A stainless steel *site scoring* worksheet

The IMOA site score as a printable worksheet: score five sections, add them, read the band. It is a guideline for an initial evaluation, and 5 or more needs an expert.

AT A GLANCE

Section	What you decide	Points	How they combine
1 Environment	Rural, urban or industrial, and how polluted	0 to 4	Take the highest that applies. High urban (3) and high industrial (4) need an expert.
2 Salt	Distance from salt water, or from de-icing salt	Coastal 1 to 10; de-icing 0 to 4	Take the highest. Spray, splash, immersion and direct de-icing need an expert, and so does exposure to both salts.
3 Weather	Rain, humidity and fog	−1 to +2	Pick one row. Hot, humid and rainless (+2) needs an expert if salt or pollution is also present.
4 Design	Finish roughness, grain, flat faces, shelter and crevices	−2 to +5	Add everything that applies, using one finish row. Sheltered or open-crevice details need an expert if salt or pollution is present.
5 Washing	How often it is washed	0 to −3	Pick one row. It counts only if someone owns the job.
Total	Add the five sections		0 to 2: 304 or 304L. 3: 316 or 316L. 4: 317L or better. 5 or more: ask a corrosion expert.

Points and bands are IMOA's (ABC 00/03, 2003); layout and wording are ours. Score each component separately where finish, washing or exposure differ. Totals below 0 are not covered by the brochure: we read them as the 304 band.

WORKSHEET

1 Environment take the highest

0	Rural or suburban: very low or no pollution
0	Urban, low pollution (light industry, vehicle exhaust)
+2	Urban, moderate pollution
+3	Urban, high pollution *
+3	Industrial, low or moderate pollution (aggressive gases, iron oxides, chemicals)
+4	Industrial, high pollution *

3 Weather pick one

−1	Temperate or cold climate, regular heavy rain
−1	Hot or cold climate with typical humidity below 50 per cent
0	Temperate or cold climate, occasional heavy rain
0	Tropical or subtropical, wet, regular or seasonal very heavy rain
+1	Temperate climate, infrequent rain, humidity above 50 per cent
+1	Regular very light rain or frequent fog
+2	Hot, humidity above 50 per cent, very little or no rain ***

2 Salt take the highest; both salts: ask an expert

Coastal or marine

+1	More than 1.6 km and up to 16 km from salt water **
+3	30 m to 1.6 km from salt water
+4	Less than 30 m from salt water
+5	Some salt spray or occasional splashing *
+8	Continuous splashing *
+10	Continuous immersion *

De-icing salt

0	No salt found on a sample from the site and no change expected; or traffic too light, or wind too weak, to carry chlorides, and no de-icing salt on paths
+1	Very low: 180 m or more from the salt source, or 12 floors up **
+2	Low: 30 to 180 m from the salt source, or up to 12 floors **
+3	Moderate: less than 30 m from the salt source, or 3 floors **
+4	High: direct application, or a splash zone *

4 Design add all that apply; one finish row

0	Boldly exposed, so rain can wash it
0	Vertical surface with vertical grain, or no grain
−2	Finish pickled or electropolished, or roughness Ra 0.3 micrometres or less
−1	Roughness over Ra 0.3 and up to 0.5 micrometres
+1	Roughness over Ra 0.5 and up to 1 micrometre
+2	Roughness over Ra 1 micrometre
+1	Sheltered location, or unsealed crevices ***
+1	Horizontal surface
+1	Horizontal finish grain

5 Washing pick one

0	Not washed
−1	Washed at least once a year
−2	Washed four or more times a year
−3	Washed at least monthly

* Possibly highly corrosive: ask a stainless steel corrosion expert. ** Test a sample from the site for chlorides. *** With salt or pollution present, ask an expert. Totals: 0 to 2, 304 or 304L. 3, 316 or 316L. 4, 317L or better. 5 or more, ask an expert. Points and bands are IMOA's (ABC 00/03).

SPECIFICATION WORDING

SITE ASSESSMENT RECORD

Exposure assessed by [designer] on [date] using the IMOA Site and Design Evaluation System (IMOA ABC 00/03) for [component, location]: environment [0], salt [4], weather [0], design [-1], washing [0]; total [3]. Grade selected: [316L (EN 1.4404)] [after review by a stainless steel corrosion expert / BSSA advisory service where flagged]. The score is re-assessed if the design, location or cleaning arrangement changes.

FINISH AND DETAIL REQUIREMENTS

Stainless steel [316L (EN 1.4404)], finish [EN 10088-2 code, for example 2K], roughness not more than Ra [0.3] micrometres, grain [vertical on vertical faces]. Welds ground to match, not rougher than the surrounding finish. No flat upward faces: falls of [ ] to shed water. Crevices [sealed by weld or sealant / avoided]. As drawing [number, revision].

CLEANING AND RESPONSIBILITY

Washed [at least monthly] with [soap or mild detergent and clean water], rinsed. No cleaners containing chlorides, bleach or hydrochloric acid. Responsibility: [facilities manager]. Entered in the O&M manual at [section]. The washing credit in the site score depends on this schedule.

SITE EXPOSURE SAMPLE

Before the order is released, [two] samples made to the proposed finish and detail are exposed at [location] for [four to six months / six weeks if severe marine or industrial] and examined by [designer] and [partner]. The order is released on written approval.

TERMS USED

Site score

The total from IMOA's five-section evaluation of a stainless steel project: environment, salt, weather, design and washing. A low total points to 304, a higher one to 316 or beyond, and 5 or more to an expert.

Tea staining

Brown surface discolouration on stainless steel where corrosion has begun, often in coastal air. It is cosmetic, and a sign that the grade, finish or cleaning is marginal.

PRE (pitting resistance equivalent)

A number worked out from the chromium, molybdenum and nitrogen in a stainless steel: PRE = %Cr + 3.3 x %Mo + 16 x %N for austenitic and duplex grades. Higher resists chloride pitting better.

Crevice corrosion

Corrosion in a narrow gap where water and salt stay trapped. IMOA advises removing such gaps or sealing them with a weld or sealant.

STANDARDS AND SOURCES

- IMOA: Which Stainless Steel Should Be Specified for Exterior Applications? (ABC 00/03, 2003; via BSSA): the scoring method; all six pages read.
- ASSDA: Technical FAQ 6, Preventing Coastal Corrosion (Tea Staining): no edition date on the page.
- Nickel Institute publication 11 024, Stainless Steels in Architecture, Building and Construction: Guidelines for Corrosion Prevention: named in the IMOA brochure; not read.
- Make Bespoke Studio, TL-MET-01: 304 or 316 stainless steel: the first filter and the fabrication checks.

Full guide: https://makebespoke.com/trade/technical/stainless-environment-scoring-worksheet. Make Bespoke Studio coordinates manufacture through its partner workshops. Figures are guidance only and your specification governs; some may be superseded, so contact the studio to verify.