

This is a preview of "ISO 9905:1994". Click here to purchase the full version from the ANSI store.

STANDARD

9905

First edition
1994-05-01

Technical specifications for centrifugal pumps — Class I

Spécifications techniques pour pompes centrifuges — Classe I



Reference number
ISO 9905:1994(E)

This is a preview of "ISO 9905:1994". [Click here to purchase the full version from the ANSI store.](#)

Contents

	Page
1 Scope	1
2 Normative references	1
3 Definitions	2
4 Design	4
5 Materials	24
6 Shop inspection and tests	26
7 Preparation for dispatch	29
8 Responsibilities	30

Annexes

A Centrifugal pump — Data sheet	31
B External forces and moments on branches	36
C Enquiry, proposal, purchase order	44
D Documentation after purchase order	45
E Peak displacement	46
F Examples of seal arrangements	47
G Piping arrangements for seals	49
H Code for identification of fluid connections	67
J Materials and material specifications for centrifugal pump parts	68
K Check-list	70
L Bibliography	72

© ISO 1994

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

This is a preview of "ISO 9905:1994". [Click here to purchase the full version from the ANSI store.](#)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9905 was prepared by Technical Committee ISO/TC 115, *Pumps*, Subcommittee SC 1, *Dimensions and technical specifications of pumps*.

Annexes A, B, C and D form an integral part of this International Standard. Annexes E, F, G, H, J, K and L are for information only.

This is a preview of "ISO 9905:1994". Click here to purchase the full version from the ANSI store.

Introduction

This International Standard is the second of a set dealing with technical specifications of centrifugal pumps; the specifications are designated as Classes I, II and III. Class I (this International Standard) comprises the most severe and Class III (see ISO 9908) the least severe requirements. For requirements for Class II centrifugal pumps, see ISO 5199.

The selection of the class to be used is made in accordance with the technical requirements for the application for which the pump is intended. **The class chosen is to be agreed between purchaser and manufacturer/supplier.**

The safety requirements of the field of application are furthermore to be taken into account.

However, it is not possible to standardize the class of technical requirements for centrifugal pumps for a certain field of application, because each field of application comprises different requirements. All classes (I, II and III) can be used in accordance with the different requirements of the pump application, e.g. for an oil refinery plant, chemical plant or power plant. It may happen that pumps built in accordance with classes I, II and III may work beside each other in one plant.

Conditions covering specific applications or industrial requirements are dealt with in separate standards.

Criteria for the selection of a pump of the class required for a certain application may be based on:

- reliability,
- operating conditions,
- environmental conditions,
- local ambient conditions.

Throughout this International Standard, text written in bold letters indicates where a decision may be required by purchaser, or where agreement is required between purchaser and manufacturer/supplier.

This is a preview of "ISO 9905:1994". [Click here to purchase the full version from the ANSI store.](#)

Technical specifications for centrifugal pumps — Class I

1 Scope

1.1 This International Standard covers the Class I (most severe) requirements for centrifugal pumps used in various industries. It consists of a basic text covering general requirements. The technical requirements refer only to the pump unit.

Storage pumps are not included in this International Standard. A separate standard will be issued by IEC.

1.2 This International Standard includes design features concerned with installation, maintenance and safety of such pumps, including baseplate, coupling and auxiliary piping.

1.3 Where this International Standard specification has been called for:

- a) and requires a specific design feature, alternative designs may be offered which meet the intent of this International Standard, provided that the alternative is described in detail;
- b) pumps not complying with all requirements of this International Standard may be offered for consideration, provided that all deviations are stated.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements

based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7-1:1982, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Designation, dimensions and tolerances.*

ISO 76:1987, *Rolling bearings — Static load ratings.*

ISO 185:1988, *Grey cast iron — Classification.*

ISO 228-1:1982, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Designation, dimensions and tolerances.*

ISO 281:1990, *Rolling bearings — Dynamic load ratings and rating life.*

ISO 427:1983, *Wrought copper-tin alloys — Chemical composition and forms of wrought products.*

ISO 544:1989, *Filler materials for manual welding — Size requirements.*

ISO 1940-1:1986, *Mechanical vibration — Balance quality requirements of rigid rotors — Part 1: Determination of permissible residual unbalance.*

ISO 2372:1974, *Mechanical vibration of machines with operating speeds from 10 to 200 rev/s — Basis for specifying evaluation standards.*

ISO 2548:1973, *Centrifugal, mixed flow and axial pumps — Code for acceptance tests — Class C (It is planned to combine ISO 2548 with ISO 3555 during their next revision to create a new International Standard).*