Steel Corpo

JFE Steel Corp. makes the utmost effort to supply high-quality steel plates in response to customer's requirements, and so is continuously improving its production equipment, expanding the product range, and improving quality control.

Plates used for offshore structures under severe conditions require excellent mechanical properties and strictly controlled quality. JFE Steel has developed plate products with high weldability and a wide range of strengths which are suited for various temperature environments, by combining the latest manufacturing processes and chemical design techniques. This document outlines the characteristics of JFE's steel plates and technologies for offshore structures. JFE Steel believes its steel plates have excellent quality to fully satisfy customer's requirements.

CONTENTS

[redacted]

Steel Plat

JFE's Stan

Exampl

JFE’s leading TMCP technology

Coarse Grain HAZ Control

&72' LPSURYHPHQW E\ PDNLQJ JUDLQV ÀQHU DQG LPSURYLQJ WKH microstructure.

HOP™

The newly developed HOP uses an induction heating method in which an induced current is passed through the steel plate by electromagnetic coils and heating is performed by the heat generated, achieving heating with an extremely large energy density.

Features of HOP™

Realizes 100% on-line heat treatment synchronized with rolling
A complete on-line system including rolling – accelerated cooling – heat treatment makes it possible to meet extremely short deadlines and realize mass production.

API2W Gr.60 t=101.6mm

Chemical composition

Available sizes

Heat Treated

1. In case of the diagonal-lined column ▨, “A” shows the maximum product length. And the product length between “B” and 6.1m can not be provided.
2. The minimum product size is as follows: 1m wide and 3m long.
3. Please consult with JFE prior to ordering the product width between 5,201 and 5,350mm.
4. 30m length for limited thickness and width is available. Please consult with us.

With 690MPa or higher tensile strength steel plates, a higher preheating temperature between 100 and 200°C is required to prevent cold cracking, though the specific temperature varies based on the above conditions. Please consult with JFE.

5) Tack Welding

Tack welding conditions are the same as those for normal welding, however, it is recommended that welding beads be over 50mm in length. It is absolutely essential that arc striking be performed in the bevel or on other steel plate, and not on the base metal.

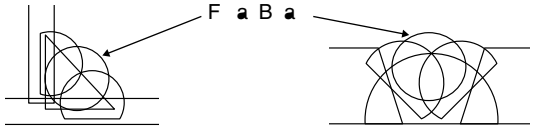
6) Welding

ƒ y In case of welding by covered electrodes, it is recommended at the outset that a back start be done for about 30mm in the groove, giving straight beading.

„ y It is recommended that arc length be as short as possible.

… yWeaving will impair heat input required for welding. If weaving is applied, the width of weaving must be less than 1.5 times rod diameter.

④ In case of SMAW for TS690MPa and over grades, temper bead methods are recommendable, as shown below.



‡ Slag removal is not easy for low hydrogen type electrodes, particularly compared to ilmenite or cellulose types, but it is recommended by all means. Pre-heating helps to remove weld slag preferably.

ˆ In case of submerged-arc welding, phenomena such as embrittlement and softening at heat affected zone must be considered.

Care must therefore be taken concerning the welding heat input.

‰ Besides preheating, the control of interlayer temperature is recommended.