



**NFPA Recommended Standard**  
**NFPA/T3.21.3 R1-2008 (R2018)**  
3 September 2008

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AN INDUSTRY STANDARD FOR FLUID POWER

**Pneumatic fluid power —  
Flow rating test procedure and reporting method —  
For fixed orifice components**

[revision of ANSI/(NFPA)T3.21.3-1990]

**This method is to be used as an alternative to ISO 6358, which is recognized as the preferred flow rating test procedure and reporting method.**

**Descriptors:** flow rating, fixed orifice; flow rating, pneumatic; fluid power; pressure drop; reporting method; test method

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## Foreword

This Foreword is not part of NFPA Recommended Standard *Pneumatic fluid power - Flow rating test procedure and reporting method - For fixed orifice components*, NFPA/T3.21.3 R1-2008.

At its 18 February 2004 meeting, NFPA/T3.21 recommended that NFPA/T3.21.3-1990 be revised to take into account the comments from NFPA/T3.21's five-year review of the standard.

At its 1 April 2004 meeting, the NFPA Technical Board approved the Title, Scope and Purpose for NFPA/T3.21.3 R1-200x.

On 17 May 2005, draft no. 1 was circulated to NFPA/T3.21 for discussion at its 8 June 2005 meeting. At the 8 June 2005 meeting, a motion was made to circulate the document for general review. It was circulated for general review on 3 March 2006. The voting resulted in five approval votes, with no disapprovals or comments.

At the 17 May 2006 joint meeting of NFPA/T3.21 and U.S. TAG to ISO/TC 131/SC 5/Pneumatic, a motion was approved to ask the NFPA Technical Board for permission to circulate the document for final ballot. The NFPA Technical Board gave such approval on 10 August 2006.

The document was circulated for final ballot on 7 August 2007 and closed on 21 September 2007. The NFPA ballot resulted in four approval votes, zero disapprovals and two abstentions. No comments were received.

At the 19 September 2007 joint meeting of NFPA/T3.21 and U.S. TAG to ISO/TC 131/SC 5/Pneumatic, a motion was approved to ask the NFPA Technical Board for approval to publish the document. At its 10 January 2008 meeting, the Technical Board approved a motion to publish the document.

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## **Introduction**

In pneumatic fluid power systems, power is transmitted and controlled through a gas under pressure within an enclosed circuit. One factor governing the selection of individual components is the ability to pass system flow without undue power loss. A flow rating parameter provides one means for identifying flow performance of a pneumatic component.

# Pneumatic fluid power — Flow rating test procedure and reporting method — For fixed orifice components

## 1 Scope and field of application

**NOTE** This method is to be used as an alternative to ISO 6358, which is recognized as the preferred flow rating test procedure and reporting method.

**1.1** To define a rating parameter, test method, and method of reporting flow in fixed orifice pneumatic fluid power components.

**1.2** To promote better pneumatic fluid power systems by providing manufacturers and users of components with an easily understood standard means of developing, verifying and communicating pneumatic flow ratings.

This standard does not apply to control valves used in flow control of process fluids, as defined in Fluid Control Institute standards ANSI/FCI 68-1 and ANSI/FCI 68-2.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this NFPA document. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this NFPA document are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referenced applies. NFPA maintains registers of currently valid NFPA Standards. Standards development organization contact information and links can be found on the NFPA website ([www.nfpa.com](http://www.nfpa.com)).

ISO 1000 (*latest edition*), *SI units and recommendations for the use of their multiples and of certain other units*.

ISO 1219-1 (*latest edition*), *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols*

ISO 1219-2 (*latest edition*), *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 2: Circuit diagrams*

ISO 5598 (*latest edition*), *Fluid power systems and components – Vocabulary*

ISO 6358 (*latest edition*), *Pneumatic fluid power – Components using compressible fluids – Determination of flow-rate characteristics*

## 3 Terms and definitions

For definition of terms used, see ISO 5598.