**Section 215.TABLE C Minimum Material Requirements for Shells and Bottoms of Refrigerated Storage Tanks for Various Temperatures and Thicknesses**

|  |  |  |  |
| --- | --- | --- | --- |
| Design Temperature | Thickness | Material Spec. | Qualifications to be Added to the Basic Specification |
|
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|
|  |  |  |  |
| 65 F to 25 F, incl. (See Note 1) | Up to ½", incl. | Any approved steel with specified min. T.S. not exceeding 60,000 psi | None |
|  |  |  |  |
|  | Over ½" to 1", incl. | A-131B (or C)  | None |
| Case 1256 | None |
| A-201 A & B | FGP (Fine grain practice) |
|  |  |  |  |
|  | Over 1" to 1⅜", incl. | A-131C, Case 1256- | None |
|   |  | A-201 A & B | None |
|   |  |  | FGP |
|  . |  |  |  |
|   | Over 1⅜" | A-131C | Normalized |
|  |  | Case 1256 | Normalized |
|   |  | A-201 A & B | FGP, Normalized |
|   |  |  |  |
| Below 25 F to 5 F, incl. (See Note 2)  | Up to ½", incl. | Case 1256 | None |
| A-201 A & B | None |
|  |  |
|  | Over ½" to 1⅜ ", incl. | A-131B (to 1" max.) | FGP |
|   |  | A-131C | FGP |
|   |  | Case 1256 | FGP |
|  |  | A-201 A & B (to 1" max) | FGP, High Mang.\* |
|  |  | A-201 A & B (over 1") | FGP, High Mang., Normalized |
|   |  |  |  |
|   | Over 1⅜ " | A-131C | Normalized |
|  |  | Case 1256 | Normalized |
|   |  | A-201 A & B | FGP, High Mang., Normalized |
|   |  |  |  |
| Below -5F to -30F (See Note 3) | Up to ½" incl. | Case 1256 | FGP |
| A-201 A & B | FGP, High Mang. |
|  |  |  |  |
|  | Over ½" to 1⅜" incl. | A-131B (to 1" max) | FGP, Normalized |
|   |  | A-131C | Normalized |
|   |  | Case 1256 | FGP, Normalized |
|   |  | A-201 A & B | FGP, High Mang., Normalized |
|   |  |  |  |
|  | Over 1⅜" | A-300 Class 1 | A-201 A & B only |

\*Manganese content of 0.70% to 1.0% is preferred in lieu of usual content of 0.80% maximum.

Note 1: The design temperature shall be taken as the lower of the following:

a) The minimum temperature to which the tank contents will be refrigerated.

b) The minimum estimated tank shell temperature due to atmospheric temperatures, considering the effectiveness of the insulation in keeping shell temperatures above expected minimum atmospheric temperature (if expected to be below the refrigerated temperature).

Note 2: For this thickness, temperature category approved steels include all those listed in API 12-C and API 620. Materials for vessels must comply with requirements of the Code and any additional requirements of this table. A-131 steel is not approved by ASME and some Code cases have not been approved by local jurisdictions. All specific materials listed in table are satisfactory for all designs based on API 12-C or API 620.

Note 3: For vessels constructed under the Code with a design temperature below -20F., the impact requirements shall comply with 8 Ill. Adm. Code Section 215.Table B.