

- CRS Panel (Pretreated or Untreated)
- Production Steel or Cast / Aluminum and Plastic Panel / Part
- Other Test specimens

10 test specimens / test panels for all following tests:

The tests, requested:

- ✓ Salt spray test
- ✓ Humidity test
- ✓ Pencil hardness
- ✓ Cross cut
- ✓ Elongation
- ✓ Measurement of colour
- ✓ Impact resistance test
- ✓ Cyclic corrosion test
- ✓ Heat resistance

Pencil Hardness Test according to ISO 15184
Gloss grad measurement according to ISO 2813
Cross-Cut Test according to ISO 2409
Salt Spray Test according to ISO 9227
Elongation according to ISO 6860
Impact Resistance according to ISO 6272-2
Chip Resistance according to ISO 20567-1 / ASTM D3170 and SAE J400
Humidity Resistance according to 6270-2 / ASTM D2247

- Blister rating ASTM D714 or ISO 4628-2
- Rust rating ASTM D610 or ISO 4628-3

Chemical Resistance according to ISO 2812
Accelerated Weathering of Materials - Xenon Arc Light
Cyclic Corrosion Test according to SAE J2334

Evaluate of mean creep from scribe after Salt spray test

5.9 Calculate the mean corrosion creep across the scribe and round this value to the nearest 0.1 mm. Using Equation 1, calculate the mean corrosion creep from the scribe and round this value to the nearest 0.1 mm. Figure 3 illustrates an example of proper calculation of the mean creep-across-scribe distance and calculation of the mean creep-from-scribe value.

Equation 1
$$c = \frac{w_c - w}{2}$$

where:

c = mean creep from scribe

w_c = mean total creep across scribe

w = width of original scribe

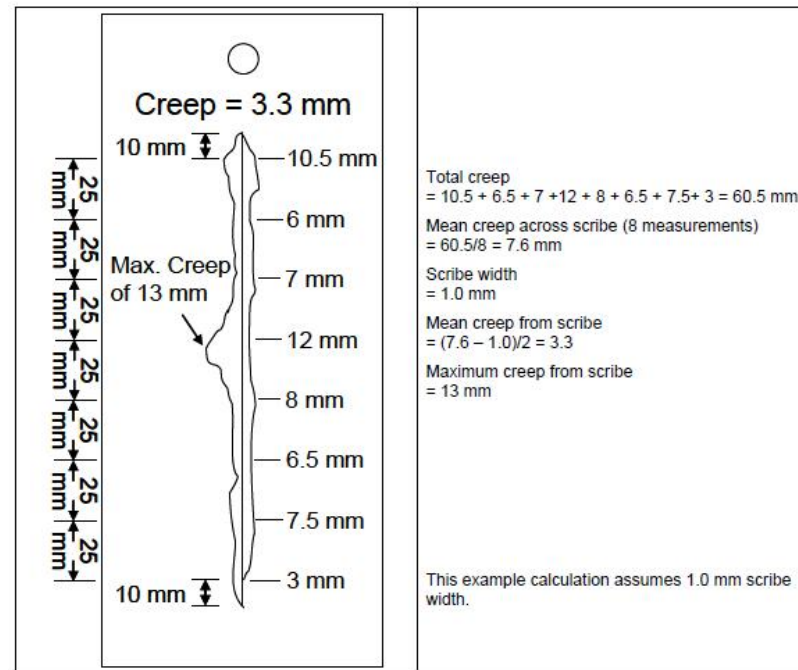
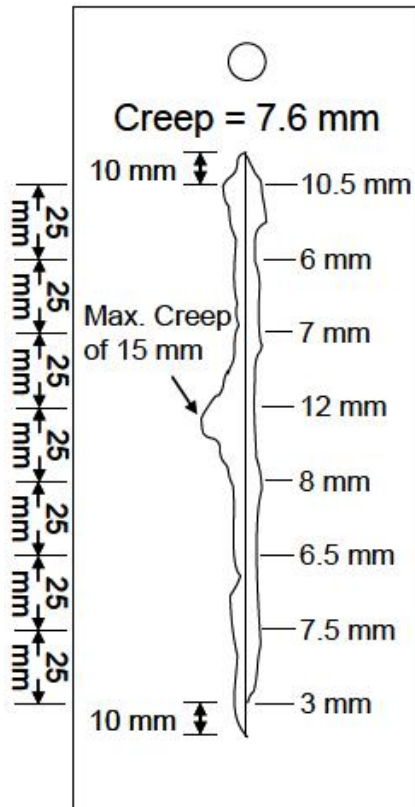


Figure 3 Example of a Measured Panel After Salt Spray Exposure and Scraping

Evaluate of mean creep after Cyclic Corrosion Test



Total creep
= 10.5 + 6 + 7 + 12 + 8 + 6.5 + 7.5 + 3 = 60.5 mm

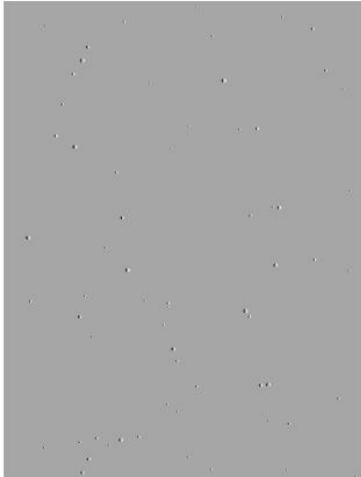
Mean creep (8 measurements)
= 60.5/8 = 7.6 mm

Maximum creep
= 15 mm

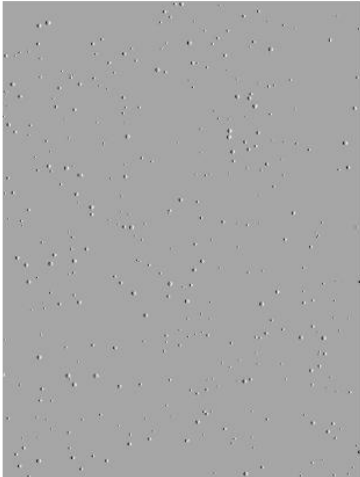
Table 1 Cycle Stages with Duration and Conditions for SAE J2334

Stage	Duration	Temperature	Relative Humidity
Humid	6 h	50°C	100%
Salt Application	0.25 h	Ambient	Ambient
Dry	17.75 h	60°C	50%

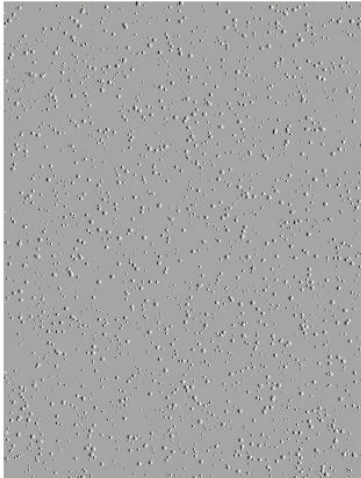
Assessment of degree of blistering (ISO 4628-2)



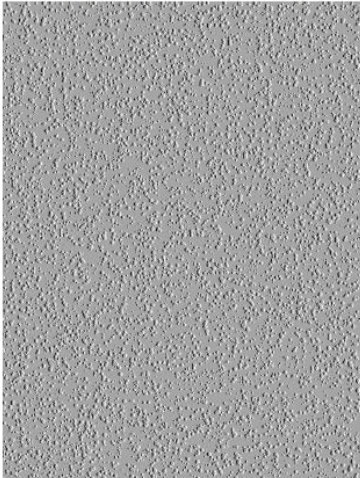
a) Menge (Dichte) 2 - 2(S2)



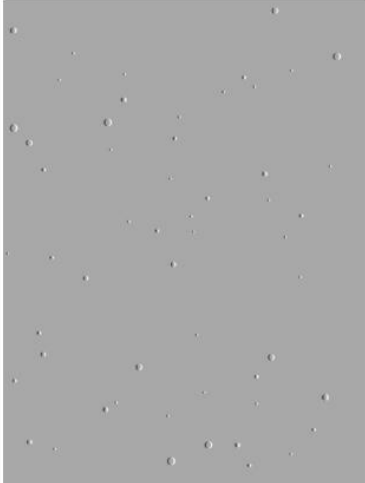
b) Menge (Dichte) 3 - 3(S2)



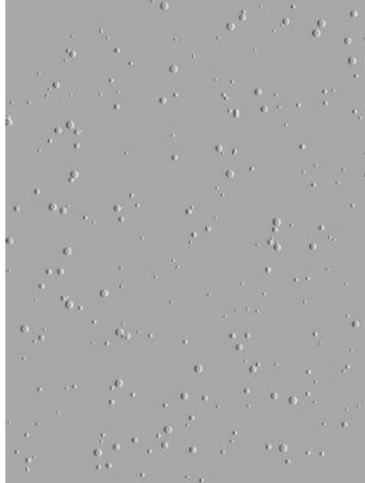
c) Menge (Dichte) 4 - 4(S2)



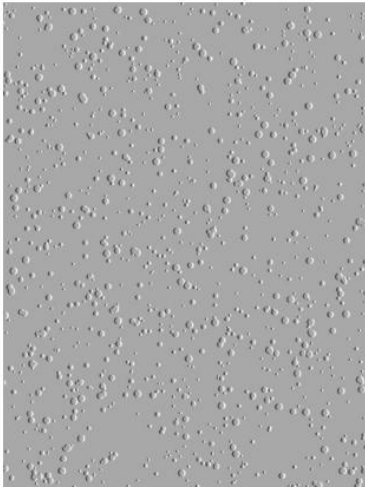
d) Menge (Dichte) 5 - 5(S2)



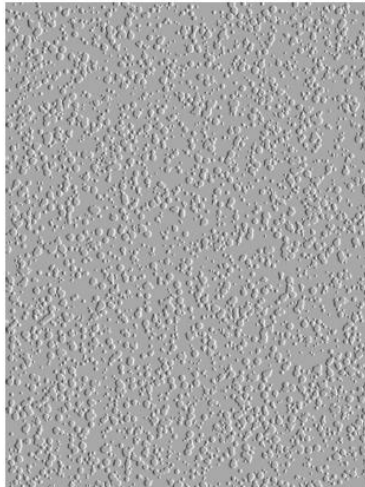
a) Menge (Dichte) 2 - 2(S3)



b) Menge (Dichte) 3 - 3(S3)

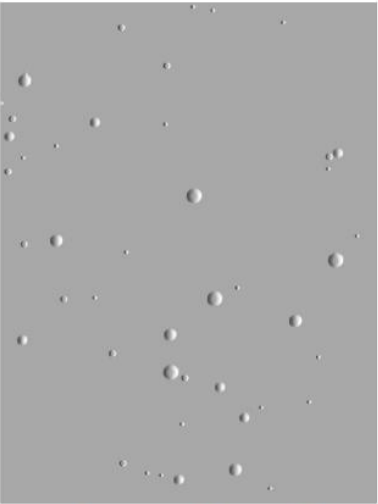


c) Menge (Dichte) 4 - 4(S3)

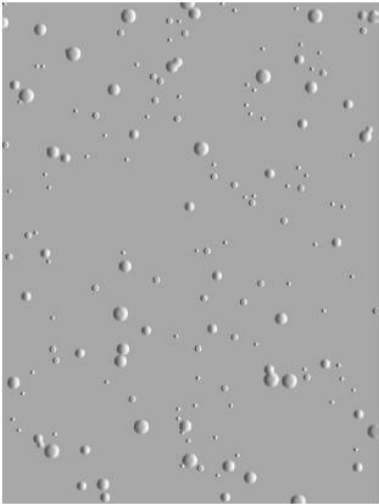


d) Menge (Dichte) 5 - 5(S3)

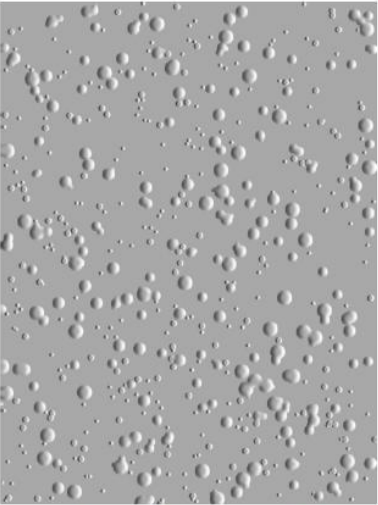
Assessment of degree of blistering (ISO 4628-2)



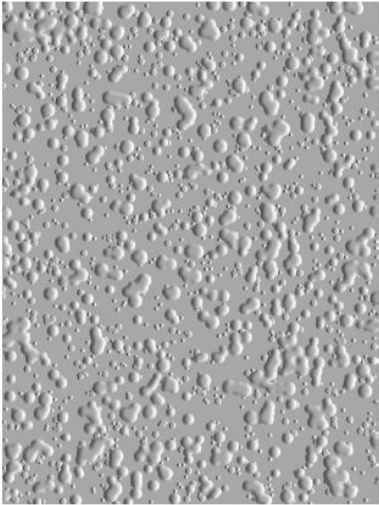
a) Menge (Dichte) 2 - 2(S4)



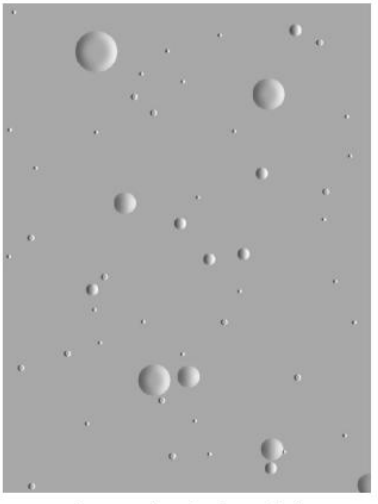
b) Menge (Dichte) 3 - 3(S4)



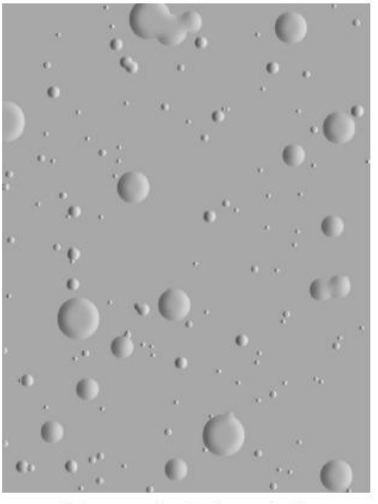
c) Menge (Dichte) 4 - 4(S4)



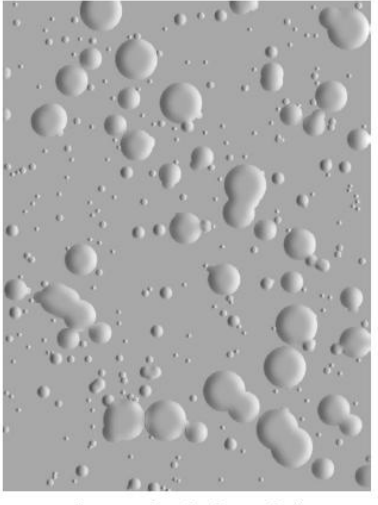
d) Menge (Dichte) 5 - 5(S4)



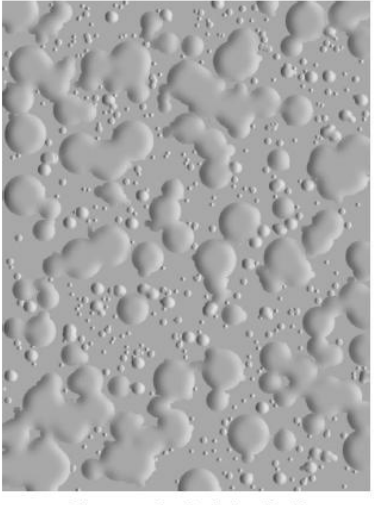
a) Menge (Dichte) 2 - 2(S5)



b) Menge (Dichte) 3 - 3(S5)



c) Menge (Dichte) 4 - 4(S5)



d) Menge (Dichte) 5 - 5(S5)

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Assessment of degree of rusting (ISO 4628-3)

Degree of rusting	Area of rusting %
Ri 0	0
Ri 1	0,05
Ri 2	0,5
Ri 3	1
Ri 4	8
Ri 5	40 to 50

Assessment of degree of rusting (ISO 4628-3)



Bild 1 — Rostgrad Ri 1



Bild 2 — Rostgrad Ri 2

Assessment of degree of rusting (ISO 4628-3)

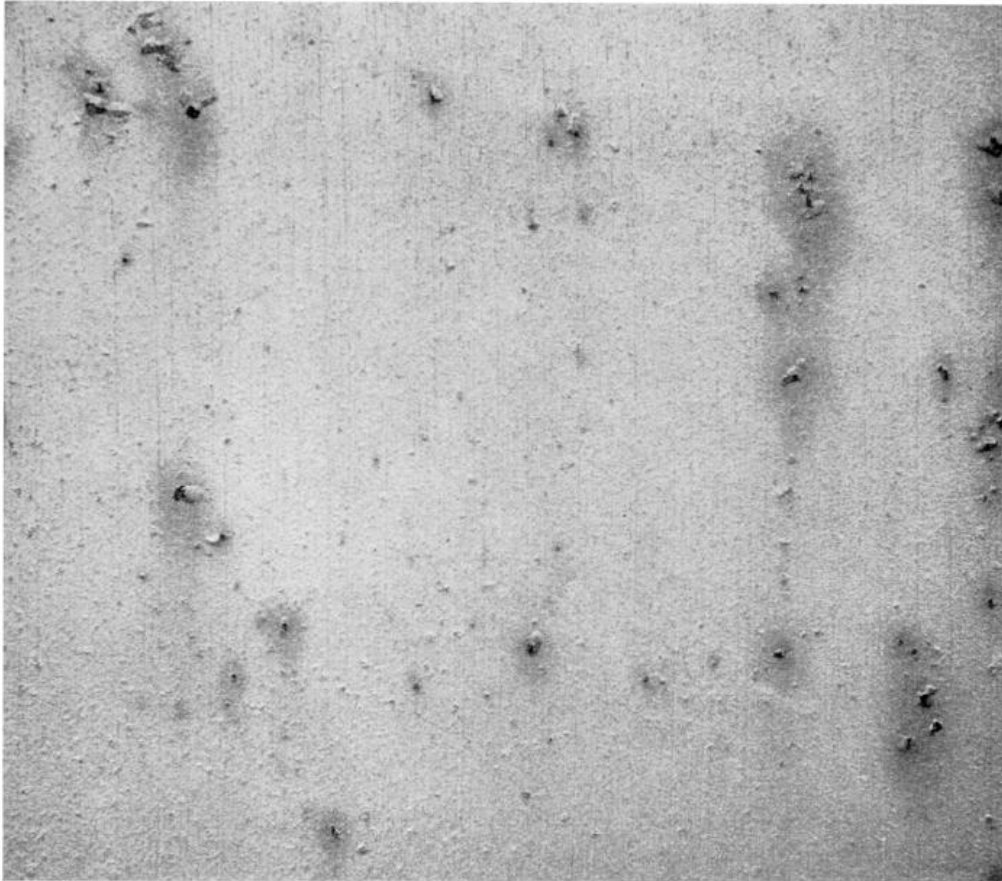


Bild 3 — Rostgrad Ri 3

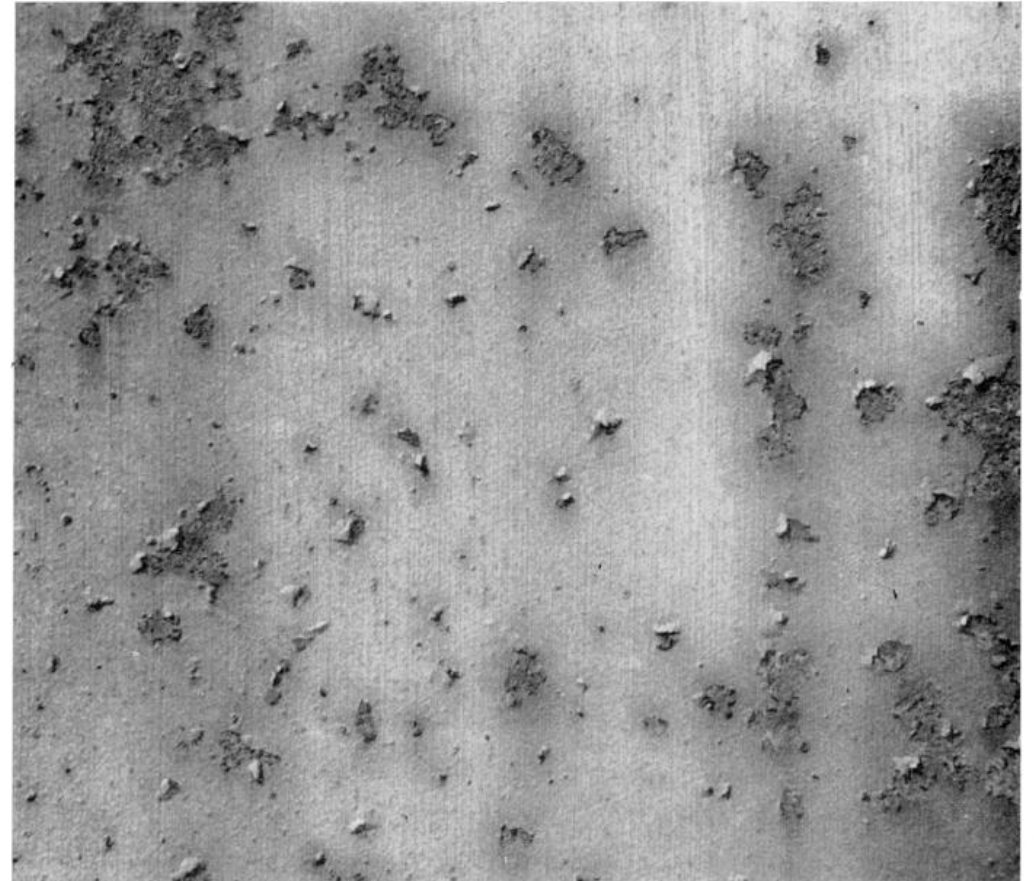


Bild 4 — Rostgrad Ri 4

Assessment of degree of rusting (ISO 4628-3)

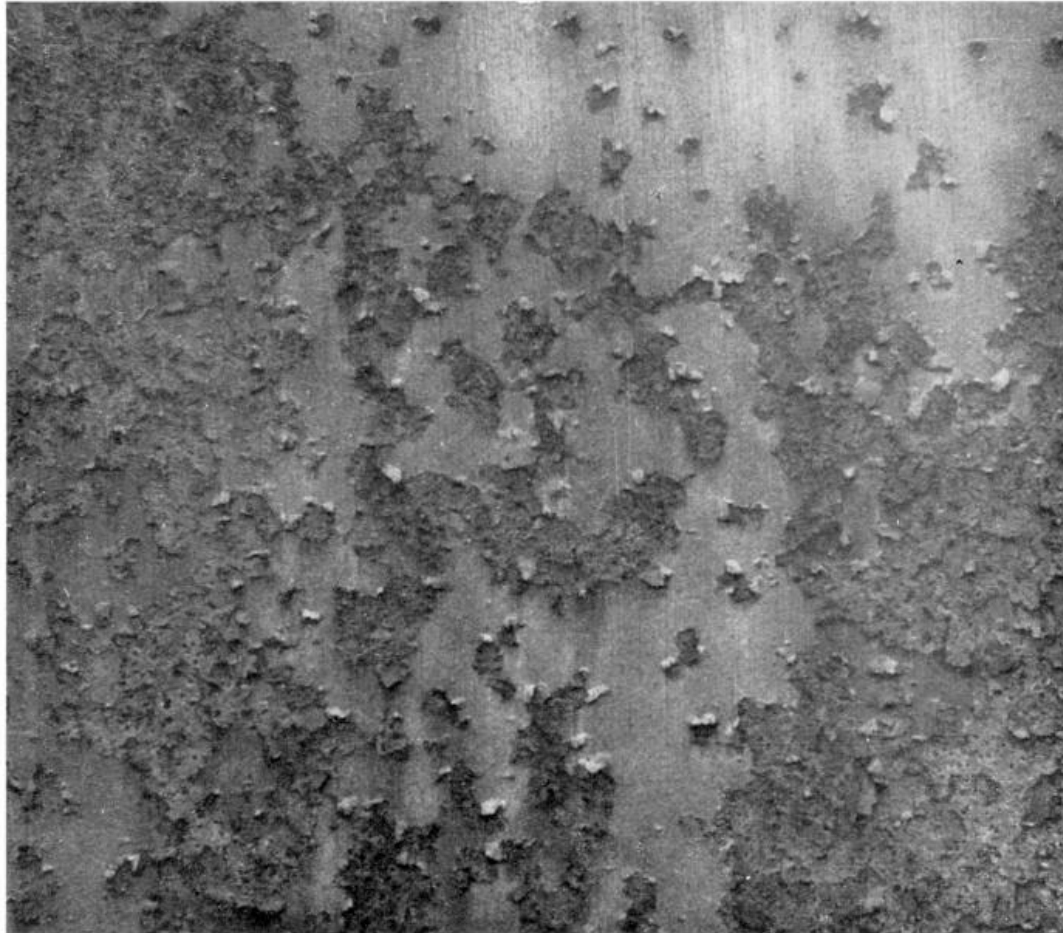


Bild 5 — Rostgrad Ri 5

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Assessment of degree of rusting (ISO 4628-3)

Calibration pictures

If the evaluation is performed using digital image processing, calibrate the image processing system with images A.1 to A.5.

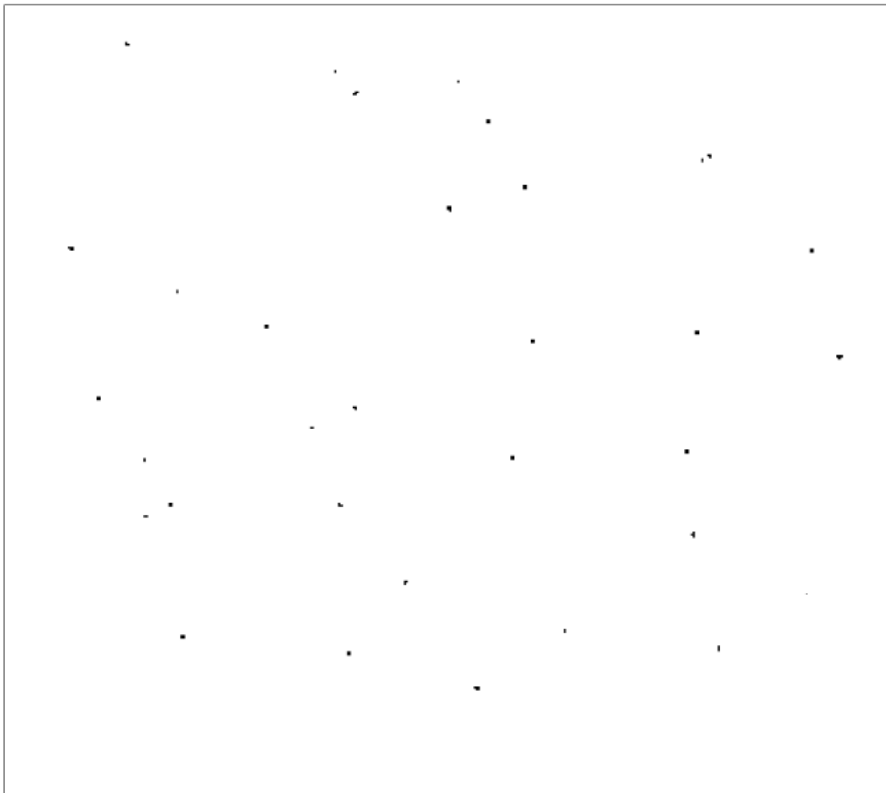


Bild A.1 — Rostgrad Ri 1

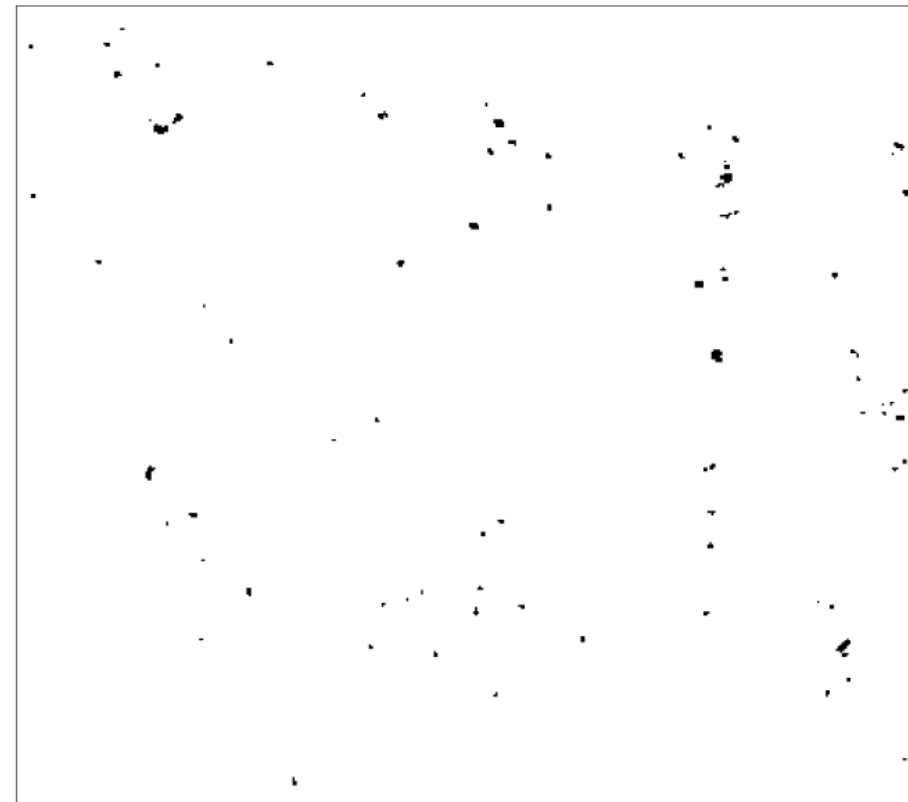


Bild A.2 — Rostgrad Ri 2

Assessment of degree of rusting (ISO 4628-3)

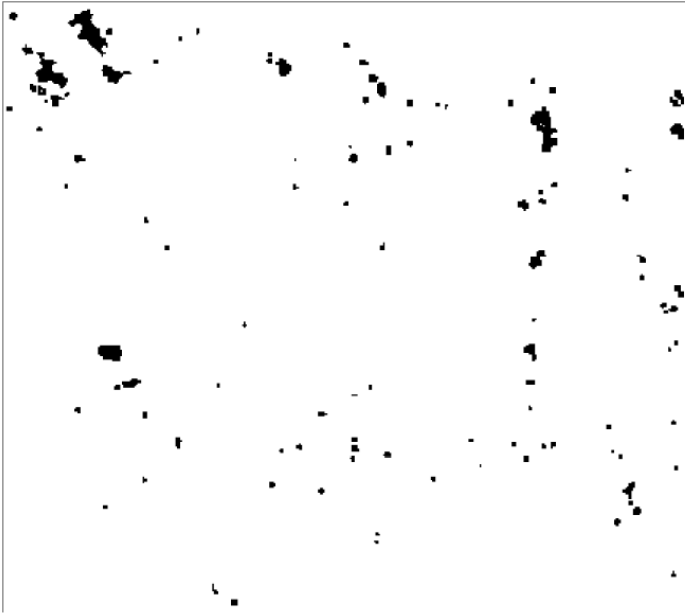


Bild A.3 — Rostgrad Ri 3

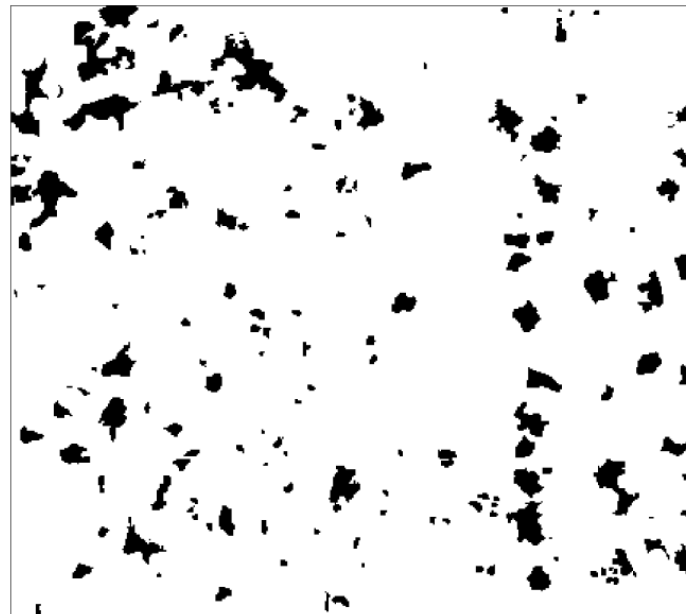


Bild A.4 — Rostgrad Ri 4

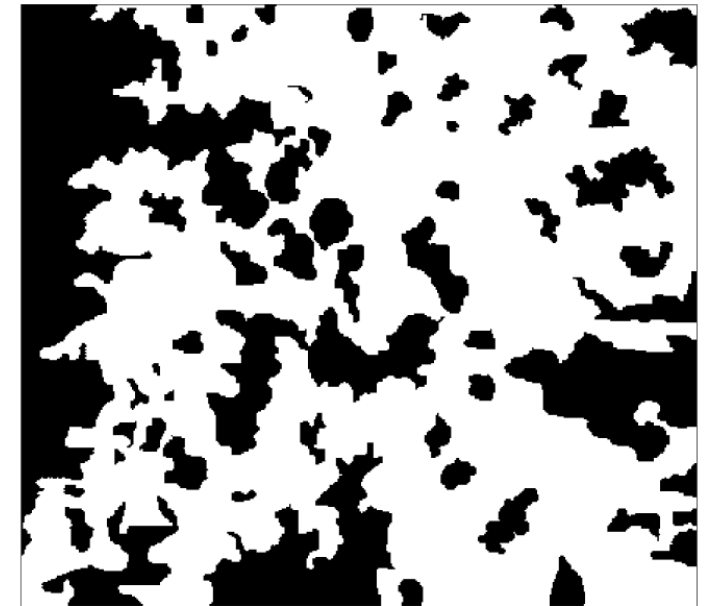


Bild A.5 — Rostgrad Ri 5

ISO- degree of rusting	ASTM– degree of rusting
Ri 0	10
Ri 1	9
Ri 2	7
Ri 3	6
Ri 4	4
Ri 5	1 to 2