

OPTION 2: Tables with both Metric & Imperial

Guidelines for Evaluation Vibration

The following guidelines are based on the ISO 20816-3:2022(E) specification. Use the information below to correctly evaluate the vibration levels presented.

Description

This is intended to provide guidance for assessing the severity of vibration measured on industrial machines. These criteria consider the magnitude of the observed broad-band vibration. These criteria do not form the only basis for judging the severity of vibration. The changes in the magnitude of the broad-band vibration over time (i.e., vibration history) and the source of the vibration should also be considered.

The standard specifies the general requirements for evaluating the vibration of various coupled industrial machine types with a power above 15 kW (~20hp) and operating speeds between 120 rpm and 30,000 rpm. Note that this standard does not apply to all machine types.

The vibration levels shown refer to measurements taken on non-rotating parts (i.e., case measurements) at or near the bearing. The evaluation of severity is made using the highest RMS value of the broad band velocity.

Table 1 - Classification of vibration severity zones for machines of Group 1: Large machines with rated power above 300 kW / 400hp; electrical machines with shaft height $H \geq 315$ mm / 12.5 inches.

Zone Boundary	Rigid Support	Flexible Support
A / B	2.3 (0.09)	3.5 (0.14)
B / C	4.5 (0.18)	7.1 (0.28)
C / D	7.1 (0.28)	11.0 (0.43)

RMS Velocity values in mm/s (in/s)

Table 2 - Classification of vibration severity zones for machines of Group 2: Medium-sized machines with a rated power above 15 kW / 20 hp up to and including 300 kW / 400 hp; electrical machines with shaft height 160 mm / 6.25 inches $\leq H < 315$ mm / 12.5 inches

Zone Boundary	Rigid Support	Flexible Support
A / B	1.4 (0.06)	2.3 (0.09)
B / C	2.8 (0.11)	4.5 (0.18)
C / D	4.5 (0.18)	7.1 (0.28)

RMS Velocity values in mm/s (in/s)

Evaluation Zones

- Zone A: Vibration of newly commissioned machines.
- Zone B: Vibration considered acceptable for long-term (unrestricted) operation.
- Zone C: Vibration considered unsatisfactory for long-term continuous operation.
- Zone D: Vibration considered sufficient severity to cause damage to the machine.

OPTION 3: Chart with both Metric & Imperial

Guidelines for Evaluation Vibration

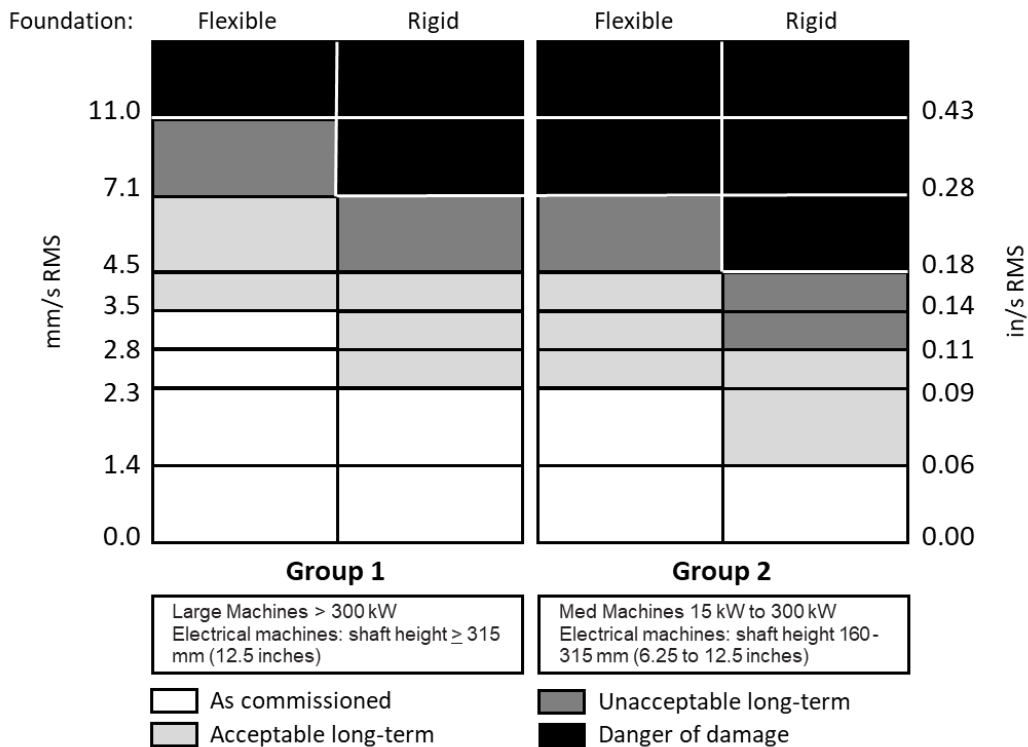
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Severity Guideline Chart for Velocity (RMS) Values