

CONNECT AND PROTECT

nVent ERIFLEX Flexibar Performance with Frequency



Current and temperature ratings of nVent ERIFLEX Flexibar as published in the nVent ERIFLEX catalog are based on operating frequency up to 100Hz. If a particular application of Flexibar will require operation at higher frequencies, the maximum current values must be reduced (or de-rated) to achieve the published temperature rise.

All copper conductors have higher impedance at higher frequencies. This is not a unique characteristic of Flexibar. However, the rectangular cross-section of Flexibar reduces this effect as compared to cables with round cross-section.

The formula below specifies how the de-rating factors on the attached graphs should be used:

$$I_f \approx \frac{I_{100\text{Hz}}}{K_f}$$

Where I_f equals the de-rated current at the operating frequency and K_f equals the de-rating factor at that frequency.

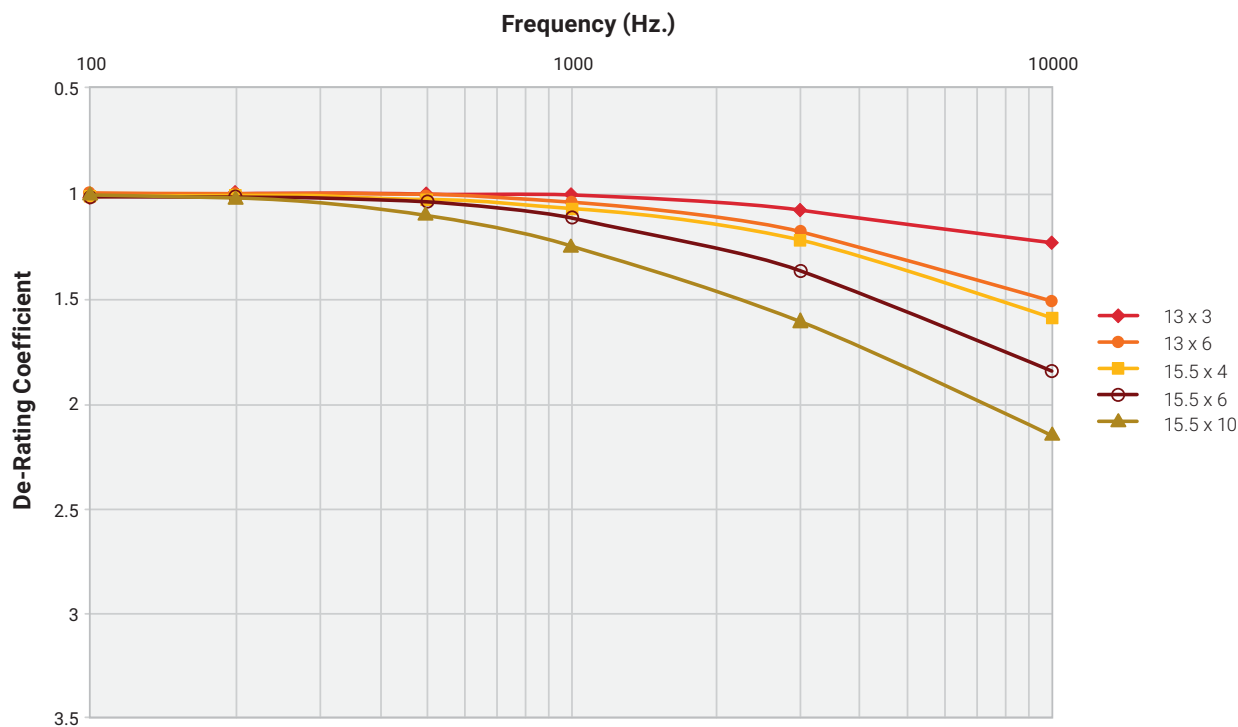
To determine the K_f (current de-rating value) for a particular configuration, select the graph that pertains to the width of Flexibar and the curve that pertains to the number of laminates. Next, identify the frequency of the current according to the logarithmic scale on the x-axis. The de-rating factor for the specific configuration can be read from the y-axis of the graph at the point where the curve meets the desired frequency. The current value listed in the catalog must then be divided by K_f to determine the current value at which the published temperature rise will be achieved.

Example: Consider a system with current of 470 amps at 3 kHz. For Flexibar width of 32 mm and a temperature rise of 50°C, it can be seen from the graph, de-rating factors range from 1.2 to 1.9 depending on the number of laminates. Multiply the operating current of the system by the de-rating coefficient for each 32 mm nVent ERIFLEX Flexibar at 3 kHz. Next compare the calculated currents to the currents in the catalogue. You will notice that the lowest number of laminates that will produce a temperature rise at or less than 50°C is 8, thus you would choose Flexibar part number 505518 in North America, or 552670 in Europe.

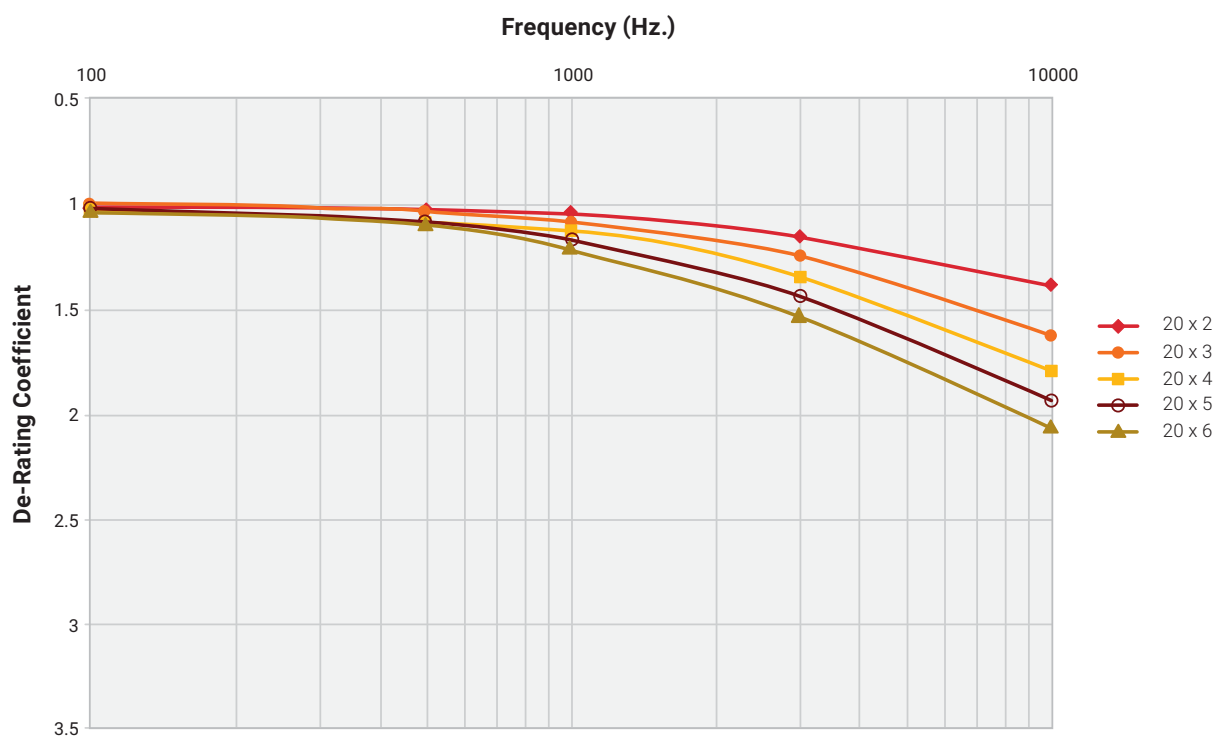
For further information, contact nVent ERICO Application Engineering or visit nVent.com/ERIFLEX.

De-Rating vs. Frequency for Flexibar

WIDTHS 13 AND 15.5 MM

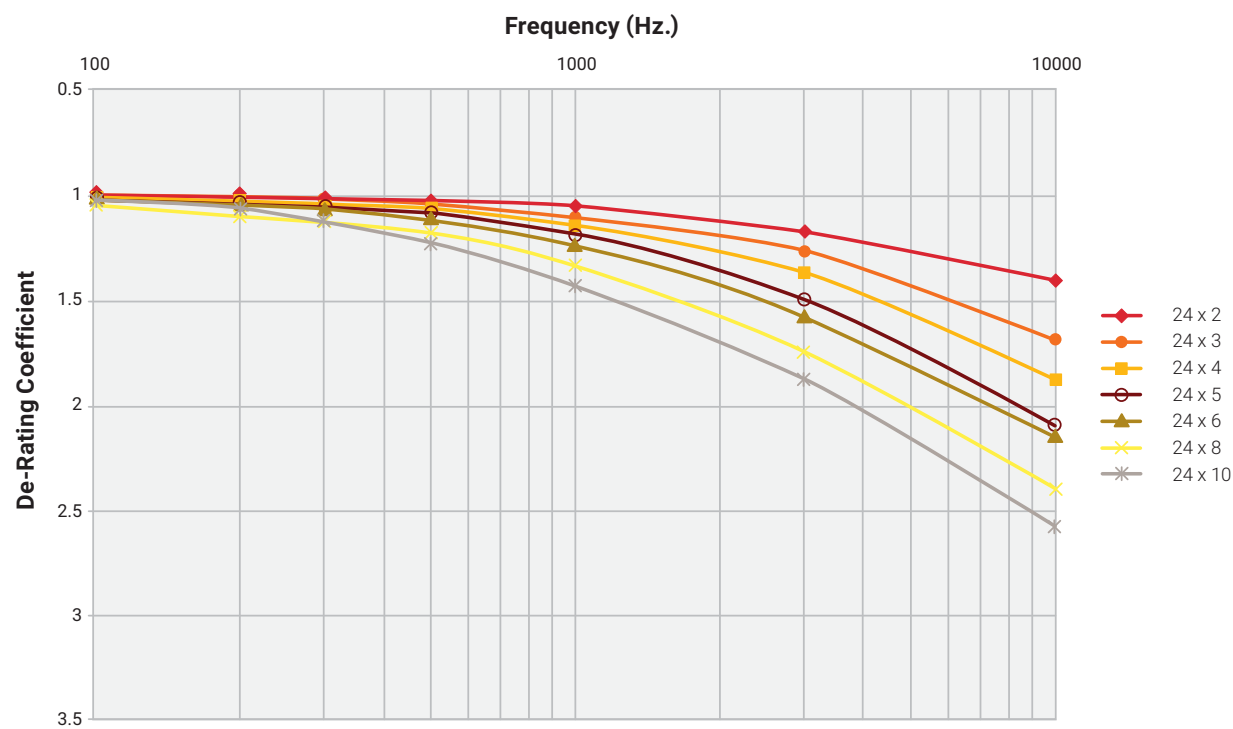


WIDTH 20 MM

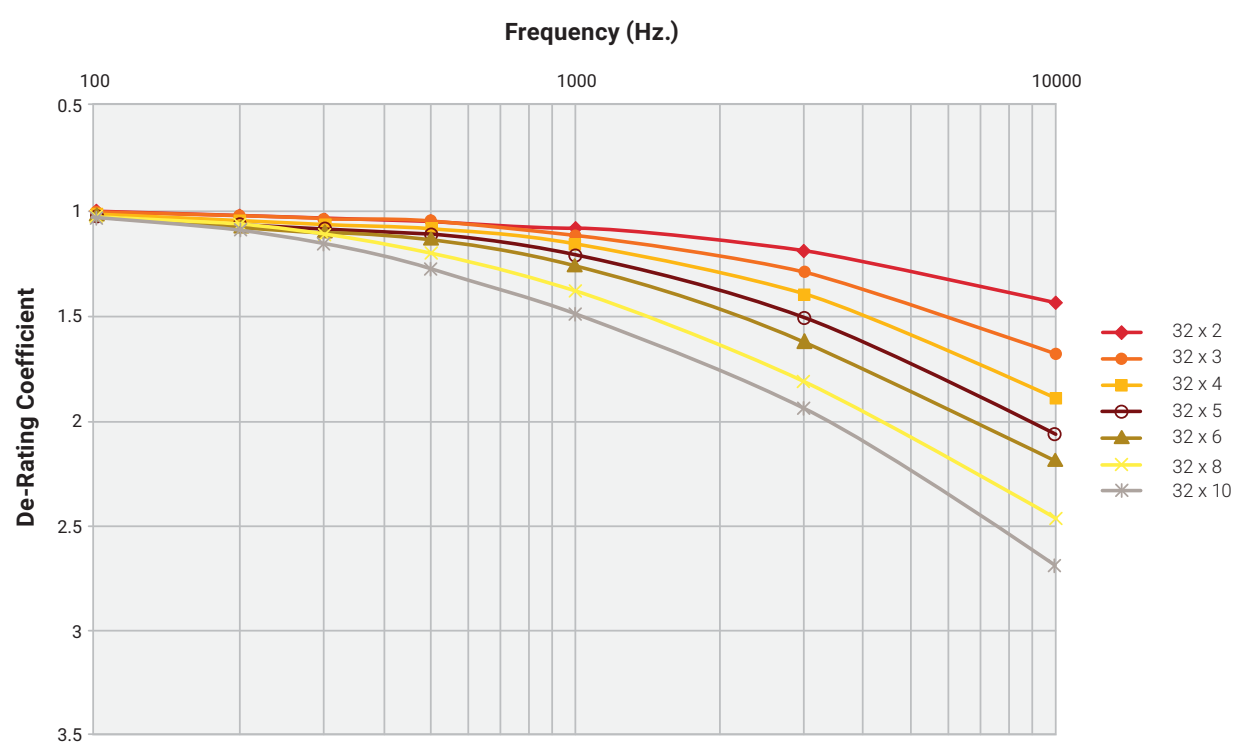


De-Rating vs. Frequency for Flexibar

WIDTH 24 MM

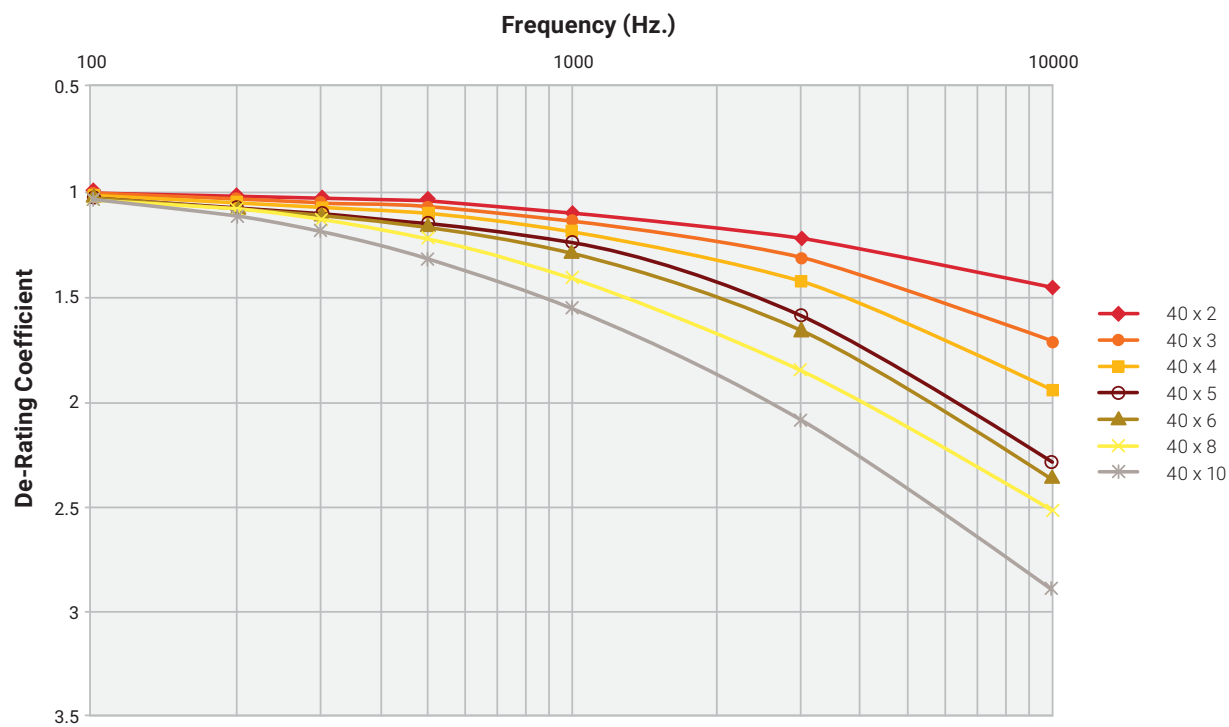


WIDTH 32 MM

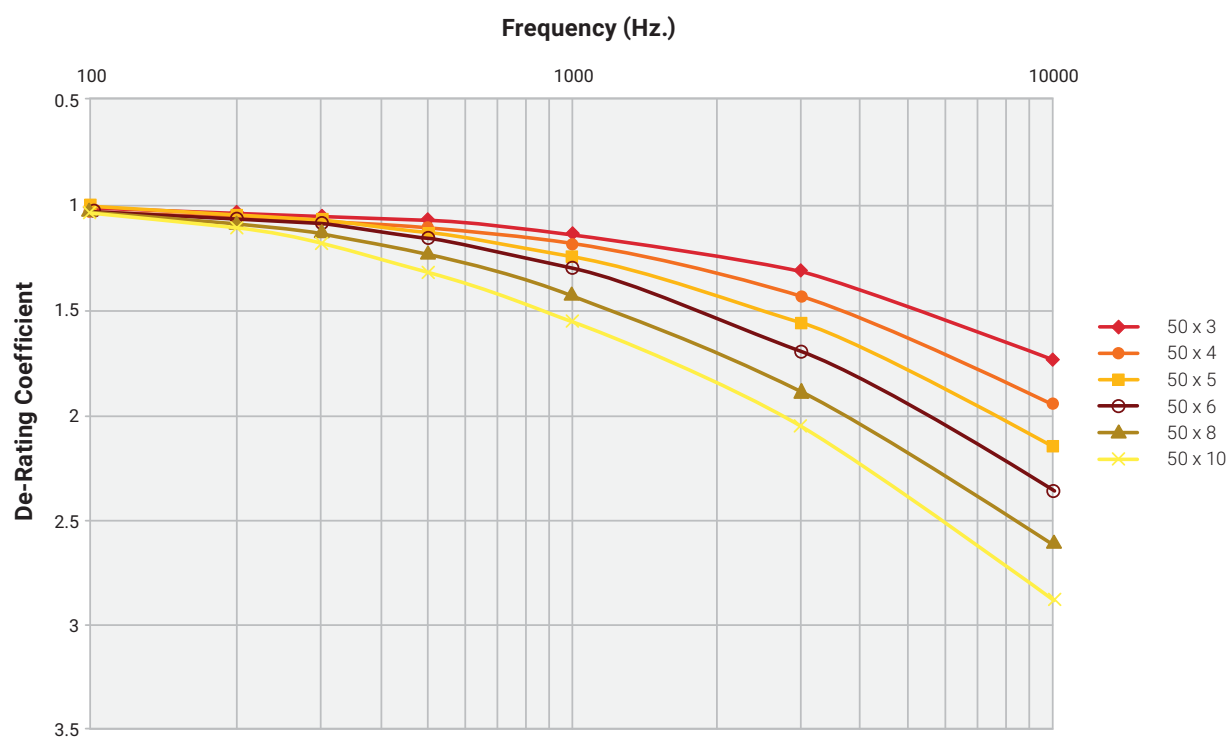


De-Rating vs. Frequency for Flexibar

WIDTH 40 MM

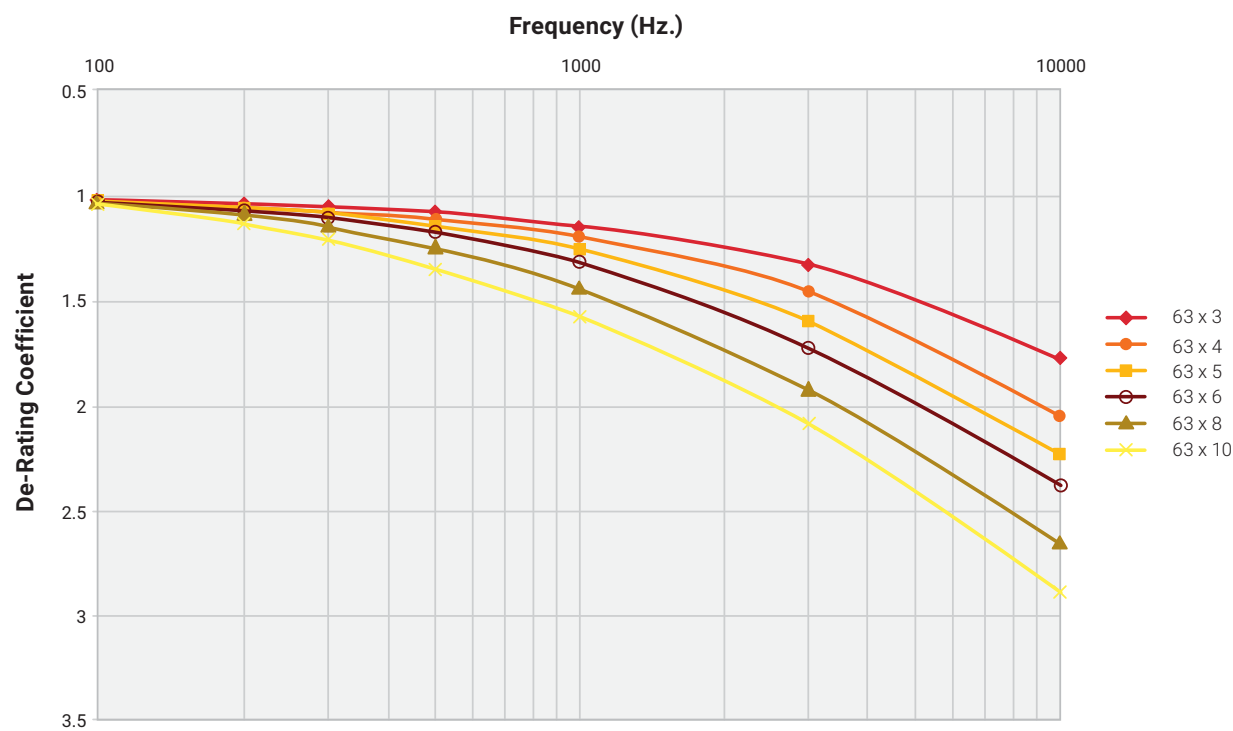


WIDTH 50 MM

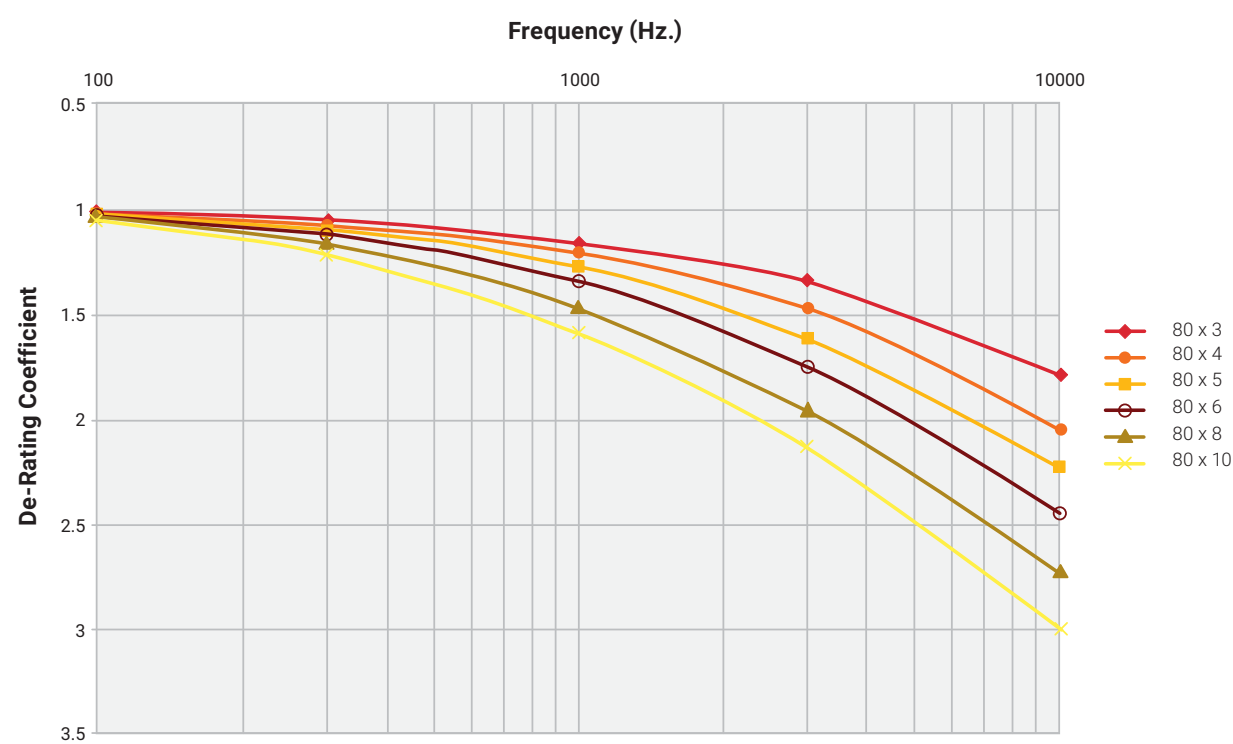


De-Rating vs. Frequency for Flexibar

WIDTH 63 MM

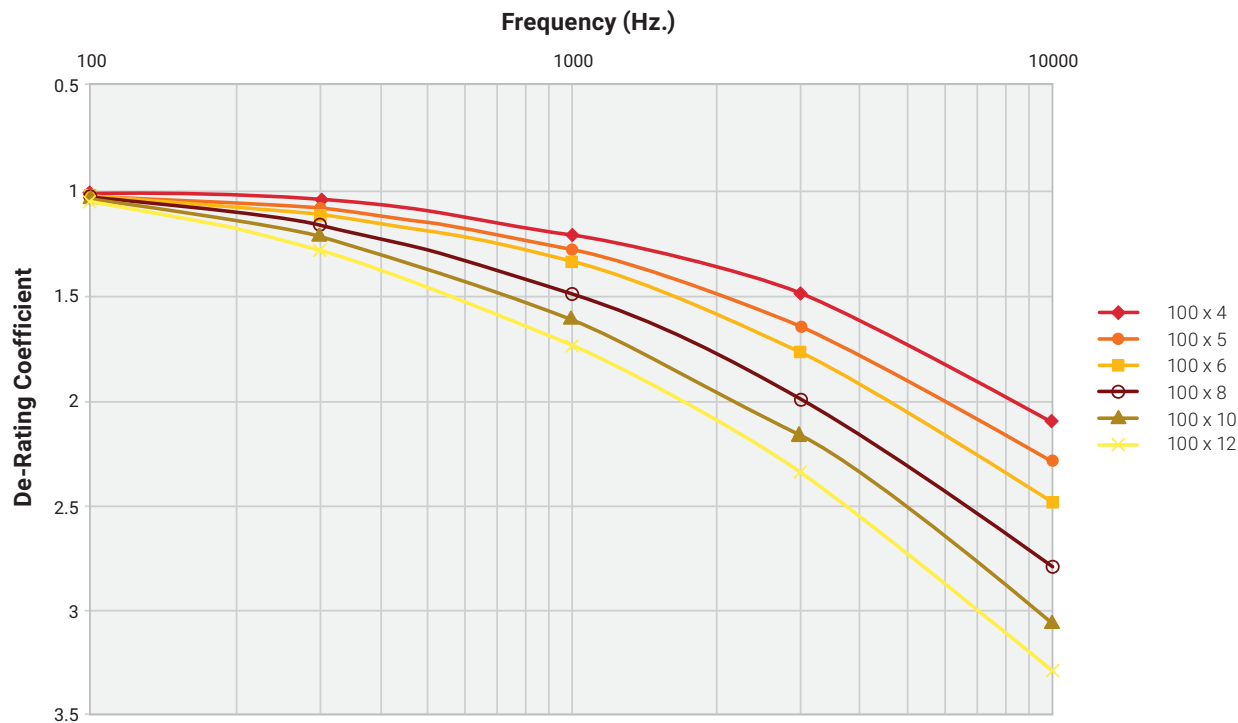


WIDTH 80 MM



De-Rating vs. Frequency for Flexibar

WIDTH 100 MM



Our powerful portfolio of brands:

CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER



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WARNING: nVent products shall be installed and used only as indicated in nVent's product instruction sheets and training materials. Instruction sheets are available at nVent.com/ERIFLEX and from your nVent customer service representative. Improper installation, misuse, misapplication or other failure to completely follow nVent's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death and/or void your warranty.

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