International Standard



INTERNATIONAL ORGANIZATION FOR STANDARDIZATION-MEXAJHAPOQHAR OPFAHU3ALUUR IIO CTAHAAPTU3ALUUHOORGANISATION INTERNATIONALE DE NORMALISATION

Air distribution and air diffusion — Rules to methods of measuring air flow rate in an air handling duct

Distribution et diffusion de l'air - Règles pour la technique de mesure du débit d'air dans un conduit aéraulique

First edition - 1984-01-15

Descriptors : air distribution, air diffusion, air flow, flow rate, flow measurement, aeraulic pipes, flowmeters, Venturi tubes, Reynolds number, dimensions, dimensional tolerances, characteristics.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5221 was developed by Technical Committee ISO/TC 144, *Air distribution and air diffusion*, and was circulated to the member bodies in July 1980.

It has been approved by the member bodies of the following countries :

Australia Austria Belgium Czechoslovakia Finland France Ireland Italy Korea, Rep. of Norway Poland Romania South Africa, Rep. of Sweden United Kingdom USA

No member body expressed disapproval of the document.

© International Organization for Standardization, 1984 •

Printed in Switzerland

Contents

			Page
0	Introduction		1
1	Scope and field of application		
2	References		1
3	Proposed devices		1
4	General formulae of calculation		2
5	Syr	nbols and units	2
6	General conditions for the installation of the various devices		
	6.1	Subsonic pressure-difference devices (devices 1 to 12)	2
	6.2	Venturi-nozzles with sonic throat (devices 13)	5
	6.3	Pitot-static tubes (devices 14)	5
7	Characteristics and employment limitations of the different devices		6
	7.0	Common characteristics of devices under clauses 7.1, 7.2 and 7.3	6
	7.1	Orifice plates with corner taps	11
	7.2	Orifice plate with flange taps	11
	7.3	Orifice plates with D and $D/2$ tappings	11
	7.4	ISA 1932 nozzle	12
	7.5	"Long radius" nozzles	14
	7.6	Classical Venturi tube	16
	7.7	Venturi nozzle	17
	7.8	Conical entrance orifice plate	18
	7.9	"Quarter-circle" orifice plate	19
	7.10	Inlet orifice plate	21
	7.11	Inlet "Quarter circle" nozzle	22
	7.12	Inlet cone	23
	7.13	Venturi-nozzles with sonic throat	24
	7.14	Pitot-static tubes	26
A	Annex		
B	Bibliography		