

**Abstract:**

JFE S<sup>1</sup> a a a a a a a a-  
TS780 MPa  
1 470 MPa ab y a ab y  
a a y  
y a a a a a a  
d ab . T a- a a a a  
by a y JFE S<sup>1</sup> y, -  
a a a - a a  
a y b a y a .  
E a y, TS1180 MPa a a  
a a a , a a . I 1.5  
a a a a a a a  
980 MPa, a - a ab y a a  
b a a a a TS980 MPa. I  
a ab - a ab y a ba - a ab y  
a b a - a a .

**1. Introduction**

In the past, the steel industry has been a major source of CO<sub>2</sub> emissions. The steel industry is one of the most energy-intensive industries in the world, and it is responsible for approximately 7% of the world's CO<sub>2</sub> emissions. The steel industry is a major source of CO<sub>2</sub> emissions because of the high energy requirements for the production of steel. The steel industry is a major source of CO<sub>2</sub> emissions because of the high energy requirements for the production of steel.

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2. ... ..

... .. 780 MP, ... .. (1) ... .. (2) ... .. (3) ... .. (4) ... ..

\* ... ..

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... ..  
... ..  
... ..  
... ..  
... ..





- (1) ...  
 (2) ... 1180 MP, ...  
 ... 1.5t ...  
 ... 1180 MP, ...  
 ... 980 MP, ... B. ...

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