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# Control charts —

## Part 3: Acceptance control charts

*Cartes de contrôle —*

*Partie 3: Cartes de contrôle pour acceptation*



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## Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Symbols and abbreviated terms</b> .....	<b>2</b>
4.1 Symbols .....	2
4.2 Abbreviated terms .....	3
<b>5 Description of acceptance control chart practice</b> .....	<b>3</b>
<b>6 Acceptance control of a process</b> .....	<b>5</b>
6.1 Plotting the chart .....	5
6.2 Interpreting the chart .....	5
<b>7 Specifications</b> .....	<b>5</b>
<b>8 Calculation procedures</b> .....	<b>6</b>
8.1 Selection of pairs of elements .....	6
8.1.1 Defining elements APL and RPL .....	6
8.1.2 Defining elements APL, $\alpha$ , $\beta$ and $n$ .....	9
8.2 Frequency of sampling .....	9
<b>9 Examples</b> .....	<b>10</b>
9.1 Example 1 (see also <a href="#">Figures A.3</a> and <a href="#">A.4</a> ) .....	10
9.2 Example 2 (see also <a href="#">Figure A.5</a> ) .....	12
<b>10 Factors for acceptance control limits</b> .....	<b>13</b>
<b>11 Modified acceptance control charts</b> .....	<b>14</b>
<b>Annex A (normative) Nomographs for acceptance control chart design</b> .....	<b>15</b>
<b>Bibliography</b> .....	<b>21</b>

## Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 69, *Applications of statistical methods*, Subcommittee SC 4, *Applications of statistical methods in process management*.

This second edition cancels and replaces the first edition (ISO 7870-3:2012), of which it constitutes a minor revision with the following changes:

- typo corrections in [9.1](#), example 1;
- editorial updates.

A list of all parts in the ISO 7870 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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## Introduction

An acceptance control chart combines consideration of control implications with elements of acceptance sampling. It is an appropriate tool for helping to make decisions with respect to process acceptance. The bases for the decisions may be defined in terms of

- a) whether or not a designated percentage of units of a product or service derived from that process will satisfy specification requirements;
- b) whether or not a process has shifted beyond some allowable zone of process level locations.

A difference from most acceptance sampling approaches is the emphasis on process acceptability rather than on product disposition decisions.

A difference from usual control chart approaches is that the concept of process acceptance is introduced in the process control. The process usually does not need to be in control about a single standard process level; as long as the within-subgroup variability remains in control and is much smaller than the tolerance spread, it can (for the purpose of acceptance) run at any level or levels within a zone of process levels which would be acceptable in terms of tolerance requirements. Thus, it is assumed that some assignable causes will create shifts in the process levels which are small enough in relation to requirements that it would be uneconomical to attempt to control them too tightly for the purpose of mere acceptance.

The use of an acceptance control chart does not, however, rule out the possibility of identifying and removing assignable causes for the purpose of continuing process improvement.

A check on the inherent stability of the process is required. Therefore, variables are monitored using Shewhart-type range or sample standard deviation control charts to confirm that the variability inherent within rational subgroups remains in a steady state. Supplementary examinations of the distribution of the encountered process levels form an additional source of control information. A preliminary Shewhart control chart study should be conducted to verify the validity of using an acceptance control chart.