TECHNICAL REPORT

CEN/TR 14520

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

July 2007

ICS 13.030.50; 55.180.40

English Version

Packaging - Reuse - Methods for assessing the performance of a reuse system

Emballage - Réutilisation - Méthode d'évaluation de la performance d'un système de réutilisation

Verpackung - Wiederverwendung - Verfahren zur Einschätzung der Leistungsfähigkeit eines Wiederverwendungssystems

This Technical Report was approved by CEN on 25 May 2007. It has been drawn up by the Technical Committee CEN/TC 261.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

| Contents | | Page |
|----------------|---|---------|
| Forewo | ord | 3 |
| Introduction | | |
| 1 | Scope | 5 |
| 2 | Terms and definitions | |
| 3 | Methods of calculation | |
| 3.1 | Open and closed loop systems | 6 |
| 3.1.1 3.1.2 | Principle Calculation of average number of rotations in the system during the calculation period | 6 |
| 3.1.2 3.1.3 | Calculation of average number of rotations in the system during the calculation period | 7 |
| 3.1.4 | Calculation of reuse ratio | 8 |
| 3.2 | Hybrid system | 8 |
| 4 | Factors influencing the calculation Selection of calculation period | 8 |
| 4.1 4.2 | Selection of calculation period | 88 a |
| 4.3 | Selection of measurement point | 9 |
| Annex | A (informative) Trips and rotations. | 10 |
| Anney | B (informative). Examples of average number of rotations and rouse ratio calculations | 11 |
| B.1 | Average number of rotations. Example 1 Example 2 Example 3 Example 4 | 11 |
| B.1.1 | Example 1 | 11 |
| B.1.2 B.1.3 | Example 2 | 11 |
| B.1.4 | Example 4 | 12 |
| B.2 | Reuse ratio - General example: | 13 |
| B.3 | Rotations during the packaging lifetime | 13 |
| Bibliog | graphy | 14 |
| | Example 4 Reuse ratio - General example: Rotations during the packaging lifetime graphy | |

Foreword

This document (CEN/TR 14520:2007) has been prepared by Technical Committee CEN/TC 261 "Packaging", the secretariat of which is held by AFNOR.

This document (CENTIR 14520:2007) has been prepared by Technical Committee CENTIC 201 Packaging, the secretariat of which is held by AFNOR.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [analog CENELEC] shall not be held responsible for identifying any or all such patent rights.

Introduction

The methods set out in this Technical Report are both capable of giving realistic results in the relevant circumstances. Experience over time with the results will indicate the levels of performance that are being achieved.

This document is a preview denotated by the

1 Scope

This Technical Report gives methods of assessing the performance of a reuse system related to the proportion of reused packaging in use. This may be measured by:

- the average number of rotations during a calculation period and the lifetime; or
- the reuse ratio.

The choice of method will vary according to the type of reuse system and information available.

2 Terms and definitions

For the purposes of this secument, the following terms and definitions apply.

2.1

trip

transfer of packaging, from filling to emptying/unloading. A trip can be part of a rotation

2.2

rotation

cycle undergone by reusable packaging from filling/loading to filling/loading. A rotation will always contain a trip

2.3

population

total number of a packaging type, empty or filled, in that whole reuse system

2.4

claiming company

packer/filler who is making a claim of 'reusable' for a type of packaging, in the circumstances of its intended use

2.5

reuse ratio

ratio, expressed as a percentage, of the number of movements of reused packaging to the number of movements of all the packaging at the measurement point (see definition 2.7) over the calculation period (see definition 2.6)

2.6

calculation period

period over which the number of trips or reuse ratio is calculated

NOTE This should be of adequate duration to smooth out the effects of seasonal variation, product lifetime, packaging inputs and other factors which can affect the calculation.

2.7

measurement point

point in the rotation loop at which the information for the calculation is gathered

NOTE Examples of some possible measurement points are given in 4.2.

2.8

newly manufactured packaging

newly purchased packaging entering the system for the first time to increase the population or replace all types of losses