

## 7 THICKNESS OF COATING

### 7.1 Thickness grade

When determined in accordance with one of the methods specified in Clause 7.2, the minimum average thickness and the minimum local thickness of the coating shall comply with the requirements of Table 1.

NOTES:

- 1 Guidance on the selection of thickness grades is given in Appendix H.
- 2 The thickness grade designations given in Table 1 are those that are usually specified. If coatings of intermediate or greater thickness than those given in Table 1 need to be specified, they are designated by the letter AA followed by a number representing the minimum average thickness, in micrometres. In this case, the minimum local thickness is 80% of the minimum average thickness.
- 3 A description of the atmospheric environments that exist in Australia is given in Appendix I.

**TABLE 1**  
**THICKNESS REQUIREMENTS**

Thickness grade	Minimum average thickness, $\mu\text{m}$	Minimum local thickness, $\mu\text{m}$
AA25	25	20
AA20	20	16
AA15	15	12
AA10	10	8
AA5	5	4

**TABLE H1**  
**RECOMMENDED THICKNESS GRADES AND**  
**WASHING REQUIREMENTS**

Description	Atmospheric classification (See Appendix I)	Thickness grade	Cleaning intervals, months Maximum
<i>Interior</i>			
Mild	1	AA5	12
Moderate	2	AA10 and AA15	12
Severe*	—	AA20	6
Very severe*	—	AA25	3
<i>Exterior</i>			
Mild	3	AA15	12
Moderate	3	AA15, AA20 and AA25	9
Tropical	4	AA25	9
Severe	5	AA25	6
Very severe*	—	AA25	1 to 3

\* These environments are not defined in this Standard. A severe or very severe interior environment could occur as a result of high moisture condensation, e.g. resulting from an indoor swimming pool.

Very severe exterior environments usually occur at or near the beachfront in regions of rough seas and surf beaches.

## 12 ATMOSPHERIC CLASSIFICATIONS

A classification of the corrosivity of an exterior atmosphere into one of five categories is given in ISO 9223. A number of surveys to determine the corrosion rate at various sites in Australia and New Zealand have made it possible to place each of these sites into one of the five ISO categories. It is stressed that the micro-environmental effects described in Paragraph I1 also require consideration. The exterior atmospheric classifications make reference to one-year corrosion rate figures for mild steel. Figures are not given for aluminium which is highly resistant to atmospheric corrosion.

For the purpose of this Standard, atmospheric environments have been classified as follows:

- (a) *Interior environments* Interior environments are separated into Classifications 1 and 2, as follows:
  - (i) *Classification 1—Interior mild* Applicable to interior conditions not subject to moisture condensation.
  - (ii) *Classification 2—Interior moderate* Applicable to interior conditions subject to moisture condensation.
- (b) *Exterior environments* Exterior environments are separated into Classifications 3, 4 and 5, as follows:
  - (i) *Classification 3—Mild to moderate* A description of these environments is as follows:
    - (A) *Mild (ISO Category 1–2)* This environment includes all areas remote from the coast, industrial activity and the tropics. Sparsely settled regions such as outback Australia are typical examples, but it also includes rural communities other than those on the coast. The only areas in New Zealand in this category are sheltered areas far inland. Corrosion protection required for this category is minimal.
    - (B) *Moderate (ISO Category 2)* This environment includes areas with light industrial pollution or very light marine influence, or both. Typical areas are suburbs of cities on sheltered bays such as Melbourne, Adelaide and Hobart (except those areas near the coast), and most inland cities. Most of New Zealand, other than sheltered areas far inland and areas near the coast, is in this environment. The suburbs of Brisbane and Perth that are away from the coast are also in this environment.
  - (ii) *Classification 4—Tropical (ISO Category 2)* A tropical environment includes coastal areas of north Queensland, Northern Territory, north-west Western Australia, Papua New Guinea and the Pacific Islands, except where directly affected by salt spray. This is the only environment that cannot be delineated by corrosion rate, although measurements would put these areas into ISO Category 2.
 

NOTE: The characteristics of a tropical environment are as follows:

    - (a) Subject to high rainfall, greater than 1200 mm annually.
    - (b) Average humidity high all year round, typically 65% to 100%.
    - (c) No industrial fallout.
  - (iii) *Classification 5—Severe* A description of these environments is as follows:
    - (A) *Industrial (ISO Category 3–4)* The only areas within this environment are around major industrial complexes inland from the sea. Examples occur around smelters in Port Pirie and Newcastle. There are only a few sites within this category in Australia and none in New Zealand. The pollution in these areas requires that coating systems be resistant to mild acid.

- (B) *Marine (ISO Category 3)* This environment includes areas influenced to a moderate extent by coastal salts. The extent of the area varies considerably depending on factors such as winds, topography and vegetation. For sheltered areas, such as occur around Port Phillip Bay, it extends from the coastline to about 100 m from the beach, but for most ocean-front areas, such as occur along the south-western corner of Western Australia, the south-eastern coast of South Australia, and the New South Wales, Queensland and New Zealand coasts, it generally extends from about 200 m from the coast to about 5 km inland, depending on the conditions. Large areas of Perth, Wollongong, Sydney and Newcastle are in this environment. A high-performance coating system is required for long-term protection.