

# INTERNATIONAL STANDARD

国际标准

# ISO 4628-2

第二版

Second edition  
2003-09-01

色漆和清漆—漆膜降解的评定，缺陷量值大小和外观均匀程度的规定。

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## Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance —

Part 2: 第二部分：起泡等级评定

### Assessment of degree of blistering

*Peintures et vernis — Évaluation de la dégradation des revêtements —  
Désignation de la quantité et de la dimension des défauts, et de  
l'intensité des changements uniformes d'aspect —*

*Partie 2: Évaluation du degré de cloquage*



Reference number  
ISO 4628-2:2003(E)

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Published in Switzerland

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## Foreword 前言

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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

ISO 4628-2 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

This second edition cancels and replaces the first edition (ISO 4628-2:1982), of which it constitutes a mainly editorial revision. The pictorial standards have been replaced by computer-generated pictures and binary images have been added for the calibration of optical imaging systems.

ISO 4628 consists of the following parts, under the general title *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance*: ISO4628 包含以下几个部分：

- *Part 1: General introduction and designation system* 基本说明和标识系统
- *Part 2: Assessment of degree of blistering* 起泡等级评定
- *Part 3: Assessment of degree of rusting* 生锈等级评定
- *Part 4: Assessment of degree of cracking* 裂纹等级评定
- *Part 5: Assessment of degree of flaking* 剥落等级评定
- *Part 6: Assessment of degree of chalking by tape method* 胶纸黏贴法测试的粉化等级评定
- *Part 7: Assessment of degree of chalking by velvet method* 丝绒法测试的粉化等级评定
- *Part 8: Assessment of degree of delamination and corrosion around a scribe* 划痕处分层及腐蚀等级评定
- *Part 10: Assessment of degree of filiform corrosion* 纤维腐蚀等级评定

色漆和清漆—漆膜降解的评定，缺陷量值大小和外观均匀程度的规定

# Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance —

Part 2: 第二部分：起泡等级评定

## Assessment of degree of blistering

### 1 Scope 范围

This part of ISO 4628 describes a method for assessing the degree of blistering of coatings by comparison with pictorial standards. ISO4628的这部分，通过与图示标准的对比，描述了漆膜起泡评定等级的方法。

The pictorial standards provided in this part of ISO 4628 illustrate blisters in the sizes 2, 3, 4 and 5, and each size in the quantities (densities) 2, 3, 4 and 5. 图示标准以图例方式给出了起泡大小的2,3,4,5级，且给出了每种大小的数量（密度）。

ISO 4628-1 defines the system used for designating the quantity and size of defects and the intensity of changes in appearance of coatings and outlines the general principles of the system. This system is intended to be used, in particular, for defects caused by ageing and weathering, and for uniform changes such as colour changes, for example yellowing.

ISO4628-1规定的系统用于指定漆膜缺陷量值大小和外观的均匀度，且概述了此系统的基本原则。此系统特别用于由老化和天气原因造成的缺陷，以及泛黄、褪色等均匀度的改变。

### 2 Normative references 参考标准

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. 以下参考文件是应用此标准不可或缺的部分。对于有日期的参考文件，仅引用版本使用。对于无日期的参考文件，最新版本（包括修订版）适用。

ISO 4628-1, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 1: General introduction and designation system* ISO 4628-1, 色漆和清漆—漆膜降解的评定，缺陷量值大小和外观均匀程度的规定—第一部分：基本介绍和标识系统。

### 3 Terms and definitions 术语和定义

For the purposes of this document, the following terms and definitions apply. 为应用此标准，使用以下术语和定义。

#### 3.1

#### **degree of blistering** 起泡等级

rating characterizing blisters in a coating in terms of quantity (density) and size 以数量（密度）和大小划分漆膜上的起泡

### 4 Assessment 评定

Assess the quantity and size of the blisters in a coating using the pictures given in Figures 1 to 4. 使用图1-4中给出的图示评定漆膜起泡的数量、大小。

Where the area to be examined exhibits blisters of varying size, quote as the size rating that of the blisters which are typical of the test area.

如被测区域有不同大小的起泡，则选用被测区域中典型的起泡评定等级。

Carry out the assessment under good illumination. 在光线充足的情况下执行评定。

If the assessment is to be done using an optical imaging system, calibrate the system using the images given in Annex A. 如使用光学成像系统执行评定，则运用附录A中给出的图像校正这个系统。

## 5 Expression of results 描述结果

Express the ratings for the quantity (density) and size of the blisters as given in Figures 1 to 4, together with the approximate dimensions of the area concerned, or its proportion of the total area, expressed as a percentage. 根据图1-4中给出的气泡数量（密度）、大小描述等级，连同相关区域的近似尺寸，或其在总范围中的比例，用百分数表示。

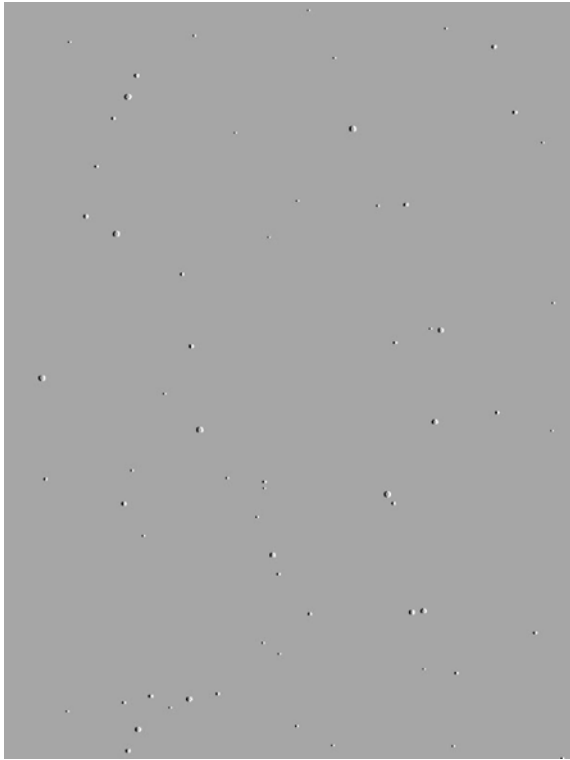
For example, if the coating is assessed as having blisters of quantity 2, size 2, i.e. matching Figure 2 a), it shall be reported as: 例：如果被测漆膜评定为气泡数量2级，大小2级，与图2a)相符，其表述为：

blistering; degree of blistering 2(S2). 起泡；等级2 (S2)。

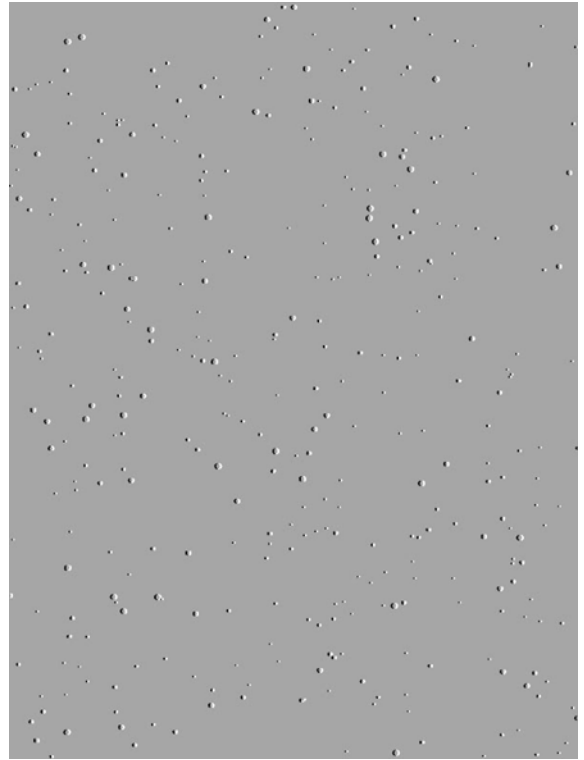
## 6 Test report 检测报告

The test report shall contain at least the following information: 检测报告应至少包含以下信息：

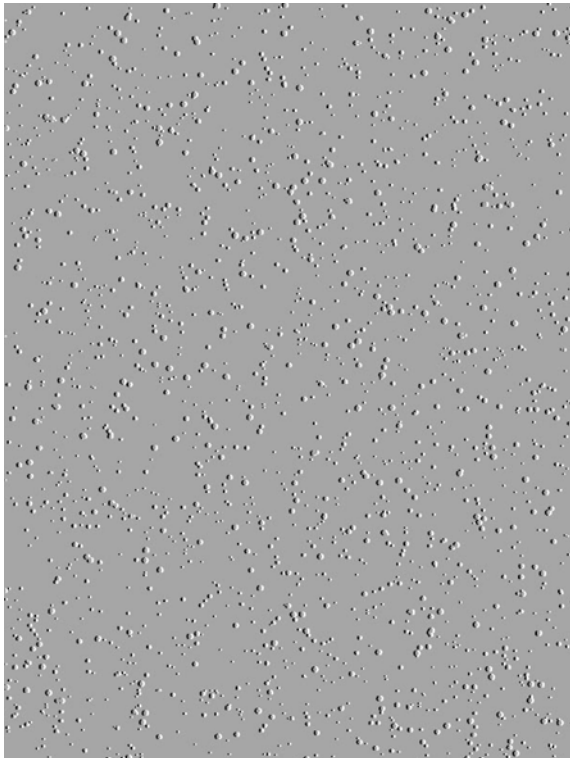
- a) all details necessary to identify the coating examined; 确定被测漆膜所需的全部细节
- b) a reference to this part of ISO 4628 (ISO 4628-2:2003); 参考ISO4628
- c) the type of surface examined, its size and, if appropriate, its location; 被测试件表面类型，大小及部位
- d) the result of the assessment in accordance with Clause 5; 评定结果符合条款5
- e) an indication of the illumination under which the assessment was carried out; 执行评定的光线条件
- f) any unusual features (anomalies) noted during the assessment; 记录评定过程中产生的异常
- g) the date of the examination. 检测日期



a) Quantity (density) 2 — 2(S2)  
数量 (密度)



b) Quantity (density) 3 — 3(S2)  
数量 (密度)



c) Quantity (density) 4 — 4(S2)  
数量 (密度)

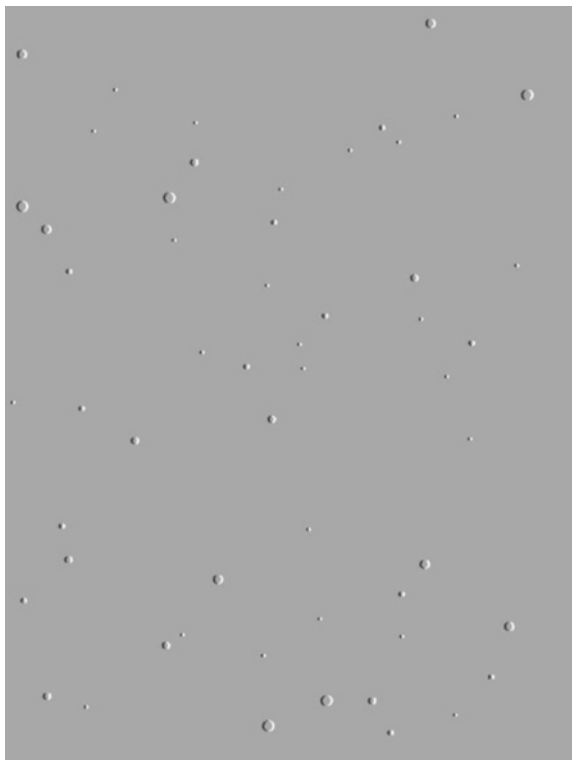


d) Quantity (density) 5 — 5(S2)  
数量 (密度)

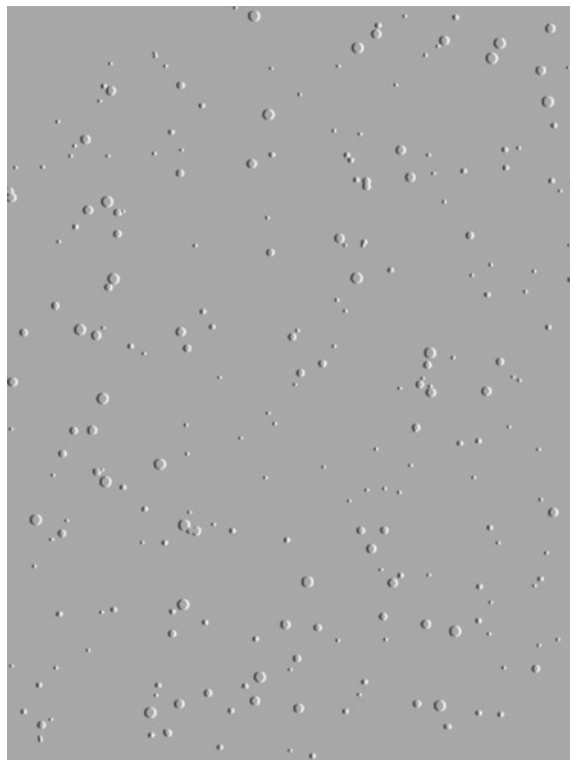
Figure 1 — Blisters of size 2

图1- 起泡大小等级2

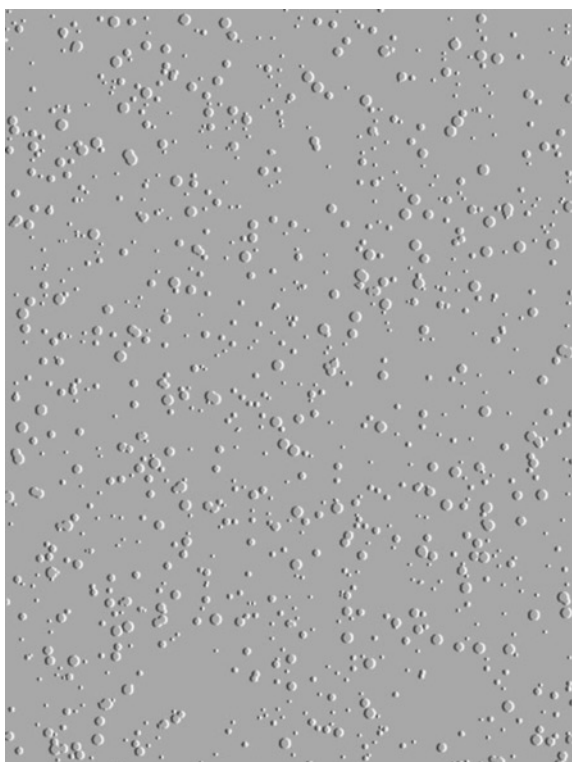




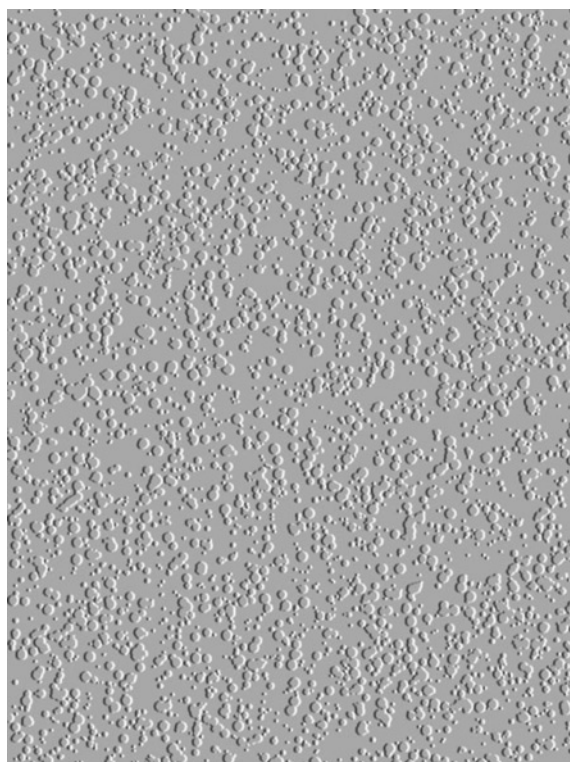
a) Quantity (density) 2 — 2(S3)  
数量 (密度)



b) Quantity (density) 3 — 3(S3)  
数量 (密度)



c) Quantity (density) 4 — 4(S3)  
数量 (密度)



d) Quantity (density) 5 — 5(S3)  
数量 (密度)

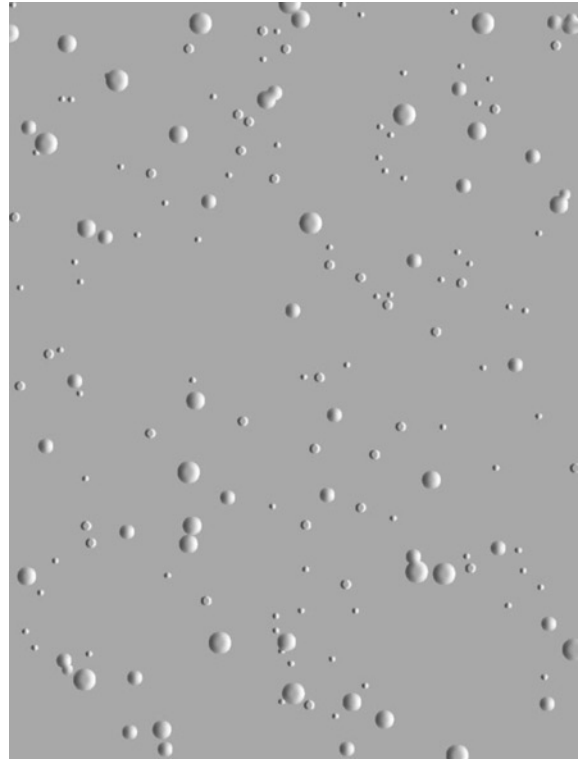
Figure 2 — Blisters of size 3

图2- 起泡大小等级3

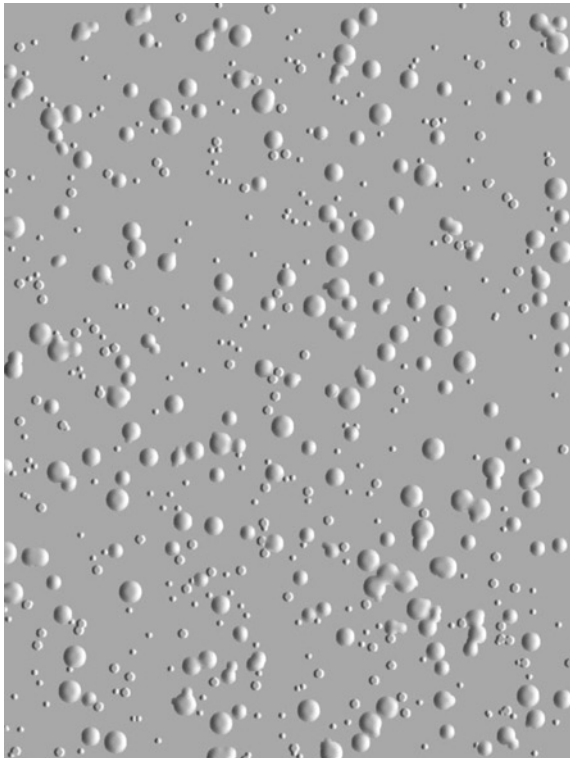




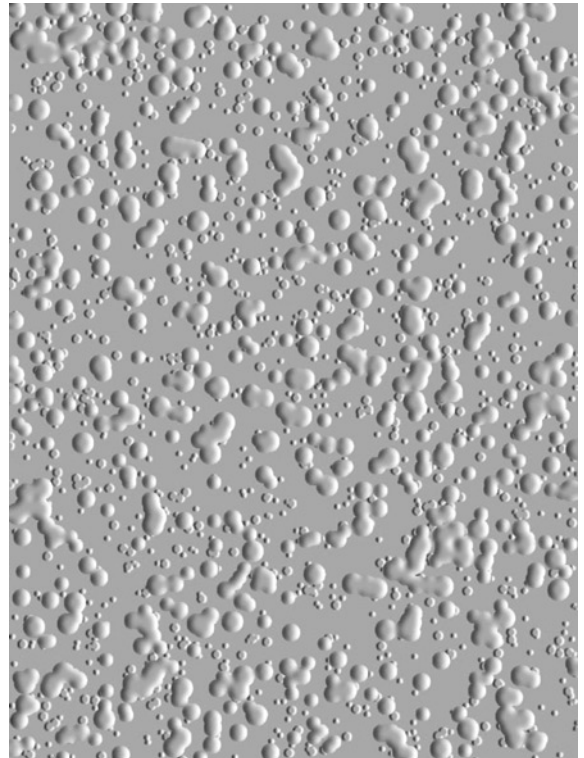
a) Quantity (density) 2 — 2(S4)  
数量 (密度)



b) Quantity (density) 3 — 3(S4)  
数量 (密度)



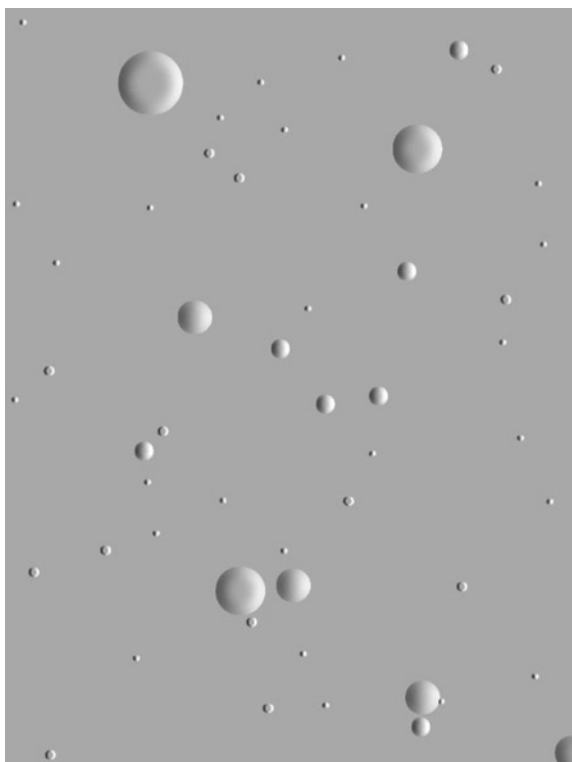
c) Quantity (density) 4 — 4(S4)  
数量 (密度)



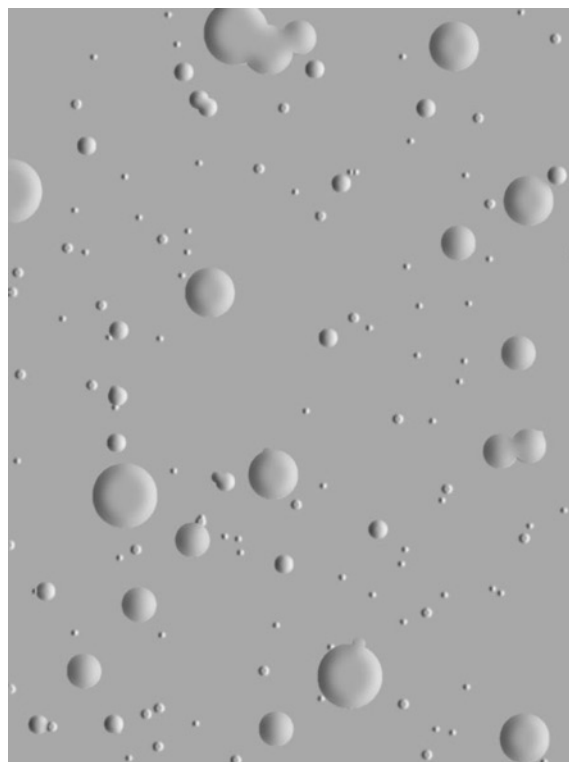
d) Quantity (density) 5 — 5(S4)  
数量 (密度)

Figure 3 — Blisters of size 4

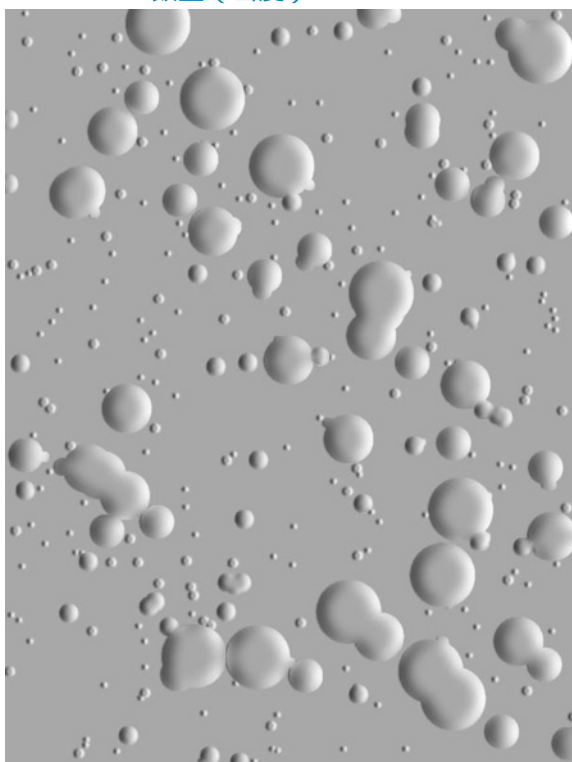
图3- 起泡大小等级4



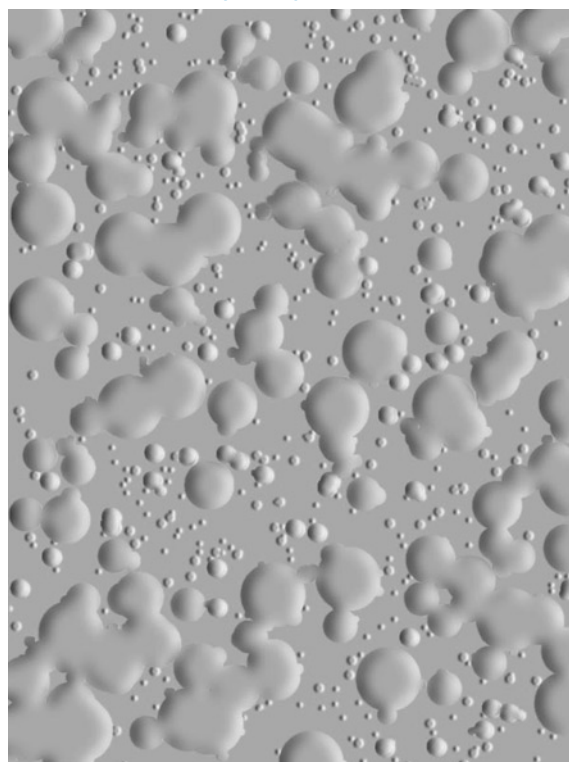
a) Quantity (density) 2 — 2(S5)  
数量 (密度)



b) Quantity (density) 3 — 3(S5)  
数量 (密度)



c) Quantity (density) 4 — 4(S5)  
数量 (密度)



d) Quantity (density) 5 — 5(S5)  
数量 (密度)

Figure 4 — Blisters of size 5

图4- 起泡大小等级5

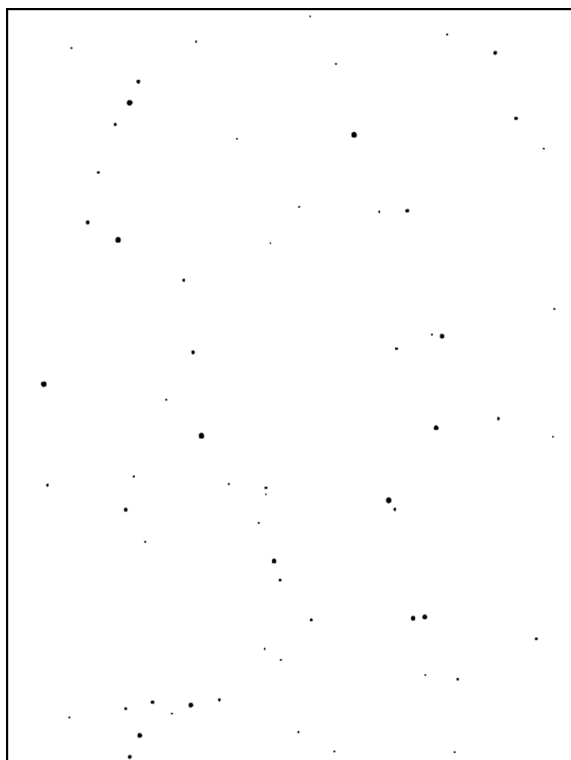
## **Annex A** (normative)

### **Calibration images**

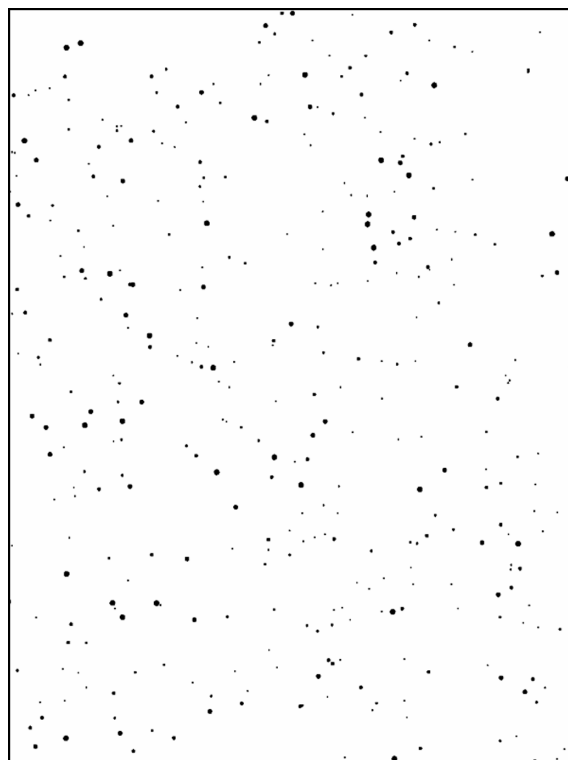
#### 图像校正

If the assessment is to be done using an optical imaging system, use the images given in Figures A.1 to A.4 to calibrate the imaging system.

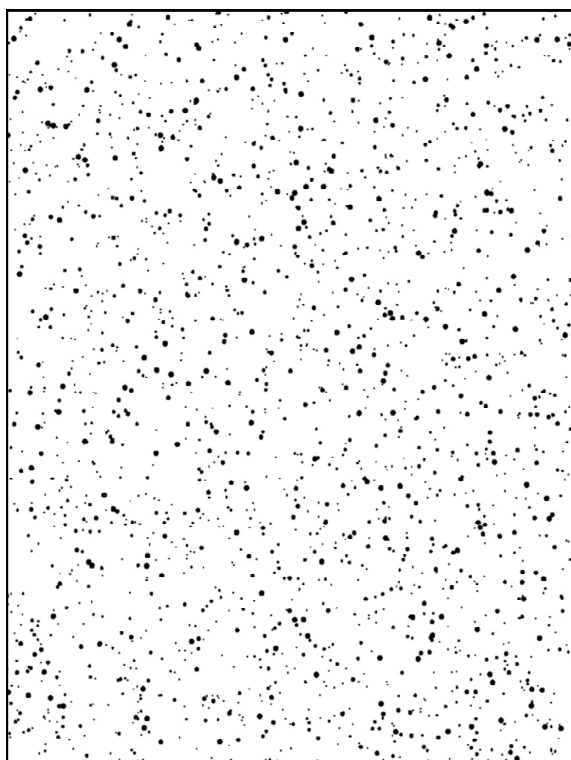
如使用光学成像系统执行评定，则运用图A.1- A.4中给出的图像校正成像系统。



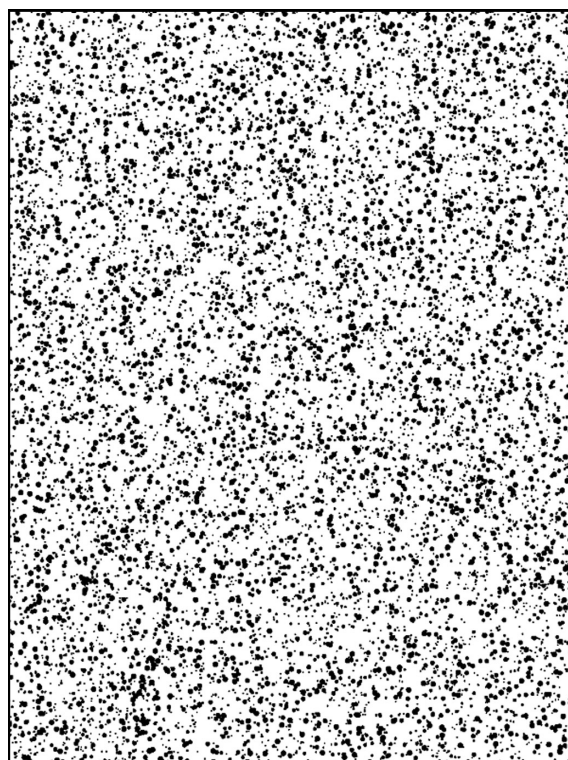
a) Quantity (density) 2 — 2(S2)



b) Quantity (density) 3 — 3(S2)

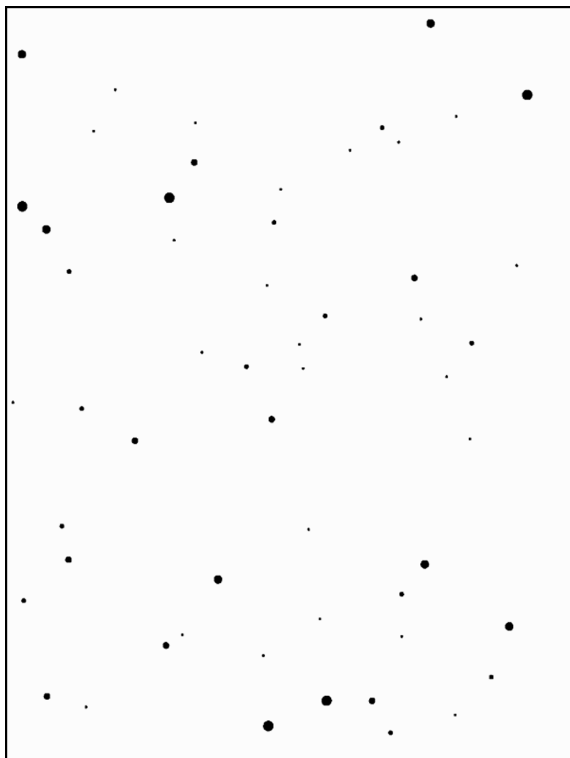


c) Quantity (density) 4 — 4(S2)

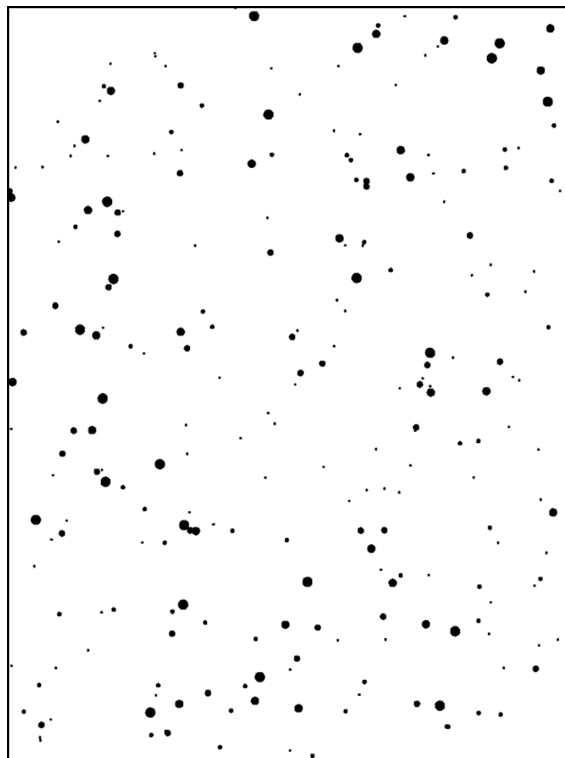


d) Quantity (density) 5 — 5(S2)

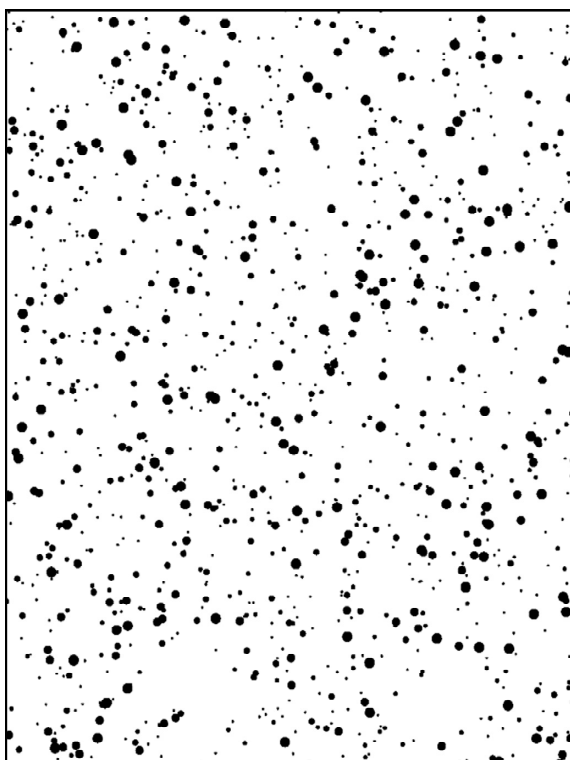
Figure A.1 — Blisters of size 2



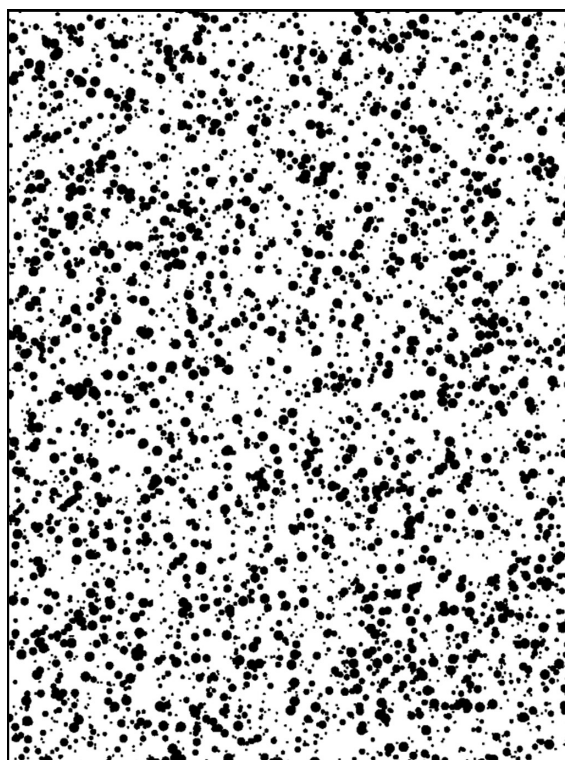
a) Quantity (density) 2 — 2(S3)



b) Quantity (density) 3 — 3(S3)

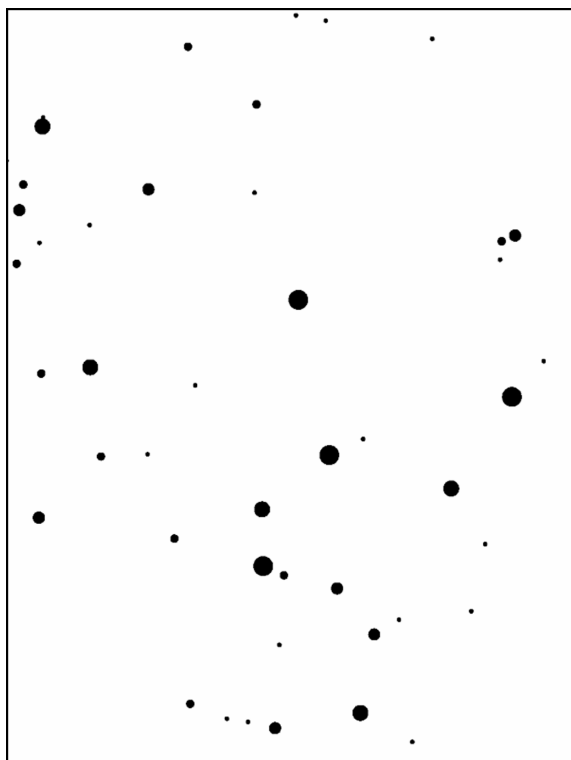


c) Quantity (density) 4 — 4(S3)

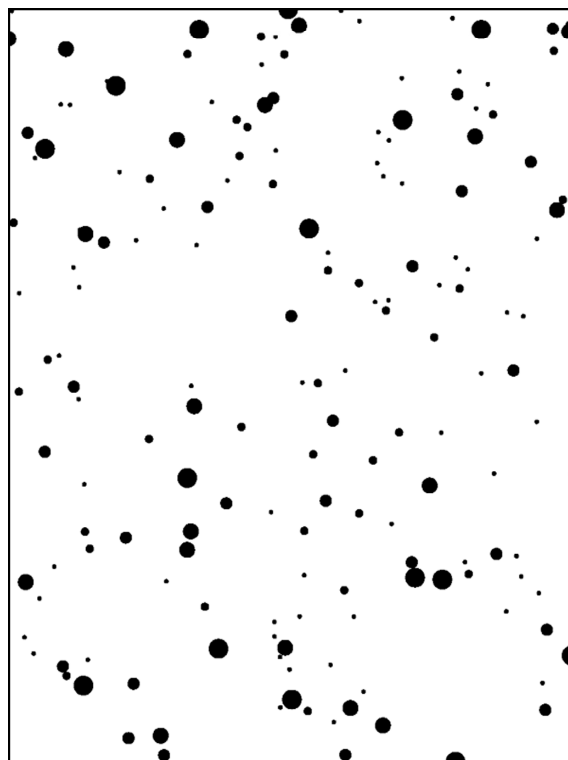


d) Quantity (density) 5 — 5(S3)

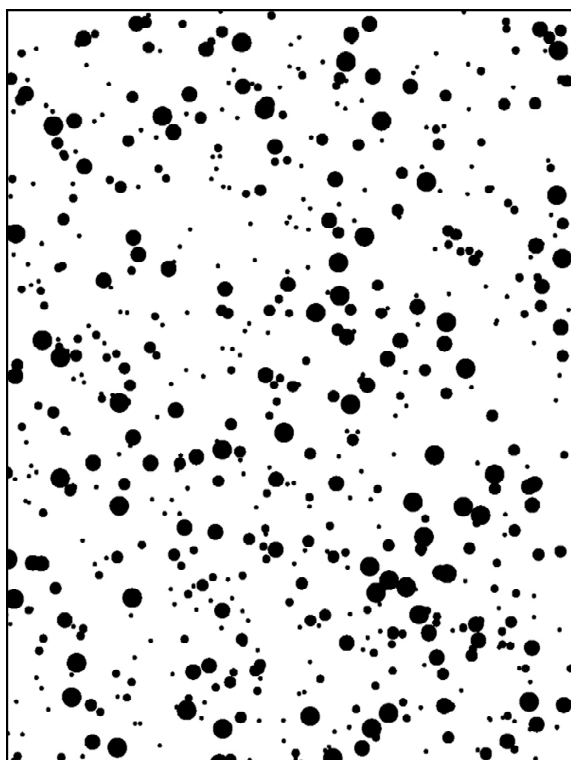
Figure A.2 — Blisters of size 3



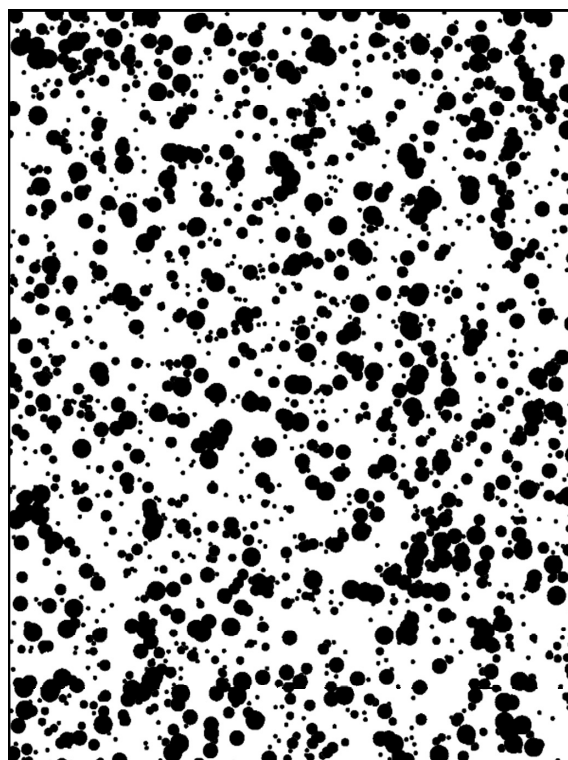
a) Quantity (density) 2 — 2(S4)



b) Quantity (density) 3 — 3(S4)

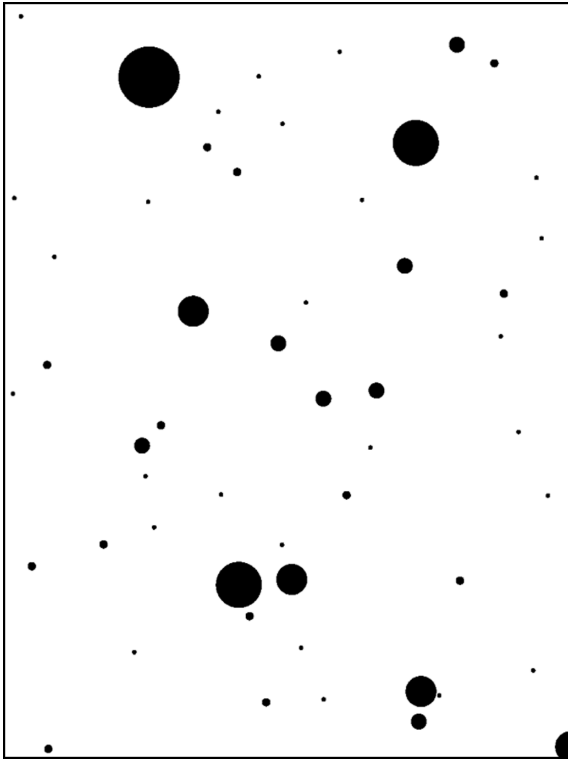


c) Quantity (density) 4 — 4(S4)

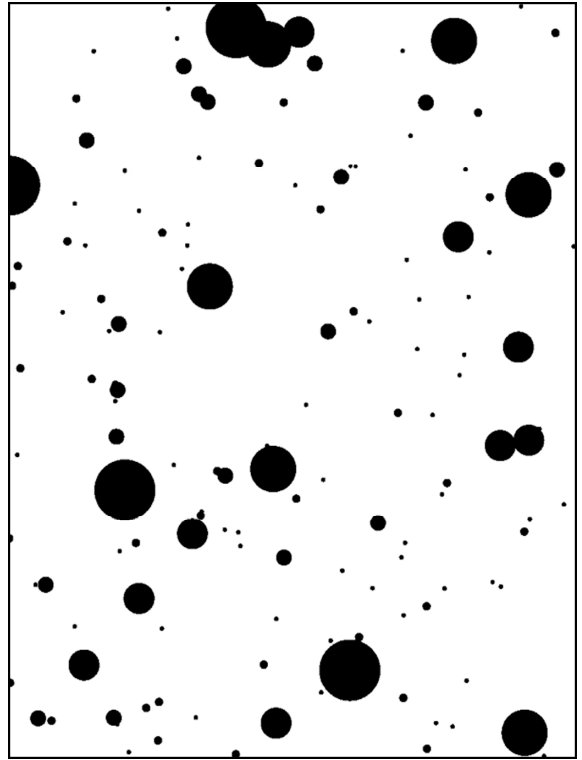


d) Quantity (density) 5 — 5(S4)

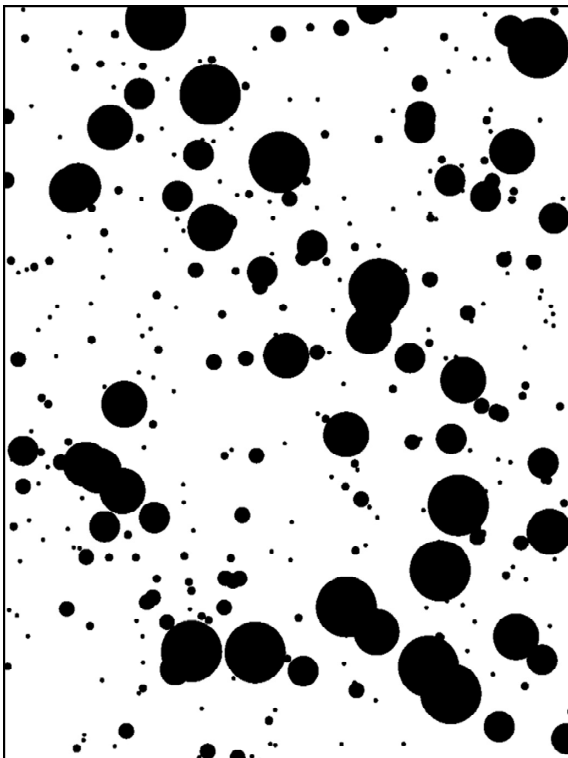
Figure A.3 — Blisters of size 4



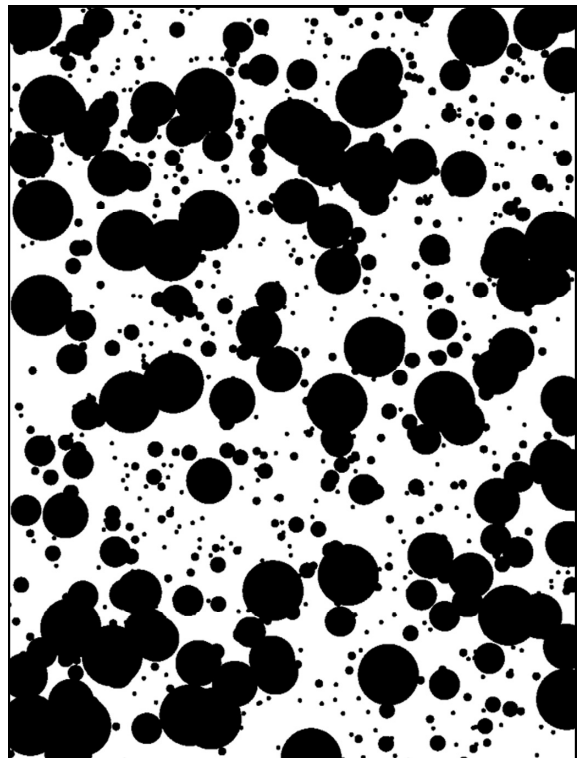
a) Quantity (density) 2 — 2(S5)



b) Quantity (density) 3 — 3(S5)



c) Quantity (density) 4 — 4(S5)



d) Quantity (density) 5 — 5(S5)

Figure A.4 — Blisters of size 5



## Annex B (informative)

### Correlation between ISO 4628-2 and ASTM D 714 rating systems

ISO 4628-2和ASTM D 714 标准等级划分系统的相互关系。

Quantity (density)数量 (密度)		Size大小	
ASTM	ISO	ASTM	ISO
None	0		
—	1	—	1
Few	2	8	2
Medium	3	6	3
Medium-dense	4	4	4
Dense	5	2	5



