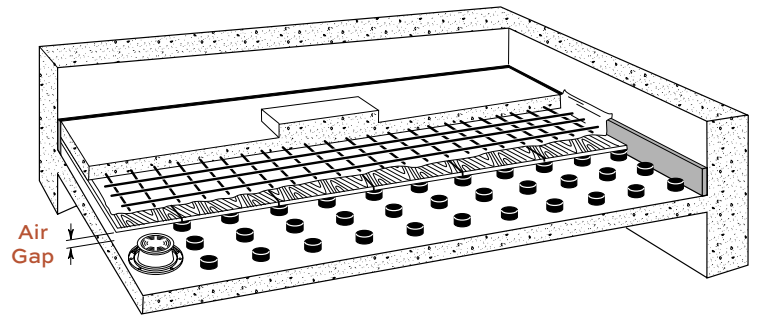
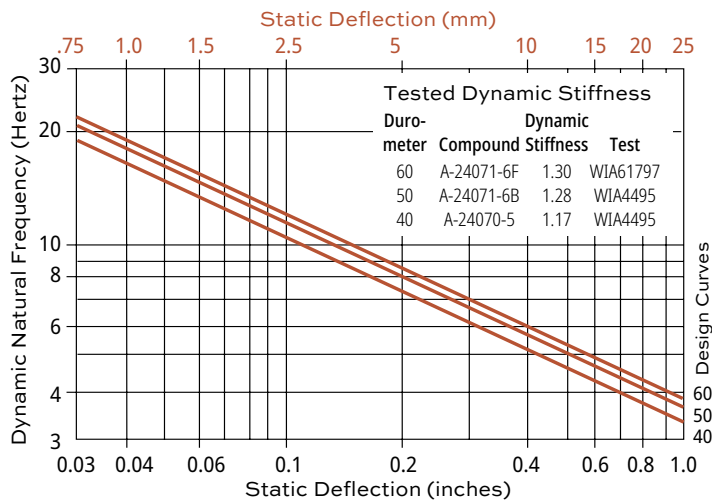
We continued with Neoprene until 2006 when we developed Natural Rubber Compounds with the same life expectancy but much lower dynamic stiffness. These compounds are referred to as LDS. Frequencies in two inch (50mm) thickness are now 7 - 8 Hz compared to fiberglass @ 15 Hz. It is hard to understand why fiberglass is still acceptable. Please refer to Bulletin ACS-102, page 4-8 for a complete discussion.

In bridge and overpass work there is a need for very high loadings with pressures as high as 2000 lbs/square inch. If strain is limited to 10 to 15 percent of the pad thickness, both creep and permanent set are very acceptable.



MOUNTS FROM 1/2" - 4" HEIGHTS

MASON LOW DYNAMIC STIFFNESS (LDS) BRIDGE BEARING NATURAL RUBBER COMPOUNDS. DYNAMIC NATURAL FREQUENCY/DEFLECTION CHART



TYPICAL EAFM FLOATING FLOOR

Since we started by supporting floating floor areas of one square foot (0.1 square meters), our initial problem was to design a stable rubber column that would deflect 0.2 to 0.3 inches (5mm to 8mm) under minor loadings. A mounting thickness of 2 inches (50mm) at 10 to 15% deflection (strain) met the deflection criteria. A two inch (50mm) diameter reduced the shape factor (SF= Loaded Area/Perimeter Area) to achieve the low capacities of the EAFM-8823 on page 4-73.

All of the other sizes were gradually designed and tooled to raise or lower both capacities and frequencies.

In response to the wishes and specifications of Acousticians and Architects, we almost always manufacture these products in Bridge Bearing Natural Rubber and tool for other sizes and thicknesses. We still supply Neoprene but only on special order.

This arsenal of available sizes encouraged other applications. Standard designs and variations are used as drop hammer shock absorbers, subway and railroad isolators as required. We design and fabricate to virtually all requirements in our own factory, including squares and rectangles with bonded embedded plates to increase shape factors and capacities.

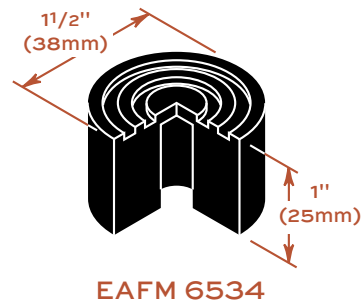
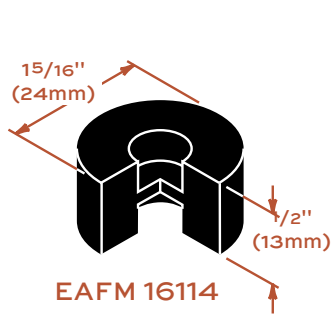
AASHTO BRIDGE BEARING SPECIFICATIONS FOR POLYISOPRENE

| ORIGINAL PHYSICAL PROPERTIES |                  |                   | TESTED FOR AGING |                  |                   | COMPRESSION SET | LONG TERM CREEP |
|------------------------------|------------------|-------------------|------------------|------------------|-------------------|-----------------|-----------------|
| Duro-meter                   | Tensile Strength | Elongat. at Break | Hard-ness        | Tensile Strength | Elongat. at Break |                 |                 |
| 40±5                         | 2000 psi         | 500%              | +10%             | -25%             | -25%              | 25% (max)       | 5% (max)        |
| 50±5                         | 2250 psi         | 450%              | +10%             | -25%             | -25%              | 25% (max)       | 5% (max)        |
| 60±5                         | 2250 psi         | 400%              | +10%             | -25%             | -25%              | 25% (max)       | 5% (max)        |
| 70±5                         | 2250 psi         | 300%              | +10%             | -25%             | -25%              | 25% (max)       | 5% (max)        |

NOTE: 40 Durometer is not included in AASHTO Specifications. Numbers are Mason standard.



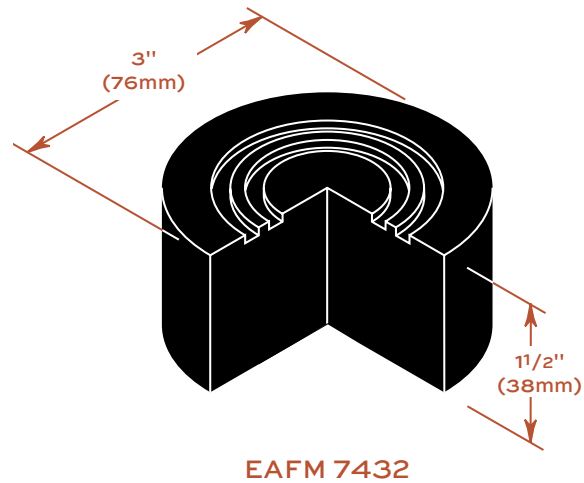
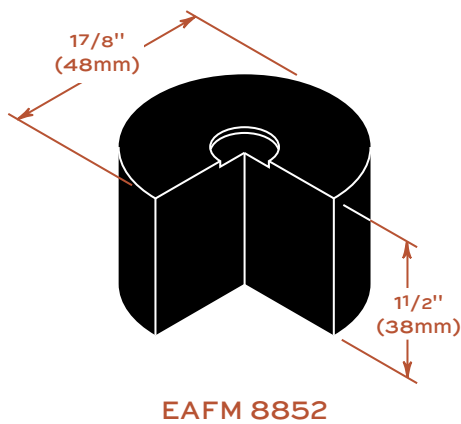
1/2" – 1" (13 – 25mm) Height



| EAFM Designation & Color |       | Durometer ±5 | 0.025" (0.6mm) Deflection |      |                | 0.050" (1.3mm) Deflection |      |                | 0.075" (1.9mm) Deflection |      |                | Temporary Overload*<br>3X Maximum Loading |     |
|--------------------------|-------|--------------|---------------------------|------|----------------|---------------------------|------|----------------|---------------------------|------|----------------|---|-----|
|                          |       |              | Loading (lb)              | (kg) | Frequency (Hz) | Loading (lb)              | (kg) | Frequency (Hz) | Loading (lb)              | (kg) | Frequency (Hz) |   |     |
| 16114                    | Green | 40           | 17                        | 8    | 21.4           | 33                        | 15   | 15.1           | 50                        | 23   | 12.4           | 150                                       | 68  |
|                          | Red   | 50           | 25                        | 11   | 22.4           | 50                        | 23   | 17.8           | 75                        | 34   | 12.9           | 225                                       | 102 |
|                          | White | 60           | 37                        | 17   | 22.5           | 73                        | 33   | 16.0           | 110                       | 50   | 13.0           | 330                                       | 150 |
|                          |       |              | 0.05" (1.3mm) Deflection  |      |                | 0.1" (2.5mm) Deflection   |      |                | 0.15" (3.8mm) Deflection  |      |                |   |     |
|                          |       |              | Loading (lb)              | (kg) | Frequency (Hz) | Loading (lb)              | (kg) | Frequency (Hz) | Loading (lb)              | (kg) | Frequency (Hz) |   |     |
| 6534                     | Black | 30           | 17                        | 8    | 14.7           | 33                        | 15   | 10.4           | 50                        | 23   | 8.5            | 150                                       | 68  |
|                          | Green | 40           | 30                        | 14   | 15.1           | 60                        | 27   | 10.7           | 90                        | 41   | 8.7            | 270                                       | 122 |
|                          | Red   | 50           | 47                        | 21   | 15.8           | 93                        | 42   | 11.2           | 140                       | 64   | 9.1            | 420                                       | 191 |
|                          | White | 60           | 70                        | 32   | 16.0           | 140                       | 64   | 11.3           | 210                       | 95   | 9.2            | 630                                       | 286 |

\*Temporary overload is often mentioned in specifications. We have tested mountings compressed to 50% of their initial thickness. After release there was no permanent set or damage.

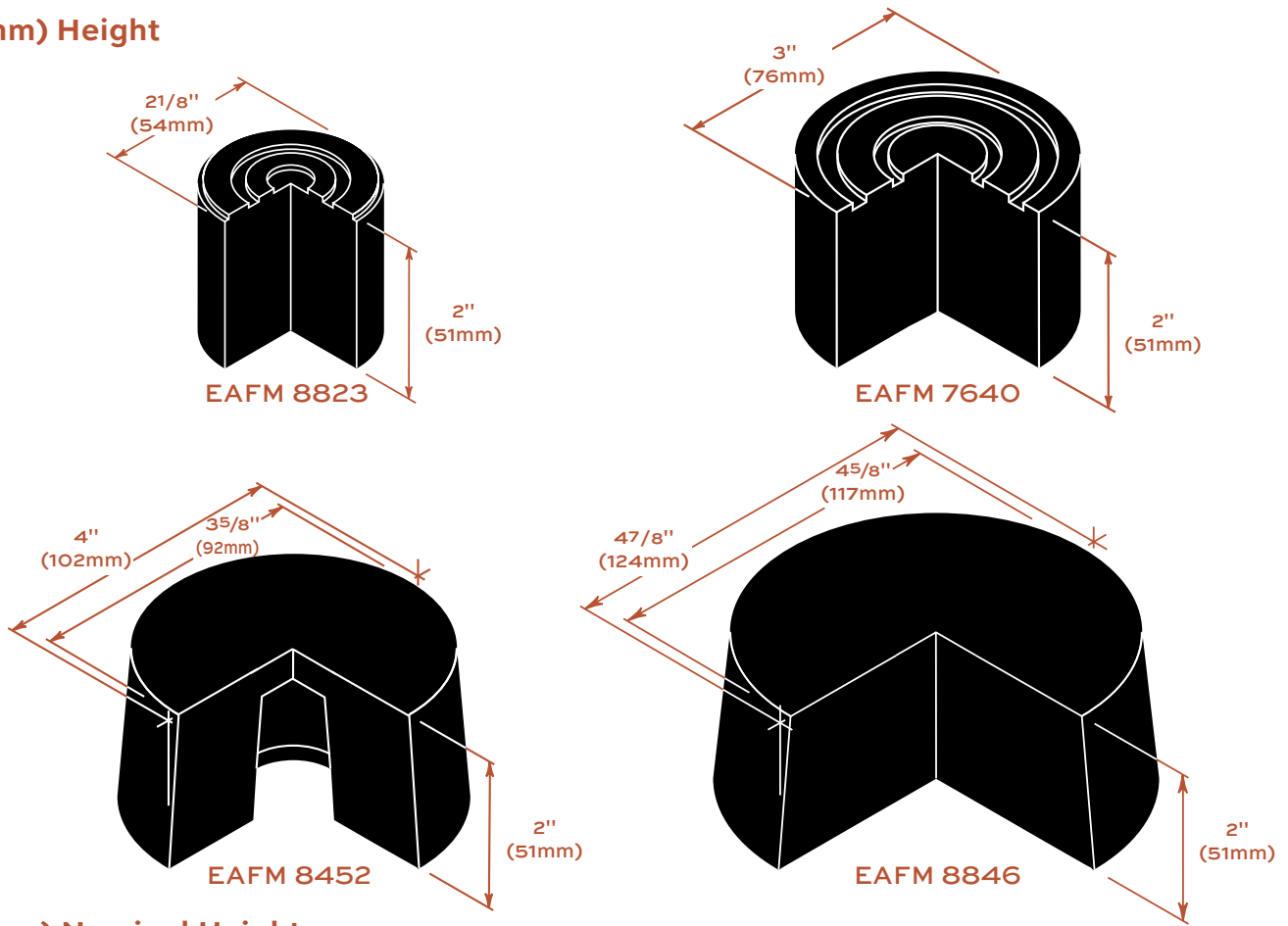
1 1/2" (38mm) Height



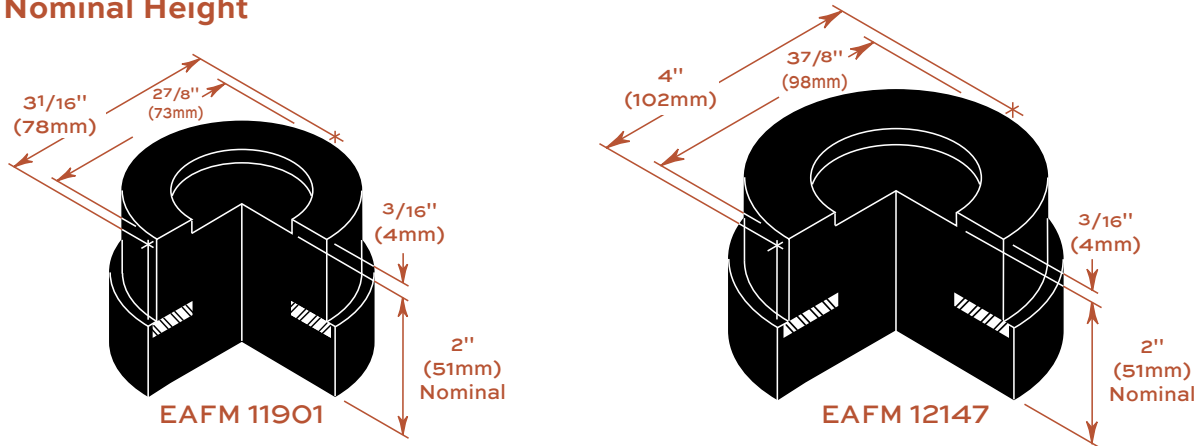
| EAFM Designation & Color |       | Durometer ±5 | 0.075" (1.9mm) Deflection |      |                | 0.150" (3.8mm) Deflection |      |                | 0.225" (5.7mm) Deflection |      |                | Temporary Overload*<br>3X Maximum Loading |     |
|--------------------------|-------|--------------|---------------------------|------|----------------|---------------------------|------|----------------|---------------------------|------|----------------|---|-----|
|                          |       |              | Loading (lb)              | (kg) | Frequency (Hz) | Loading (lb)              | (kg) | Frequency (Hz) | Loading (lb)              | (kg) | Frequency (Hz) |   |     |
| 8852                     | Green | 40           | 50                        | 23   | 12.4           | 100                       | 45   | 8.7            | 150                       | 68   | 7.1            | 450                                       | 205 |
|                          | Red   | 50           | 73                        | 33   | 12.9           | 145                       | 66   | 9.1            | 220                       | 100  | 7.5            | 660                                       | 300 |
|                          | White | 60           | 113                       | 51   | 13.0           | 225                       | 102  | 9.2            | 340                       | 155  | 7.6            | 1020                                      | 465 |
| 7432                     | Green | 40           | 93                        | 42   | 12.4           | 185                       | 84   | 8.7            | 280                       | 127  | 7.1            | 840                                       | 380 |
|                          | Red   | 50           | 139                       | 63   | 12.9           | 277                       | 126  | 9.1            | 420                       | 191  | 7.5            | 1260                                      | 570 |
|                          | White | 60           | 208                       | 95   | 13.0           | 416                       | 189  | 9.2            | 630                       | 286  | 7.6            | 1890                                      | 860 |

\*Temporary overload is often mentioned in specifications. We have tested mountings compressed to 50% of their initial thickness. After release there was no permanent set or damage.

**2" (51mm) Height**



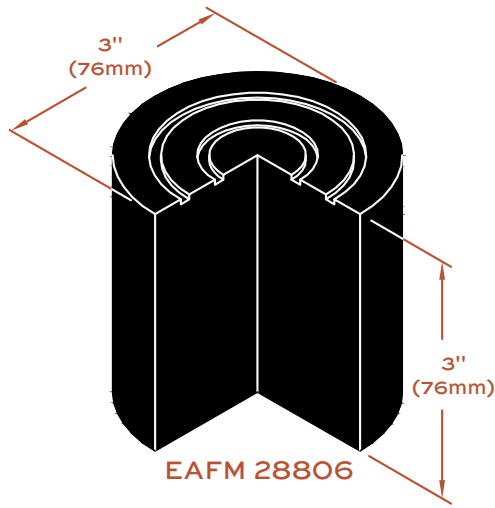
**2" (51mm) Nominal Height**



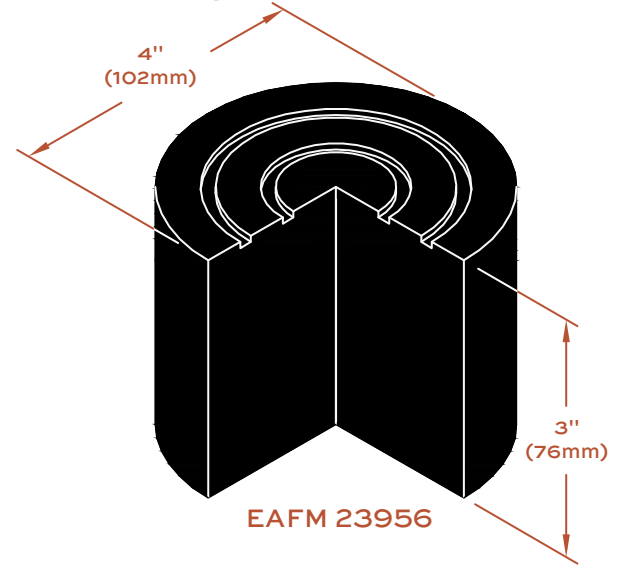
| EAFM Designation & Color | Durometer ±5 | 0.1" (2.5mm) Deflection |      |                | 0.2" (5.1mm) Deflection |      |                | 0.3" (7.6mm) Deflection |      |                | Temporary Overload* 3X Maximum Loading |      |
|--------------------------|--------------|-------------------------|------|----------------|-------------------------|------|----------------|-------------------------|------|----------------|--|------|
|                          |              | Loading (lb)            | (kg) | Frequency (Hz) | Loading (lb)            | (kg) | Frequency (Hz) | Loading (lb)            | (kg) | Frequency (Hz) | (lb)                                   | (kg) |
| 8823                     | Green 40     | 48                      | 22   | 10.7           | 97                      | 44   | 7.6            | 145                     | 66   | 6.2            | 435                                    | 197  |
|                          | Red 50       | 80                      | 36   | 11.2           | 160                     | 73   | 7.9            | 240                     | 109  | 6.4            | 720                                    | 327  |
|                          | White 60     | 120                     | 54   | 11.3           | 240                     | 109  | 8.0            | 360                     | 163  | 6.5            | 1080                                   | 490  |
| 7640                     | Green 40     | 140                     | 64   | 10.7           | 280                     | 127  | 7.6            | 420                     | 191  | 6.2            | 1260                                   | 572  |
|                          | Red 50       | 200                     | 92   | 11.2           | 400                     | 181  | 7.9            | 600                     | 272  | 6.4            | 1800                                   | 816  |
|                          | White 60     | 300                     | 136  | 11.3           | 600                     | 273  | 8.0            | 900                     | 409  | 6.5            | 2700                                   | 1225 |
| 8452                     | Green 40     | 167                     | 76   | 10.7           | 333                     | 151  | 7.6            | 500                     | 227  | 6.2            | 1500                                   | 681  |
|                          | Red 50       | 256                     | 116  | 11.2           | 513                     | 233  | 7.9            | 770                     | 350  | 6.4            | 2310                                   | 1050 |
|                          | White 60     | 400                     | 182  | 11.3           | 800                     | 364  | 8.0            | 1200                    | 545  | 6.5            | 3600                                   | 1636 |
| 8846                     | Red 50       | 600                     | 273  | 11.2           | 1200                    | 545  | 7.9            | 1800                    | 818  | 6.4            | 5400                                   | 2454 |
|                          | White 60     | 900                     | 409  | 11.3           | 1800                    | 817  | 8.0            | 2700                    | 1227 | 6.5            | 8100                                   | 3681 |
| 11901                    | Red 50       | 368                     | 167  | 11.2           | 735                     | 333  | 7.9            | 1100                    | 499  | 6.4            | 3300                                   | 1497 |
|                          | White 60     | 520                     | 236  | 11.3           | 1040                    | 472  | 8.0            | 1550                    | 703  | 6.5            | 4650                                   | 2109 |
| 12147                    | Red 50       | 667                     | 303  | 11.2           | 1335                    | 606  | 7.9            | 2000                    | 907  | 6.4            | 6000                                   | 2722 |
|                          | White 60     | 1075                    | 488  | 11.3           | 2150                    | 975  | 8.0            | 3200                    | 1451 | 6.5            | 9600                                   | 4354 |

\*Temporary overload is often mentioned in specifications. We have tested mountings compressed to 50% of their initial thickness. After release there was no permanent set or damage.

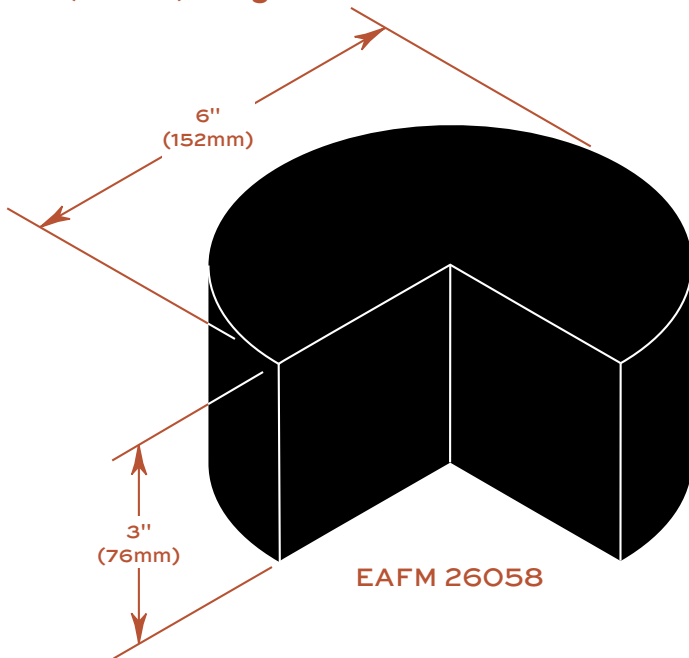
**3" (76mm) Height**



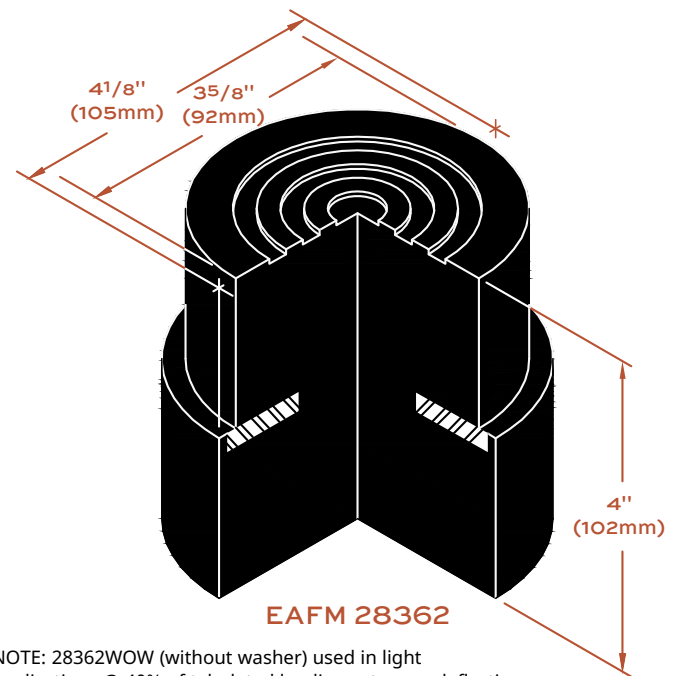
**3" (76mm) Height**



**3" (76mm) Height**



**4" (100mm) Height**



NOTE: 28362WOW (without washer) used in light applications @ 40% of tabulated loadings at same deflection.

| EAFM Designation & Color | Durometer ±5 | 0.15" (3.8mm) Deflection |              |                | 0.30" (7.6mm) Deflection  |              |                | 0.45" (11.4mm) Deflection |              |                | Temporary Overload*<br>3X Maximum Loading |      |
|--------------------------|--------------|--------------------------|--------------|----------------|---------------------------|--------------|----------------|---------------------------|--------------|----------------|---|------|
|                          |              | Loading (lb)             | Loading (kg) | Frequency (Hz) | Loading (lb)              | Loading (kg) | Frequency (Hz) | Loading (lb)              | Loading (kg) | Frequency (Hz) |   |      |
| 28806                    | Green 40     | 75                       | 34           | 8.7            | 150                       | 68           | 6.2            | 225                       | 102          | 5.0            | 675                                       | 306  |
|                          | Red 50       | 125                      | 56           | 9.1            | 250                       | 113          | 6.4            | 375                       | 170          | 5.2            | 1125                                      | 510  |
|                          | White 60     | 200                      | 90           | 9.2            | 400                       | 181          | 6.5            | 600                       | 272          | 5.3            | 1800                                      | 816  |
| 23956                    | Green 40     | 230                      | 105          | 8.7            | 460                       | 210          | 6.2            | 700                       | 320          | 5.0            | 2100                                      | 960  |
|                          | Red 50       | 365                      | 166          | 9.1            | 730                       | 332          | 6.4            | 1100                      | 500          | 5.2            | 3300                                      | 1500 |
|                          | White 60     | 500                      | 227          | 9.2            | 1000                      | 454          | 6.5            | 1500                      | 680          | 5.3            | 4500                                      | 2040 |
| 26058                    | Green 40     | 270                      | 125          | 8.7            | 540                       | 250          | 6.2            | 810                       | 375          | 5.0            | 2430                                      | 1125 |
|                          | Red 50       | 750                      | 340          | 9.1            | 1500                      | 680          | 6.4            | 2250                      | 1020         | 5.2            | 6750                                      | 3060 |
|                          | White 60     | 950                      | 430          | 9.2            | 1900                      | 860          | 6.5            | 2850                      | 1290         | 5.3            | 8560                                      | 3870 |
|                          |              | 0.20" (5.1mm) Deflection |              |                | 0.40" (10.2mm) Deflection |              |                | 0.60" (15.2mm) Deflection |              |                |   |      |
|                          |              | Loading (lb)             | Loading (kg) | Frequency (Hz) | Loading (lb)              | Loading (kg) | Frequency (Hz) | Loading (lb)              | Loading (kg) | Frequency (Hz) |   |      |
| 28362                    | Green 40     | 215                      | 97           | 7.0            | 435                       | 197          | 5.0            | 660                       | 299          | 4.2            | 1880                                      | 898  |
|                          | Red 50       | 365                      | 165          | 8.0            | 725                       | 329          | 5.5            | 1100                      | 499          | 4.6            | 3300                                      | 1497 |
|                          | White 60     | 600                      | 272          | 8.5            | 1200                      | 544          | 6.0            | 1830                      | 830          | 5.0            | 5498                                      | 2490 |

\*Temporary overload is often mentioned in specifications. We have tested mountings compressed to 50% of their initial thickness. After release there was no permanent set or damage.

# ELASTOMERIC ACOUSTICAL FLOOR MOUNTINGS

for SOUND & VIBRATION CONTROL



The definition of a rubber isolation mounting is any configuration, round, square or rectangular with a known capacity and deflection. Acoustical solutions are in the 6 - 8 Hz frequency range. However, these very same low stress isolators can be stacked with steel shim plates between to achieve lower frequencies for vibration isolation.

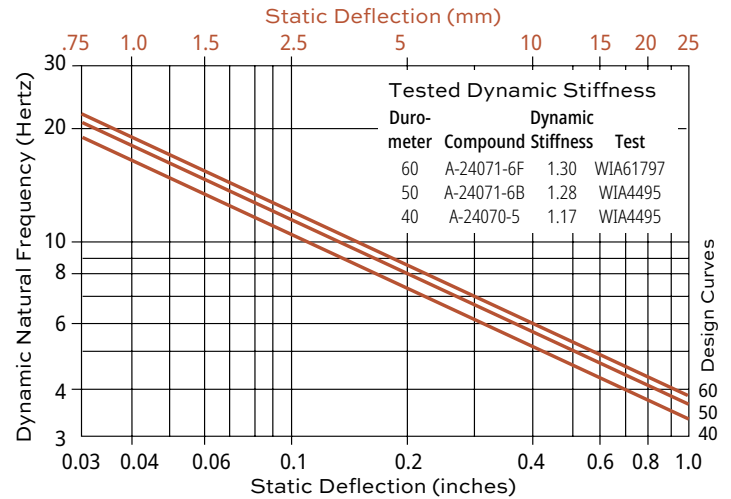
This grouping is typical of special purpose product. We add new designs in response to market requirements.

### AASHTO BRIDGE BEARING SPECIFICATIONS FOR POLYISOPRENE

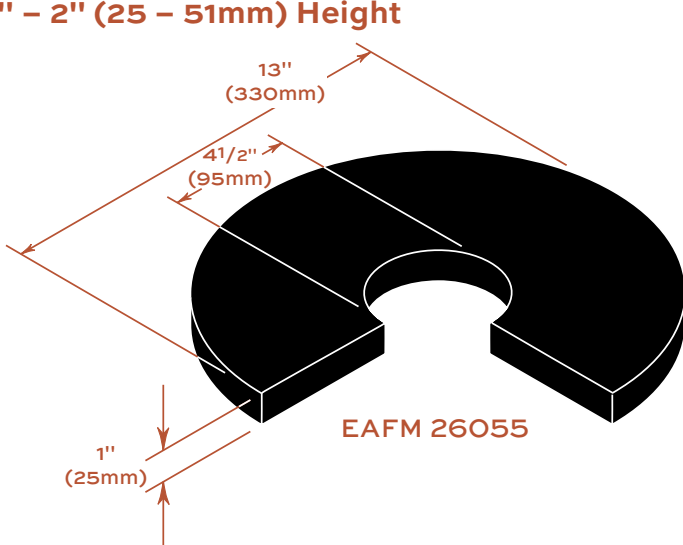
| ORIGINAL PHYSICAL PROPERTIES |                              |                               | TESTED FOR AGING         |                              |                               |  | COMPRES-<br>SION SET | LONG<br>TERM<br>CREEP |
|------------------------------|------------------------------|-------------------------------|--------------------------|------------------------------|-------------------------------|--|----------------------|-----------------------|
| Tests: ASTM D-2240 & D-412   |                              |                               | Oven Aging (70hrs/158°F) |                              | Ozone                         | ASTM D-395<br>22 hrs/158°F<br>Method B | 168 hrs              |                       |
| Duro-<br>meter<br>Shore A    | Tensile<br>Strength<br>(min) | Elongat.<br>at Break<br>(min) | Hard-<br>ness<br>(max)   | Tensile<br>Strength<br>(max) | Elongat.<br>at Break<br>(max) |  |                      |                       |
| 40±5                         | 2000 psi                     | 500%                          | +10%                     | -25%                         | -25%                          | No Cracks                              | 25% (max)            |                       |
| 50±5                         | 2250 psi                     | 450%                          | +10%                     | -25%                         | -25%                          | No Cracks                              | 25% (max)            |                       |
| 60±5                         | 2250 psi                     | 400%                          | +10%                     | -25%                         | -25%                          | No Cracks                              | 25% (max)            |                       |
| 70±5                         | 2250 psi                     | 300%                          | +10%                     | -25%                         | -25%                          | No Cracks                              | 25% (max)            |                       |

NOTE: 40 Durometer is not included in AASHTO Specifications. Numbers are Mason standard.

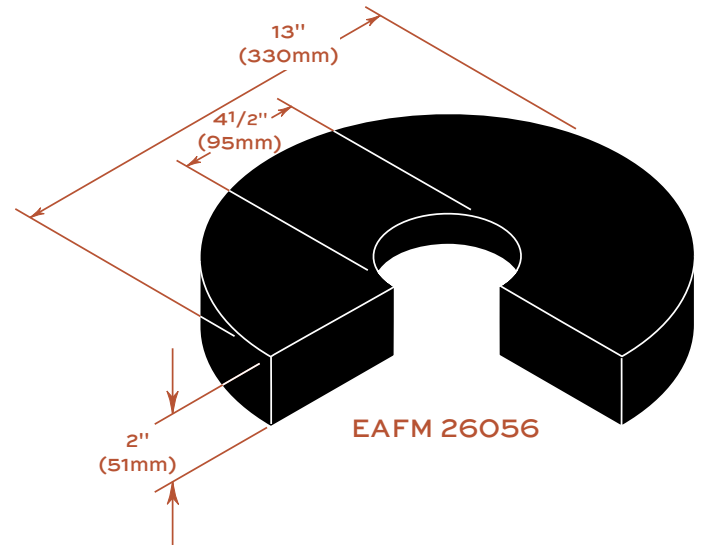
### MASON LOW DYNAMIC STIFFNESS (LDS) BRIDGE BEARING NATURAL RUBBER COMPOUNDS. DYNAMIC NATURAL FREQUENCY/DEFLECTION CHART



### 1" - 2" (25 - 51mm) Height



EAFM 26055



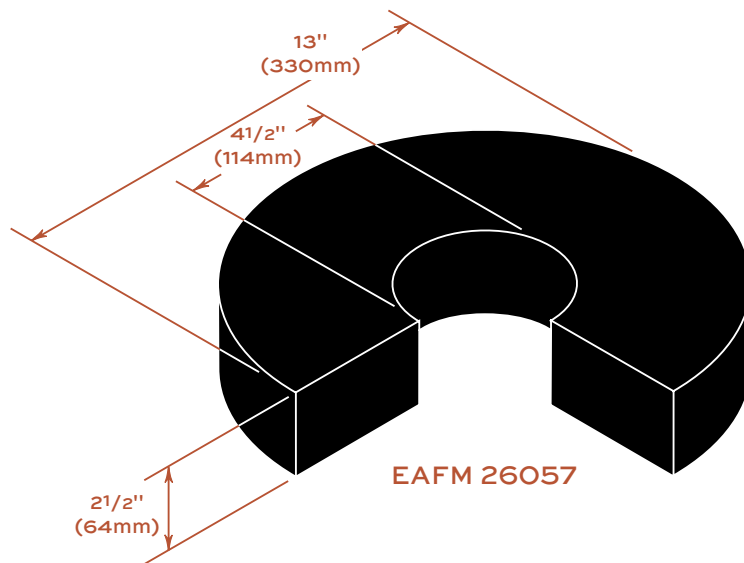
EAFM 26056

| EAFM<br>Designation<br>& Color | Durometer<br>±5 | 0.05" (1.3mm) Deflection |                   | 0.1" (2.5mm) Deflection |                   | 0.15" (3.8mm) Deflection |                   | Temporary<br>Overload*<br>3X Maximum<br>Loading |       |       |        |       |
|--------------------------------|-----------------|--------------------------|-------------------|-------------------------|-------------------|--------------------------|-------------------|---|-------|-------|--------|-------|
|                                |                 | Loading<br>(lb)          | Frequency<br>(kg) | Loading<br>(lb)         | Frequency<br>(kg) | Loading<br>(lb)          | Frequency<br>(kg) |   |       |       |        |       |
| 26055                          | Green           | 13160                    | 5969              | 15.1                    | 26325             | 11941                    | 10.7              | 39490   | 17912 | 8.7   | 118470 | 53737 |
|                                | Red             | 19085                    | 8658              | 15.8                    | 38170             | 17314                    | 11.2              | 57255   | 25970 | 9.1   | 171765 | 77911 |
|                                | White           | 24085                    | 10925             | 16.0                    | 48175             | 21852                    | 11.3              | 72260   | 32777 | 9.2   | 216780 | 98829 |
| 26056                          | 40              | 0.1" (2.5mm) Deflection  |                   | 0.2" (5.0mm) Deflection |                   | 0.3" (7.5mm) Deflection  |                   |   |       |       |        |       |
|                                |                 | Loading<br>(lb)          | Frequency<br>(kg) | Loading<br>(lb)         | Frequency<br>(kg) | Loading<br>(lb)          | Frequency<br>(kg) |   |       |       |        |       |
|                                |                 | 5560                     | 2522              | 10.7                    | 11115             | 5042                     | 7.6               |   |       | 16680 | 7566   | 6.2   |
| 26056                          | 50              | 8055                     | 3654              | 11.2                    | 16115             | 7310                     | 7.9               | 24170   | 10963 | 6.4   | 72510  | 32890 |
|                                |                 | 10170                    | 4613              | 11.3                    | 20340             | 9226                     | 8.0               | 30510   | 13839 | 6.5   | 91530  | 41517 |

\*Temporary overload is often mentioned in specifications. We have tested mountings compressed to 50% of their initial thickness. After release there was no permanent set or damage.



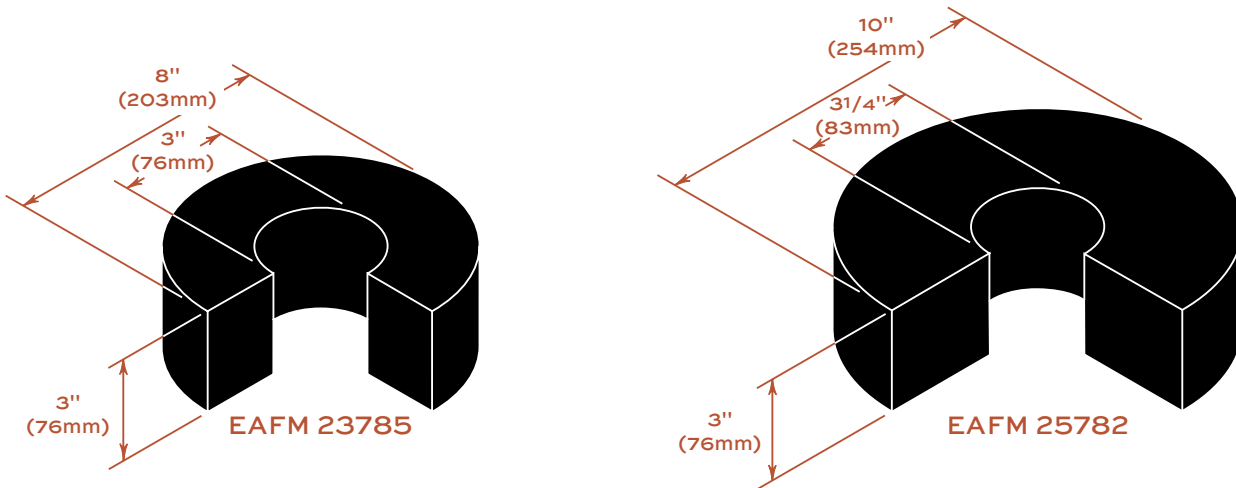
2 1/2" (64mm) Height



| EAFM Designation & Color | Durometer ±5 | 0.125" (3mm) Deflection |              |                | 0.25" (6mm) Deflection |              |                | 0.375" (10mm) Deflection |              |                | Temporary Overload* 3X Maximum Loading |       |
|--------------------------|--------------|-------------------------|--------------|----------------|------------------------|--------------|----------------|--------------------------|--------------|----------------|--|-------|
|                          |              | Loading (lb)            | Loading (kg) | Frequency (Hz) | Loading (lb)           | Loading (kg) | Frequency (Hz) | Loading (lb)             | Loading (kg) | Frequency (Hz) | (lb)                                   | (kg)  |
| 26057                    | Green 40     | 3780                    | 1720         | 9.6            | 7560                   | 3440         | 6.8            | 11340                    | 5160         | 5.5            | 34020                                  | 15480 |
|                          | Red 50       | 4750                    | 2160         | 10.0           | 9500                   | 4320         | 7.0            | 14250                    | 6480         | 5.7            | 42750                                  | 19440 |
|                          | White 60     | 6000                    | 2727         | 10.1           | 12000                  | 5454         | 7.1            | 18000                    | 8181         | 5.8            | 54000                                  | 29545 |

\*Temporary overload is often mentioned in specifications. We have tested mountings compressed to 50% of their initial thickness. After release there was no permanent set or damage.

3" (76mm) Height



| EAFM Designation & Color | Durometer ±5 | 0.15" (3.8mm) Deflection |              |                | 0.30" (7.6mm) Deflection |              |                | 0.45" (11.4mm) Deflection |              |                | Temporary Overload* 3X Maximum Loading |       |
|--------------------------|--------------|--------------------------|--------------|----------------|--------------------------|--------------|----------------|---------------------------|--------------|----------------|--|-------|
|                          |              | Loading (lb)             | Loading (kg) | Frequency (Hz) | Loading (lb)             | Loading (kg) | Frequency (Hz) | Loading (lb)              | Loading (kg) | Frequency (Hz) | (lb)                                   | (kg)  |
| 23785                    | Green 40     | 1100                     | 500          | 8.7            | 2200                     | 1000         | 6.6            | 3300                      | 1500         | 5.0            | 9900                                   | 4500  |
|                          | Red 50       | 1600                     | 725          | 9.1            | 3200                     | 1450         | 6.4            | 4800                      | 2175         | 5.2            | 14400                                  | 6525  |
|                          | White 60     | 2000                     | 910          | 9.2            | 4000                     | 1820         | 6.5            | 6000                      | 2730         | 5.3            | 18000                                  | 8190  |
| 25782                    | Green 40     | 2000                     | 910          | 8.7            | 4000                     | 1820         | 6.6            | 6000                      | 2730         | 5.0            | 18000                                  | 8190  |
|                          | Red 50       | 2900                     | 1320         | 9.1            | 5800                     | 2640         | 6.4            | 8700                      | 3960         | 5.2            | 26100                                  | 11880 |
|                          | White 60     | 3660                     | 1660         | 9.2            | 7320                     | 3320         | 6.5            | 10980                     | 4980         | 5.3            | 32940                                  | 14940 |

\*Temporary overload is often mentioned in specifications. We have tested mountings compressed to 50% of their initial thickness. After release there was no permanent set or damage.

