



NATIONAL PETROCHEMICAL COMPANY
STANDARDS

MATERIAL STANDARD
FOR
CENTRIFUGAL PUMPS FOR GENERAL REFINERY SERVICES
NPCS-MS-RE-01
REVISION : 0

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1 SCOPE

This standard covers the requirements for the documentation of noise levels data, the procedure for measuring noise level of equipment and noise **limitations** for equipment. Also requirements for acoustic enclosures and vent silencers are given. In case of conflicting requirements between this standard and the referenced specifications (Clauses 2.1 and 2.2) the most conservative requirement shall apply.

2 BASIS

2.1 Specification No. NWG 1, Revision 2, 1980, Procedural Specification for Limitation of Noise in Plant and equipment for use in the petroleum industry, issued by OCMA, shall be used as a general basis for measuring and calculations.

2.2 Emissionskennwerte technischer Schallquellen-Pumpen, VDI-3743, 1982, and Gerauschemessung an Maschinen Luftschallmessung, Hüllflächenverfahren, Rahmen-Messvorschrift/Flüssigkeitspumpen, DIN 45635 1/24, shall be used as the basis for measuring and calculations for centrifugal pumps.

3 DOCUMENTATION

3.1 Purchaser will submit to vendor "Data/Requisition Sheet for Equipment Noise Limitation" for subject equipment.

3.1.1 The noise limitations as what will be specified on the noise data sheet apply to a single piece of equipment or an equipment train of two or more pieces. In case an equipment train is specified, the noise limitations apply to the whole train which results in more severe limitations for the individual equipment. It is vendor's responsibility to allot to the individual equipment sound pressure and sound power levels in such a way that the overall limitations will be met.

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If vendor is unable to meet those limitations, the data/requisition sheet for "Equipment Noise Limitation" shall be filled out completely as indicated under Clauses 3.3 and 3.4.

3.1.2

When the noise contains an annoying characteristic such as narrow band or impulsive components, the basic limits shall be modified in the octave bands containing the characteristic. The modifications can take one of two forms:

- The basic sound pressure level limit for the area may be reduced by 5 dB(A) in the octave band (or bands) where the characteristic exists. This reduction would apply to all the equipment contributing to the noise in the area.
- The equipment emitting the characteristic noise may be treated separately so that the characteristic noise is reduced below the broad-band noise. The noise from the offending equipment shall be reduced in the relevant octave band (or bands) by the amounts given in the table below.

	OCTAVE BAND CENTER FREQUENCIES HZ								COMMENT
	63	125	250	500	1K	2K	4K	8K	
Reduction for narrow- noise (dB(A))	0	0	2	6	8	9	9	5	for work areas and plant offices
Reduction for impu- lsive noise [dB(A)]	5	5	5	5	15	5	5	5	for all areas

3.2

Preference shall be given to equipment of low noise emission by design. Where possible, the use of enclosures shall be avoided.

3.3

In his quotation, vendor shall submit his approach to meet the requirements of the noise limits. His quotation is to indicate:

3.3.1

Guaranteed unsilenced sound pressure levels for each octave band in dB(A) as well as the total sound pressure level in dB(A) at any location 1 m from the equipment surface.