

API Specification

2MT1

2nd Edition, September 2001
Carbon Manganese Steel Plate with Improved
Toughness for Offshore Structures

Appendix A

Suggestions for Ordering API Spec 2MT1 Steel Plate

In placing orders for steel plate to be manufactured in accordance with API Spec 2MT1, the purchaser should specify the following on an inquiry and the purchase order:

Specification	API Spec 2MT1
Quantity Size	As Required
Grade	2MT1
Chemical Requirements (see Table 1, Footnotes b and d)	State Whether use of Boron and/or Zirconium is Permitted and, if Permitted, State Limits
Process of Manufacture	Subsection 3.2.2
Mill Inspection by Purchaser	State Advance Notice Requirements
Delivery Date and Shipping Instructions	As Required
Supplementary Requirements	As Required
Manufacturers Procedure Specification (MPS)	State if Required

The purchaser should state on the purchase order the requirements concerning the following supplementary requirements which are optional with the purchaser:

S1	Ultrasonic Examination	Q
S9	Simulated Post-Weld Heat Treatment	Q
S13	Surface Quality	Q
S14	Thickness Tolerance	Q
S15	Manufacturing Procedure Specification	Q

Note: *Nothing in this specification should be interpreted as indicating a preference for any material or process. In the selection of materials and processes, the purchaser must be guided by the purchaser's experience and by the service for which the plate is intended.*

Supplementary Requirements

These requirements shall not apply unless specified in the order in which case the manufacturer or processor shall perform the specified supplementary requirement before shipment of the material. Supplementary requirement S1 provides for ultrasonic examination of the plates by the manufacturers and specifies limits for acceptance.

Supplementary Requirement S9 provides for simulated post-weld heat treatment of test samples. The purchaser should specify on the purchase order the temperature range, time at temperature, and cooling rate.

Supplementary Requirement S13 may be applied where surface quality is considered critical.

Supplementary Requirement S14 may be applied to reduce the standard over thickness tolerance.

Supplementary Requirement S15 may be applied if additional details of the manufacturing procedure or process are required by the purchaser.

By agreement between the purchaser and manufacturer, and when specified on the purchase order, the following Supplementary Requirements shall apply:

SR1 Ultrasonic Examination

SR1.1

Pulse echo ultrasonic examination shall be performed on each plate in accordance with ASTM Specification A 578/A 578M. Acceptance Level II shall be used.

SR1.2

Examination reports shall be furnished for each plate, and areas with more than 50% loss of back reflection shall be located on a sketch.

SR9 Simulation of Postweld Heat Treatment

SR9.1

A second test of test coupons shall be subjected to a simulated postweld heat treatment provided by the purchaser that is representative of the thermal treatment to which the material will be subjected during fabrication. The temperature range, time at temperature, and cooling rate shall be as specified on the order.

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SR13
Surface Quality

For applications where surface quality is considered critical, plates are to be furnished in the blasted and inspected conditions. The depth of rolled-in scale or clusters of pits shall not exceed 0.015 in. and shall not result in an undergage condition. However, isolated individual pits not over 0.030 in. deep are acceptable provided plate thickness is not reduced below the specified minimum. Other surface imperfections such as tears, seams, snakes, blisters, scabs, etc., are not acceptable and must be conditioned without reducing the thickness below minimum. The surface imperfections may be removed by grinding provided each ground area is well fired and grinding does not reduce the thickness of the plate below minimum.

SR14
Thickness Tolerance

By agreement between purchaser and supplier, plates can be ordered to $\frac{1}{2}$ standard over tolerance for thickness shown in ASTM A6.

SR15
Manufacturing Procedure Specification (MPS)

Details of steel making refining, desulfurization deoxidation continuous casting (if used), control of segregation, intermixing between heats, and slab cropping shall be addressed.

The sequence of deoxidizing, microalloying, and grain refining elements shall be shown. Slab quality control shall be included.

The MPS shall identify aim and range values for chemical composition, mechanical tests, and all major manufacturing steps, including all examination and checkpoints. Process variables for steel plate rolling and cooling conditions shall be identified.

Details of welding repair and repair qualifications shall be shown.