INTERNATIONAL STANDARD

ISO 4628-2

Second edition
2003-09-01

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: 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
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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.

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 The pictorial standards have been replaced by computer-generated pictures and binary images have been added for the calibration of optical imaging systems.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*:

— *Part 1: General introduction and designation system*

— *Part 2: Assessment of degree of blistering*

— *Part 3: Assessment of degree of rusting*

— *Part 4: Assessment of degree of cracking*

— *Part 5: Assessment of degree of flaking*

— *Part 6: Assessment of degree of chalking by tape method*

— *Part 7: Assessment of degree of chalking by velvet method*

— *Part 8: Assessment of degree of delamination and corrosion around a scribe*

— *Part 10: Assessment of degree of filiform corrosion*

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:
Assessment of degree of blistering

1 Scope

This part of ISO 4628 describes a method for assessing the degree of blistering of coatings by comparison with pictorial standards.

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.

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.

2 Normative references

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.

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*

3 Terms and definitions

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

3.1
degree of blistering
rating characterizing blisters in a coating in terms of quantity (density) and size

4 Assessment

Assess the quantity and size of the blisters in a coating using the pictures given in Figures 1 to 4.

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.

Carry out the assessment under good illumination.

If the assessment is to be done using an optical imaging system, calibrate the system using the images given in Annex A.

5 Expression of results

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.

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:

blistering; degree of blistering 2(S2).

6 Test report

The test report shall contain at least the following information:

a) all details necessary to identify the coating examined;

b) a reference to this part of ISO 4628 (ISO 4628-2:2003);

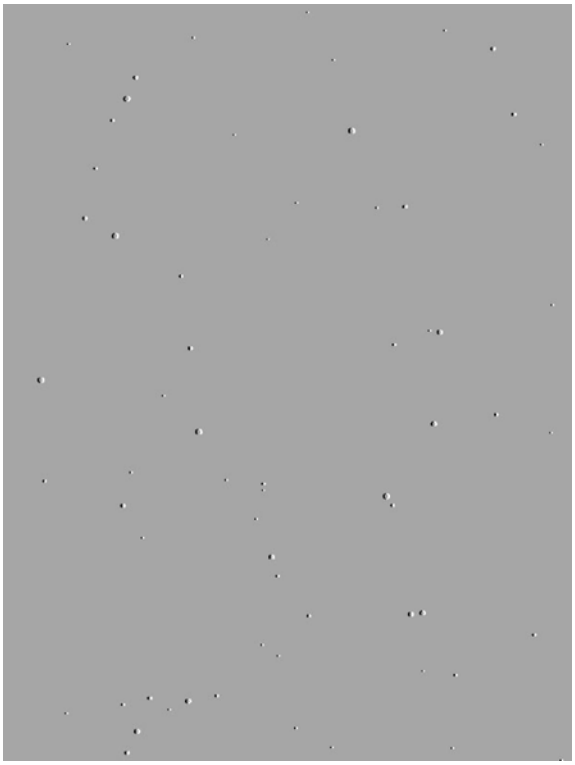
c) the type of surface examined, its size and, if appropriate, its location;

d) the result of the assessment in accordance with Clause 5;

e) an indication of the illumination under which the assessment was carried out;

f) any unusual features (anomalies) noted during the assessment;

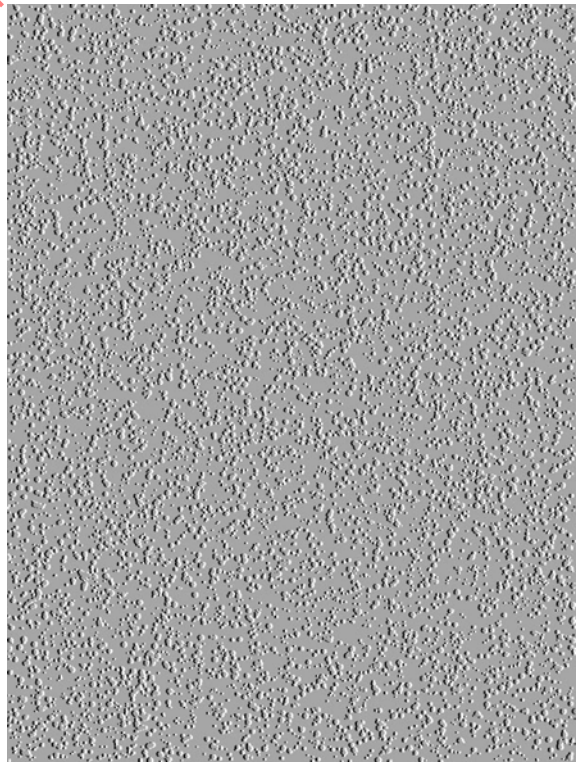
g) the date of the examination.



a) Quantity (density) 2 — 2(S2)

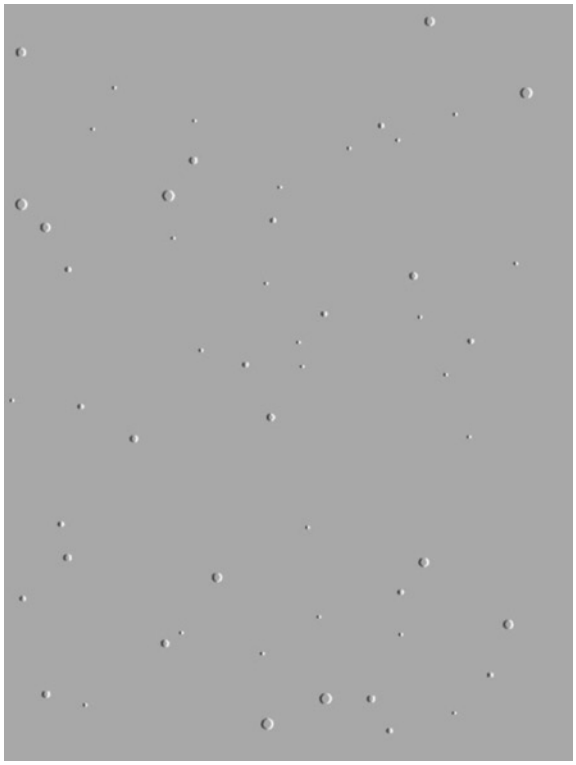
b) Quantity (density) 3 — 3(S2)

c) Quantity (density) 4 — 4(S2)



d) Quantity (density) 5 — 5(S2)

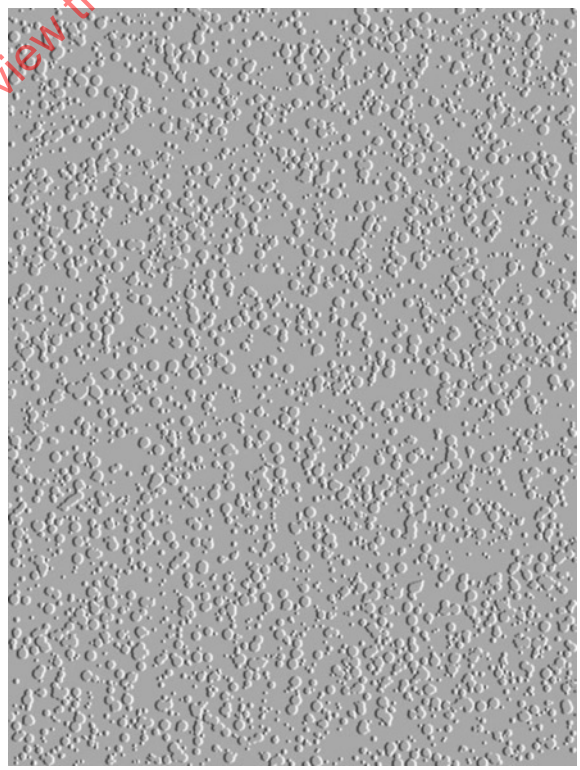
Figure 1 — Blisters of size 2



a) Quantity (density) 2 — 2(S3)

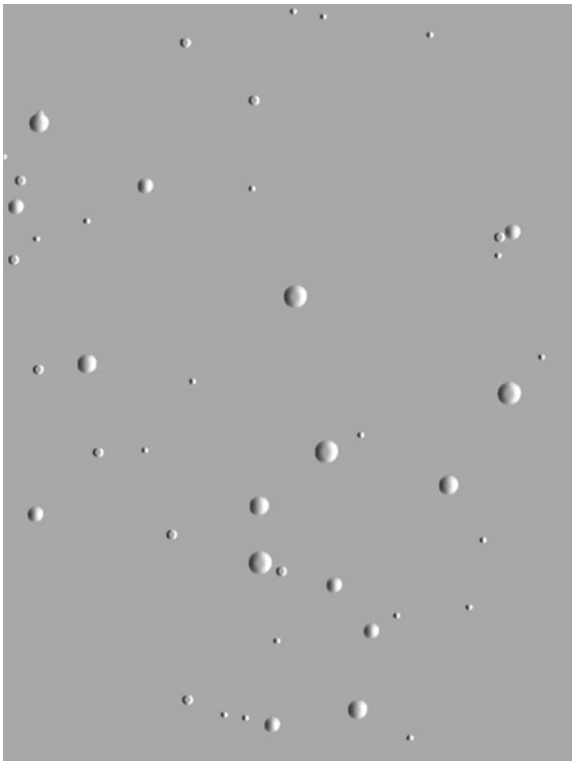
b) Quantity (density) 3 — 3(S3)

c) Quantity (density) 4 — 4(S3)



d) Quantity (density) 5 — 5(S3)

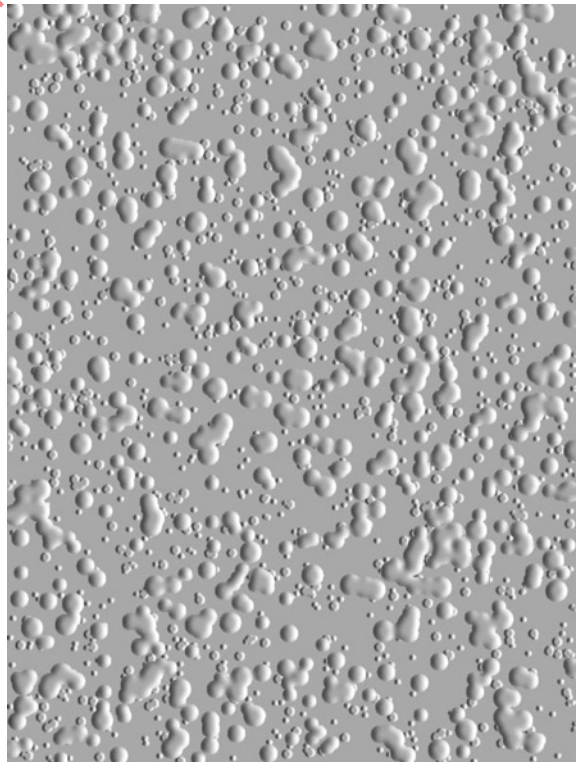
Figure 2 — Blisters of size 3



a) Quantity (density) 2 — 2(S4)

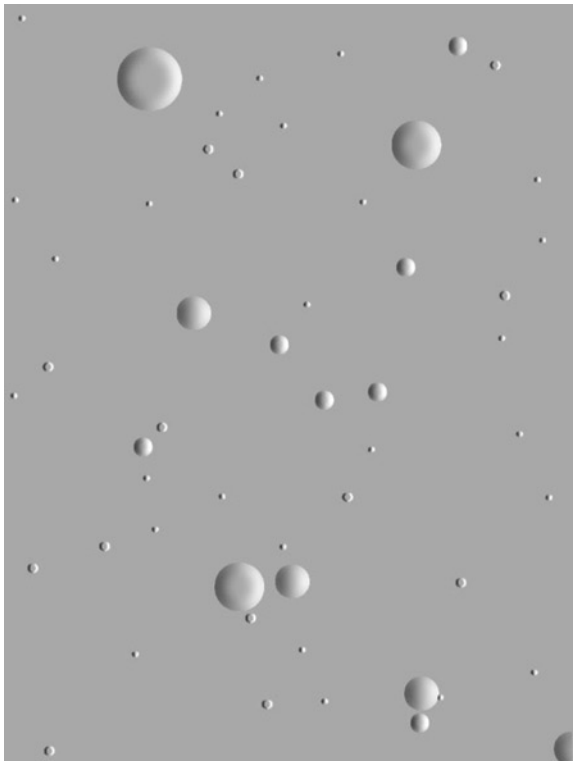
b) Quantity (density) 3 — 3(S4)

c) Quantity (density) 4 — 4(S4)



d) Quantity (density) 5 — 5(S4)

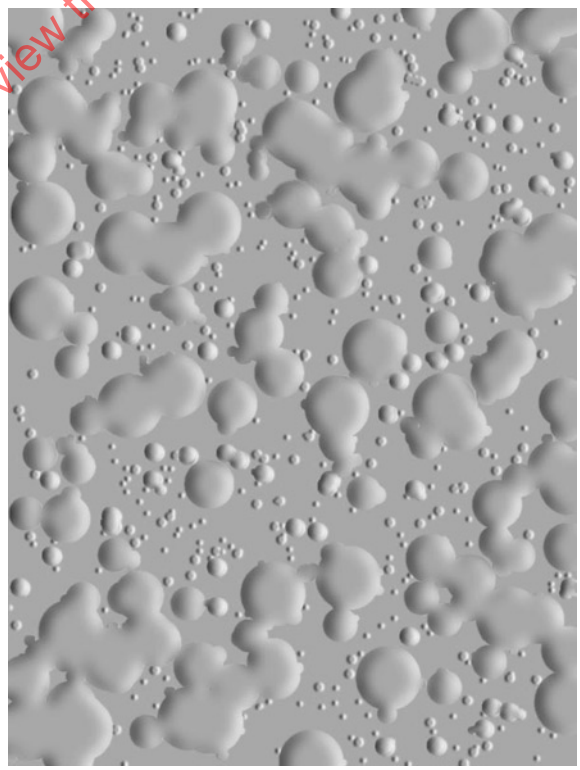
Figure 3 — Blisters of size 4



a) Quantity (density) 2 — 2(S5)

b) Quantity (density) 3 — 3(S5)

c) Quantity (density) 4 — 4(S5)



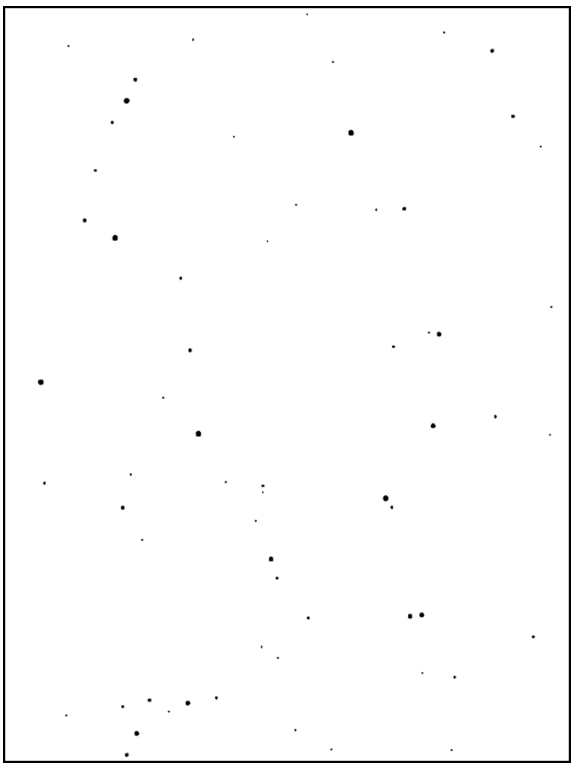
d) Quantity (density) 5 — 5(S5)

Figure 4 — Blisters of size 5

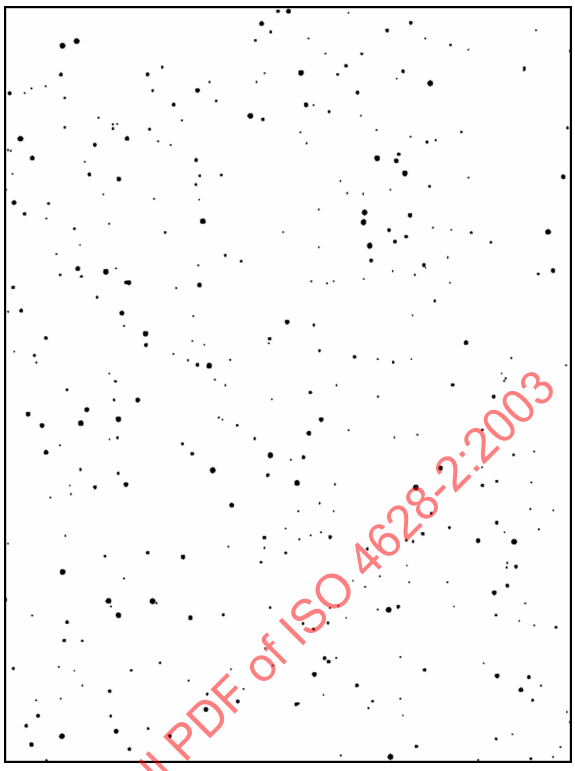
Annex A
(normative)

Calibration images

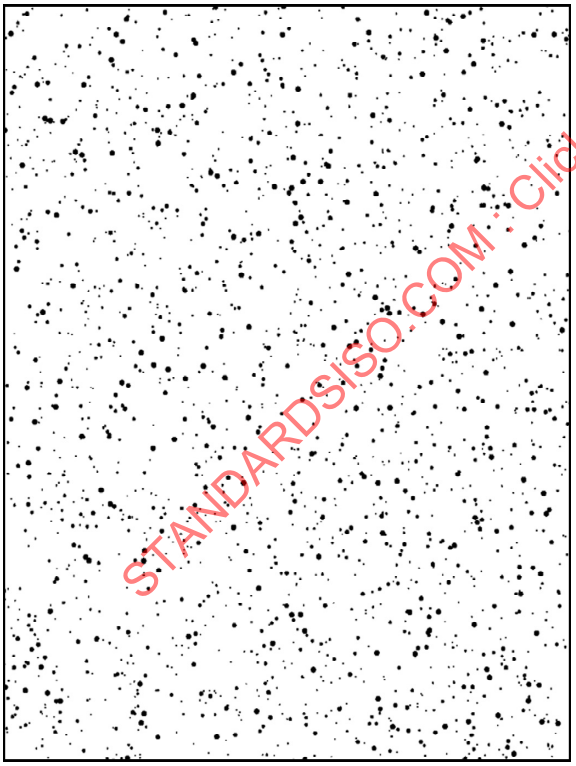
If the assessment is to be done using an optical imaging system, use the images given in Figures A.1 to A.4 to calibrate the imaging system.



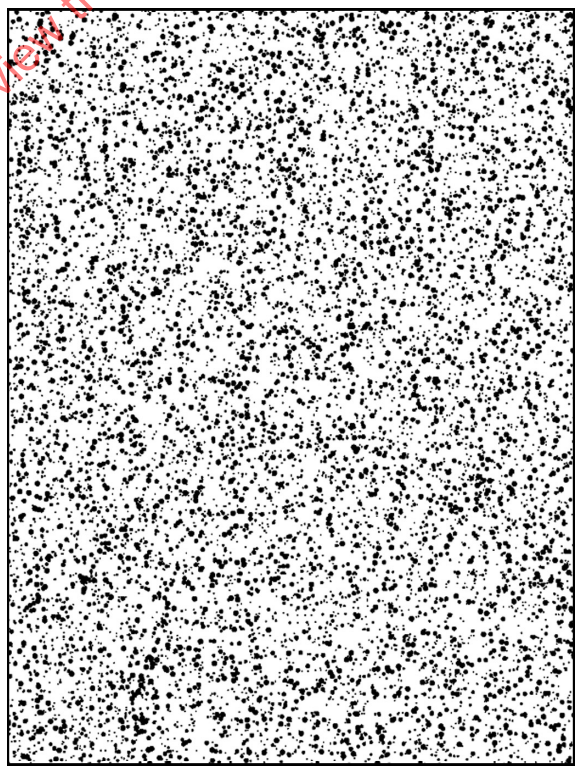
a) Quantity (density) 2 — 2(S2)



b) Quantity (density) 3 — 3(S2)

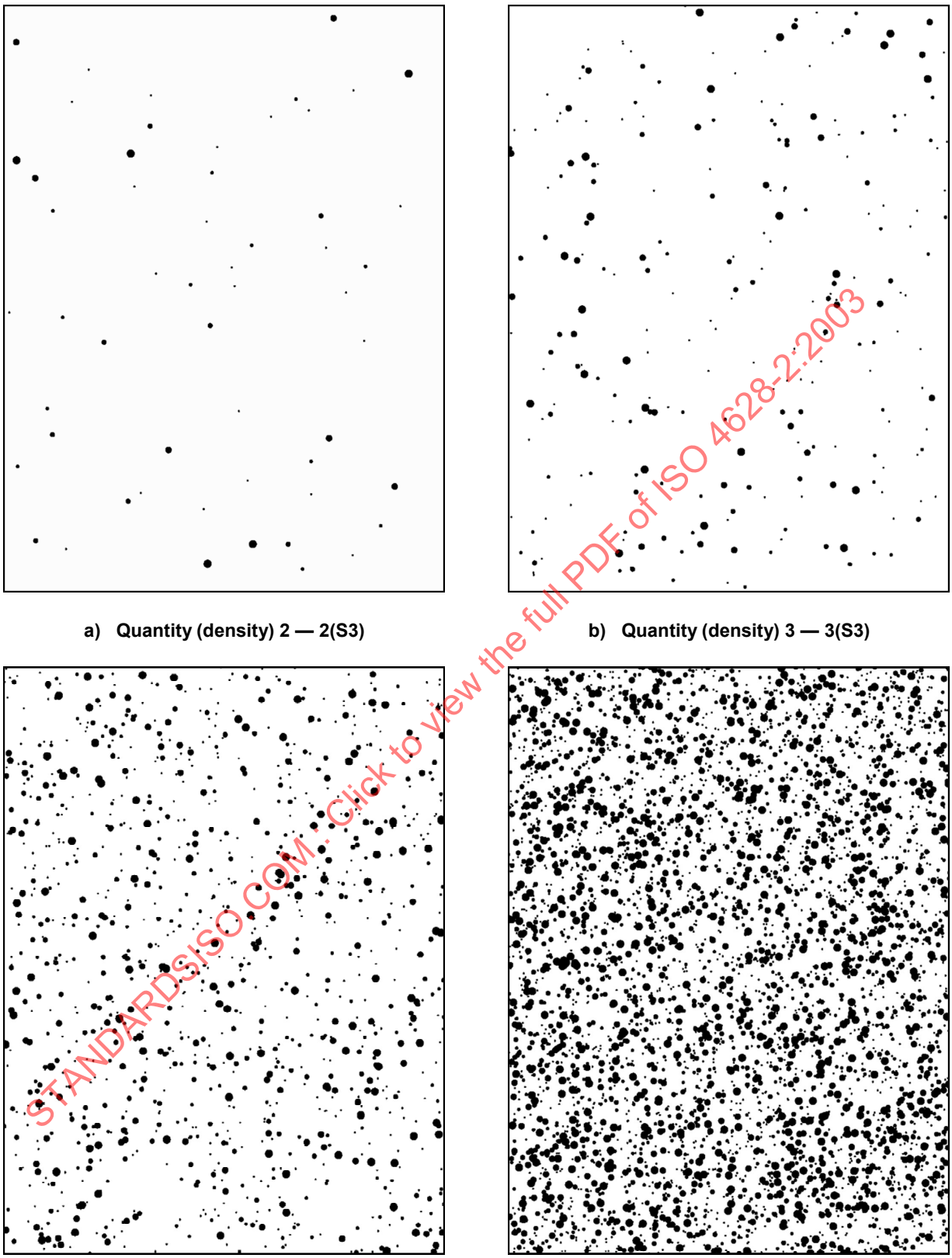


c) Quantity (density) 4 — 4(S2)



d) Quantity (density) 5 — 5(S2)

Figure A.1 — Blisters of size 2



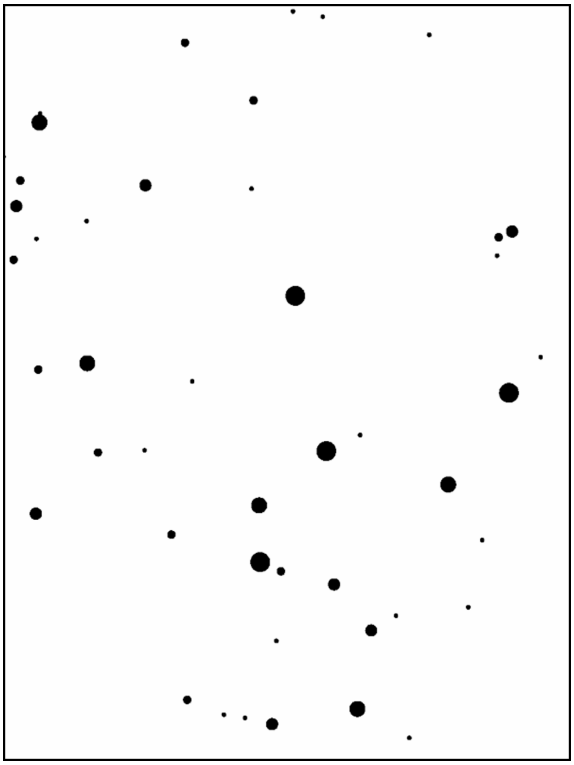
a) Quantity (density) 2 — 2(S3)

b) Quantity (density) 3 — 3(S3)

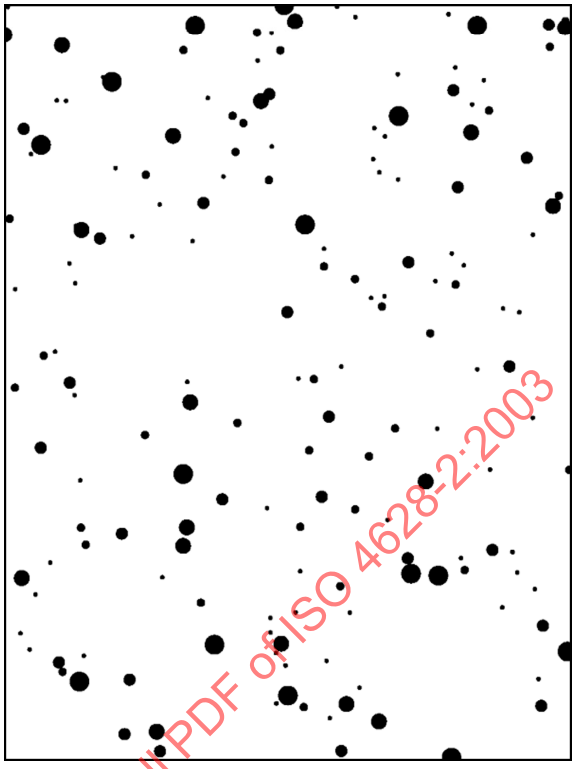
c) Quantity (density) 4 — 4(S3)

d) Quantity (density) 5 — 5(S3)

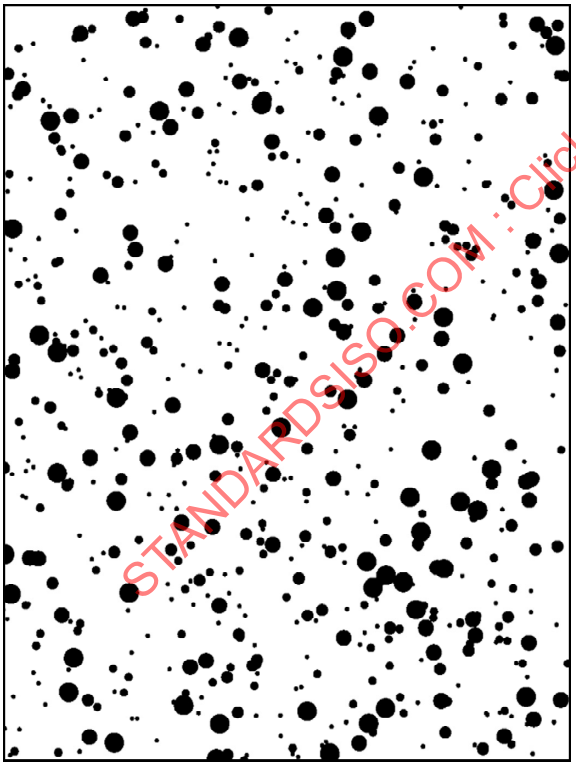
Figure A.2 — Blisters of size 3



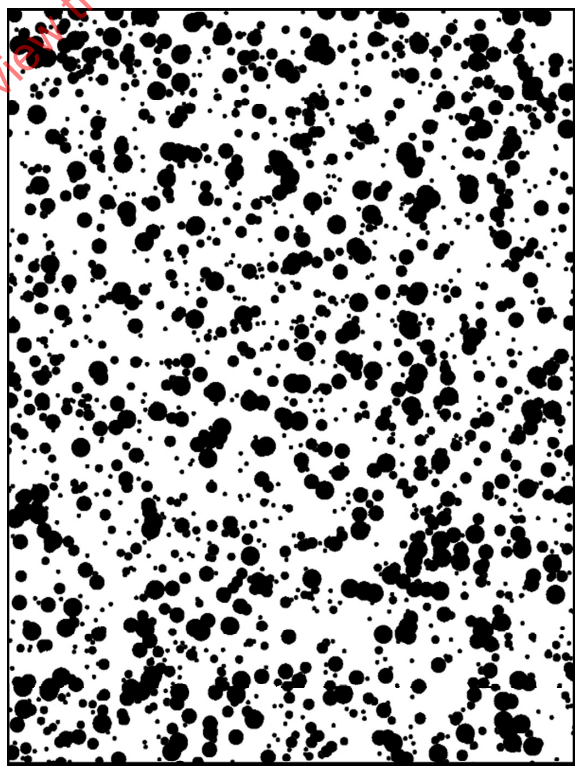
a) Quantity (density) 2 — 2(S4)



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